

A WEEKLY JOURNAL OF PRACTICAL INFORMATION IN ART, SCIENCE, MECHANICS, CHEMISTRY AND MANUFACTURES.

VOL.VIII.--NO. 26.

NEW YORK, JUNE 27, 1863,

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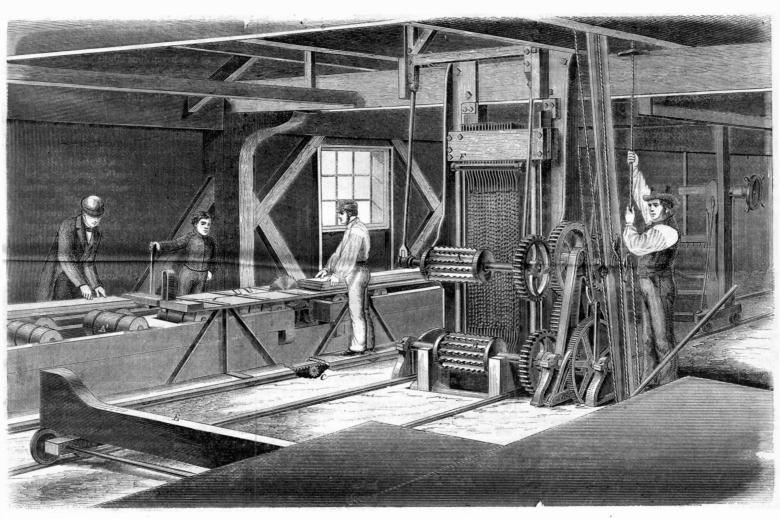
Improved Sawmill Machinery.

Although lumber is among the first demands of civilization, and machinery for its manufacture among the first inventions, improvements in this spurs, which reduce the size and which occasion great class of machinery have progressed more slowly than in almost any other. Cushing's improved feed works | The log is prevented from moving further than solidity when under the stroke of the saws, and

the parts of this machinery than under the old arrangements.

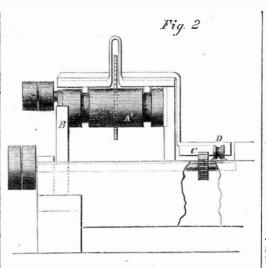
The advantages claimed are that the spikes or waste to logs and lumber, are wholly dispensed with.

occasioned by the logs running into the saws, when burls or knots are passing over the rolls, as well as the rough, crooked, and unsound lumber, and loss of time by false strokes, under the old system, are thus avoided. The log rests upon the rolls with greater



CUSHING'S IMPROVED SAWMILL MACHINERY.

or gang saws and improved edging or saw table, recently patented, are said to be important, and, we believe, will be found beneficial to mill-owners. The feed works for gang saws consist in feeding the upper or pressure rolls, as well as the lower or log rolls, making them co-efficient in feeding the log into and through the saws, whereby sawyers are enabled to use fluted instead of the spiked or tooth rolls. This is accomplished without in any degree affecting the facility with which the upper or pressure rolls may adapt themselves to the various sizes and inequalities of logs—round as well as square—a simultaneous movement being imparted to all the rolls by one and the same motion of the rag wheel, under all circumstances. Gang saws have been found practically superior to any other method yet tried for reducing legs to lumber, both as regards the expenditure of power, simplicity and durability of machinery, economy in labor, and great saving of stock. In all these respects it is quite evident that the single or frame saw, the circular, and the muley are much inferior.



the regular prescribed action of the rag wheel feeds The inventor claims greater facility in working all | t; and the frequent accidents to saws and machinery

is moved steadily under their action. The mechanical advantages of this improvement will present themselves at once to any experienced mill-man.

The improved edging or saw table consists principally in connecting with the table a platform upon which the men edging the lumber are carried back and forth. It is known that the labor of edging and splitting the deals, plank, scantling, and boards from gang saws heretofore has been the most laborious work in the mill. Even then the saws are often run upon short feed or stopped to enable the edgers to clear the lumber. This arrangement not only relieves the men from constant walking (amounting in some mills to nearly or quite a mile to every thous and feet sawed), but by increased facility of motionit also relieves them from the hurry which sometimes occasions great waste of lumber by careless adjustment on the table. This table will also prove of great advantage in planing mills where much lumber is split-up with circular saws for various purposes of building. The platform and table may be worked by a boy, with a mash staff to tighten the

straight and cross belt, or by having friction pullies to reverse the motion, situated behind the table near the saw; or by the men who edge and split the lumber, simply by extending a light shipping-pole or rope along and over the table, out of the way and within their reach at all times.

In Fig. 2 we have a section of the edging table and its machinery. The table itself runs on the large friction rollers, A, which work on journal boxes set in the frame, B. The table and platform on which the workman stands are both driven by the rack and pinion seen at C, and the platform is supported by the small friction rollers, one of which is shown at D. The feed rolls, A, in Fig. 1 (perspective view), can be adjusted to suit any sized log, and the timber to be sawed is supported on the carriages, E, and taken as it issues on the further end by the head seen in the background. By attaching a block and fall to the upper part of the building, the feed rolls can be swung up out of the way entirely, and easy access obtained to the saws or other parts of the machinery. The width of the saws is regulated by iron guides or gages, F, inserted in a frame at the end of the saws; and the general arrangement of the mill is workmanlike, ingenious, and convenient, and reflects credit on the skill and enterprise of the inventor.

The advantages of this machinery may be summed up as follows:—It enables the mill to do more work, and it also saves a great deal of lumber, inasmuch as it economizes time, giving the men opportunity to adjust the timber to the saw more carefully upon the table, literally preventing the haste which makes waste. These improvements, having been in use during the last two years, almost constantly, summer and winter, are recommended to mill-owners and manufacturers as valuable. They may be easily attached to the present gearing of any mill, with slight alterations, and at small expense.

The patent for this invention was procured through the Scientific American Patent Agency, on Jan. 6, 1863, by A. Cushing, of St. Johns, N. B. Further information can be obtained by addressing the inventor as above.

The Action of the Sun.

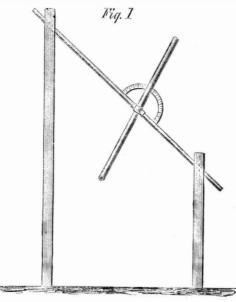
Every mechanical action on the earth's surface, every manifestation of power, organic or inorganic, vital and physical, is produced by the sun. His warmth keeps the sea liquid and the atmosphere a gas, and all the storms which agitate both are blown by the mechanical force of the sun. He lifts the river and the glaciers up the mountains, and thus the cataract and the avalanche shoot with an energy derived immediately from him. Thunder and lightning are also his transmuted strength. Every fire that burns and every flame that glows dispenses light and heat which originally belonged to the sun. In these days, unhappily, the news of battle is familiar to us, but every shock and every charge is an application or mis-application of the mechanical force of the sun. He blows the trumpet, he urges the projectile, he bursts the bomb! And, remember, this is not poetry, but rigid mechanical truth. He rears, as I have said, the whole vegetable world, and through it the animal; the lilles of the field are his workmanship, the verdure of the meadows, and the cattle upon a thousand hills. He forms the music, he urges the blood, he builds the brain. His fleetness is in the lion's foot; he springs in the panther, he soars in the eagle, he slides in the snake. He builds the forest and hews it down-the power which raises the tree and wields the axe being the same. The clover sprouts and blossoms, and the scythe of the mower swings by the operation of the same force. The sun digs the ore from our mines, he rolls the iron, he rivets the plates, he boils the water, he draws the train. He not only grows the cotton, but he spins the fiber and weaves the web. There is not a hammer raised, a wheel turned, or a shuttle thrown, that is not raised and turned and thrown by the sun. His energy is poured forth into space, but our world is a halting place where his energy is conditioned. Here the Proteus works his spells.—Heat considered as a Mode of Motion, by Professor Tyndall.

Scollay's Burial-case.—Mr. George B. Boyle has left this city recently to establish an agency in New Orleans for Dr. Scollay's deodorizing burial-case, which is extensively used now for preserving de ceased persons intact for many weeks.

A LESSON IN ASTRONOMY.

Ingenious mechanicians have constructed orreries, celestial globes, maps and numerous other instruments to aid us in obtaining a correct conception of the motions of the heavenly bodies; but for understanding the apparent motions, none of these artificial devices are so good as the heavens themselves—that great celestial globe which was fashioned by the Architect of the Universe, and which, suspended on its two pivots, rolls daily around us. We have only to watch the sun, the moon and the stars, to perceive that they are apparently set in a hollow shell, in the center of which we stand, and which is slowly rolling from the east to the west, over our heads and under our feet perpetually.

A very simple instrument, which any school-boy can construct, will aid materially in watching these motions of the heavenly bodies, and will illustrate the principle on which a large part of the astronomical observations are made. Let two posts be set in the ground, the second considerably shorter than the first and due south of it, so that a rod passing through holes in the upper ends of the posts may point exactly towards the north pole of the heavens.



To find the position of the north pole we must first find that most brilliant and best known of all the constellations, and which is variably called "The Big Dipper," "Charles's Wain" or "The Great Bear"—in the Latin, Ursa Major. The two stars in the end of the "Big Dipper" point very nearly towards the "North Star," and that is situated in the end of the handle of the "Little Dipper" or the end of the tail of Ursa Minor. The north pole of the heavens is at this time about two degrees from the "North Star," its position being indicated in our engraving by the cross.



* * * * *

The rod should fit the holes in the posts so loosely that it can be turned upon its axis, and a tube is secured to it near the middle by a pivot so that the tube may be inclined at any angle with the rod.

Now if the tube is set at right angles with the rod and the rod is turned round upon its axis, the tube will describe a great circle in the heavens mid-

way between the north and south pole. This circle is called the equinoctial. If the tube is pointed at any star and the rod is turned upon its axis, the tube will describe the circle in the heavens which the star will travel during the 24 hours.

When the tube is pointed towards a star, the angle of its variation from a right angle with the rod gives the declination of the star, either north or south, and this may be measured by a graduated arc attached to the rod.

If clockwork is connected with the rod so as to turn it from east to west upon its axis just half as fast as the hour hand of a clock, that is, once in 24 hours, and the tube is then pointed towards any star in the fire is involved in mystery.

heavens, it will continue to point towards the same star during the whole of its circuit.

A telescope mounted in this way is said to be equatorially mounted; and in our large astronomical observatories many thousands of dollars are expended in mounting the great telescopes with sufficient solidity and delicacy to follow precisely the tracks of the stars.

The rod is parallel with the axis of the earth, and if the axis of the earth pointed to the center of the "North Star," as the star is larger than the earth, the rod would point at some part of the star. The distances of the stars are so great that the apparatus works practically the same as if the rod was right at the axis of the earth.

Is a Patent Skate adapted to breaking Horses?

A correspondent, writing to Goward's Real Estate Register, gets off the following excellent story about our worthy cotemporary, Otis Brewer, the editor of the Boston Cultivator:—

"In the Scientific American for March 2, 1861, [Vol. IV. (new series) No. 9,] is a fine engraving of an apparatus, or gearing, for breaking ugly, fractious horses; and just below, on the same page, is an engraving of the 'Arctic skate,' invented and extensively manufactured in Uxbridge, Mass., by Bradford Stetson. Hastily looking over that page [136] and getting the two inventions slightly mixed, Mr. Brewer wrote a note to Mr. Stetson, the skate inventor, and requested permission to publish (in the Cultivator) the engraving of his original 'horse-breaker,' as he though it 'a nice thing.'

"Stetson, who is something of a wag, as well as the best mechanic in New England, wrote back that he thought Mr. Brewer had drawn a too hasty conclusion in calling his invention a 'horse-breaker!' The old article was sometimes called head-breaker, but, by the improvement of the gearing, and the entire absence of buckles, spurs and strings, this new invention, with much truth, could, in the language of Mr. Brewer, be called 'a n-ice thing!' Brewer, who is one of the best men alive, but as free from fun as a chicken from wool, did not fully understand Stetson's letter, and, after waiting a few months, wrote again for the engraving of the 'horse-breaker.' Stetson replied in the same vein as before, complimenting the agricultural editor on his good judgment in approving his invention, but again suggesting the propriety of examining the cut carefully, to see if it was truly the one he wanted, although he added, 'Those who have tried it pronounce it 'the biggest thing on ice l'

"For nearly two years this correspondence has been carried on, with good humor on one side, and wonder on the other, that he did not receive the engraving for the patent 'horse-breaker;' and he will now learn for the first time, through this letter, that he has been corresponding with the inventor of the 'Arctic skate.' Is it not a remarkable fact that all great inventive geniuses have a passion for fun? This fact has impressed itself on my mind for many years. Stetson is a genius, and is as well known as any mechanic in America. His Arctic skate has, during the past winter, superseded everything in the market. The skate is peculiarly formed, having no curls, loops or rings to catch sticks or strings to throw the wearer; it has no buckles, screws or strings to fasten with, but is made firm to the foot by two broad leather straps, with no visible ends.'

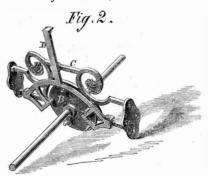
DESTRUCTION OF THE TREDEGAR IRON-WORKS IN RICHMOND, VA.—About eight days after the celebrated raid of Stoneman carried terror into the heart of the Virginia people, the Tredegar Iron-works took fire, and were burned to the ground. The fine machinery in the buildings was entirely ruined, and many of the workmen lost from three to five hundred dollars' worth of tools. In the works were sixteen new guns. which had just been cast and finished for the new gunboats recently constructed for the defense of Richmond. These guns were ready for mounting, wanting only the finishing of the touch-holes, and were rendered perfectly useless by the intense heat to which they were subjected. From the Tredegar Works the flames communicated to the woolen factory opposite, which was the largest in Virginia, and which was also reduced to ashes. The origin of the

Improved Hand Cultivator and Seed Planter.

This machine is designed to fill a place in horticulture between planting and hoeing by hand, and planting and cultivating with horses. Fig. 1, shows the arrangement of the machine. The frame, B, in front of the wheel is stationary and supports a corresponding frame, C, to which the tools are attached; it is made to slide up and down, and is held in its each upper berth there are two ventilators, one at place with guides, and regulated to the proper depth each end, which the occupants can regulate at will. the end, and is also provided with a nut, D, and

by an adjusting apparatus composed of the perforated plate, D, pin and spring, E, and the rod, F, and pinion, C, working in a rack on the movable frame, C. This frame may be taken off by removing the guides. Similar frames with different kinds of tools may be attached for cultivating between rows of plants by hand. The quantity and size of the seed sown is regulated by adjustable cells in vibrating or sliding plates (the plates being also removable when desired), working in the seed box A. The seed passing through the tube, H, is covered by a share following the same, and packed if desired, by the wheel of the machine passing over it; if not desired to pack, the machine can be reversed and the seed planted after the wheel. The seed box, A, is held in its place by pins, and may be taken off when desired, leaving the cultivator unincum-By changing the frames

may be employed. The distance at which the seed are planted is regulated by the actuating device, I, seen at the right of the wheel; also shown on a larger scale in Fig. 2, in which B is a wheel on the driving shaft, with an odd number of pins or projections on the periphery, from one to any number desired. One permanent pin and two made to screw off on one side, with five permanent ones on the other side, will be found as convenient as any other plan. The frame, C, is fitted with rods for the sliding device, D to work on; a pin pressing against a double bevel joint on one end of the slide, pushes it forward, while another pin pressing the double bevel joint at the other end of the slide,

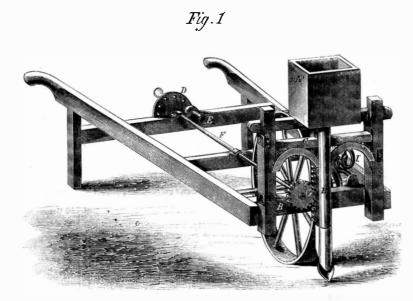


pushes it backwards. The slide, D, is held in its place with springs or screws, and can be applied to each side of the wheel. The distance at which the seed are planted is regulated by the number of pins on the wheel, B (Fig. 2), the size of the driving wheel and the orifices in the feed plates, enabling it to plant from one inch to four feet apart, a continuous stream, or even a single turnip, or larger seed at a time as wanted, such as beans or corn. These improvements in seed planters are also adapted to horse-power machines. This invention was patented by James K. Dugdale of Richmond, Ind., on May 13, 1862, and again on April 7, 1863; further information can be had by addressing him as above.

A Splendid New Sleeping Car.

A new sleeping car, which cost \$4,000, has lately been placed upon the Chicago & Rock Island Railroad It is 56 feet long-8 feet longer than the ordinary car. It contains three sooms. The main room is 38 feet long and contains twenty beds. At each end there is a saloon 9 feet long; both finished and furnished alike. Each saloon contains a sink, a washroom, with elegant marble-top stand and silverplated fixtures, a sofa, an elegant mirror, coat-hooks and that they are sometimes very difficult to stop on dents, and the galleries were filled with ladies.

roof, running the entire length, is an aperture 1 foot wide. Over this is raised a "steamboat roof," 2 feet high and 3 feet wide, with registers for ventilation; through this all the impure air (which has ever been the bane of sleeping cars) escapes. The upper berths are thus made as pleasant as the lower ones. To is faced with felt, B, or any elastic substance deemed

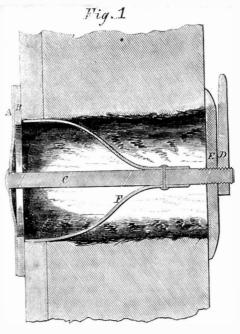


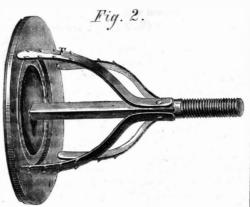
DUGDALE'S HAND CULTIVATOR AND SEED PLANTER.

any kind of garden tools adapted to the machine | The mattresses are all made of hair. The windows are filled with double sashes, so as to keep out dust, and are provided with brocade curtains instead of blinds. The car is splendidly lighted by lamps and reflectors in the roof, and carpeted with Brussels carpet throughout.

LOCKWOOD'S PATENT SHOT-HOLE STOPPER.

It is well known to most persons that shot-holes





through the side of a ship, when below the water-line, greatly endanger the safety of the vessel and cargo,

and other accommodations. In the center of the account of their ragged nature and irregular form. We illustrate herewith a device for stopping leaks of the kind in question; Fig. 1 shows a section of a vessel breached by a shot, and Fig. 2 is a perspective view of the invention. The metallic plate, A, is curved in a suitable manner to make it strong, and

> washer, E. To the stem is riveted the springs, F; these serve to center the outside plate over the hole, so that it will seat itself properly and cover all parts of the aperture. These details comprise the invention. The operation is easily seen at a glance. The locality of the leak being ascertained, it is only necessary to dive down or reach it by other means (such as fastening the plate on the end of a boathook) and shove the plate over the leak. The springs center the apparatus properly, and the barbs on the same prevent it from slipping out before the nut is applied; it only remains to screw up the nut on the inside, and the leak is stopped. This is a very convenient and easily-adjusted device; it is much better than the ordinary wooden plugs used for the purpose, and is applicable to all classes of vessels, iron-clad and otherwise. It

was patented by Edmund Lock-wood, of Ulster, Pa., on Feb. 25, 1862. Any further information may be had by addressing him as above.

Honor to the Discoverer of Photography

The degree of LL.D. was, on the first of April last, conferred upon William H. Fox Talbot, Esq., in the University of Edinburgh, Scotland, upon which occasion Prof. Muirhead made the following address:-

conferred upon William H. Fox Talbot, Esq., in the University of Edinburgh, Scotland, upon which occasion Prof. Muirhead made the following address:—
VICE-CHANCELLOR:—I now present to you, as also accounted by the Senatus Academicus worthy to have conferred upon him the honorary degree of Doctor of Laws in this University, William Henry Fox Talbot, Esq., a Master of Arts of Cambridge and a Fellow of the Royal Society. It is not because of his political services that I present Mr. Talbot to your notice (though he, too, has had a seat in the Legislative Council of the nation), but because of his pre-eminence in literature and science, and the benefitshis discoveries have conferred upon society. When I tell you, sir, that at Cambridge, Mr. Talbot was in mathematics a wrangler, and in classics the Chancellor's medalist, I but mention some of those early honors that were looked upon as carnests of his future triumphs. His subsequent career has not been behind his academic promise. Literature owns with gratitude her obligations to his philological inquiries. Oriental antiquities—and, in particular, the cuneiform inscriptions of Assyria—have been materially elucidated by his investigations. The transactions of our learned bodies and the medal awarded him by the Royal Society in 1838 bear witness to the value of his mathematical researches, especially in the field of optics; and chemistry has profited not a little by his experiments in connection with the spectrum analysis. But all these claims of his to grateful recognition pass into the shade when contrasted with that one which no man, sir, is better able to appreciate than you—his claim to our acknowledgments as the discoverer of the art of photography. Wedgewood and Davy, indeed, had early in the century some faint idea of the secret; the elder Niepce had experimented not entirely without, success; Daguerre had announced that he had overcome the difficulties that had baffled his predecessors; but it was Mr. Talbot who first made known that method of photogenic oper

The Vice-Chancellor (Sir D. Brewster) then, amid great applause, conferred the degree upon Mr. Tal-bot. The body of the hall was crowded with stu-



A Creditable Piece of Engineering.

MESSRS. EDITORS: -- An attentive perusal of the Scientific American for some time past having convinced me that you desire to relate the practical, as well as discuss the theoretical value of mechanical science, I venture to enclose a short account of the tapping of the largest body of water ever operated upon in this State; the feat is regarded about here as "a very pretty piece of engineering." On the Ashland estate, in the vicinity of the town of Ashland, are located two large collieries; one, worked by Bancroft, Lewis, & Co., employing between four and five hundred hands, and the other, worked by Mr. Moody, almost as many. These collieries are situated on opposite sides of the Mahanoy creek, and the slopes in each have been sunk to the depth of 600 feet perpendicular. The mining engineer of the estate, seeing the great advantage to be derived from having the draining of both mines effected by one pump, proposed that an engine should be constructed of sufficient power to perform the required work. A direct-acting engine of 500 horse power was built by the firm of Pott & Vastine, of Pottsville, and erected at Bancroft's colliery, and having been found to work satisfactorily, the work of connecting the two collieries was commenced. This, as all engineers will understand, was a most difficult undertaking. The intervening distance between two slopes consisted partly of precipitous mountain side; and the slopes, following the pitch of the vein to the depth of 600 feet, were very steep and unfavorable for the use of instruments. A small gangway, merely large enough to allow the workmen room, was started at 500 feet below water-level in the eastern colliery, and driven forward with the intention of meeting a similar gang way from the western colliery; but as the miners advanced the influx of water became greater, and finally, owing to some accident to the pump, drove the men out and arose 300 feet in the slope, com_ pletely drowning out the lower part of the mine. The western gangway was then driven to within 60 feet of the flooded gangway, and preparations made for boring through the intervening mass of coal and slate. A strong battery of heavy timber was first erected to prevent the washing away of the coal by the immense pressure of the 300 feet of water about to be tapped. The drill was then put in operation, and with such nicety and skill had the gangways been driven, and so exactly was the direction of the drill determined, that the water was struck at the first attempt. Only from an actual inspection of the collieries can an idea be formed of the delicacy of leveling and measurement required to execute successfully such a work, where the smallest error in the direction or slope of the gangways would involve everything in inextricable confusion. Mr. H. H. Fisher, the engineer under whose direction this work was performed, has had for several years the entire control of the engineering department of the Ashland estate, upon which are situated some of the largest collieries in Schuylkill county. VISITOR.

Pottsville, Pa., June 15, 1863.

The undertaking seems to have been successfully accomplished, and the originator and director of the scheme is certainly entitled to great credit for the fortunate issue of it.—Eps.

Steam on Canals.

Messes. Editors :- From the Scientific American. No. 23, current volume, it appears that steam power on the Erie canal has not yet proved successfulhorse-power being again in the ascendant. For the benefit of all persons interested I wish to sav. through your paper, that I have just completed a device for propelling canal boats by steam; it requires but little room, it does not wash the bank, and yet it does the work. This propeller I am prepared to introduce on the following terms, namely, with twelve bushels of coal per twelve hours, to do the work of six horses; and for every additional horse-power, two bushels of coal per twelve hours, for any speed desired, attainable by power. This I guarantee at the above cost. I made a trip on the Miami canal on the 27th ult., effectually precluded, and the recoil of the guus or oil had just been struck there at a depth of 500 feet.

running at the rate of seven and a half miles per hour. Will the above pay? Any person wanting steam power on the Erie canal, with the above conditions guaranteed, can have it by addressing-

> A. E. HARDING. Middletown, Butler Co., Ohio.

Will Vulcanized Rubber corrode Iron?

MESSRS. EDITORS:-Recently in a common two-flue boiler belonging to the works I have charge of, we found it necessary to make some repairs, and we find that in the last sheet at the bottom, where the blow-off pipe is bolted on, the fire has burnt entirely through the sheet in a circle just outside the flange of the pipe, causing the feed to leak out faster than it could be pumped in. I conclude that it was the action of the sulphur in the vulcanized rubber packing which was between the flange and the boiler, that enabled the heat of the fire to burn so deeply at that particular spot, while other parts of the same sheet, as much exposed, were uninjured. How can this be accounted for? CIVIL ENGINEER.

Mount Vernon, Ohio, June 4, 1863.

[We do not exactly understand the disposition of the blow-off pipe. How could it be under the action of the fire?. Vulcanized rubber packing does not stand much over 250° of heat, and we are puzzled to know why the joint did not burn out in a short time, as the heat of the fire must have far exceeded that temperature. Sulphuric acid may be formed by the action of heated water on the sulphur contained in the packing, but it must be necessarily very dilute, and does not affect the integrity of the iron. It is the common practice in all engineering establishments to use vulcanized rubber, to a greater or less extent, for making joints. We have never met with a case in our experience where iron was in the least injured by vulcanized rubber, and we cannot account for the occurrence on the theory advanced by our correspondent. Perhaps some of our readers may have observed a similar phenomenon (we cannot call it anything else), and will favor us with their experience.-Eps.

RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week. The claims may be found in the official list :-

Lamp.—This invention relates to an improvement in that class of lamps the wicks of which are supplied with oil or other burning material from an elevated fountain, or one which projects above the burner. This class of lamps possess an advantage over the ordinary lamps which have the burner attached to the top of the fountain for the reason that the former supply the flame with a uniform amount of burning material, and thereby cause a constant flame or one of uniform intensity so long as any burning material remains in the fountain, whereas, in the ordinary lamp the intensity of the Hame diminishes as the level of the burning material in the fountain descends from the flame, as the supply of the former to the flame proportionally diminishes with its descent. The object of this invention is to obtain a lamp with an elevated fountain which will admit of a uniform supply of burning material to the wick or flame, and render an overflow impossible, so that volatile substances, such as the lighter grades of coal oil may be burned with perfect safety. J. H. Seaman, of Brooklyn (E. D.), N. Y., is the inventor of $this\ improvement.$

Submarine Battery .-- This invention consists in extending the turret of a vessel or floating battery through its deck and bottom, in such a manner that a gun placed in the bottom of the turret can be fired below the water-line; it consists, also, in combining with the turret a mechanism for raising and lowering it, in addition to and entirely independent of the ordinary mechanism for producing a rotary motion of the same, in such a manner that one or more guns placed at the bottom of said turret can be fired under water in any desired direction; the invention consists, further, in the arrangement of water tight cases which surround the guns or mortars and which are provided with springs in their back ends in such a manner that the entrance of water into the turret is

mortars is taken up entirely by the springs in the cases. F. A. De Mey, of Brooklyn, N. Y., is the inventor of this improvement.

Printing Apparatus.—This invention relates to a new and improved apparatus or device for printing direct from the type so as to avoid the labor of setting up the type, and also the subsequent manipulation of taking the impression therefrom. The invention is designed for printing letters, circulars, &c., either directly on ordinary paper or on transfer paper; and it is also designed for forming electrotype molds, the type in the latter case being pressed directly into wax, or other suitable plastic substance, on which, after it has received the impressions of the type, a coating of copper is deposited through the agency of a galvanic current. F. A. De Mey, of Brooklyn, N. Y., is the inventor of this apparatus.

Rotary Engine.—This invention consists in a novel construction of the stationary steam cylinder with its abutments and mode of combining them with the rotating cylinder or piston wheel to which the pistons are attached, whereby provision is made for dispensing to a great extent, if not wholly, with the use of packing and with working joints composed of surfaces perpendicular to the axis of rotation which are so difficult to keep steam-tight in rotary engines. It also consists in certain means of operating the pistons to bring them to positions to be operated upon by the steam, and into positions to pass the abutments of the stationary cylinder, as required; and in certain means of cutting off the steam from the pistons at various points in their revolution, to provide for working the steam more or less expansively. C. T. Boardman, of Bergen Point, N. J., is the inventor of this engine.

Steam Radiator Connector .- This invention consists n making the connection between the several sections of steam boilers, generators or radiators, by means of metallic thimbles having a right-hand screw-thread on one end and a left-hand screw-thread on the other end of its exterior; one end screwing into a hole with a corresponding internal thread in one section of the boiler generator or radiator, and the other into a hole with a corresponding internal thread in the adjacent section thereof; such thimbles constituting not only the means of connecting the several sections, but as durable communications between them, for the circulation of steam or waterand dispensing with the use of soft or perishable packing, such as cement, putty or india-rubber gaskets; it also consists in the construction of the inte. riors of such thimbles of square or other suitable form for the reception of a key of corresponding form by which to screw them into their places to make the connections. Charles Whittier, of Roxbury, Mass., is the inventor of this improvement.

LITERARY NOTICE.

THE ANNUAL DIRECTORY OF THE CITY OF NEW YORK. J. F. Trow, publisher, 50 Greene street, New

That an accurate compilation of the names of our citizens, their business and the places at which they transact it, is absolutely necessary to the daily duties of life, will be admitted by all. The value of such a catalogue may be well conceived by supposing it altogether suppressed and the community left to grope blindly after the information that is readily found in its pages. The City Directory, this year, completed by H. Wilson, is creditable to the canvassers and the editor of it, and doubtless contains as few mistakes as possible under the circumstances. Among the names of our own acquaintance we have not been able to detect any. The publisher apologizes for any inaccuracy by stating, in the preface, that the canvassers have had to encounter many difficulties when demanding names from persons, under the impression that they were enroiling for the draft, and he also instances other causes which conflicted with a thorough prosecution of the duties of the name-collectors. The cost of the production of the volume has been largely increased this year from obvious causes, but the publisher states it is still the cheapest book, considering its value, issued from the

Just as we go to press we are in receipt of a letter from a correspondent at Erie, Pa., announcing that

THE FOURTEENTH ANNUAL REGATTA OF THE NEW YORK YACHT CLUB.

The friendly trial of speed, which has occurred every year but one since the organization of the yacht club, came off on the 11th instant. The entries were quite numerous, being sloops and schooners of varying tunnage. Their names are appended below. It seems as though some adverse fate ruled the winds and waves when regattas occur, for the inevitable calm that is always a part of the proceedings appeared on this occasion, and very nearly destroyed the hopes of the yachtmen. The breeze sprung up, however, at a later hour in the day. The advantages of the club as an organization, to our own city and country, should not be lost sight of. They are manifest in the splendid clipper ships built by our merchants, which are nothing but yachts in the finest sense of the word, and are at once the pride and boast of the world.

The race which took place on the 11th instant was of a character to excite mingled feelings, those of hope and fear predominating. It was a handicap race, or, in plain English, those yachts who could reach the stake-boat first were the best fellows. At about 11 A. M. the boats started in the following order, and the allowance of time can be noted: -- Mystery, 59 tons, started at 10 o'clock and 15 min. utes; Fanny, 48 tons, 10h. 25m.; Alpha, 23 tons, 10h. 34m.; White Wing, 53 tons, 10h. 41m.; Nettie, 110 tons, 10h. 43m.; Favorita, 138 tons, 10h. 48m.; Gipsey, 148 tons, 10h. 48m.; Minnie, 75 tons, 10h. 50m.; Dawn, 42 tons, 10h. 50m.; Plover, 40 tons, 10h. 57m.; Nautilus (not entered), 10h. 56m.; Escort, 34 tons, 10h. 58m; Annie, 27 tons, 11h. 58m. The wind was dead ahead on the start, and the yachts dropped listlessly down the river, doing the best they could under the circumstances. The vessels made long stretches; and at 11 o'clock and 10 minutes the Annie put about on the starboard tack; at 11h, 30m. she was off Governor's Island. At 11h. 35m. the Nettie was off Bedloe's Island with every stitch of sail set: and at 11h. 55m, the Alpha was off Robbin's Reef Light. From the Battery down to the stakeboat off Robbin's Reef, there was no breeze worth speaking of, and at the stake-boat itself the vessels were almost becalmed. At this juncture a breeze and a shower both came together, and the yachts hastened on their way with increased speed. The following list exhibits the time made by each vessel to Robbin's Reef, and the order in which they reached it :- Fanny, 11h. 49m.; Mystery, 11h. 51m.; Alpha, 11h. 55m.; White Wing, nearly becalmed, 12m.; Plover, 12h. 7m.; Nettie, 12h. 8m.; Minnie, 12h. 12m.; Dawn, 12h. 20m.; Favorita, 12h. 25m.; Annie, 12h. 23m.; Gipsey, 12h. 29m.; Escort distanced. The run to the southwest spit materially changed the position of the vessels. The excursion steamboats all panted down to the buoy, and 'laid off awaiting the contestants. As they came down with swelling sails and bows cleaving the waves, they won the admiration of every person. The Fanny (sloop) was the first to reach the goal at 2h. 40m. P. M., and put about on her way home. The Minnie came cracking down on her little adversary just ten minutes behind, with the Silvie (withdrawn) close hauled after her. The excitement among the spectators became intense, and culminated as the Plover, the first of her class, reached the goal, put her helm up, and bore away in chase. After these came the White Wing at 2h. 54m., and the Annie at 3h. 10m. Then the excursion steamers toiled after the straining yachts and steered a straight course for the stake-boat off the Elysian Fields at Hoboken. They reached the home stake in the following order :- The Minnie (first-class prize) at 4h. 39m., the Fanny at 4h. 41m., and the White Wing at 4h. 51; the Nettie just one minute behind, and the Plover at 5h. 10m. This ended the regatta. No accident occurred to any one that we heard of.

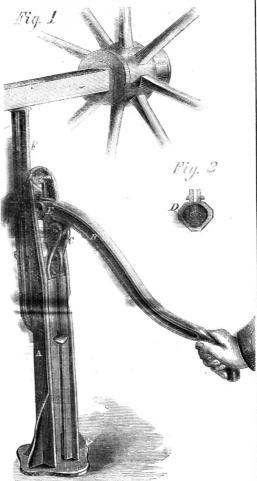
Vitrified Photographs.

Several specimens of vitrified photography upon transparent glass have been presented to the Paris Photographic Society by M. Maisson. In a communication upon the subject he states that he believes this kind of photography may be applied to the windows of apartments. The transparency, free from opacity, will, he believes, be an auxiliary which the glass-painter may advantageously employ. The

ordinary method, it is covered with yellow ocher, and when dry exposed to the furnace in a muffle until it becomes a cherry-red color. When cold, the coating of yellow ocher is removed, and the picture is found vitrified.

LANE'S PATENT CARRIAGE-JACK.

We herewith illustrate one of the best and most convenient implements for the purpose of jacking up wagons and carriages while the wheels are being washed, or having the axles on which they run repaired or greased. It is a very simple machine, as will be seen by referring to the engraving and description. The cast-iron column or post, A, has a long lever, B, working through the slotted head. This lever has a lug on the under side, to which is jointed the links, C; these are secured at the other end to the column. The head, D, is also jointed to the lever at E, and fits over the jack-head, F. Fig. 2



represents this appliance more fully. The operation of the jack is as follows: - The head is placed under the axle, as in the engraving, and the handle forced down the same as in pumping water. The looselyfitted head, D, bites on the jack-head, F, and raises it up. When the handle is down, it folds closely up against the side of the supporting column, so that nothing is in the way to run against or throw the vehicle down. The links also are on their center of motion or perfectly upright, so that it requires no ratchet-teeth or palls of any sort to hold the jack up to its work, and it can never detach itself prematurely. Various heigths may be obtained by slipping the head, D, up or down on the jack-head, F, and the whole apparatus is very simple, cheaplyconstructed, and well adapted to the purpose:

This invention was patented on Oct. 23, 1860, by Mr. W. J. Lane, of Washington, N. Y. Further partic ulars can be obtained by addressing the manufacturer, J. G. Lane (who has State rights for sale), at the same place.

An Accommodating Railroad.-On the Peoria, Oquawka, and Burlington Railroads, they run a combined "express and stock train," on which they carry hogs and humanity. One day last week a pig escaped from the cars at Gatesburgh, when about midway between this city and Elmwood, and forthwith the "express and stock train" was brought to a dead halt, method is as follows:—After taking a transparent for the purpose of capturing his swineship. An ex- has been found.

positive from a negative, either by contact or by the citing chase of half an hour followed, in which the passengers were called to join, until " porky" was run down, returned to his fellows, and the "express and stock train" moved on its way. Great institution that "express and stock train!"--Syracuse Union.

VALUABLE RECEIPTS.

WASH FOR APHIDES.—Take half a pound of the strongest smoking tobacco, boil in it 2 quarts of water until it is reduced to 3 pints, then dilute it with 9 quarts of water in which soot has been previously mixed. Then add about a quarter of a peck of quicklime; stir it daily for eight days with a wisp of straw and strain it through a piece of canvas (not too thick); this will render the fluid so clear that when used it will pass through the finest watering-pot without choking up the "rose." This wash has been used for pelargoniums, verbenas, roses and calceolarias, without their being in the slightest degree injured by it.

POTTING HERRINGS AND SUCH LIKE SMALL FISH .-The following is the mode practiced in the Isle of Man for potting herrings, the fame of which is current in Europe :- Take 50 herrings, wash and clean them well, cut off the heads, tails and fins. Put them into a stewpan with 3 ounces of ground allspice, a tablespoonful of coarse salt and a little Cavenne pepper. The fish must be laid in layers, and the spice, &c., sprinkled upon them equally. A few bay leaves and anchovies are then interspersed among the fishthe latter improve the flavor greatly. Pour upon the whole a pint of vinegar mixed with a little water. Tie over them a clean bladder and bake in a slow oven. Skim off the oil; boil half a pint of port or claret wine with a small quantity of the liquor and add it to the fish. If required to be sent any distance it is better to cover the whole with some clarified butter.

COLORED FLAME PAPERS .-- A very convenient mode of exhibiting the characteristic flames of metals is by prepared papers. The papers are prepared like guncotton, then soaked in the chlorates of the different metals, and afterwards thoroughly dried for use. Good paper for this purpose is prepared by soaking strips of filtering paper for about ten minutes in a mixture of 4 parts of oil of vitriol with 5 parts of strong nitric acid, by measure. The strips, when taken out of the acid, should be washed first with cold, and then with hot rain water, till the washings are no longer sour to the taste. The solutions of the metallic salts need not be very strong; but if they are warm, the strips of gun-paper will be more easily and completely saturated with them. Since some of the chlorates attract moisture from the air, it is better to dry the papers prepared with them before the fire previous to lighting them. They are shown to best advantage when a strip is loosely crumpled up into a pellet, lighted quickly at one corner and thrown up into the air against a dark back-ground. They leave, after burning, if properly prepared, no ashes whatever. Paper prepared with the salt of potash gives a flash of violet flame; that prepared with the soda salt, the characteristic yellow flame; and that with chlorate of baryta, a very beautiful green light. The chlorates of strontia, lithia and lime, when thus ignited, give intense colors. The violet-blue flame of copper is well seen, even with the chloride of that metal, while paper soaked in nitrate of potash shows the flame better than if the chlorate be used. Gunpaper prepared with a very weak solution of chloride or chlorate of thallium shows the characteristic spriggreen flame of that metal with great distinctness. Chlorate of baryta, being an article of commerce, may be employed for the preparation of the other chlorates, it being merely necessary to add to this salt in solution an exactly equivalent quantity of the sulphate or carbonate of the metal whose chlorate is desired. For instance, in order to make chlorate of copper, 15.1 grains of chlorate of baryta being dissolved in hot distilled water, a boiling solution containing 12.5 grains of pure crystallized sulphate of copper is to be added to it. Insoluble white sulphate of baryta falls, while the solution, filtered and evaporated, yields the new chlorate in crystals.

The Journal de Hortsculture de la Belgique states that a powder made from the flowers of red camomile (Pyrethrum roseum) emits "an odor so strong and penetrating that it kills all the insects and the vermin for which, until now, no certain agent of destruction

Improved Turbine Wheel.

In some parts of the country it is inconvenient to employ steam power on account of the expense of fuel and the abundance of water power which furnishes an economical substitute for steam. We illustrate this week an improved turbine wheel which possesses some features worth noting, and those who

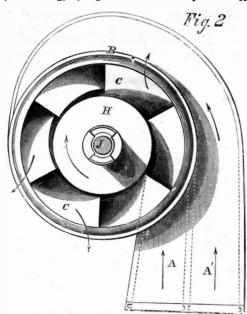
amine into its good qual-

ities Fig. 1, is an elevation of the wheel, showing the casing partly in section; Fig. 2 is a plan. Water is applied simultaneously to the two opposite sides of the wheel through the double chute, A A' (Fig. 2), so that whether admittéd in large or small quantities, it will act uniformly on both sides of the shaft, thus reducing the friction and wear, and causing the wheel to work with greater uniformity. The arrows indicate the course of the water. It is deflected upward by the scroll, I, and entering the wheel from below, its direct force is first applied to the lower ends of the buckets, C, and then to the short intermediate buckets, D; from whence it diverges upward and inward. The continued upward pressure caused by the gravity of the descending column is exerted against the oblique upper ends of the long buckets, C, until it has passed beyond the reach of the pressure of the descending column; after which it flows away with perfect freedom and without any disadvantageous reaction. The position of the buckets

on the lower side of the wheel is such as to obtain

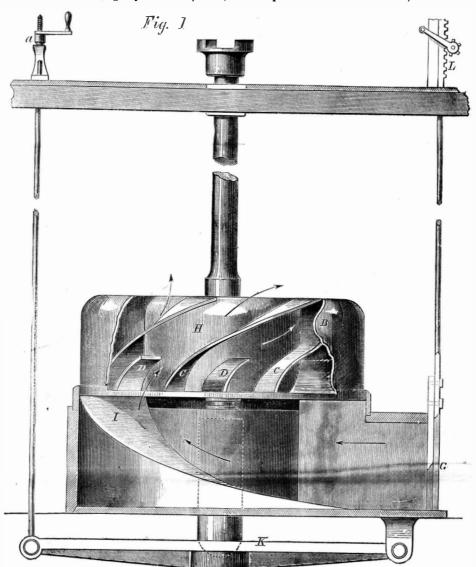
the direct force of the

water to the fullest extent, while at the upper side, where the greater obliquity | obtained by addressing Elias Dohner, at Lancaster, | Had no person been at hand to discover the of the buckets, C, causes them to approach nearer together, the absence of the intermediate buckets. D, affords space sufficient to admit of an unobstructed discharge. The upward convergence, of the hub. H, and casing, B, together with the depression of



the outer edges of the buckets causes the centrifugal action to be made use of. 'The main shaft may constitate the spindle of the mill, being attached directly to the running stone; it rests on a lever, K, for

regulating the stones in the customary manner by means of a screw, a. L represents the rack and pinion to regulate the gates, G. The wheel can be cheaply constructed and may be made to run at the proper speed for mill-stones with from 41 to 12 feet head, without intermediate gearing. This wheel was patented through the Scientific American Patent are about constructing mills would do well to ex- Agency on Jan. 6, 1863; further particulars can be



DOHNER & BRUCKART'S PATENT TURBINE WHEEL.

The Frog Market.

There is a frog market in Pittsburgh, and quite a large amount of business is done in it too. The frogs are brought from all parts of the adjacent country, and disposed of to restaurant-keepers and others, at prices which, considering that it costs nothing to raise them, and but little to catch them, must prove highly remunerative. Some are considerably larger than spring chickens, and are held at the lively price of twelve cents each. The regular price to restaurant-keepers is \$8 a hundred, which is an increase of twenty-five per cent on the prices of last year. This seems a stiff figure for frogs, but we were assured that, if the present demand for them continues, they cannot be had at \$10 a hundred, a week hence. They are brought to market alive, and, with their sage-looking heads and big, dreamy eyes, look as though they heard and understood everything passing around them.—Pittsburgh Chronicle.

[Frogs are very excellent eating, but we think that the chickens about Pittsburgh must be very small, or else the frogs are very large.-EDs.

A NICE COUNTRY. - Down on the Amazon are spiders with bodies two inches and legs seven inches long that catch and suck birds; butterflies that are mistaken for humming-birds; green snakes just like a creeping plant, and a lovely coral snake with bands of black and vermilion separated by clear white rings; monkeys with white hair all over them; monkeys only seven inches long; and owl-faced apes, sleeping all day and lively all night.

THE CAUSES OF FIRES.

We have noticed with much concern that people generally are extremely careless with combustible substances, or those that generate fire spontaneously. A large number of fires of "unknown origin" may be traced to the recklessness exhibited in the use of matches, in the tossing aside of ignited cigar-ends,

in keeping materials together that develop heat by contact, such as oily waste, damp shavings, and carboys of chemicals, in fact the wholearray of natural, artificial, or mechanical appliances for creating That "fire is a good servant but a bad master " is a truism, the force of which is amply attested daily, and such being the case, it behooves all persons to be more watchful of their habits lest they transgress in this respect.

It is not an uncommon thing to see a young man go into a store with a fragment of a cigar in his mouth, which he presently throws on one side, regardless of where it may fall. That simple but foolish act may cost some men their fortunes and others their lives, and yet it is of almost daily occurrence. It was only a short time since that we had positive proof of the mischief of such a proceeding. Some person did precisely what we have narrated above-threw a cigar-end down in an office not very far distant, which alighted in a corner of the room on a raw edge of the cocoa-matting that covered the floor. This "stump" ignited the matting, which burned slowly for a long time until attention was called to it by the sense of smell.

cause and extinguish it, there would doubtless have been another "mysterious" fire on record, as the furniture and other surroundings afforded excellent food for flames. In the cotton factories in New England several accidents have occurred from the spontaneous ignition of the greasy waste accumulated from time to time, and stringent penalties are now enforced, we believe, against such practices. Sawdust is a prolific source of danger when gathered in great quantities, as are all bodies incapable of being thoroughly ventilated. Perhaps cigarsmokers think to dispose of their rejected ends by casting them aside as convenience suits, but such a practice, although possibly harmless in forty-five cases, is in the other five unquestionably a source of disasters that ought not to occur. Rats are said to have caused conflagrations by carrying combustibles to their nests in the walls of houses, and children frequently obtain matches and do themselves lasting injury by sucking the prepared ends and by building fires in barns and other dangerous places. The careless use of combustible materials is greatly to be deprecated and ought to be stopped.

NOW IS THE TIME TO FORM CLUBS,

With the present number another volume of this journal closes. We appeal to our friends in all sections of the country where mail facilities exist. to endeavor to form clubs for the coming year. We feel justified in asserting that no other journal in this country furnishes the same amount of useful reading, and especially at the extraordinarily low price at which it is furnished. Friends, send in your clubs; at least renew your on subscriptions promptly.

The Scientific American.

MUNN & COMPANY, Editors and Proprietors.

PUBLISHED WEEKLY At No. 37 Park Row (Park Building), New York

O. D. MUNN, S. H. WALES, A. E. BEACH.

TERMS-Three Dollars perannum-One Dollar in advance, for

tour months.

Sing sopies of the paper are on sale at the office of publication, and at all periodical stores in the United States and Canada.

Sampson Low. Son & Co., the American Booksellers, No. 47 Ludgate Hill, London, England, are the British Agents to receive subscriptions for the Solentific American.

Rep See Prospectus on last page. No traveling agents employed.

VOL. VIII, NO. 26. [New Series.]... Nineteenth Year.

NEW YORK, SATURDAY, JUNE 27, 1863.

TO OUR READERS.

Time, with unceasing tread, has brought us to the middle of another year, and with this number we conclude the eighth volume of the new series of the Scientific American. We earnestly hope that all our readers whose terms now expire will renew their subscriptions and forward the money at the earliest opportunity. Never before was there such a necessity for inventors, mechanics, manufacturers, and others maintaining an acquaintance with the inventions and discoveries of the day. The public mind is so active that improvement is heaped upon improvement with unexampled rapidity; and unless a person endeavors to keep "read up" in the published accounts of inventions and discoveries, he is sure to lose much and fall behind in useful acquirements.

The half-year just closed has, on the whole, been very prosperous for most manufacturers and mechanics; and invention has progressed with gigantic strides. The claims of no less than 1,729 new patents, granted by the Government Bureau at Washington have been published in the columns of this volume and the number of patents issued is a very fair test of the progress of useful discovery in any country. To this statement we can add another equally as reliable and gratifying, viz., that patentees have never been more generally successful in the sale of rights and in obtaining adequate remuneration for their inventions. This result is due in a great measure to a more just appreciation, on the part of patentees, of the necessity and value of having their inventions illustrated and brought to the notice of the public through the columns of the Scientific American. It is the only organ of American inventions and discoveries on our continent, and it is the source to which the public looks for reliable information relating to such subjects. As a matter of mere selfinterest it behooves all who are interested in the progress of invention to consult its pages and carefully preserve their numbers for binding.

HOPEFUL CHARACTER OF NEW INVENTIONS.

Many persons have supposed that most of the inventions which engross public attention at present are of a warlike character; hence they believe that improvements in the useful industrial arts are not so numerous as formerly. This is a mistaken notion. Of the one hundred and eighteen new inventions which are illustrated in the present volume of the Scientific American, only seven relate to purposes of warfare. Improved machines and devices relating to every branch of the industrial arts have been illustrated; among these are reapers, cultivators, cowmilkers, horse hay-forks, churns, carts, lamps, water wheels, steam engines, bridges, screw-jacks, wrenches, &c.; all of which afford evidence of the great variety of subjects to which the minds of our inventors have been directed. This is a most gratifying feature, because the prosperity of a country depends upon the progress of what are called "the peaceful industrial

Steel is hardened by being heated and then plunged into cold water. Brass is annealed (or softened) by the same process.

PRESERVING EGGS.

Since the "hen-persuader" has failed in its object, and fowls cannot be prevailed upon to lay eggs all the year round, it is advisable for those who are fond of eggs to preserve them in seasons when they are plenty. However close and compact the shell of an egg may appear to be, it is nevertheless full of minute holes and pores invisible to the naked eye. The effect of these holes is apparent in the decrease of the moisture of the egg, and the subsequent change in the contents occasioned by contact with the air. "As full as an egg is of meat" is an old saying, but in all stale eggs there is a vacancy proportioned to the loss they have sustained by evaporation. If the end of a fresh egg be applied to the tongue it feels cold, but in an addled egg it feels warm, because the albumen of the egg being in contact with the shell absorbs heat from the tongue more rapidly than the air-bubble in the fresh egg. If the pores of the eggshell be kept closed, the contents must be preserved intact, as no change can occur, and the object is to close this atmospheric connection in the cheapest and simplest manner. Any kind of varnish will answer the purpose in one sense, but will defeat it in another; as eggs, being particularly affected by strong scents; would lose their delicate flavor by the odor of the coating. A better plan would be to employ beef suet or mutton tallow, provided the egg can be kept in a cool place. The eggs should be dipped in the fat and afterward wiped off, as any excess of grease over that required to fill the pores, would become rancid. After this the egg should be set perpendicularly, with the small end uppermost, and placed in a box filled with bran and tightly covered up. If the egg is laid on its side, the yolk will adhere to the shell. Charcoal finely pulverized is a good substitute for bran, as it is a deodorizer and will absorb any disagreeable effect that might be perceived from the grease. Some dealers are said to practice dipping their eggs in dilute sulphuric acid. This is a feasible plan, chemically, as the action of the acid on the chalky shell would deposit sulphate of lime in the pores and thus close the connection. Strong vinegar would doubtless answer as well as vitriol. Egge quire an unpleasant odor by coming in contact with strong-smelling substances, such as mahogany sawdust, lime-water, and musty straw; and the greatest care should be observed in having all the materials used each excellent after its kind. It is a common practice to preserve eggs in lime, but they are at best doubtful when so kept, and cannot be praised. An egg is very much like a razor-either excellent or else good for nothing; and those who preserve eggs for market would do well to give the abovementioned recipes a trial.

FLAX RETTING:

The subject of American flax cultivation and the proper modes of preparing it for manufacturing purposes is still engaging much public attention. This is due to the great scarcity and high price of cotton, which far exceeds that at which fine flax sold when cotton was abundant. In former numbers of the Scientific American we presented information, at the proper season, relating to the preparation of the soil and the selecting and planting of flaxseed, and have nothing further to say upon these topics at present. We have been informed that more flax has been planted this year than at any previous period, as our farmers expect there will be a great demand for it. This expectation may be realized if care is bestowed upon securing the crops and treating the flax properly afterwards.

A very instructive little manual, on "Flax Culture and its Manufacture," has just been forwarded to us by its publisher-D. D. T. Moore, of the Rural New-Yorker, Rochester-in which are a number of essays and much useful information upon this subject. It contains several chapters by Mr. N. Goodsell, of Oswego county, N. Y., who has given much attention to the cultivation of flax, and who has visited some of the largest flax manufactories in Ireland and England. With respect to the time of pulling flax, he states that this should be done as soon as the stalks turn yellow, when the leaves fall freely from the stem, and when two-thirds of the balls have become brown. The stalks should be pulled, then made up into small bunches and set upon their butts alluded to.

to dry. The next operation is rippling-removing the seed-which is accomplished by thrashing with a flail, whipping the stalks upon stone flags, or drawing them through strong coarse hatchels.

The most important operation which follows is that of retting, which consists in treating the flax in such a manner that the gluten of the stalk in which the fiber is confined will be so decomposed as to permit the fibers to become loose and easily separated. There are two modes of retting; one by spreading the flax on grass exposed to the weathercalled "dew rotting;" and the other by steeping it in water—called "water rotting." The former method is practiced in Kentucky in the treatment of hemp; the latter is the only mode practiced in Europe with flax. In no case can a good fiber be obtained by dew rotting; therefore those of our farmers who have planted flax this season should make preparations for water rotting it. In Belgium and Holland the flax is placed in ditches—the bundles being laid in inclined tiers with the butts downwards, and it is allowed to remain covered with soft water for about ten days. It is examined every day after it has been steeped five, so as to ascertain the progress of the process. When it is observed that the fibers draw out freely it is lifted immediately, as the fiber will be injured if it is over-retted. The bundles are next laid upon the grass, spread out and dried preparatory to the breaking operation.

In this treatise there is also a report of a committee of the New York State Agricultural Society on flax and its treatment, in which great stress is laid upon the proper mode of retting flax. It is correctly stated in this report that machinery cannot separate the fiber from the stalk without the retting process, and it says: "The only means of separating the fiber is to discover some solvent that has a stronger affinity for the cement than the fibers of the flax. Whoever shall be the first to discover such a solvent may exclaim, with Archimedes, 'Eureka!' An ample reward in fame and in money awaits the discoverer, whoever he may be." We had supposed that such a solvent was generally known to exist in potash. It is a solvent of the gluten of flax, and does not act upon the fiber. Acetic acid is also a solvent, but it would be far too expensive to use. We have no doubt but flax could be retted in a superior manner in establishments erected for the purpose, in which it should be steeped in large cauldrons for one or two days in a cold dilute solution of potash, then heated up to about 2120, and suffered to remain at this temperature for several hours. The liquor should then be run off and the flax washed with hot water. The cauldrons for this method of retting flax should be heated by steam.

LEARN TO FORGE YOUR OWN TOOLS,

Many mechanics have an idea that after they have mastered the more legitimate duties of the workshop, they have learned all that is necessary, and can undertake anything in their line of business. Machinists particularly are prone to this error-a common one, by the way-and think that a knowledge of fitting and turning, once acquired, makes up for all other deficiencies. In reality, the self-styled finished mechanic is, paradoxically, the unfinished one; for he who acknowledges his shortcomings, and tries to correct them by obtaining all the information he can, will acquire a more thorough knowledge of his profession. Comparatively few machinists are competent to dress their own tools, or, indeed, handle the blacksmith's hammer on any work. How many times such knowledge would have been invaluable, we leave individuals to decide from their own experience. A simple weld which they were unable to make, a faculty for dressing chisels without putting their own eyes in danger by striking the anvil instead of the tool, would assuredly have stood persons ignorant of such details in good service in time of need. Apprentices who go to the tool-dresser to have the edges of their chisels or other instruments renewed, will do well to observe the process and inform themselves of it, instead of throwing coal at the helpers or otherwise conducting themselves in an unseemly manner. Observation and experience are twins and inseparable, and no youth or indeed any adult can hope to attain eminence or proficiency without paying some respect to the matters herein



ISSUED FROM THE UNITED STATES PATENT OFFICE

FOR THE WEEK ENDING JUNE 9, 1863.

Reported Officially for the Scientific American.

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38,800.—Device attached to Railroad Cars for facilitating the Passage of Trains up Steep Gradients or Inclining Planes.—Thomas Agudio, Turin, Italy:
I claim the apparatus, constructed and operating substantially as herein described, to be used as an attachment to the front of a train for the purpose of facilitating its passage along a steeper gradient than the ordinary locomotive engine is competent for.

38,801.—Car Coupling.—T. H. Arnold, Arlington, Ill.: I claim the pendent swinging plates, C D, in connection with the bolts, E F, and links or shackles, G, all arranged in connection with the draw-head, A A, to operate as and for the purpose set forth. I further claim the projections, f f, in the draw-heads, A A, in combination with the plates, C D, bolts, E F, and links or shackles, G, for the purpose set forth.

[This invention relates to an improved car-coupling of that class which are commonly termed self-coupling, and it consists in the employment or use in each-head of a link or shackle, and two pendent swir ging plates and two bolts arranged in such a manner that the link of one draw-head will as it enters the draw-head of an adjoining car, couple with it, and due provision made to protect the links of the draw-heads against bending, in case of the parts not being in proper position to admit of the links coupling when entering the drawheads.

38,802.—Weather Strips.—B. F. Averill, Dunkirk, N. Y.

38,802.—Weather Strips.—B. F. Averill, Dunkirk, N. Y.: I claim, first, The two inclined faces, M. N, so arranged on the door frame as to operate the weather strip, C, through the aid of the piece, K, and connecting parts substantially in the manner herein set forth. Second, I claim the arrangement of the separately adjustable pins, G. G. in the holes, g. g., &c., in the connected levers, E, and the slots, C2 C2, in the sliding weather strip, C, or its equivalent so as to vary the range of motion of the weather strip, C, at either end or both ends substantially in the manner and for the purpose herein shown. Third, I claim the employment of the inclined metallic surface, P, on the door slil in combination with a sliding weather strip, C, on the door and with supporting means adapted to act rapidly at the moment of the closing of the door, and opening of the same, substantially as represented by M N K, and E E, for the purpose herein explained.

explained. Fourth, I claim the scraper, Q q, pivot, R, and moving pin, T, ar ranged as represented relatively to each other and to the door-frame A, door, B and the working parts of the weather strip mechanism, substantially as and for the purpose represented.

38,803.—Plow.—James R. Beggs, New 'Albany, Ind. Ante-dated April 18, 1863:
I claim the combination of the beam, A, mold-board, B, standard, C, brace, D, and heel-piece, E, all arranged as and for the purpose herein set forth.

herein set forth.

38,804.—Horseshoe 'Machine.—Uriah Billings, New Bedford, Mass.:

I claim the combination of the griper, D, and its operative mechanism with the wheel, W, the blank former, C, the actuator, M, and the swaging rollers.

I also claim the combination of the guide rails, H H, and the abutment, I, with the wheel, M, the former, C, and the swaging rollers or mechanism arranged and so as to operate together substantially as specified.

38,805.—Rotary Engine.—C. T. Boardman, Bergen Point

N. J.:

I claim, first, The cylinder, A, constructed to receive only the lower portion of the piston wheel and having its abutments, G G', combined withit and the piston wheel by mears of hinged clamps, H H, which also serve to confine the said wheel to its place in the cylinder substantially as herein specified.

Second, The adjustable plates, h h, and anti-friction rollers, g g, applied in combination with the cylinder, and with the groove, i, in the piston-wheel, substantially as and for the purpose herein described.

the piston-wheel, substantially as and for the purpose herein described.

Third, The combination with the swinging pistons, C C, of the bell-cranks, K K, turnished with studs, q r, the bar, P, and the projections, s t, on the cylinder, the whole arranged substantially as herein described to operate the pistons.

Fourth, Making the abutments, G G', of taper form and so fitting them between the cylinder and the piston wheel that they may be kept tight by the pressure of steam substantially as herein described. Pith, The combination of the variable cut-off cams, T T, with the cut-off valve by means of a system of levers, S and U, combined to operate substantially as and for the purpose herein set forth.

38,806.—Sewing-machine Stitch.—C. F. Bosworth, New Haven, Conn.:
I claim a seam or succession of stitches having the distinguishing characteristic above set forth formed in and uniting two pieces of braid or other material, said seam being chiefly useful in uniting braids for hats and like fabrics.

38,807.—Sewing Machine.—C. F. Bosworth, in New Haven,

38,807.—Sewing Machine.—C. F. Bosworth, Mew Haven, Conn.:

I claim the combination of a sewing machine needle, with a roller or its equivalent and with a feed apparatus or mechanism, when the needle and roller are so arranged relatively to each other that braid can be sewed by a needle piercing and leaving the braid or other material on the same side thereof, the combination being substantially such as described.

I also claim in combination, a sewing-machine needle, a roller or its equivalent around which braid can be bent and a needle guide, the three being arranged and acting in combination substantially aspecified.

And finally I claim a vibrating sewing-machine needle, or a sewing-

I also chain. It is equivalent around which brain can be three being arranged and acting in combination substantially specified.

And finally I claim a vibrating sewing-machine needle, or a sewing-machine needle caused to vibrate by proper mechanism substantially as specified, in combination with a roller around which braid can be bent or turned and any appropriate feed apparatus, the mode of operation of the combination being substantially such as set forth.

The second Rox.—J. Mosher Brower, Syracuse, N. Y.

os, over.—Julian BOX.—J. Mosner Brower, Syracuse, N. Y. Ante-dated Feb. 28, 1862:
I claim the combination of the iron shell or case, A., the brass rib formed of a longitudinal central portion, B, and lateral arms, B', and the soft metal filling, C, filling cavities in the said rib and locking the whole firmly together, all as hereinbefore explained and for the objects stated.

[This journal box is formed of an iron shell, a brass rib, and a filling of soft metal composition, the latter serving to secure the brass rib in position so that both rib and filling can readily be replaced when worn.1

38,809.—Radiator.—Levi Burnell, Milwaukee, Wis.:
I claim the arrangement of the deflector, C, and register, E, with each other and with the pipe, A, and space, D, in the manner hereishown and described.

38,810.—Cap for Jars, Cans, &c.—John K. Chase, New York City:
I claim, first, The mode substantially as described, of constructing

I claim, first, The mode substantially as described, of constructing caps for the purposes mentioned. Second, The combination with a cap for the purposes enumerated, whether constructed substantially as described or not, of a knob or projection, for facilitating the tightening or loosening of the cap, as set forth.

Third, The combination of a cap and nozzle, whether constructed substantially as described or not, with the spouts of oil cans or molasses cups, or the lips of bottles and other similar articles, substantially as set forth.

38,811.—Apparatus for raising Water.—Nathaniel Colver' Chicago, Ill.:

I claim the arrangement of the screw, h h, within a conduit, c2 d2, whose inlet is placed in a plane lower than that of its exit passage, when applied for the purpose of displacing and drawing off stagnant and sluggish waters and causing an artificial inflow of pure water, substantially in the manner and for the purposes herein set forth and described.

38,812.—Steam Boiler.—Wellsly W. Crane, Auburn, N. Y.: I claim the cylinder, D, or its equivalent, in combination with the cylinder, C, and fire-box, B, for the purposes herein set forth.

Synthac, o, an interest, plot the purposes terms extended that R. Bavis, Cambridge, Mass.:

I claim compressing the sponge into any desired form and drying or baking it in the mainer substantially as set forth.

I also claim covering the sponge when so treated with india-rubber or other waterproof material, in the manner and for the purpose substantially as described.

stantially as described.

38,814.—Submarine Revolving Battery for War Vessels.—
F. A. De Mey, Brooklyn, N. Y.:
I claim, first, Extending the turret of a vessel or floating battery through the deck and bottom of said vessel in the manner and for the purpose substantially as herein shown and described.

Second, Combining with the said turret so extending through the bottom of the vessel a mechanism for raising and lowering in addition to and independent of the ordinary mechanism for revolving said turret, substantially as and for the purpose specified.

38,815.—Printing Apparatus.—F. A. De Mey, New York City (now of Brooklyn, N. Y.):

I claim, first, The revolving type wheel, R, when operated or turned through the medium of the toothed rim, V, wheel, t, and hand-wheel, X, and used in combination with the notched annular plate, T, and the stop, U, and with or without the stop, Y, and notches, u. in the periphery of the wheel, X.

Second, The lever, M, connected with the bar, J, as shown in comination with the otothed arm, I, attached to the feed-table, H, and the lever, N, arranged in relation with the lever, M, to operate as and for the purpose herein set forth.

Third, The treadle, O, connected with the lever, P, as shown, in connection with the plate, B', and lever, C', when saidparts are used in combination with the type-wheel, R, for the purpose specified.

Fourth, The combination of the levers, M, Y, treadle, O, bar, J, toothed arm, I, plate, B', lever, C', and type-wheel, R, all arranged for joint operation as and for the purpose herein set forth.

38,816.—Reel for drying Flour.—W. H. Dole & D. R. Fraser. Chicago, Ill.:

We claim, first, Drying flour and other similar ground substances by means of reels of the character substantially as described; and hot air circulated through such anti-metallic reels, for the purpose set forth.

Second, The employment of cones or their equivalents in connections.

set forth.
Second, The employment of cones or their equivalents in connection with flour-drying reels in the manner substantially as and for the purpose described.

38,817.—Pin-cushion.—Timothy Earl, Valley Falls, R. I.:
I claim as an improved article of manufactureia pin-cushion composed of two disks, A A, of metal, or other suitable hard substance, connected together by a perforated band, B, of the same material, to form a case which is filled with wool or other suitable, substance, c, to keep the pins which pass through the perforations in the band, B, in proper position as herein set forth,

This invention consists in constructing a pin-cushion of two con avo convex plates or disks of any suitable [metal or hard material connected together by a narrow band of the same substance, perfor ated with holes of such diameter to admit of pins passing through, the interior of the case being stuffed with wool or other suitable material to keep the pins in proper place.]

terial to keep the pins in proper place.]

38,818.—Machine for making Railroad, Boat and other Spikes.—Morrison Foster, Cleveland, Ohio:

I claim the heading and pointing of the spike or other article one or both, during the revolution of the jaws, substantially as described. I also claim the use of the bar or roller or its equivalent, for bending the prodruding portion of the blank, to form the head upon one side of the spike, substantially as described. I also claim so arranging the header that itishall travel in the same radial plane with and upon the jaws, in order to performits functions without disturbance of any of the other parts of the machine substantially as described.

I also claim the curved guides, P, in combination with the header, I also claim in combination with the curved guides, P, and the header, the guide, u, for the header to play through and to prevent latteral motion thereof, substantially as described.

I also claim combining the pointing rolls with the ervolving jaws

latteral motion thereof, substantially as described.

I also claim combining the pointing rolls with the revolving jaws and header, in such manner that the points of the spikes shall be formed during the rotation or movement of the jaws and header, substantially in the manner and for the purpose described.

I also claim the inner revolving shaft, F, with its outer stationary shaft, each carrying its respective parts as described and represented, so that the outer shaft may take the strain of the heading and pointing operation without springing or straining the inner shaft, substantially as described.

38,819.—Car Coupling.—Henry C. Glasgow, Chicago, Ill.:
Ante-dated Dec. 25, 1862:
I claim, first, The combination and arrangement of the abutment
A, the arm, B, the pin, C, the bar, D, and the ribs, e, constructed and
operating substantially as and for the purpose set forth.
Second, I claim the combination and arrangement of the abutment,
A, the rods, c, the plate, I, the rods, a G, the plate, J, the cups, H,
and the block, M, all constructed and operating substantially as and
for the purposes delineated and set forth.

38,820.—Cap for Fruit Jars.—Ralph Gray & Robert Hem-ingray, Covington, Ky.: We claim, in the construction of sheet metal screw tops for jars, the combination of the helical wire, d, the annular space, e, and the lugs, f, substantially as herein shown and described,

38,821.—Frame for forming Hoop Skirts.—James F. J. Gunning, New York City:
I claim, first, The arrangement of one or more reels, D, in the interior of the frame, A, constructed and operating in the manner and for the purpose substantially as shown and described.
Second, The arrangement of the adjustable or moveable cross-bar, E, or its equivalent in the bottom of the form, A, as and for the purpose specified.

[This invention consists in arranging one or more reels on which the skirt wire is wound, in the interior of the frame on which the skirt is formed in such a manner that the space is saved which said reel or reels would occupy either above or beside the form and that the wire is placed in the most convenient place for the operator; the invention consists also in the arrangement of an adjustable botto the form or frame in such a manner that by unshipping the bottom he reel or reels can conveniently be taken out or put in.]

38,822.—Composition for Lubricating.—Alexander Hamill, Baltimore, Md.:

ing operation without ially as described.

Baltilinore, mu.:
I claim the mixture in suitable proportions of pulverized soap-stone with crude petroleum, coal-oil, or any of its products, to form a luvicator for machinery.

38,823.—Mode of ornamenting Lamp Stands, &c.—Hiram W. Hayden, Waterbury, Conn.:
I claim the method herein specified of ornamenting a lamp stand or similar article by interrupted parallel lines, engraved upon the surface of such article, ya tool in contact with such surface, while the said article is being rotated as specified.

38,824.—Batteries of War Ships and other Floating Structures.—Charles W. S. Heaton, Belleville, Ill.:

1 claim constructing batteries of war vessels and other like structures in zig-zag bastions in the manner and for the purpose substantially as set forth.

38,825.—Compound Oil for Burning and Lubricating.— Wm. G. Hermance, West Sandlake, N. Y.: I claim the compound produced by the admixture of fish or other animal or vegetable oil with mineral oil substantially in the propor-tions herein described.

38,826.—Lamp Top.—Frederick Hewitt, Newark, N. J.: I claim, first, The fastening together of the two specific parts of lamp, viz: the top or fluid receptacle, by means of corresponding wedged shape pieces substantially as described.

Second, I claim as new the combination of the parts, A C C' B, and D D', substantially inthe manner and for the purposes described, all being parts of a lamp as herein set forth.

38,827.—Folding Bedstead.—John Housiaux, Washington City, D. C.:

claim a bedstead composed of two sections, each section being deup of three pieces hinged together as described, and the two titions united at diagonal corners, substantially in the manner set th, so that the two sections may, when taken apart, be folded up as wn and described.

shown and described.

38,828.—Stove.—G. G. Hunt, Quincy, III.:
I claim, first, The chamber, I, provided with the internal air-tubes, J', in combination with the fire-pot, E, flues or vertical tubes, F, communicating with the annular chamber, G, and smoke-pipe, H, all arranged to operate as and for the purpose herein set forth.

Second, The annular pendent flange, a, in the central opening of surgannular chamber, G, when placed relatively with the upper ends of the tubes, J', to operate as and for the purpose herein set forth.

[The object of this invention is to obtain a stove which will burn all

thd inflammable gases, smoke, &c., evolved by imperfect combustion, thereby economizing in fuel, and, at the same time, obviating the \dim ficulty hitherto caused by the flues of the stove becoming clogged or choked up with soot. The invention is more especially designed for the burning of bituminous coal, but anthracite coal may be used, and a saving in that also effected.]

38,829.—Skate.—A. W. Johnson, Auburn, N. Y.:
I claim the employment of the double-screwed knee, D, made small at its lower part and enlarged at its upper part, in combination with the runner screw, C, and the foot-stand screw, E, as herein shown and described; so that the said knee, while it presents at its upper end a large and firm bearing surface or support for the foot-stand, will also present a large interior nut or screw surface for the reception of the foot-stand screw, while in its lower end the said knee will receive the runner screw, and all the parts will be firmly bound together, as set forth.

[This invention relates to an improved made of attaching the runne $_{\Gamma}$ of the skate to the footstand thereof, and consists in having the upper edge of the runner, at the proper points, provided with screws, on which the posts or knees are screwed, the latter serving as supports for the footstand, and being firmly secured in position by screws which pass through the foot stand and into the posts or knees.]

38,830.—Bush for Bungs.—William Kenyon and Alexander Menzies, New York City:
We claim the metallic flanged bush, b. secured to the stave, as set forth, and receiving the bung, as specified.

38,831.—Gun Carriage.—James B. Lyons, Litchfield, Conn

I claim, first. The arrangement of the hand-levers, o o, and their ams, 1 i, with the axie levers, i i, operating substantially as decribed.

Second. I claim the arrangement of the combination of the same levers.

scribed.

Second, I claim the arrangement of the combined friction clamp, m m, and wedges, P P, to check and hold the recoil and prevent the rebound of the gun, substantially as set forth.

Third, The combination of the friction clamp with the gun carriage by means of the adjustable chains, t t, whereby the distance provided for the recoil may be accurately and uniformly provided for, as set forth.

forth.
38,832.—Hoop Skirts.—Jonathan Mann, Waltham, Mass.,
and Alexander McDonald, Cambridge, Mass.:
We claim the improved collapsible hoop skirt, made substantially
as described, viz.: with each of its hoops lapped at its ends and having one or more spring nippers or mechanical canivalents applied to
one or more of them, so as to operate as specified, each half of the
number of the ends of the hoops being connected by a band, as specided.

ified. And we also claim the combination and arrangement of rings with the hoop skirts, when made with the ends of its hoops to overlap one another, and such hoops are provided with one or more spring hippers applied to one or more of them, in the manner and for the purpose as specified.

specified.

38,833.—Composition for forming Cement, Tiles, Pipes, Pavements, Building Blocks, &c.—Isaac Marsh, Jr., of Milton, Pa., and Griggs Marsh, of Lewisburg, Pa.: We claim, first, An improved cement, as specified, in the manner and for the purposes herein fully set forth.

Second, We claim an improved paving or building block, in combination with our improved cement, made in the manner and for the purposes herein fully set forth.

Third, We claim the manner of preparing the said composition or cement in the proportions and of the materials used, as particularly set forth in the specifications.

38,834.—Spring Bed.—Warren P. Miller, Marysville, Cal.: came the combination of the upper guide bars, d', and connecting indards, e, with the lower guides, d, independent rods, q, caps, t, d springs, h, the latter being confined between the upper and lower ides, and all arranged and operating in themanner and for the purses specified.

In this invention a uniform and durable elasticity is imparted to e entire surface of the bed-bottom by the use of independent spring rods working in guide bars so arranged as to preserve the rods in vertical positions, and protect the springs from crushing.]

38,835 .- Safety Paper .- Joseph Prosper Olier, Paris, France:

France:

I claim, as an improved article of manufacture, a paper composed of three layers of differing thicknesses, of which the central layer is or may be colored with a delible or ensity-removable color, and the external layers are or may be charged with silicate of magnesia or other mineral or vegetable matter, all made in the manner herein shown and described.

and described.

38,836.—Inkstand.—F. E. Oliver, New York City:
I claim, first, The combination with an ink reservoir of otherwise ordinary construction and provided with the usual dipping cup, of a flexible diaphragm valve capable of assuming and retaining a convex or concave form for withdrawing the ink from or forcing it into the dipping cup, substantially as herein set forth.

Second, Forming the diaphragm valve, for operation hereinbefore referred to, of a concavo-convex vulcanized india-rubber disk, in combination with a center knob, substantially in the manner and for the purposes herein set forth.

38,837.—Sewing Machine.—Aaron Palmer, Brockport, N. Y.:
I claim, first, A horizontal screw having a countersink for the contraction.

N. Y.:

Iclaim, first, A horizontal screw having a countersink for the eye end of the needle, in combination with the feeding and crimping wheels, when constructed and arranged substantially as described, so that the horizontal screw is, in itself, both an adjusting screw and holder for the eye end of the needle.

Second, I claim, in combination with a feed wheel and crimping wheel, the movable frame in which the mandrels of the lower feed wheel and corrugating wheel are sustained, and the set screw, substantially as described, and for the purpose of simultaneously adjusting both the corrugating wheels and feed wheel, substantially as described.

3.—Cooking Stove.—Moses Pond, Boston, Mass.: im the combination and arrangement of the shouldered lec s, R R, with the ash chamber, C, the same being for the pecified.

pecified.

o claim the combination of the deflector, L, with the smoke, and the hot air receiving and discharging passages, I K, ar with respect to the oven, as hereinbefore specified.

ranged with respect to the oven, as nerembetore specimen.

38,839.—Evaporating Pan for Sorghum Juice, &c.—N. Z.
Potter, Uniontown, Ill.:

I claim giving to the bottoms of the several divisions of a sugar pan
a lateral inclination alternately in opposite directions, substantially
as and for the purpose shown and described.

[This invention consists in giving to the bottoms of the several divisions of a sugar pan a lateral inclination, alternately in opposite direction, in such a manner that the juice or sirup in the pan readily runs from one division to the other, and the necessity of pushing the same or the danger of scorching it is avoided.]

38,840.—Seed Drill.—Edward F. Rate, Woodbridge, Iowa

18,840.—Seed Drill.—Edward F. Rate, Woodbridge, 10wa.

Ante-dated Jan. 11, 1862:

I claim, first, constructing a seed drill with the toothed wheels, n, perating in the manner described and for the purpose specified. Second, Combining the toothed wheels, n, drills, f, cam, t, and guides, s, substantially in the manner described, by which the wheels und the drills may be raised from the ground, and the seed cut off by a single shifting of the handle.

a single smiting of the handle.

38,841.—Hydrant.—Joshua Regester, Baltimore, Md.: I claim, first, Combining in one and the same tube or tall stock. C C', the two cocks, E E', arranged and operating substantially herein described.

Second, Making the axes of the two cocks, when combined in c tall, stock or tube, in the same plane, and conducting the water throc, and around the "street-supply" cock, substantially as herein scribed.

Third, Combining with and supporting the street and house-supply ocks within a metallic casing, constructed substantially as herein

described.
Fourth, The combination of the key rod, G, tubular key rod, F, bearings, a a', and supply cocks, E E, substantially as and for the purposes set forth.

38,842.—Ornamental Chain, &c.—Egbert S. Richards, Attleborough, Mass.:
I claim the improved method of making links for guard chains, eardrops, breast pins or other similar articles of ornament described, consisting of the use of a skeleton frame of metal, within which the glass or other material composing the body of the ornament is contained, and by which it is held in place, substantially as specified.

38,843.—Gate Hinge.—William W. Robinson, Ripon, Wis.: I claim the lever hinge, h, constructed and operated in the manner herein set forth.

As 844.—Grain Separator.—Joachim and Detlef Schild-hauer, New Holstein, Wis.

I claim the screens, F. and screens, G. placed in the box, D, and the sliding box, H, arranged in relation with the screen box, D, substantially as shown, in combination with the inclined screen, Q. placed in the box, P, the latter communicating with the fan case, K, and all arranged for joint operation as and for the purpose herein specified.

[The object of this invention is to obtain a machine of simple construction which will effectually separate foreign substances grain, and also separate one kind of grain from another, as, for in-

38,845.—Portable Shield for Infantry or Artillery.—Milton Saviers, Shawneetown, Kansas. Ante-dated Jan. 25

1863:
I claim the adjustable head guard, M, constructed as described, and applied to the portable shield, K, in the manner and for the purposes shown and explained.

10010 John H. Seaman, Brooklyn, N. Y.:

shown and explained.

38.846.—Lamp.—John H. Seaman, Brooklyn, N. Y.:

I claim the combination of the air tubes, M. N. and chamber, L. with the chamber, E. air bountain, A. substantially in the manner herein shown and description with the above-named parts of the tabe, F. valve, H. and socket, G. as shown and described.

38,847.—Composition for coloring and water-proofing Photographs, &c.—William F. Spieler, Philadelphia, Pa.:
I claim the use and application for the purposes of painting and permanently securing and protecting photographs printed on albumenized paper, or its equivalent, by the use of the aforesaid described two compound fluid materials.

38,848.—Fruit-collecting and drying Apparatus.—Samuel N. Thomas, Auburn, N. Y. Ante-dated April 11, 1863

claim the employment or use of the folding frame, A, with adjuste legs, B, in combination with the canvas, C, and conductor, D, structed and operating as and for the purpose shown and defined.

[This invention consists in the employment of a frame provided with singes, so that it folds up, and furnished with legs capable of being adjusted in a position at right angles to the rails, constituting the sides of the frame, when the implement is to be put in working order; or in a position parallel with said sides, when the implement is not to be used; in combination with a canvas secured to the frame and provided with a conductor leading down to the ground in such a manner that said canvas folds up and opens with the frame, and that the imple when not used, can be stowed away in a comparatively sr space, and that it can easily be carried from place to place and put up in working position whenever desired.]

38,849.—Photograph-holder.—James E. Treat, Boston

mass.:
I claim confining the ferrotype, photograph, or other picture, in a holder, or album leaf, by means of a stationary flange, f, and a movable flange or flap, d, or their equivalents, substantially as set forth and for the purpose described.

-Water Elevator .- William B. Wadsworth, Cleve land, Ohio:

I allu, OHIO:

I caim the combination of the chair and wheel, substantially as described, with the bucket, F, rod, I, valve, g, and spout, A, substantially as described.

38,851.—Wind Wheel.—William B. Wadsworth, Cleveland Ohio

Ohio:
I claim, first, The governor composed of the hub, H', arms, N N, and rods, M' M', weights, M M, springs, X X, chuck, X', and set screws, Z2, and arms, F, and hooks, S, connecting with standards on the sails, or their equivalents, substantially as described.
Second, The lever, D, and counterbalance, D', in combination with the rod, R2, when applied to relieve the milhead, T, substantially as and for the purpose described.
Third, The hooks, S, and arms, F, connecting the sails with the governing arrangement, when made substantially as and for the purpose described.

governing arrangement, when made substantially as and for the purpose described.

Fourth, The hub, H, arms, I, hooks, L, and pivots, p, in combination with the wind sails and movable brackets, m, substantially as and for the purpose described.

Fifth, The posts, B, wings, b, tube, A, guide screws, d, in combination with shank, o, milhead, T, and wheel shaft, a, substantially as and for the purpose described.

38,852.—Cupboard Latch.—William B. Wadsworth, Cleve-

land, Ohio: I claim the latch described, as a new article of manufacture

-Sash-fastener .- Gilbert D. Whitmore, Boston, Mass:

I caim the improved sash-fastener, having its parts arranged and constructed substantially in the manner and so as to operate as described.

38,854.—Apparatus for the Manufacture of Cube Sugar, &c.—William H. Whitmore, Boston, Mass.:
I claim a combination consisting not only of the rotary molding drum or series of molds, and a movable presser-plate, but mechanism

for imparting motions to such presser plate, substantially as and for the purpose hereinbefore described; the Said rotary molding drum, when in use, being provided with a plunger or piston to each mold, and with suitable means of operating such piston or plunger.

38,845.—Method of connecting Sections of Steam Boilers.

—Charles Whittier, Roxbury, Mass.:

I claim, first, The application of the herein-mentioned metallic himbles to the connecting of the sections of steam boilers, generaors, or radiators, for dispensing with packing, substantially as set orth

forth.

Second, Constructing the interiors of the herein-described metallic thimbles, of square or other suitable form, for the reception of a key of corresponding form by which to turn them, substantially as represented.

-Water Elevator.—Elias L. Yorks, Honeoye Falls,

38,866.—Water Elevator.—Elias L. Yorks, Honeoye Falls, N. Y.:

I claim, first, The ratchet box, D. consisting of the disk, b, having a laterally bearing frictional surface, the cylindrical flange, d, and the ribs, e, or equivalent: said ratchet box turning loosely on the shaft, and held by the pawl, K, substantially as herein described. Second, in combination with the ratchet box thus arranged, I also claim the gear plate, G, having notches, g, or equivalent, sliding over the ribs, e, e, in such a manner as to hold on the shoulders, ff, when turned forward, but to be disengaged therefrom when turned back, substantially as specified.

Third, I also claim, in combination with the gear plate, provided with the concentric inclined teeth, h, the crank gear, H, having similariy engaging teeth, nn, substantially as and for the purpose herein set forth.

Fourth, Incombination with the gear plate, G, and crank gear, H,

herein set forth.

Fourth, Incombination with the gear plate, G, and crank gear, H, I also claim the coupling gear, I, arranged and operating substantially as herein specified.

Fifth, I also claim the combination and arrangement of the ratchet box, D, colled spring, E, or equivalent, gear plate, G, crank gear, H, coupling gear, I, pawl, K, and frictional bearing shoulders, a p, whereby the whole automatic action is produced, substantially as herein set forth.

38,857.—Burial Case.—E. H. Borton (assignor to himself and E. A. Skeele), St. Louis, Mo.:
I claim the employment of paper, in combination with asphaltum varnish, or its equivalent in effect, for lining the interior surfaces of burial cases, substantially as herein described for the purpose set forth.

forth.

38,858.—Permutation Lock.—John Connell (assignor to Martin Briggs). Rochester, N. Y.:

I claim the arrangement and combination of the cam. O, on the operating shaft, the bearing, m, and dog, N, of the tumbler, C, and the permutation wheels, M. M, whereby the dog is prevented from producing noise or pressure on the edges of the wheels substantially as herein set forth.

I also claim locking the back, K, and cylinder, L, in place when the bolt is reversed or thrown back, by means of the catch, P, passing through the hole, u, arranged and operating substantially as herein set forth.

set forth.

38,859.—Mechanical Movement for Lamps.—F. B. de Kerevenan (assignor to Joseph H. Bailey and George A. Jones), New York City:

I claim the general arrangement and combination of the mechanism herein described for the purpose of supplying air to the lamps, &c.

38,860.—Safety Pocket.—Samuel French, Boston, Mass., assignor to himself and Sidney Allen, of Newton, Mass.:

Mass.:

I claim the improved flexible arm or bolt-actuator carrier, as made of tubular sections connected by ball-and-socket joints.

I also claim the improved flexible pocket-mouth frame, as made in separate plates or sections hinged together and with some to overlap others, and having contractile bands applied to them, substantially as described, the whole being so as to enable the mouth frame to be readily flexible and capable of being expanded more or less, as specified.

reamy management and the combination of the rotary pulley, k, its cams, m m, retractile spring, o, with the catches 11, and their spring, n, arranged in the manner and so as to operate as described.

retractile spring, 0, with the catenes 1, and their spring, n, arranged in the manner and so as to operate as described.

38,861.—Machine for rossing Bark.—Richard Healy (assignor to himself and Samuel Goldey), Swanton Falls, Vt.:

I claim, first, The fixed concave bed, B, and adjustable concave bed, C, in concave rollers, L L', arranged to operate substantially as and for the purpose herein set forth.

Second, The cutters, K, provided with concave cutting edges and arranged are used in connection with the concave beds, B C, and convex feed rollers, L L', for the purpose specified.

Third, The particular arrangement of the feed rollers, L L', with the arms, M M', and driving mechanism, as herein set forth, whereby said rollers may be raised and lowered, and adjusted as circumstances may require, without interfering with the driving mechanism.

Fourth, The combination of the toothed feed rollers, L L', concave beds, B C, revolving cutters, K, and roller, I, all arranged for joint operation, as and for the purpose herein specified.

3[This invention relates to a new and improved machine for stripping tanners' bark of the outer coating, which possesses no tanning prop-

tanners' bark of the outer coating, which possesses no tanning prop retties. This process of cutting or stripping the outer from the inner layer of bark is technically termed "rossing" and it is essential that the work be perfectly done, for if any imaterial quantity of the outer layer of bark be left on the inner one, the process of tanning leather is much prolonged, and the leather, when tanned, has a dark

color.]

38,862.—Thrashing Machine.—Minard Harder, George W.
Douglass and Hiram Becker, of Cobleskill, N. Y., and
David Anthony, of Worcester, N. Y., assignors to
Reuben and Minard Harder, of said Cobleskill:
We claim, first, The "concave" suspended upon the arms, b, and
having attached to it the air-deflector or guide, d, and the rods, e, and
jamb nuts, as and for the purposes herein set forth.
Secondly, The dust-fine, h, constructed and arranged as described.
Thirdly, The rods or bars, p, placed outside of the casing and connected by the sides of the separator by the eyes, r, and hooks, s, passing through the slots, t, in combination with the strips, Z', and side
boards, X', whereby the separator is moved and guided as herein described.
Fourth, Connecting the bottom to the separator by the hooks, v. eyes.

urth. Connecting the bottom to the separator by the hooks, v, eyes, screws, x, so that the bottom may be easily and readily detached,

as herein set forth.

38,863.—Inkstand.—L. E. Hicks (assignor to himself and R. E. Crane), New York City:

I claim, first, The elastic diaphragm, b, resting upon the top of the reservoir and secured by the cover or cap, c, in combination with the elastic tube, d, formed with or attached to said diaphragm and receiving the tube, e, of the bowl, f, whereby said tube and bowl are sustained, but can be raised for drawing air to the reservoir, as set forth. Second, I claim the flexible tube, g, in combination with the tube, e, and bowl, f, for the purposes set forth.

Third, I claim the air valve, l, applied as shown, in combination with the diaphragm, b, tube, e, and bowl, f, as specified.

Fourth, I claim the forked lever, h, and key, k, in combination with the thimble, i, tubes, d and e, and bowl, f, as and for the purposes set forth.

forth. Fifth, I claim the holes, 9, at the sides of the tube leading to the bowl, to prevent the ink jetting or spurting up in the bowl, the end of said pipe being closed, as set forth.

said pipe being closed, as set forth.

38,864.—Hand Stamp.—Horace Holt, Brooklyn, N. Y., assignor to W. W. Secombe, New York City:

I clsim the hand stamp herein described and represented, consisting essentially of rollers or reels, s. f. transfer ribbon, O, type box, z, type, t, and cylindrical metallic case or tube, a, the whole combined and arranged in the manner and for the purposes specified.

[The nature of this invention consists in having the transfer ribbon which passes over the face of the type, attached at its opposite ends to independent rollers or reels, arranged between the type and handle of the instrument in a cylindrical case or tube inclosing the type.]

38,865.—Churn.—E. H. Philo (assignor to himself and Samuel Peters), Half Moon, N. Y. Ante-dated June 2. 1863: I claim the arrangement for imparting two distinct, efficient moons to the cream, by means of the reversing cream box, B, when

e same is pivoted as described, in combination with the revolving ddle, H, when these are operated substantially in the manner and the purposes set forth.

for the purposes set forth.

38,866.—Hot-air Engine.—S. H. Roper (assignor to Elmer Townsend), Boston, Mass.:

I claim lining the fire-box with fire-brick, or their equivalent upon all sides except the bottom, as set forth.

I also claim the parts or pieces of the fire-box, G and H2, in combination with the exterior casting, A, the space between them being filled with plaster, or its equivalent, for the purpose specified.

I also claim the induction pipes, d2 f2, arranged and operating as described, in combination with the pipe or passage which brings the air from the air primp to the furnace, for the purpose of regulating the intensity of the fire, as set forth.

the intensity of the fire, as set forth.

38,867.—Washing Machine.—G. L. Whitsil, Philadelphia, Pa.:

I claim a washing machine consisting of the frame with the revolving fluted rollers. G. posts, C.C. and the vibrating frame carrying the fluted roller. H. when the whole are arranged as described, and adapted by means of the projection, h. and the shoulder formed by the box, B. to a wash tub, substantially as set forth.

38,868.—Paper File.—Wm. L. Woods (assignor to Henrietta Woods), Washington, D. C.:

I claim the combination of the falling lid, 1, the outer box, A B C D. E, the inner box, F G H, and the perforations, J, as shown and described, for the purpose set forth.

38,869.—Roll for Rolling Metal.—David Reeves, Phenix-ville, Pa., assignor to the Phenix Iron Company, Philadelphia, Pa.:

I claim a compound roller made of wrought and cast iron, in the

adelphia, Pa.: claim a compound roller made of wrought and cast iron, in the nner and for the purpose substantially as herein described.

38,870.—Feed-water Heater for Steam Boilers.—W. W.

Martin, Allegheny, Pa.:

I claim locating a feed-water pipe within an external vertical pipe arranged in the furnace space, for the purpose of heating the water that is to supply thesteam boilers, substantially in the manner herein described and represented.

38,871.—Label or Tag.—E. W. Dennison, Boston, Mass.: I claim, as a new article of manufacture, a label or tag composed of paper with an additional thickness of abric in the form of a washer applied and secured by glue, or other adhesive material on each side of the label or tag around the eye, as and for the purpose specified.

[This invention makes a much stronger label than those nade of muslin coated with paper.

made of musiin coated with paper.]

38,872.—Elevating Hay Fork.—E. W. Seymour, Center Lisle, N. Y., and G. W. Gregory, Binghamton, N. Y., assignors to G. W. Gregory, aforesaid:

We claim the peculiar construction and combination of the head, A, handle, C, latch, E, lever spring catch, G, and staple, II, as and for the purpose herein described.

handle, C, latch, E, lever spring catch, G, and staple, H, as and for the purpose herein described.

38,873.—Machinery for making Horseshoes.—Barney Mee, Troy, N. Y.:
First, I claim the adjustable bender, g, in combination with the slotted bar, n, and the die, f, substantially as and for the purposes herein described and set forth.

Second, I claim the exchangeable side formers, E E, in combination with the exchangeable die, f, substantially as and for the purposes herein described and set forth.

Third, I claim the employment of an inclined bed or plate, N, which shall receive the shoe from the die rollers by means of the scraper, M, and which shall hold the same by means of the stopper, S'', during the operation of flattening or straightening said shoe, substantially as herein described and set forth.

Fourth, I claim the adjustable die plate or flatte ner, P, in combination with the cams, R'', and the inclined bed or plate, N, substantially as and for the purposes herein described and set forth.

Fitth, I claim the employment of the movable stopper, S'', in combination with the inclined bed or plate, N, substantially as and for the purpose herein described and set forth.

Stript, I claim the employment of the movable stopper, S'', in combination with the inclined bed or plate, N, substantially as and for the purpose herein described and set forth.

38,874.—Machine for folding Paper.—John North, Middletown, Conn., assignor through mesne-assignments to Daniel S. George S., Samuel T., John A., and W. H. Appleton, New York City.—Ante-dated August 10, 1858.

claim, first, placing the sheet direct in register upon the knife to eive its first fdd, in the manner and for the purpose hereluabove cribed. second, Folding paper by means of a straight edge or knife and re-

Second, Folding paper by means of a stanger cape of ciprocating rollers.

Third, Hanging the frame, m m, with reciprocating rollers and folding knile, E, attached to move and reciprocate in the arc of a circle.

Fourth, Causing the rollers to rotate and change their motion alternately, for the purpose specified.

Fifth, Cutting of the inset for the "twelve-mo." folding at the same time it is being folded.

RE-ISSUES.

1,491.—Spring Bed.—J. H. Crane, Charlestown, Mass.
Patented April 3, 1860:
I claim the employment of springs formed, arranged and operating as described, in combination with the slats and rails of a spring bed

I claim the employment of springs formed, arranged and operating as described, in combination with the slats and rails of a spring bed 1,492. (A.)—Harvesting Machine.—W. A. Kirby, Buffalo, N. Y., and D. M. Osborn, Auburn, N. Y., assignees of said W. A. Kirby. Patented July 2, 1861:

We claim, in combination with an automatic rake in a reaping machine, a hinged reaching post and two connecting rods, operated from one and the same crank, for the purpose of giving said rake its motions, substantially as described.

Also hinging and supporting the rake post on the main frame and inclining it backward, so that the rake will be out of the way of the falling grain when at rest and be raised high enough, as it moves toward the outside divider, to avoid the falling grain, and drop beyond the staiks on the platform, preparatory to sweeping them off, substantially as described.

Also, in combination with an automatic rake, the lever, trigger and clutch arm, substantially as described, so that the driver at his seat may stop or set the rake in motion at his will, or set the triggers of that it will stop the rake after making one operation, as described.

1,493. (B.)—Harvesting Machine.—W. A. Kirby, Buffalo, N. Y., and D. M. Osborn, Auburn, N. Y., assignees of said W. A. Kirby. Patented July 2, 1861:

We claim, in combination with a rake post on the main frame and the rake-driving shaft supported at one of its ends on a supplemental frame, the two trames having motions independent of each other, the universal joint, k, in the rake shaft, for the purpose and in the manner substantially as described.

N. Y. and D. M. Osborn, Auburn, N. Y. assignees of

the universal joint, k, in the rake shaft, for the purpose and in the manner substantially as described.

1,494. (C.)—Harvesting Machine.—W. A. Kirby, Buffalo, N. Y., and D. M. Osborn, Auburn, N. Y., assignees of said W. A. Kirby. Patented July 2, 1861:
We claim placing or making a guard or shield upon a supplemental frame or plate, to which the driving wheel is attached, and passing it under and partially around the gearing attached to said wheel to protect it from injury or from being clogged, substantially as described.

1,495. (D.)—Harvesting Machine.—W. A. Kirby, Buffalo, N. Y., and D. M. Osborn, Auburn, N. Y., assignees of said W. A. Kirby. Patented July 2, 1861:
We claim, first, Driving the reel of a harvesting machine by means of a pulley placed within an endless belt, so as to spread apart the belt, and thus be driven by the friction of the belt on diametrically opposite sites of said pulley, this arrangement admitting of an easy adjustment of the reel, without lossening the belt, substantially as described.

Second, Placing a tightening pulley above the reel-pulley, for the purpose of allowing the reel with the reel pulley and the tightening pulley, without materially affecting the tension of the belt, and thus avoiding the necessity of changing its length, substantially as described.

EXTENSION.

Steering Apparatus

EXTENSION. Jesse Reed, Marshfield, Mass. Pat-

Steering Apparatus.—Jesse Reed, Marshfield, Mass. Patented June 5, 1849:
I claim the combination of a right and left-threaded screw, on the hand wheel shaft, a a, with two half nuts, d d, arranged, one on each side of said screw, and traversing in guides opposite to each other, as hereinabove set forth; said nuts being comnected to the rudder head either by the long arms, o pop, as in the first described arrangement or as in the second by the slotted arms, a "a,' and sliding buttons, c', all arranged and operating substantially as hereinabove set forth.



- B. F., of Ohio.-The yellow scales in the sand which you
- E. H. J., of R. I .- We do not know of any work by Septimus Piesse other than the one mentioned by you. To make tar from pine wood it is essential that the wood should be distilled in a
- J. McD., of Ohio. White lead is a carbonate of lead. It is usually made by exposing thin sheets of lead to the fumes of vinegar. It may also be formed for experimental purposes by adding a solution of carbonate of potash to a solution of the acetate of lead (sugar-of-lead). The precipitate thus obtained is the carbonate of
- E. G., of Ill.-Iron may be effectually prevented from rusting by coating it with asphalt varnish, then baking it in an oven, but such an application cannot conveniently be made to the iron-plates of ships, and such large masses of iron. Red lead is a good paint for iron, but it requires to be applied with care in order to render it durable. The first coat should be put on thin, then allowed to dry, and the iron should then receive two subsequent
- D. M., of Ohio.—The subscription price for Silliman's al is \$5 per annum. Address Silliman & Dana, proprietors, New Haven, Conn.
- J. De Z., of Mo .- Iron patterns may be coated with copper, and oxidation prevented by first cleaning them perfectly, coating them with asphalt, then preparing the surface with plumbago, and afterwards submitting them to the galvanic battery in a trough containing the sulphate of copper in solution. The process would be troublesome and too expensive for you to practice.

NVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired.

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At the Scientific American Office, on account of Patent Office business, from Wednesday, June 10, to Wednesday, June 17,

C. D. S., of N. Y., \$16; J. N. W., of Ill., \$25; H. M., of Pa., \$25 H. P., of Pa., \$25; R. F., of Ind., \$15; J. H. M., of Ind., \$26; R. B. M., of Ohio \$25; M. S., of Cal., \$20; N. and N., of III., \$19; M. and S. of Pa., \$16; C. J. Van O., of N. Y., \$10; H. and R., of Ohio, \$20; J. N. N., of Iowa 20; C. C. W., of III., \$20; C. N. B., of Pa., \$45; S. M. 6B., of N. Y., \$20; P. L. S., of Pa., \$20; D. J. O., of Pa., \$20; S. S., of Pa., \$20; A. W., of England, \$45; H. L., of N. Y., \$20; J. McC., of N. Y., \$15; E. C., of N. Y., \$25; W. H. M., of Conn., \$25; J. H. C., of Va., \$11; L. M., of N. Y., \$21; C. R., of Mich \$25; B. K., of Mo., \$25; W. F. R., of R. I., \$16; L. and G., of Pa., \$26; B. L. W., of Mass., \$16; S. H., of —— \$16; C. H. R., of Maine, \$16; L. D., of N. Y., \$20; J. M., of Ky., \$20; D. and T. W., of Cal., \$20; A. F. W., of N. Y., \$20; L. and H., of Mass., \$40; P. and P., of Ill., \$20; R. H. L., N. Y., \$20; L. and H., of Mass., \$40; P. and P., of 111., \$20; K. H. L., of Pa., \$51; P. R., of N. Y., \$125; S. C. C., of Conn., \$26; H. E., of N. Y., \$25; B. and M., of N. Y., \$25; T. F., of N. Y., \$15; W. F., of Iowa, \$20; E. A., of Conn., \$16; J. C., of N. Y., \$16; W. F. O., of Mass., \$16; J. N. P., of Ind., \$10; Z. W., of Cal., \$50; S. A. and W. H. P., of N. Y., \$25; A. V. R., of N. Y., \$50; W. D. G., of Va., \$20; C. and F., of Conn., \$20; J. H. S., of N. Y., \$36; B. L. W., of Mass., \$16; J. A. M. G. \$10; N. Y., \$36; B. L. W., of N. Y., \$36; J. L. W., of N. Y., \$36; J. L. W., of N. Y., \$36; J. A. W. G. S. Y. S. Y Mass., \$45; J. A. M., of N. Y., \$22; H. and J., of Iowa, \$20; G. B. McD., of Ky., \$20; W. C. H., of Ohio, \$45; W. C., of Md., \$45; A. B. K., of Canada, \$12; S. B. C., of N. Y., \$25.

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Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent parties with the following initials have been forwarded to the Patent Office from Wednesday, June 10, to Wednesday, June 17, 1863:—
H. L., of N. Y.; H. E., of N. Y.; A. B. K., of Canada; J. McC., of N. Y.; W. M. D., of N. Y.; J. H. S., of N. Y.; E. C., of N. Y.; B. & M., of N. Y.; S. B. C., of N. Y.; E. C. B., of Cal.; H. P., of Pa.; W. H. M., of Conn.; C. R., of Mich.; L. M., of N. Y.; F. A., Jr., of Mich.; H. M., of Pa.; C. A., of Cal.; B. K., of Mo.; F. & D., of Paris; Z. W., of Cal. (2 cases); R. B. M., of Ohio; J. H. M., of Ind.; S. A. & W. H. P., of N. Y.

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sides covered with marble paper, and morocco backs and corners.

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The price of binding in the above style will be 75 cents. We shall be unable hereafter to furnish covers to the trade, but will be happy to receive orders for binding at the publication office, 37 Park Row



ILLUSTRATIONS.

Α

Armor for vessels, patent (Cox) 224

В

Balloon, patent (Shaw) 193
Battery, patent automatic (Crozier) 113
Bayonet, patent (Jenkinson) 256
Bench, patent saw (Talpey) 17
Brake for hand trucks (Daboil) 308
Brake, patent friction (A. & F. Brown) 152
Breastwork pos

Braas Patent House W. Brasswork, portable (Sherman) 104 Bridge, patent (Wood) 145 Buckfe, patent lever (Sprague) 32 Burial-case, patent air-tight deodorizing (Scollay) 136 Burner, patent lamp (Tisdei & Nash) 240

C

Camera-obscura, patent (Kolb) 353
Cannon and india-rubber sabot, elastic breech (Day) 24
Capstan, patent (Getchell) 232
Car for cities, patent steam (Irwin) 369
Cart, patent (Grambo) 32
Chimney-fastener, patent (Swift) 56
Churn-power, patent (Drake) 64
Clothes-dryer, patent (Powers) 144
Clothes-dryer, patent (Powers) 144
Clothes-squeezer, patent (Swift) 112
Clothes-squeezer, patent (Swift) 112
Clothes, patent horse (Fisher) 350
Coupling, patent orar (Fisher) 350
Coupling, patent shark (Richardson) 340
Cow-miker, the celebrated patent (Col-vin) 49

Cow.miker, the celebrated patent (Col-vin) 49 Cultivator and seed planter, hand (Dug-daie) 403 Cultivator and seed-sower (Tyler & Jones) 296 Cultivator, patent (Carhart) 280 Cultivator, patent (Ellis) 200 Cultivator, patent (Leigh) 384 Cup, patent oil (Dewies) 168 Currency-holder, patent (Snow) 136

D

Ditching machine, patent (Strowger) 327 Door-fastener, patent (Frazer) 112 Draining machine, inodorous (Walter) 289 Drill, patent seed (Travis) 248 Drill, patent seed (Underwood) 352

E

Engine, patent caloric beam (Roper) 97 Engine, patent rotary (Christensen) 321 Engine, patent rotary (Root) 65 Envelope, patent sad-iron (Briggs) 144 Evaporator, sorghum (Drake) 72 Eyeletting machine (Reed & Packard) 33

\mathbf{F}

Fastening, patent blind (Hicks) 208
Fence, field (Cosgrove & Westerman) 80
Fence, patent farm (Orendorf) 184
Fixtures, patent window (Ford) 320
Fork, hay-elevating (Rundell) 304
Fork, improved horse hay (King) 201
Fork, patent hay (Raymond) 264
Frame, patent clothes (Mayhugh) 336
Frame, patent clothes (Mayhugh) 386
Frame, patent saw (Roberts) 368
Furnace, patent steam boiler (Evans) 16

G

Gas-making apparatus, petroleum (Thorson) 324 Governor, patent (Cline) 200 Governor, patent (Gillespie) 328 Governor, patent (Howeli) 288 Grading machine, patent (Spalding) 280 Grading machine, patent (Spalding) 280 Grain-scourer (Simpson & Hayden) 8

н

Hinge, patent (Archer) 216 Holder, currency and bill (Isham) 296

Ice-creeper, improved (Field) 96 Ice-creeper, patent (Bailey) 192

J

Jack, patent carriage (Lane) 405 Jack, patent screw (Landis) 177

\mathbf{L}

Lamp attachment, improved (Baker) 40 Lathe, patent broom-handle (Prescott) Lock, patent (Duckworth) 400

M

Mill, patent cider (Ellis) 360 Mill, patent fiber (Patrullo) 368 Mill, patent portable (Searfoss) 232

N

Needles, implement for threading (O'Kane) 184 New Ironsides, the shot-marks on the 276

P

Packing, patent piston rod (Johnson) 272
Packing, self-adjusting steam-pressure
piston (Dunbar) 224
Pipes, apparatus for cleaning water
(Bond) 376
Potato diversity of the control of the

Pipes, apparatus for cleaning water (Bond) 376
Potato-digger, patent (Lane) 56
Press, improved printing (Potter) 385
Press, new "railway" printing (Hote) 120
Press, patent brick (Lafier) 216
Projectiles, patent sub-caliber (Smith) 337
Projectiles, patent sub-caliber (Smith) 7
Projectiles, the celebrated "Stafford" 209
Pump, patent air (Vial) 31
Pump, patent (Morrell) 213
Pump, patent (Morrell) 213
Pump, patent (Reynolds) 273

Rack and frame, combined clothes (Pat-

Rack and frame, combined clothes (Patton) 376
Rack, patent hat and clothes (Montignani) 40
Rack, patent hay (Cob) 264
Radiator, heat (Watson) 240
Rake, patent horse (Homan) 344
Refrigerator, patent (Bartlett) 257
Regulator, patent steam and fire (Clark) 344

Roofs, mode of covering (Robinson) 176

S

Sad-iron, patent (Christy) 152 Sawmill machinery, improved (Cushing)

Sawmill machinery, maporimed 401
Sawmill, patent portable (Wells) 120
Sewing machine manufactory (Wheeler & Wilson) 1
Shot-hole stopper, patent (Lockwood) 403
Spader, patent rolary (Comstock) 129
Stall, patent horse (Mackintire) 357
Stop, patent window-sash (Hildreth) 309
Switch, patent railroad (Marshall) 160

т

Thrasher and huller, clover (Fosdick & Crawford) 241
Tourniques improved (Party 202 Tourniquet, improved (Bond) 307 Trap, patent stench (Voorhees) 305

U

Urn, patent tea (Bristol) 392

v

Valve for pumps, air (Shaw) 24 Vulcanizing apparatus, patent (McDer-mut) 312

W

Watch Company, the factory of the American 225
Wheel, patent car (Beecher) 168
Wheel, patent central-discharge water (Burnham) 104
Wheel, patent turbine (Dolmer) 406
Wheel, patent turbine water (Burnham) 25
Wheel, patent water (Company) 200
Wheel, patent water (Company) 200

325 Wheel, patent water (Cummings) 88 Wheel, wind (Köchler & Reichardt) 48 Wrench, patent (Kearney) 192

MISCELLANY.

Figures followed by stars (*) refer illustrated articles.

A
Abandonment, the new law of 115
Abuses! reform these 313
Academy of Sciences, the National 291
Acetylene 195
Adjectives and nouns, the relationship of 343
Admiralty, a board of 137
Adwritsements 14, 30, 46, 63, 79, 94, 111, 127, 142, 158, 175, 190, 206, 222, 238, 254, 270, 2*6, 302, 319, 334, 350, 366, 352, 398
Advice on sundry subjects, good, 130
Aerostation, the science of 246, 310
Affairs, commercial 99
Aid for the Lancashire operatives, American 91
Apriculturist, the American 260
Alabama again, the 18
Alabama, the head gunner of the 306
Album of the Empress of France, the photographic 176
Alcohol, the falsifications of 34

Alpaca, llama and vicuna in California, the 279
Americans in Australia, the number of 394

the 279
Americans in Australia, the number of 394
Amaily 188
Analogy 214
Analysis, spectral 91
Anemometer, the 375
Anger 85
Anight 35
Anight 36
Armor for ships, a new 357
Armor for ships, and yen 295
Armor he mortality and sickness of the 3
Arsenic in bismuth preparations 132
Artillery arm of the nation, the 247
Artillery experiments of the American and English Governments 42
Artillery, heavy 202
Astronomy, a lesson in 402*
Atmosphere, the pressure of the 137
Atmosphere, the pressure of the 137
Atmosphere, wonders of the 6
Autographs in Paris, sale of 353
Autophoneon, the 149
Auto-typegraphy 360

R

Bacon, a lecture on the life and times of Lord 51

Lord 51
Bacon, to cure 82
Balloon, a great Montgolfier 48
Balloon, bombarding a 343
Bank-notes, how to prevent forgery of
375

Boys, the selfishness of 229
Bread-making, 311, 387
Briges, the best material for railroad 224
Br ges, unsaferaliroad 170
Bronze aluminium 75, 130, 231
Buileings in Troy, N. Y, new 135
Builets, tuns of 162
Buil-frog, a carnivorous 390
Burial-case, Scollay's 402
Business, I don't like my 247
Business, I don't like my 247
Business, our manufacturing 67
Butter, artificial 261
Butter, curing 260, 294
Butter, under ground, storing 391
Butter-making, hints on 374

C

Cable between France and Algiers, the telegraphic 116
Callipers, how to use 89
Camomile as an insect-killer 4
Canal across the Isthmus of Corinth 81
Canal arround Niagara Falls, ship 37
Canal enlargements, the proposed 265
Canal, immense business on the Erie 277
Canals estam on 359, 494
Canceler, a Yankee postage-stamp 85
Canceler, a Yankee postage-stamp 85
Canceler, postage-stamp 4
Cannon, Government proposals for 105
Canhon, the first 215
Carbon for smelting iron, gas 18
Carpenters, hints to 404
Carriage, an improved steam 165
Carriage axles, a good anti-friction compound for 71
Carriage can way 326
Carriages, the manufacture of 330
Carr, ases, ases, a good anti-friction components
Carriage, the 55
Carria

Cloves and allspice, about 245
Clubs, now is the time to form 408
Coal, a lecture on 203
Coal, anthractic 168
Coal by machinery, the mining of 67
Coal in Great Britain, annual production
of 120
Coal in Indiana 154
Coal, the wase of 171
Coal-mining in Rhode Island 311, 358
Coal-to-mail for President Lincoln, a
Japanese 328
Cobalt lives, use of 230
Coca-leaves, use of 230
Coffee-cup made of paper, a 309
Cointage, alteration in French 248
Coin, the value of United States 357
Coins in Charleston, S. C., the value of United States 44
Coke for iron-smelting, purifying 371
Coke, purification of 231
Colors, aniline 292
Colors, history of aniline 340
Colors of nature, the 262
Collodion and gun-cotton 208
Collodion for photography 360
Comet, a new 324, 374
Compliment to an American, a 135
Compliment well earned, a 131
Composition, anti-incrustation 340
Condensers of marine engines, surface
Conner, large masses of 32 Compliment well earned, a 181
Composition, anti-incrustation 340
Condensers of marine eugines, surface
90
Conveyances, abuses in public 169
Copper, large masses of 32
Copper, production of 82
Cord, naval hemp 240
Corn, burning 8
Corn, increased 119
Corn, increased 119
Corn, increased 119
Corneits of 326
Corneits of 3

132
Custom, an American 100
Cylinders, boring steam 186
Cylinders for piers, sinking of iron 10
Cylinders, sizes of steam 168

Dandrull 56
Daylight, a Yankee machine for storing up 310
Detis of various States, the foreign 130
Detenses, harbor 72, 168, 230
Detenses, New York 242
Detenses, our coast 85, 242
Detenses, our coast 85, 242
Detenses, our mational 265
Depreciation, percent of 181
Devil. 1the machine called the 259
Diamond dust for machinists' use 135
Diamond arter, the 290
Diamonds, the usefulness of 87
Diamonds, the usefulness of 87
Dick Rodman, whistling 230
Diamonds, the usefulness of 87
Dick Rodman, whistling 230
Discoveries and inventions abroad 45, 76, 170, 139, 171, 219, 299, 315, 354, 339
Discoveries, modern 24
Distillery business, the 134, 150, 166, 182, 197, 214
Dress of the Princess Alexandra, the wedding 329
Dresses and the treatment of burns, incombustible 178
Drop, the form of a 375
"Dummies" for a cuty railroad, new 374
Dunderberg, the 162
Duomo at Florence, completion of the 18
Dwellings for the poor 41
Dyeing, a few hints on 339
Dye, new scarlet 151
Dyspepsia, a Frenchman's definition of

Earth, divisions of the 242
Earth is safe, the 163
Earthworm, the 307
Eclipses during the year 1863 68
Education, physical 277
Eels, migration of 213
Eggs, preserving 407
Eclipses during the year 1863 68
Education, physical 277
Eels, migration of 213
Eggs, preserving 407
Egypt, curious relies of old 151
Electro-magnetic machine, Smith's 371
Electro-magnetic machine, Smith's 371
Electro-metallurgy 288
Electuary, a formula for a castor-oil 164
Eminence! strike at 361
Employment, honorable 347
Endurance, extraordinary 404
Engravings, photographic piracy of 353
Engineer, a brave 44
Engineer, a rich 36
Engineers, railroad 211
Engineering, a creditable piece of 404
Engineering enterprise of London, the
185
Engueering practice, modern English Engineering practice, modern English

Engineering practice, modern English
132
Engine for the "mosquito" fleet, an 162
Engines, cotapound cylinder 393
Engines, cotapound cylinder 393
Engines for screw steamers 105
Engines, French 308
Engines, superiority of Cornish pumping
123
Engines, superiority of Cornish pumping
123
Engines, working-beam 361
Erratum 200
Estimates, British navy and army 198
Exercise, the necessity for bodily 217
Exhibition at Hamburg, international
agricultural 1.68
Exhibition, distribution of the prizes at
the international 117

Exhibition of the Academy of Design, the annual 394
Exhibition, the Turkish industrial 386
Experiments, expensive 63, 193
Explosion, dreadful boiler 216
Explosion of a powder magazine 326
Explosions, boiler 246
Explosions, percussive action of water in 370
Exports and inmorts 355

370
Exports and imports 355
Exports and imports, British 135
Express and Produce Reporter, Welvs
mercial 291
Eye, the human 272
Eye, the human 272

Fact, an important 27
Farmer, wealth for the 70
Farmers, wealth for the 70
Farmers, weather hints for 210
Feet, features of the 96
Fences, cost of 210
Ferry-houses, iron 121
Figure as true as beautiful, a splendid 183
Finances, national 293
Fire-arms, rebel-manufactured 341
Fire-engines, American and English
steam 137
Fire-engines, remarkable trial of steam

steam 1: American and English steam 99, 392.

Fire-engines, remarkable trial of steam 99, 392.

Fire-engines, the popularity of steam 342.

Fire-engines, the popularity of steam 342.

Fire-experiments with Greek 195.

Fire, experiments with Greek 195.

Fire, experiments with Greek 195.

Fire, the steam of 406.

Fish and fisheries 228.

Fish and fisheries 228.

Fish and fisheries 279.

Flandsis for the army, manufacture of 180 c. 24 lifeonie 307.

Fish as food 59
Flannels for the army, manufacture of 250
Flax, California 307
Flax, cultivate 169
Flax, defects of American 249, 390
Flax in Minnesota 340
Flax retting 407
Flax seed, the best kind of 231, 274, 279
Flax seed, the best kind of 231, 274, 279
Flax seed, the best kind of 231, 274, 279
Flax treatment 262
Flints are formed, how 104
Flour and provisions for English operatives, a Philadelphia cargo of 69
Fly-wheel, a large and ponderous 320]
Fly-wheel, bursting of a 324
Fogs and signals, sea 329
Food, 273
Food, the preparation of 73
Food, the preparation of 73
Forces tan taffect matter, observations on the invisible 263
Forest at night, a 198
Forests, Brazilian 245
Friends, to our 8
Friends, to our 8
Friends, the exertions of our 58
Friends, the exertions of Friends, Frog market, the 406
Fullon and Napoleon 92
Furnace, a new iron 343
Furnace, a great melting 359
Furs 83

Gallery, the National 256
Gardens of mechanics 328
Garden-walks, waterproof 64
Garroter philosophizing, a 181
Gas for fevers, oxygen 8
Gas in carriages on English railways 103
Gas in small towns 43
Gas, liquid carbureting of coal 408
Gas, new infiammable 6
Gas or air at a high temperature, the volume and pressure of 310
Tasses, burning and explosing of 339
Gases by water and the lungs, absorption of 138
Gases of decaying vegetation 2921

of 188
Gases of decaying vegetation 292|
Gate on the New Jersey Railroad, a safety drawbridge 374
Gearing, frictional 73, 167, 214, 263, 326
Generals, bad for the 151
Geology and the "king crab" 282
Geology of the South Atlantic coast 181
Geology physiographic 100
George Griscold with provisions for the Lancashire sufferers, the sailing of the 50th Atlantic coast 181
Geology in the 50th Atlantic coast 181
Geology of the South Atlantic coast 181
Geology for the South Atlantic coast 181
Geology of the South Atlantic coast

Lancashire sufferers, the sailing of the 57
Gins and ginning, cotton 393
Girls, lucky 346
Glass and iron at Lenox Furnace, Mass., manufacture of 376
Glass, discovery of ancient Pompeian window 10
Glass, germinating seeds under blue 230
Glass, manufacture of 103
Glass, manufacture of plate 308
Glass, window 145

Glass, window 145 Globe, the wonders of the 25, 35 Glycerine in surgery 306 Globe, the wonders of the 25, 35
Glycerine in surgery 306
Gold 98
Gold, California 218
Gold, California 218
Gold, jewelers' 34
Golden Gute, recovery of treasure lost in the 179
Goods, general substitution of woolen for cotton 100
Goose and a military Michi-gander, a rebel's 268
Gorilla in Liverpool, arrival of the first live 21
Irve 21
Grain at Buffalo, N. Y., receipts of 326
Grain, exports of Western 275
Grain from Chicago, large shipment of 337
Grain in England, the yield of 56

Grain, exports of Western 275
Grain from Chicago, large shipment of
337
Grain in England, the yield of 56
Grain in Wheat, origin of the 353
Grass, Chinese 154
Grater wanted, a 240
Great Eastern, departure of the 43
Great Eastern, the accident to the 147
"Greenbacks," forgery of 320
Guns of the 190
Gun, the new Ferris 230
Guns and projectiles, the properties of 22
Guns, breech-loading versus muzzle-loading 150, 154, 293
Guns for the army and navy, the Greenwood batteries of brass 19
Guns of the Keokuk were raised, how the
359
Guns, Parrott 247
Gun-cotton for artillery 89
Gunnery experiments, French 132
Gunnery experiments, peculiar 279
Gunpowder for the South, large shipment of British 147
Gunpowder, Improvement in 181
Gunpowder of the Confederates, the 275

Habits, eating 308
Hair and wool—their nature and uses 186
Halleck, General 43
Hand-shaking, the origin of 183
Harbor, Charleston 19
Harbors, an extraordinary mode of defending 167

Harvest, a most abundant 337
Hat, a timber 70
Hatteras, the loss of the 130
Hay-makers, a hint to 315
Hawser, a huge 201
Health—our feet 70
Heat can do, what a unit of 10
Heat in boilers, preventing waste of 89
Hemp, culture of 199
Hens do not lay, why 275
Hogs, handling 76
Holes, tapping 281
Ioily and mistletoe in London, annua sale of 162
Holly, the 375
Homes for men of moderate incomes 26
Homes for soldier's orphans 41
Homesty, old-fashioned 309
Honey 192
Honey 192
Honey the origin of 311
Hoods, shaker 74
Horn for making combs, preparing 358
Horse-power 310
Horses from a building on fire, to remove 375
Horses, vitality in 244
Hops in beer and ale, ancient and modern use of 297
Hot-beds in Germany, the way they make 33
Housekeepers, hints for 244, 260
Houses in China 336
How not to do it 170
Humbug, origin of the term 212

Houses in China 336
How not to do it 170
Humbug, origin of the term 212
Hyacinth, the first double 24
Hyacinths in glasses, culture of 87
Hydro-motors, experiments with 56

I ce crop, the 98
If you mean "no," say "no!" 183
Illinois, growth of 299
Illiumination, discoveries in gas 309
Illiuminator, a new 138
Implements ready? are the 374
Importations, curious 83
Improvements, a demand for 361
Index 410
Indicated the 200, 290
India-rubber, artificial 199
India, the project-of overland come cation with 194
Industrial establishments, our 277
Ingenious, a chance for the 138, 152
Invention, perseverance in 233
Invention shored, American 155
Inventions abroad, American 155
Inventions abroad, American 155
Inventions hopeful character of neventions, hopeful character of neventions of ancient times, curiou
370
Inventions, hopeful character of neventions of ancient times, curiou
370
Inventions, recent American 11, 28
Inventions, a friendly treasonse from a

Inventions of ancient times, curious 355, 370
Inventions, recent American 11, 28
Inventor, a friendly response from an 358
Inventor, a frateful 118
Inventor says, what a Western 45
Inventor says, what a Western 45
Inventors! attention 354
Inventors! attention 354
Inventors, patentees and manufacturers, valuable work for 75
Inventors, take notice! 378
Inventors, take notice! 378
Inventors, what can be done for 121
Iodine, experiments with tincture of 400
Ireland, emigration from 385
Iron and steel from pig iron, malleable 345
Iron and steel from pig iron, malleable 345
Iron and steel, the science of 105

Iron and steel, the science of 105 Iron as a tonic in the vegetable creation 370

Iron and steet, the science of 103
Iron as a tonic in the vegetable creation
370
Iron directive wrought 265
Iron direct from the ore, manufacture of
wrought 133
Iron for musket barrels, American 198
Iron formusket barrels, American 198
Iron formusket barrels, American 198
Iron for the puddling process, desulphuration of 117
Iron, the safe load and strength of 298
Iron-clads at Fort Sumter, the 346
Iron-clads, changes in the 330
Iron-clads, English 7
Iron clads, foreign 326
Iron-clads under fire, the Western 387
Iron-clads under fire, the Western 387
Iron-works in America 6
Iron-works in Richmond, Va., destruction
of the Tredegar 402
Iron-works, the Dry-dock 242
Items, California 91
Items, manufacturing 7, 19, 99, 119 146,
227, 274
Ivory 55

Japanese, peculiar customs of the 242 Japan, illustrated lectures on 39 Jerusalem underground 86 Jointers, attachment to carpenters' 50 Juniata, trial trip of the iron-clad battery 19

Keokuk a failure? was the 293
Keokuk, the 152
Kentucky Sanitary Commission, a complimentary letter from the 70
Key-seats, the proportion of 38
Kitchen-gardens 85

 ${f L}$

L
Labor, new products and new fields for Northern 353
Labor, the dignity of 394
Lafayete, the gunboat 299
Lake, draining a classic 292
Lamp of lighthouses, the electric 37
Lancashire improving 106
Lancashire improving 107
Lancashire improving 107
Lancashire improving 108
Lancashire improving 108
Lancashire 108
Lancashire 108
Leather goods and hardware in Chicopee,
Mass, manulacture of 278
Leather, stuffing 132
Letter-carrier, a novel 232
Letter-Genera Burnside's 10
Letter of Benjamin West, autograph 387
Lextalionis 201
Light and heat from electricity and the stars 298
Light in surgery, the electric 400
Light on animal life, the effects of 187
Light, the electric 279
Lighting-rods, platinum-pointed 135
Linen, transparent painting on 82
Linseed and is soil 184
Literature for all uses 274
Live temperately 151
Locomotion, the early days of steam 19
Locomotives for Government use, new

Locomotive, a little 243 Locomotives, 217 Looking-glass, to put a paper "positive" into a 57 Lotterv, a lenghable 279 Luncheon 211

Machine, an ingenious internal 176
Machine, a rebel infernal 19
Machine-shop in Boston, a new 374
Machine-shop in Boston, a new 374
Machine-shop is, fourishing condition of
the New York 29
Machinery, accurate 116
Machinery, pile-cutting 181
Machinery, pile-cutting 181
Machinery, precluses of 107
Machinery, take care of the 184
Machinery, practical hints to the 266
Magazines and other publications received 51, 78, 107, 139, 189, 219, 253,
268, 283, 301, 347, 363, 389
Magnetism in tools, induced 358
Man and the forests 166
Manufactory a new sewing-machine 246
Manufactory, demolition of the "Soho"
Manufactory in New England, the first

Man-of-business, the habits of a 359
Manufactory, a new sewing-machine 246
Manufactory, demolition of the "Soho" 98
Manufactory in New England, the first cotton 178
Manufactories and ship-yards, activity in 378
Manufacturers, and the strength of the stre

sitis, the Waterbury brass 327, 333, 372
388
Mills wanted for Kansas, wind 384
Mine, accident in a Corawall tin and copper 380
Mines, advantages of American coal 173
Mines by electricity, experiments in exploding field 167
Mines, Illinois coal 162
Mining in 1862, California 135
Mining under the sea 199
Minerals of New Brunswick 72
Mint at Philadelphia, the 151
Mirror, a curious 119
Mississippi river, changing the course of the 31
Model making 86

272
Mosaic work in Venice, revival of 336
Moth in Europe, the new silk 320
Motton, perpetual 198
Mud, as clear as 147
Mushrooms, cultivating 243
Muskets in Providence, R. I., manufacture of riifed 340
Muskrats 35
"Mustard," origin of the word 199

Nails as currency in North Carolina, tenpenny 311
Nails, sizes of 87
Nature, causes of the phenomena in organic 282
Navy Department, gratuitous advice to the 149
Navy Department, propositions to supply withe 18
Navy, Donald McKay on the French 27
Navy of Great Britain, a lecture on the 1ron 84
Navy, sour steam 50, 101
Navy, the British 99
Navy-yard, disaffection at the Brooklyn 123
Nayy-yard, the Brooklyn, 234

123
Navy-yard, the Brooklyn, 234
"Near enough" 227
Network for blocking narrow channels
231
New Ironsides, the effect of shot on the

New John Wales, population and educa-tion in 406
New South Wales, population and educa-tion in 406
Newspaper, a sorghum-fiber 36
Newspaper printed on manilla paper, a
167

Newspaper, the "constant reader" of a 53
New York, commercial statistics of 67
New York, condition of the State of 55
New York, sanitary condition of 74
New Zealand 154
New Zealand, the gold diggings in 123,
201

Nickel 215
Nile, discovery of the chief source of the river 352
Niphon, the new propeller 116
Nomenclature, senseless 297
Normandue, the French iron-clad 51, 119
Notes & queries 14, 30, 46, 62, 78, 94, 110, 126, 142, 158, 174, 190, 206, 222, 238, 253, 270, 266, 302, 318, 334, 350, 366, 382, 398
410

Notes, designs for the new Treasury 184 Notices, literary 11, 250, 291, 408 Nurses and night-watchers, to 26

0

Ocean, new survey of the Atlantic 114
Oddities, barometrical 274
Odors 166
Oddities, barometrical 274
Odors 166
Od a pesservative against the plague 94
Oil creek on fire, an 330
Oil of charter, beauting 87
Oil trainst, beauting 87
Ories of gold, silver, nickle, copper, &c., smelting 69
Organ for the Boston Music Hall, the mew 370
Ories of gold, silver, 156
Ories of gold, 157
Ories of gold, 15 new 370 Ornaments, arsenical 55 Ossi ppee and Juniata, the gunboats 14 Oysters, the nature of 181

Paint for iron ships 330
Paint, the new copper 210
Paint, the new copper 210
Paper and cloth from Indian corn husks 201
Paper and cloth from Indian corn husks 211
Paper, cat-tail 115
Paper, corn ship-building 10
Paper, new material for 145
Paper, printing 103
Paper, new material for 145
Paper, printing 103
Paper stock 18
Paper, wood 119, 291
Papers in relief, wall 119
Papers, save the valuable 16
Paper-makers, the combination of 122
Passage in winter, the Southern 98
Patent bill, the Massachusetts State 235
Patent bill, the mew Canadian 314
Patent bill, the new Canadian 314
Patent law, recent changes in the 179
Patent wit, an important 123
Patent system, the proposition to introduce a State 234, 265
Patent Office, appointments and promotions in the 75
Patent Office, operations of the Southern 106
Patent Office, removal of the military hospital from the 72
Patent Office reports for 1861 and 1862, the 35, 330
Patents, applications for the extension o 20, 84, 123, 147,203, 219, 291
Patents, introduction of foreign 242
Patents, recent American 53, 76, 92, 107, 124, 139, 155, 171, 188, 204, 219, 235, 251, 268, 283, 299, 315, 331, 347, 363, 379, 394, 408
Patents, secondary Government fees on 283

Patents, secondary Government fees on 283

Patents secured through our agency, sev-patents, the value of small 360 Peanuts in California, annual crop of 201 Pendium in California, annual crop of 201 Pendium 154 Pennics, 154 Pennics, 154 Pensions at Washington, applications for

Pennsylvania. the resources of 164
Pennsylvania. the resources of 164
Pensions at Washington, applications for 10
Perfume, coal-tar 18
Perfumes 214
Ferpetnal-motion-seeker, experience of a 262
Personal 123
Personal 123
Personal pate of iron, new form of dry 387
Petroleum 54
Petroleum, caution to refiners of 114
Petroleum, caution to refiners of bulk 374
Petroleum, exports of 200, 308, 391
Petroleum, exports of 200, 308, 391

Petroleum, dangerous character of bulk 374
Petroleum, exports of 200, 308, 391
Petroleum for preserving wood 341
Petroleum in pipes, conveving 170
Petroleum oil company, an English 187
Petroleum, origin of 112;
Petroleum, the sources and geology of 85
Petroleum the forces and geology of 25
Petroleum to market, a new plan for carrying 147
Petticoats, the manufacture of steel 208
Phenomena, atmospheric 357
Phenomena of Florida, notes on the natural 391
Phenomenon, an electrical 85

Phenomenon, an electrical 85 Philadelphia 146 r madeiphia 146 Photographs, natural colored 180 Photographs of children, instantaneous 376

Photography on children, Instantaneous 376
Photographs on large plates, the production of instantaneous 261
Photographs, vitrified 405
Photographic experience, a 183
Photography at high elevations 374
Photography, honor to the discoverer o 403
Phosphorescence 55

Photographic experiments 245
Photography at high elevations 374
Photography, thonor to the discoverer o
403
Phosphorescence 55
Photo-lithography 170
Pianos, hints about 130
Pictures for ornamentation on glass, enlarged photographic 343
Piers for New York, stone 216
Pigs and hogs, the tax upon 183
Piers for New York, stone 216
Pigs and hogs, the tax upon 183
Pike, Sen, death of Benjamin 346
Piles under water, cutting 194
Piles versus iron-clad ships, wooden 200
Pilot-Knob, the iron mountain of 38
Pine-apples 406
Pines, the glory of the 183
Pins, iron 114
Pistons of portable engines, the 385
Plague or "black death," the 322
Planetary system, the destiny of the 230
Plates, amalgamating battery 230
Plates, amalgamating battery 230
Plates for the condensers of iron-clads, heavy yellow-metal 374
Plates of any use? are angulated armor
17
Piates, superiority of French armor 273
Plow-handles wanted 43
Piuck 400
Polytechnic Association of the American
Institute 4, 66
Pompeli, a visit to 71
Pompeli, human remains discovered a
256, 279
Pontiff of the petticoat," the 151
Population of Europe, decrease of 179
Post, a pneumatic 345
Post in operation, the pneumatic 162, 274
Post-office, what goes through the 76
Potatoes in California, big 165
Poultry, fattenifig of 20
Poultry, keeping 79
Powder, black ink 179
Preparation, uninflammable 130
Press, Bullock's new printing 214
Press, Hoe's new printing 217
Prices, starvation 131

Prince Consort, dimensions and weight of the iron masts of the new British frigate 244 Prince of Wales when king of England, the title of the 274 Printing in colors 17

the title of the 274
Printing in colors 17
Printing on paper, direct photographic 292
Prize-money and prize-agents 216
Prizes of the Paris Academy of Sciences
988
Parklam a scientific 7

98
Profile, the first 242
Produce, receipts of domestic 55
Products of Ohio, the vegetable mal 55
Project a sensible 114 mal 55
Project, a sensible 114
Projectile, the Whitworth 306
Projectiles, successful experiments
106

106
Projectiles, the impact of 92
Propeller, a large screw 74
Prophet, a French weather 359
Pussy! poor 247
Pyramids of Egypt, the 179

Quartz, gold 344 Queen of the West, the feat of the 130 Queen of the West, the shell that destroyed the 306 Quinine, borax and tartaric acid, manu-facture of 242

Rabbits, catching 51
Races die out, how 256
Raft of the iron-clad, Sengamon, elasti
170
Rags 187
Rags 48cline in the price of 3
Railroad, a grand continental 153
Railroad, an accommodating 405
Railroad employes, hours of labor re
quired of 151
Railroad, Pennsylvania Central 128
Railroad, short lines of 198
Railroad, short lines of 198
Railroad, ste Broadway 329
Railroads, our 43
Railroads, our 43
Railroads, our 43
Railroads, steam on city 58, 152, 200
Railroads, the cost of horses employe
upon city 306
Railway equipment 56
Railway quipment 56
Railway novel street 375
Railways, subterranean city 41
Rainbows 18
Rain, the translation of the 48
Raike, Homan's "excelsior" horse ha;
390
Rams of no value, the rebel 75
Rappahannock, the struggle out the 310

300
Rams of no value, the rebel 75
Ruppahannock, the struggle on the 310
Rat-catcher, a successful 263
Readers, to our 407
Receipts, valuable 3, 20, 39, 53, 70, 92, 100, 117, 133, 105, 181, 203, 213, 227, 245, 261, 282, 291, 307, 330, 339, 358, 374, 389, 405

261, 282, 291, 307, 330, 339, 358, 374, 389, 405

Re de Italia, the launch of the 282
Regata of the New York Yacht Club, the fourteenth annual 405
Rents in Philadelphia, annual amount of the water 346
Renwick, Professor James 58
Reproof, excellent 184
Revenue, American national 86
Revenue of Great Britain 86
Revenue of the the theorem of the state of the

Rhode Island stutistics 275
Rhodomontade 298
Rhodomontade 298
Rice as food in India 373
Riches of the Lake Superior region, the mineral 20
Richmond, all alrs in 51
Ritles and projectiles, 5
Ritles, manufacture of Springfield 17
Roanoke, a gold model of the 236
Roanoke, present condition of the 217
Roanoke, the iron-clad steam battery 73
Robinson, death of Professor 106
Rock-boring implement, a diamond 103
Rockets in warfare 313
Roofs waterproof, to render glazed 17
Roses, about 290
Rubber corrode iron? will vulcanized 404

Roses, about 290
Rubber corrode iron? will vulcanized 404
Rubbidium, the metal 117
Russia, extent and population of 4, 18
Rust, destructive effects of iron 89

Salt and coffee on the human system, the effects of common 231
Sand in bollers 107
Sand in the bolling of water and generation of seam, the calorific effect of silicious 84, 102
Santa Cruz, California 38
Savant, death of an eminent 370
School-giris, English and American 199
Science and art, progressive 9
SCIENTIFIC AMERICAN as an advertising medium, the 23
SCIENTIFIC AMERICAN wanted by the Commissioner of Patents, back-numbers of the 99
Screw-fastening, Ahlstrom's patent expansion 168
Screws in steamships, double 268]
Screws, the size and pitch of machine 6
Sea a great cemetery, the 262
Sea-sickness, remedy for 342
Seasons of California, the 211
Sea-weeds for manure 275
Sewage, deodorization of 164
Sewage for farms, city 261
Sewer of Paris, the 197
Sewing machines in Europe 313
Shad, habits of the 356
Sheep, scab in 194
Sheers in the Southampton Docks, new iron 194
Shell, an awful 298
Shell Can do, what one 178
Shell whitworth's improved 165*
Shinplasters, repudiation of 72
Ship building m Maine 114
Ship-building mine 114

642 ps' bottoms, bolts, &c., electrotyping

Ship-building—iron and wood combined 842
Ships' bottoms, bolts, &c., electrotyping 365
Ships against forts and heavy ordnance, iron-clad 281
Shirt-collars, steel 149
Shocker, gulvanic slug and snail 276*
Shoe-tips, manufacture of copper 133
Shot, the rebel 310, 314
Silk and cloth in modern garments, the increased cost and quantity of 363
Sik from Japan, the first cargo of 161
Silk worm spawn into France, importation of Chinese and Japanese 297
Silver, a \$1,500 fee paid in 117
Silver in Canada, the glut of 118
Silver, Lake Superior 88
Silver, the changes of a piece of 10
Silver' what becomes of the 258
Skate adapted to breaking horses? is a patent 402
Skating 51

Skating, rules to be observed while 28
"Skedaddlers" to Canada, the 203
"Skein, Icelandic 114
Skin, the wonders of the 341
Sleepers for railways 170
Slights, looking out for 147
Small-arms, experiments with rified 377
Small-pox, to prevent "pitting" in 404
Smelling, science of 276
Smoking and photography 82
Smow 106
Soap-making 182
Soap, manufacture of soluble glass 180
Soap, water-glass in 231
Soldier, ingenuity of a Massachusetts 314
Soldiers, the transportation of disabled
51
Sorghum-cane and sugar 154, 166
Sorghum, planting and cultivating 297
Sparrows to Australia, transportation of
European 179
Specie in the United States 67
Specie to Europe, shipment of Southern
85
Specie, our 275
Snelling unione 98

Specie, our 275
Spelling, unique 98
Spikes, wrought-iron 70
Spirit, methylated 267
Springs and rivers, the 171
Springs Co.

Springs, Canadian oil 96 Stale 117

Springs. Canadian oil 96
Stale 117
Stamps, English postage 71
Stamps, English postage 71
Stamps, postage, proposed modes of canceling 103
Stamps, proposed mode of canceling postage 103
Stamps, proposed mode of canceling postage 103
Stamps redemption of the soiled 8 115
Stamps upon patent documents, internal revenue 7
Starch, to make potato 194
Stars, the revolutions of the 38
Stars, the twinkling of the 149, 197
Statistics, currious 230
Steam and electricity, a race between 71
Steamboats, double-bow naval 99
Steamers, quick passage of a screw 38
Steamers, double-screw 362
Steamers, double-screw 362
Steamers for the Vicksburgh expedition, the expense of chartering 314
Steamers in China, American 309
Steamship, a race between an English and an American 374
Steamships, speed of 96
Steamships, the construction of armor 361
Steel, American 122
Steel and brass, hardening and softening

361 Steel, American 122 Steel and brass, hardening and softenin 407

407

Steel, black diamond 182
Steel, hardening 104
Steel in large masses, the melting of 80
Steel made in Pittsburgh, fine 166
Steel, manganese in 195
Steel, more about Bessemer 88
Steel, welding 326

Steel, weiding 326 Stephenson and electricity, Robert 23 Sterro metal 275 Stimers, compliment to Mr. Alban C. 327 Strawberries 389 Stretcher for army use, an improved Stretcher 197* Strikes 121

Strikes 121 Stone-gathering machine wanted, a 374 Storms 36, 52, 69 Storms, magnetic 362 Subscribers, please read! 378 Sugar as an antidote to poison, refine

Sugar as food 86 Sugar, Northern 245 Sugar, Northern 245 Sugar in Austria, beet-root 360 Sugar, maple 52, 215, 280, 327 Sugar, sorghum 18 Sugars, domestic 216 Sugar-cane, experiments wi

Sugars, domestic 216
Sugar-cane, experiments with Chinese
202
Sulphur, flexibie 182
Summary, miscellaneous 7, 19, 35, 75, 91,
99, 131, 146, 163, 187, 195, 218, 227, 243,
327, 355, 371, 387
Sum ter with iron, the plating of Fort 55
Sun a habitable sphere? is the 278
Sun, the action of the 402
Sun, the work and fate of the 133
Sunlight, cheap 242
Superheaters, steam 118
Swear! do not 336
Swimming, physiology of 194
Swindling by machinery 146
Switzerland, protestants and catholics in
151

Т

Talking 80
Tapioca 84
Tar, farmers, make your own 369
Targets, more experiments with iron 247
257

Task well executed, a difficult 168
Tax-bill amendment, the 177
Tax, the income 346
Tax on manufacturers, the 393
Taxes on machinery, how to pay 67
Taxidermy 250, 259

Taxes on macunitary, new to pay or Taxidermy 250, 259
Tea 144
Tea in Russia 151
Tea in the world, consumption of 44
Tea, Japanese 135
Telegraph instrument, new 293
Telegraph-line to the Holy City 115
Telegraph, the new Atlantic 33, 185, 242
Telescope, a mammoth 162
Testimonial, another 51
Theory and practice 329
Thieves, enterprizing 330
Thieves foiled at last, umbrella 115
Thoughts for young men 357

Thoughts for young men 357
Thourette and its parish priest, th
"commune" of 263

Thourette and its parish pr "commune" of 263 Tiger, trapping a 290 Tiles, draining 38 Timber, cutting 163 Timber, growth of 258 Time, the inroads of 233 To all whom it may cowern 390 Tobacco 21, 198 Tobacco, cultivation of 83 280

The the inrodus of 235
To all whom it may concern 390
Tobacco, cultivation of 83, 280
Tobacco, treating and flavoring 40
Tomatose sarily, start the 245
Tools, learn the 7
Tools, clean the 8
Tools, intellectual 345
Tools, intellectual 345
Tools, tearn to forge your own 407
Tools, tempering steel 5
Topedo, explosion as submarine 7
Tools, tempering steel 5
Topedo, explosion as submarine 7
Traded New York, mutton 86
Trade, Pittsburgh petroleum 146
Trade, the coal 36, 5
Trades-union, a central 216
Treasure, recovered 144
Tree in China, the tallow 130
Tree murder 196
Tree 6,390 years old, a Californian 214
Trees and skies of California, the 262
Trees, great ages of 20
Trees, how to treat dwarf pear 342

Trees in gardens, training fruit 325 Trial, a steam boiler explosion 56, 75 Trial, important patent 266 Trials, an editor's 295 Trout, artificial culture of the brook Tubes, the effect of pressure upon r Trees in gardens, training fruit 325 Trial, a steam boiler explosion 56, 75 Trial, important patent 266 Trials, an editor's 295 Trout, artificial culture of the brook 3 Tubes, the effect of pressure upon met 276 Tun, a United States 25 Tunnel, the Hoosic 248 Turning, fast 182 Turpentine and tar are made, how 119 Typo-telegraphy 106

Valve, Bristol's anti-friction slide 291
Varnish, manufacture of copal 16
Vegetables in California, gigantic 211
Vegetables, qualities of the best 311
Vegetation, human 90
Vegetation on the Amazon, tropical 135
Ventilation 48
Verdict, boiler explosion 72
Vessels by steam propulsion, steering 135
Vessels, curious effects of iron-plating on 36
Yessels, construction of armoral 166

Vessels in France, new transport 399
Vessels in France, new transport 399
Vessels in the world, the number of seagoing 130
Vessels, the inventor of iron-clad 81
Vice versus virtue 83
Victories, our recent 43
Victories, our recent 43
Volcances, heat of the earth's interior 218

Volcanoes, heat of the earth's 218 Voyages, three good whaling 263

W

Wages 74
Wages, current rates of 352
Wages of carpet-makers, increase of 277
Wagons upon common roads, steam 9
Watters in a Prussian drinking-house, female skating 245
Walking, the uses of 19
War and increasing wealth 377
Warfare, scientific 131
"War-furte," a ne w358
Washing machine, improved 35
Washington, new fortrait of 312
Washington, new fortrait of 312
Washington, new fortrait of 312
Washington, wonderful sights in 234
Watter, the boiling of 196, 201, 278, 281
Watter, works, Cincinnati 267
Watter, works, Cincinnati 267
Watter, and was and war-secretary 346
Weapons-of-war, ancient and modern
Watter who 25

Watson, Assixant War-Secretary 346
Weapons-of-war, ancient and modern
212
Weather, the 35
Wedding, the great Lilliputian 115
Wells in Canada, the oil 171
Wells in the deserts 103
West, the great 352
What-is-it, a naval 7
Wheat-market in the world, the greatest
306
Wheat, the coming crop of winter 291
Wheels, emery polishing 40
Whirlpool, causes of the 118
Who are to light 243
Who are to light 243
Wind as a musician, the 290
Wine, California 244
Wine for sick soldiers, rhubarb 355
Wine, to make strawberry 112
Wine, value of old sherry 215
Wood, to prevent the rotting of 86
Wood with pyroligneous acid, preserving
233
Wool in California, the last annual clip
of 58
Wool in California, the last annual clip
of 58
Wool in Dino, the present clip of 309
Wool insideous aleece, do not put dirty
342
Wool—in supply and demand 341

Wool insideor a neese, do not put us 342
Wool—its supply and demand 341
Worden, the sphere of 44
Worden, Commander 297
Words, the origin of some 167
Workings, ancient copper 272
Workmen with orders, paying 90,5377

Y

Yard, the ancient English 331 Yarn from cotton rags, spinning 359

PATENT CLAIMS.

A Action, pianoforte 204
Air by exhaust steam, method of heating 365
Air-condensing apparatus for forcing liquids 300
Alarm and heat detector, fire 205
Alarm, burglar 269
Alarm, electro-magnetic fire 252
Alcohol, apparatus for distilling 12
Aluminum, elloys of 316
Amalgamators for gold and silver 12, 156
Ambulance 108
Aniline compounds, dyeing and printing a black color on fabrics, with 364
Annunciator 156
Apples and other fruit, machine for stringing dried 156
Apples and other fruits machine for stringing dried 156
Apples paring machine 108
Aprion for stoves and grates 300
Ash.sifter 12
Armor for ships and other batteries, defensive 77, 140, 156, 285
Axle 33
Axle, railroad car 59

В

Bagasse for fuel, preparing 379
Bag-holder and elevator (combined) 284
Bag machines, paper 124, 157, 300, 333
Bags, device for closing 141
Balloon 141

Bag machines, paper 124, 157, 300, 333
Bags, device for closing 141
Balls, springs, &c., manufacture of 408
Band-cutter for thrashing machines 379
Bank-note 124
Balks, exprings, &c., devices to prevent counterfetting 300, 7317
Bark, machines for rossing 109, 409
Barrel-heads, shingles, &c., machine for sawing 205
Barrels, oil 92
Barrels, manufacture of gun 285
Bars, drawing or forging metal 268
Bars, welding and repairing railroad 236
Bath, electric 332
Battery for ships and other navigable vessels, floating 29
Battery for war vessels, submarine revolving 408
Battery, magazine field 317
Battery, traveling 172
Batteries of war ships and other floating structures 408
Bearing, end-thrust 172
Bed, spring, 408
Beds, apparatus for obtaining profiles of submarine 141
Bed-bottoms, 28, 364

Bedstead, bureau 251
Bedstead-fastener 124
Bedstead-fastener 124
Bedstead, hospital 380
Bedstead, iron 12
Bedsteads 125, 285
Bedsteads 125, 285
Bedsteads 125, 285
Bedsteads 6. 61, 77, 124, 140, 172, 220, 237, 317 (2) 333, 348, 379
Beer-cooler 93
Bell-shifting device 12
Bevels, machine for sawing 188
Bier 364
Bill-holder 236
Bill-holder 236
Bill for horses, anatomical 349
Bit or boring tool 365
Bits in stocks, method of securing 13
Bits, preparation of aniline 221
Biades for knitting-machine sinkers 61
Blades, propeller 269, 300
Blacking apparatus, boot and shoe 108
Block for lasts, head 12
Blocks, pulley 204
Blower 60
Boiler, farmers' 316
Blower 60
Boiler, farmers' 316
Boiler-feeder 155

Block, pulley 204
Blower 60
Boiler, farmers' 316
Boiler, feeder 155
Boiler, locomotive 364
Boilers, covering for steam 236
Boiler for evaporating pans, cellular or tubular 172
Boilers, forming and double-seaming stove 365
Boilers, method of connecting sections of steam 409
Boilers, steam 33, 173, 402
Boilt, door 141
Boit, flour 396
Boils and rivets, apparatus for clipping 364
Bolts and spikes, machine for drawing Bolts and spikes, machine for drawing

poits and rivets, apparatus for clipping 364
Bolts and spikes, machine for drawing 60
Bolts, machine for making 349
Bolts, machine for pointing and checking hoop 253
Bolts, rivets and nails, mode of attaching the heads of 379
Bolts, trimming or cutting 236
Bolt-holes in turrets of gun-boats, drilling 365
Book-case, portable 172
Boot 315
Boots and shoes 29, 331, 396

Boot 315
Boots and shoes 29, 331, 396
Boots and shoes for use with machines for screwing on soles and heels, apparatus for holding and supporting 205
Boots and shoes, india-rubber sole for 365
Boots and shoes, machine for screwing on the soles and heels of 13
Boots and shoes machiner for cutting

365
Boots and shoes, machine for screwing on the soles and heels of 13
Boots and shoes, machinery for cutting soles of 348
Boots and shoes, machine for lasting the uppers of 220
Boot-crimping machine 29
Bottles, device for stoppering 331
Box for car wheels, journal 188
Box for stoves, ash 300
Box machine 189
Box, metal 364
Boxes, carridge 25, 108, 140
Boxes, journal 125, 4; 8
Boxes, machinery for dressing axle 332
Brace, ratchet 236
Brace and suspenders, shoulder (combined) 11
Braid for shoe strings, tagged 284
Brand, manufacture of 109
Brake, friction 395
Brake mechanism for carriages 93, 395
Brake, machinery for making 251
Brike, wagou 380
Brake and machiner for making 251
Bricks, machiner for making 251
Bricks machines 61, 251, 365, 381
Bridge, 1rus 364
Bridges 141, 379
Bridle 125
Bristles, machinery for assorting 220
Broiler 238

Bristles, machinery for assorting 220 Broiler 238 Brooms, device for the construction oo device for the construction

Brooms, devic 317 Brush, hat 365 Brush, shoe 60

Brush, hat 365
Brush, shoe 60
Brush, warp 349
Brush, whitewash 252
Brucket, elevator 28
Brucket for chain pumps 28
Brucket for waist belts 108
Brucket sals, 397
Bullets, machine for casting 76
Brushet and draw-head spring for rail-road cars 93
Brung for coal-oil barrels 157
Brushet for kerosene lamps 349
Bruner, gas 332
Bruner, lamp and lantern 205
Bruners for lamps, coal-oil 28, 59, 220, 252, 300
Bruners, lamp 109, 125 (2), 140, 236, 333, 395
Brush for burgs 408
Brutter-works 141
Brutter for lamps 193
Brutter for lamps 408
Brutter works 141
Brutter for lamps 408
Brutter

C

Cage, bird 284
Calash or folding top for carriages, &c
172
Calculator, tax 331
Calipers 199
Calk, ice 173
Call for telegraphs 349
Camel, marine 349
Cane, crushing and stripping sugar 269
Can, milk 237
Can, milk 237

Camel, marine 349
Cane, crushing and stripping sugar 269
Cane, crushing and stripping sugar 269
Can, milk 237
Can or fisak 189
Can, sheet metal 77
Cannon, constructing 332
Cannon, machine for riffing 220
Canony, musquito 317
Canteen 59
Caoutchoue, &c., into strips and threads machine for cutting 93
Caoutchoue, apparatus for curing 331
Caoutchoue, apparatus for curing 331
Caoutchoue, treating 29
Cap, chimney 59
Cap for fruit, jars, &c. 365
Cap for fruit, jars, &c. 365
Cap for fruit, jars, &c. 48 (2)
Cap-holder for priming fire-arms, percussion 364
Car and truck connection 284
Cars, constructing 348
Cars for carrying petroleum, &c. 93, 396
Cars, iron railroad 252
Cars, machine for moving railroad 183
Cars to traitroad tracks of different gages, applying 205
Card for liquid compasses 396
Card-board, apparatus for cutting 395
Card for liquid compasses 396
Card-board, apparatus for cutting 395
Carriages, attaching shafts or poles to 140
Carriages, gun 205, 408
Carriage-bodies, hanging 395
Cartridge 108

Cartridge for cannon, metal 316
Cartridge, shot 108
Cartridge, shot metallic 332
Cartridge, shot metallic 332
Cartridge-tearer for muskets 12
Case, portable dressing 269
Case, watch 93
Cases, watch 93
Cases, metallic burial 108, 333, 409
Cast-iron, purifying 237
Casks and barrels for oils 93
Cat-block for freeing a ship's anchor 317
Coment for leather, &c., waterproof 318}
Chain, &c., ornamental 409
Chairs, folding 59, 60, 204, 2c9
Chairs, railroad 155, 234, 365
Check, railroad baggage 93
Chenille, machines for manufacturing 76,
Therry-stoner 333
Chaimney-adjuster, lamp 365
Chimney-fastener 332
Chimney-fastener 332
Chimney-fastener 332
Chimneys for lamps, mica 108, 189
Chimneys for lamps, mica 108, 189
Chimneys, lamp 283, 348
Chimneys, mode of elevating lamp 220
Chimneys, lamp 283, 348
Chimneys, mode of elevating lamp 220
Chimneys to lamps, mode of attaching 61
Chuck for lathes 233
Churns 26 (2), 29 (2), 92, 172, 364, 365, 409
Churns and washing machines, operating 60
Churns, devices for operating 108, 237, 234, 379

Churck for lathes 283
Churns 28 (2), 29 (2), 92, 172, 364, 365, 409
Churns and washing machines, operating 60
Churns, devices for operating 108, 237, 284, 379
Clamp for raising buildings 348
Clasp for losing preserve jars 316
Clasp for paper shade-holders 237
Clasp for paper shade-holders 237
Clasp for shoes, belts, &c. 237
Claw-bar 12
Clay for bricks and tiles, machine for heating untempered 364
Clip-tie for carriages, draft 379
Clock 363
Clocks by currents of air, winding 77
Clod-crusher 268
Clothes-ironing machine 237
Clothes-dryer, window 61
Clothes-dryer, wind

Composition for gunpowder 59
Composition for lemonade 69
Composition for lemonade 69
Composition for lubricating wagon-axles, &c. 172
Composition for lubricating wagon-axles, &c. 172
Composition for pubricating wool 284
Composition for presents, &c. 364
Composition for presents, &c. 364
Composition for preserving and water-proofing leather 317
Composition for printing and copying ink
237

proofing leather 317
Composition for printing and copying ink
237
Composition for printing and copying ink
237
Composition for printing gas 188
Composition for restoring colors to cloth,
&c. 189
Composition for slate surfaces, blackboards, &c. 140
Composition for water pipes, &c. 108
Composition for water-proofing fabrics
23
Composition for water-proofing fabrics
Confact accordance
Composition for water-proofing fabrics
Cork-drawer 233
Corks and bungs, steam 300
Cork 29
Cork-drawer 233
Corks and bungs, machinery for cutting
109
Cork-drawer 233
Corks and bungs, machinery for cutting
109
Cork-drawer 233
Corks and bungs, machinery for cutting
109
Cornshellers 141, 220, 237
Corsets, weaving 109
Coupling 397
Counter-shaft 120
Couplings, pipe 120
Couplings, pipe 120
Couplings, pipe 220
Cou

Crain. Wist 300
Crutch 76
Cultivators 12, 28, 29, 59, 60, 93, 109, 173
(2), 237, 269, 284, 301, 316, 317, 364, 379, 380
Cups, dippers, &c., elastic 12
Cuttery, attaching handles to 28
Cut.off and regulator valve (combined)
365
Cutter for planing machines, rotary 381
Cutter-head for the wood of lead pencils
348
Cylinder, hydraulic 13
Cylinders, boring and squaring-off 76
Cylinder-polisher 283

Damper, ventilating 331
Dampers 236, 252, 380, 396
Dashers, churn 61, 283
Deck.light for vessels 317
Detense, submarine harbor 268
Desk, school 252
Detector, low-water 300
Die for forming hats 237
Die for nail machines, grinding 141
Die for turning flanges 205
Dirt-scraper 108
Distributor, grain 59
Distributor, grain 59
Divider for harvesting machines 237
Door-knob 332
Doors, closing 173
Dove-tailing machine 188

Dove-tailing, machine for miter 220
Doweling machine for the use of coopers 140
Drainer, pipe 331
Draw-spring for railro d cars 365
Dredges, hoisting oyster 333
Dredging-box with grater and cake-cutter attached 157
Drilling and screw-cutting machine 92
Drill, rock 141
Drills, grain 61, 315, 348, 395
Drills, seed 237, 499
Drums, kegs, casks, &c., manufacture of 309 \mathbf{E}

Earth-scraper 12
Eaves-troughs, soldering sheet metal 236
Elevator, grain 237
Elevator and carrier 156
Elevator, grain 237
Elevator, grain 237
Elevator, grain 237
Elevator, grain 237
Elevator, grain 238
Elevator, grain 238
Elevator, grain 238
Elevator, grain 248
Elevator, grain 248
Elevator, grain 248
Elevator, grain 258
Elevator, grain 258
Elevator, grain 258
Elevator, grain 259
Elevator, grain 258
Ele

Fragment 364
Exapement 364
Evaporators for saccharine liquids 60, 220

220
Evaporators, sugar 60, 172, 220, 300, 315, 380
Excavating machine 348
Excavating and ditching machine 205
Exercising machine, infant's 251
Exploder for shells, percussion 124
Extractors, stump 220, 237
Eyelet for lacing shoes 60
Eyeleting machines 60, 77 (2)

Fabrics, machine for spreading japan, &c., over 125
Fabrics, machinery for drying and finishing tubular knit 50
Fabrics, manulacture of flocked waterproof 237
Fabrics, mode of producing designs on textle 285
Fastening for door latches 125
Fastening for lamp chimneys, spring 12
Fastening for ornaments on dress 332
Fastening, shouter 140
Fastenings, shutter 140
Fastenings, window-shah 109, 125
Fastenings, window-sash 109, 125, 317, 332, 347
Faucet, self-balancing and self-closing

332, 347
Fancet, self-balancing and self-cle
Faucet, wash-basin 93
Feed-bag for horses or other anims
Feeder for lamps 77 cm 124
Fences 61, 92, 172, 252, 332
Fences, portable 237, 268, 269, 300 (2)
Fiber, reducing long-stands 2014
Filer, reducing long-stands 2014
Filer, reducing long-stands 2014 Fid 205 File, horse-tooth 332 File, paper 409 Files, machines for cutting 77 (2) 109 (2) File-blanks, grinding 125, 332 File-blanks, machine for rolling 333 File-blanks, machine for rolling 333

File-blanks, machine for Folling 353 Filter 301 Filter and cooler (combined) 364 Filter, liquid 332 Fire-arm, magazine 380 Fire-arm, sel-loading 365 Fire-arms, breech-loading 13, 61 (3) 77, 108, 109, 157, 172, 204, 221, 251, 316, 331, 347, 365 (2) 379, 396 Fire-arms, revolving 109, 156, 236, 285, 315, 316, 317 Fire-arms, revolving 109 pt. 156, 236, 285, 315, 316, 317

Gages for steam boilers, water 109, 173 Gatter 300
Garment having body and sleeves 395
Gas, apparatus for carbureting 317
Gas, apparatus for cooking with 172
Gas by electricity, lighting 364 (2)

Gas from petroleum and other hydro-car bons, apparatus for generating 333 Gas, manufacture of illuminating 59, 238

Gas, manufacture of illuminating 59, 238, 333
Gas to a soldering apparatus, regulating the flow of 252
Gases, apparatus for mixing 348
Gates 109, 317
Gearing for machinery 12
Gearing for machinery 12
Gearing for mean hammers, valve 93
Gear of steam engines, valve 61
Generator, steam 76
Gimlet 236
Gin, cotton 172
Glass, mode of removing stains from 236
Globe and chimney for lamps, combination of 173
Globe, lantern 395
Gores of shoes, device for inserting the 284
Governor, centrifugal 140
Governor, centrifugal 140
Governor, marine 236

Governor, centrifugal 140 Governor, marine 236

Governors 28, 300 Grain, &c., for malting, preparing 317 Grain, apparatus for stirring and drying Grain, &c., 10r matting, preparing 317
Grain, apparatus for stirring and drying
Grain-binder, automatic 268
Grain-cleaner 301
Grain-conveyer 140
Grain-dryers 205, 284, 365, 395, 396
Grain, mait, &c., drying 77, 140, 188, 252
Grain-sowing machine 92
Grain-sowing machine 92
Graining, and ornamental painting, process for 332
Grading machine 189
Grapes, apples, &c., grinding and pressing 124
Grates for stoves 13
Grates 221, 224, 316
Grindstones, machine for facing 396
Grindstones, machine for facing 396
Grindstones, machine for facing 396
Grindstones, machine 124
Guanos, treating phosphatic 251
Guides for sewing machines, hemming, tucking and folding 108, 236, 379, 380
Gun, air 12
Guns and gun-towers, operating 251
Gun, centrifugal 12
Guns and gun-towers, operating 251
Gun, singhing 61
Gunboats, construction of 317
Gunpowder 396
Gun-stocks, machinery for carving and drilling 156

Н

Hair-crimper 237
Hammer for fire-arms, self-priming 396
Hammer, trip 140
Hanger, adjustable 349
Hardware, manufacture of sheet-iron 333
Harrow 29
Harrow, drill, grass-seeder and roller (combined) 348
Harpoon 300
Harvester, corn 395
Harvesters, corn 395
Harvesters, paiding attachment to 204
Harvesters, pinding attachment to 204
Harvesters, raking attachment for 93
Harvesters, raking and binding attachment to 77
Harvesting machines, header attachment to 77
Hats and bonnets, manufacture of palmleaf 77
Hats, apparatus for pressing 29, 252
Hats, apparatus for pressing 29, 252

leaf 77 and to the leaf of the

partus for determining the form and size of the 172 tread for railroad cars, coupling 173 tread for railroad cars, coupling 173 tread for railroad cars, coupling 173 tread for for locomotives, feed-water 172, 40 treader for steam boilers, feed-water 172, 40 treader for steam boilers, feed-water 172, 40 treader for steam boilers, feed-water 172, 41 tringe, gate 409 tringe, sliding 156 tree 77 tringe, sliding 156 tree 78 tringe and the 184 tringe and the 184 tringe and 184 tringe and 184 tringe and 185 tringe and

Hose and flexible tubes, 12 House, metallic 29 Hub, carriage 93 Hydrants 93, 188, 380, 409

Ice-creeper 109
India-rubber, printing and ornamenting 380
Indicator for railroad cars, station and street 283
Indicator, steam-engine 237
Ink for printing bank-notes, &c. 316
Ink, green 237
Inkstands 409, 410
Inkstands 409, 410
Injector, Giffard's 109
Instruments, device for carrying off water from musical 300
Instruments, stereoscopic 285 (2)
Insulator, lamp 28
Iron, smoothing 365
Iron, smoothing 365
Ivory, machine for planing and dressing 237

Jack, carriage 220
Jack, hydraulic lifting 284
Jacks, lifting 156, 379
Jars, preserve or fruit 141, 236, 349
Jars and other vessels, process of mar
facturing enamel fruit 125
Jib and stay connection 93
Jount, gaspipe 78
Journals and axles, lubricating 396
Juices, clarifying saccharine 140

Kettle, camp 93
Rettle for culinary purposes 109
Kettles, cast.iron bottom for tea 396
Kettles, tea 77, 108
Key for electric telegraphs 349

Keys from being turned, device for preventing door 141
Kiln for drying grain 332
Knapsacks 13, 221, 380
Knife, currier's 59
Knives, attaching handles to 11
Knife-cleaning machines 109, 396
Knitting machine 12

Labels, commercial 380, 409 Ladder 364

Labels, commercial 380, 409
Ladder 364
Ladders, step 125
Ladders, extension 93, 317
Lamp and lantern, chamber (combined)
348
Lamp, carbon -oil 316
Lamp-cone 236
Lamp for vessels, head 396
Lamp for locomotives, coal-oil 237
Lamp, apor 188
Lamp, vulcanizing 124
Lamp without a chimney, coal-oil 237
Lamps 59, 93, 124, 156, 205 (2) 220, 268, 283, 284 (2) 316, 333, 409
Lamps, attachment for converting burning-fluid lamps into coal-oil 237
Lamps, coal-oil or kerosene 13, 59, 61, 237, 300, 301, 316
Lamps, railway 29, 365
Lamp-lighting device 76
Lamp-lighting device 76
Lamp-lighting device 76
Lamp-stands, &c., mode of ornamenting
408
Lamp. 18

Lamp-stands, &c., mode of ornamenting
488
488
Lamp-wick 317
Lamp-wick 318
Lamp-wick 318
Lamp-wick 318
Lamp-wick 318
Lamp-wick 319
Lantern and reflector, attachment of 348
Lantern for railroad cars, &c., coal-oil
109
Lantern, fishing 140
Lantern, railroad switch 108
Lantern, railroad switch 108
Lantern, submarine 236
Lanterns 109, 167, 220, 284, 317
Lanterns for burning coal oil 77, 285
Lard, machine for surring 93
Latch, cupboard 409
Latches, door 76, 124
Lathes for turning irregular forms 236, 332
Lead, white 346
Leather, artificial 396
Leather, machine for rolling green or wet
237
Leather, process of inishing 349

Leather, machine for rolling green or wet 237

Leather, process of inishing 349
Leather-splitting machine 396
Legs, support for artificial 172
Lever, engine 318
Lever for looms, shipper 124
Light and heat and applying the same, producing 269
Light for protecting plants, hand 379
Lining, manufacture of carpet 172
Lininent 220
Link adjustable 28

Lining, manufacture of carpet 172
Liniment 220
Link, adjustable 28
Link for railway horse-powers 396
Liquds, apparatus for evaporating saccharine 316, 332
Liquids to serve as a vehicle for paints, preparing hydro-carbon 381
Lock, alarm 364
Lock and key 348
Lock and latch 332
Lock, canal 29
Lock for fire-arms 300
Lock for fire-arms 300
Lock for mail bags 12
Locks 28, 29, 59, 77, 108, 156, 252, 332
Locks, combination or permutation 29, 409
Locks in tin-plate, forming 140

Looks, combination or permutation 29, 409

Locks in tin-plate, forming 140

Loom, fancy 172.

Loom, fower 349

Looms for weaving corsets 100 (2)

Lubricator for steam engines 29

Lubricator for steam engines 29

Lumber, devices for canting or turning logs during the process of sawing them into 61, 395

Lumber, machines for edging, splitting and re-sawing 60, 108

Magnet, telegraph 396
Mait, &c., for making beer, ale and porter, extract of 124
Mark-holders for bales, &c., 318, 397
Mast for navigable vessels 283
Match, friction 268
Measure, board 172
Measuring and weighing, apparatuses for 349
Meat-broiler 93
Medicine for piles 348
Medicine, hog-cholera 284
Medicine, hog-cholera 284
Metal for transportation, packing sheet
60
Metal, machines for bending corrugated
sheet 60, 93
Metals, machine for corrugating 125
Metals, machine for rolling 126
Mills, grinding 11, 140, 173 (2) 397
Mill, coffee and spice 61
Mills, grinding 11, 140, 173 (2) 397
Mill-stone 316
Millstones, elevating 172
Millstones, stopping 396
Mold for casting shells 76

Millstones, machine for leveling the faces of 348
Mill-stones, stopping 396
Mold for casting horse-shoes 252
Mold for casting shells 76
Mold for casting shells 76
Mold for casting 204
Mold for making paper, cylinder 380
Mold for wiking paper, cylinder 380
Mold for wiking paper, cylinder 380
Mold, sugar 108
Mold-box for casting propeller wheels 59
Moldings, manufacture of imitation gitt
364
Moldings, manufacture of imitation gitt
364
Moldings or strips for the frames of
pictures, mirrors, &c., manufacture
of wooden 316
Mordant for fixing aniline colors 78
Motion, cank 365
Motion, cank 365
Motion, devices for converting 188, 236,
316
Motion for drawing heads, stop 189

316
Motion for drawing heads, stop 189
Motion, treadle 268
Movements for lamps, mechanical 141,

409 Mowing machine, hand 332 Mowing machines 141, 221 Muzzle for smooth-bored guns, rifled 12

N

Nail machine 379
Nail machines, grinding the upper cutter of 333
Nail or tack, carpet 364
Nails for use in machines for nailing shoes, machine tor arranging 220
Nails, machine for making shoe 60
Nails, making horse-shoe and other 140

Needle 237
Needles, sewing-machine 125, 316
Needles, sewing-machine 125, 316
Newshapers, machine for printing the
addresses on 92
Night-soil for manure, preparing 156
Nipple-guard for fire-arms, safety 77
Nose-bag, automatic 220
Nut, serew 92
Nuts, bolts, &c., manufacturing 269
Nuts, machine for making 332

n

Observatory, military 13 Oil, &c., instrument for ascertaining the amount of water, &c., in barrels of 333

Observatory, military 13
Oil, &c., instrument for ascertaining the amount of water, &c., in barrels of 333
Oil as a substitute for linseed oil, process of preparing 365
Oil for burning and lubricating, compound 408
Oil for heating purposes, apparatus for burning coal 92
Oil, paint 365
Oil, apparatus for distilling coal 188
Ointment, nitrated mercurial 156
Ordnance 268
Ordnance, onstruction of 380
Ordnance, breech-loading 365
Ordnance, onstruction of 380
Ordnance, onstruction of 380
Ordnance, onstruction of 390
Ordnance, on war vessels, operating 269
Ordnance, mounting 268
Ordnance, mounting 269
Ordnance, mounting 27
Ordnance, filing 220
Ordnance, friging 290
Ordnance, friging 290
Ordnance, friging 290
Ordnance, friging 290
Ordnance, preving 59
Ores, machine for separating and dressing 386
Ores of gold, silver, copper, &c., smelting 13
Ore. washers, 238, 348

ing 396
Ores of gold, silver, copper, &c., smelting 13
Ore.washers, 238, 348
Ornaments in paper and leather, &c., apparatus for cutting 332
Oysters in the shell, apparatus for steaming 12

Packing for piston and other rods 141
Packing to projectiles, securing soft metal 61
Fan for sorghum juice, &c., evaporating 469
Pan for sugar juices, evaporating 283
Par, gold-miners' washing 172
Pans with cellular or tubular boilers, evaporating 172 (2)
Paper, &c., from the husks of Indian corn, manufacture of 300
Paper for collars, &c., manufacture of 251
Paper from sorghum, manufacture of 252

raper for conars, &c., manufacture of 251
Paper from sorghum, manufacture of 252
Paper from wood, manufacture of 251
Paper, machine for folding 409
Paper, mach ne for planishing 173
Paper to cutting machines, device for feeding 173
Paper, safety 408
Paper-making machinery 320
Paper-stock from wood, manufacture of 236

Paper-making machinery 380
Paper-stock from wood, manufacture of
236
Pattern for cutting shoes and gaiters 109
Pattern for cutting boots 109
Pattern for molding pipes 237
Pawl for hay presses 141
Petroleum, &c., deodorizing 252
Petroleum and other liquid fuel for the generation of steam and other purposes, process of burning 395
Photograph-holder 410
Photographs, coloring 283
Piano-forte, combination of reed instruments with the 28
Pianofortes 157, 395
Pick, mill 365
Pick, mining 348
Pick or at 236
Piles, machine for driving 364
Piles, machine for driving 364
Piles, machine for driving 365
Pin-cushion 409
Pipe, conduit 189
Pipe from bitumen, pitch, &c., manufacture of water 379
Pipe, molding and casting 155
Pipes with tio, lining lead 205
Pipes, ex, means for making cement 380
Pipes and manifolds, arrangement of conducting 333
Pipes, apparatus for preventing obstructions in water 269

pipes and manifolds, arrangement of conducting 333

Pipes, apparatus for preventing obstructions in water 269

Pipes, combination cement and metallic 268

Piston, engine 348

Pitama 33

Plane, bench 156

Plane for trimming soles of boots, &c., edge 251

Planter, foot corn 220

Planter, foot corn 220

Planters, corn 124, 172, 189, 300, 316, 349, 335

Planters, corn 124, 172, 189, 300, 316, 349, 365
Planters, method of actuating the feeding apparatus of seed 268
Plants, machinery for separating the fibers of tropical 317
Plaster, adhesive 125
Plate, defensive armor 189
Plate for galvanic batteries, carbon 283
Plate, stencil 141
Plates, corrugating metal 397
Plates for ships and other batteries, armor 76
Plates means of affixing defensive armor

mor 70 Plates, means of affixing defensive armor 188 or metal sheets, turning edges of

Plow, stall and snow 77
Plow, shall and snow 77
Plow, shovel 252
Plow, steam 301
Plows 140, 172, 221, 348, 364, 408
Plows 240, 172, 221, 348, 364, 408
Plows, gang 172, 224
Plow-clevis 332
Plomb and level (combined) 300
Pocket, safety 409
Pocket-book 395
Poncho 220
Porcelain, glass, &c., by the use of fluor-silicates, manufacture of 316
Port-hole for directing ordnance, adjustable 332
Post-mark and cancelling stamp 12
Potash and soda, preparing hydrated silicates of 333
Potato-diggers 156, 236
Pot, tea and coffee 363
Pottery, machinery for molding 333
Potato-diggers 156, 236
Pot, tea and coffee 363
Pottery, machinery for molding 333
Pouch, mail 318
Power, combination of steam and water 61
Power for spinners, driving 172
Power, montive 124
Press, cheese 60
Press, chopying 76
Press for bending ships' armor plates 237
Press for forming dies 396
Press, fruit 380
Press, flydraulic 365
Press, lithographic printing 157

Press, wine and cider 389
Presses 93, 317, 365
Presses, drop 93, 156
Presses, hay and cotton 61, 205, 379
Presses, printers' 56, 396
Presses, bobacco 108, 365
Printing apparatus 408
Printing machine 285
Projectile for fire-arms 220
Projectiles, explosive 124, 141, 348
Projectiles for ordnance 61, 109, 141
Projectiles for rifled ordnance 29, 220, 237, 317
Projectiles, molding chilled-iron 59

Projectiles for ordnance 61, 109, 141
Projectiles for rifled ordnance 29, 220, 237, 317
Projectiles, molding chilled-iron 59
Propeller 316
Propeller for shallow water, wave 12
Propeller, hydraulic 395
Propeller, iointed scull 204
Propeller, rocking sled 12
Propeller, serw 364
Propeller, screw 364
Propeller, screw 364
Propellers, marine 331, 332
Protector, stocking-heel 269
Provision-cooler 283
Pump, air 381
Pump, breast 156
Pump, iointed-action steam 317
Pump, centrifugal 364
Pump, direct-action steam 317
Pump, rotary 252
Pump, stock 172
Pumps 76, 140, 189, 269, 284, 300 (2), 316 (2), 318, 332, 333, 380, 395
Pumps, apparatus for working ships' 347
Pumps, mode of operating railroad 11
Puzzle 172
Pyrites, apparatus for extracting gold from 59

Q.

Quartz, &c., machine for pulverizing 60

Rack, shade 285
Rack, sheep 220
Rack, sheep 280
Radk.tor 409
Radkators, steam 61, 283, 300
Raik, machine for removing snow and ice from 220
Raiks, machine for punching railroad 349
Raiks, railroad 363
Rake, hay 92
Rakes for harvesters 300, 349, 397
Rakes, horse 155, 316, 396
Ram for the destruction of the enemy's ships' 173
Ram, marine battery 188
Rammer connection for revolving firearms 60
Raps, machine for cutting 157, 269
Ration for army use, &c. 397
Reel for drying flour 498
Reflector for lamps 284
Reflector, headlight 379
Refrigerator 60, 188
Regulators and purifiers, gas 108, 364
Regulator, draught 173
Register for gas and water meters 189
Register for forse cars 347
Register, of martingales 221
Risers, mode of ventulating and illuminating 396
Rod for injuor casks, gaging 380
Rolling in fluor casks, gaging 380
Rolling for rolling fron, operating 300, 409
Rolling for rolling fron, operating 300, 409
Rolling or polishing machine 300
Roof, cement 252
Roof, metallic and wooden 28
Roofing 379

Roof 93
Roof, cement 252
Roof, cement 252
Roof, metallic and wooden 28
Roofing 319
Roofing, machine for seaming metal 78
Roofing, state 268
Roving, machine for making 108
Rudders 254, 316
Ruffle 268
Ruffle, machine-shirred 331
Ruttles, machine for making 109

Saddle 332
Saddles, pack 172, 189
Saddlet-tree, harness 268
Sad-iron 395
Safe 364
Safe 107 travelers, money 173
Sail-hank 333
Sails of vessels 124
Sash-fasteners 155, 316, 333, 364, 365, 409
Sash-supporters, window 300, 331
Sashes, device for tightening window 61
Sashes, machine for dove-tailing and relishing 236
Sashes, shutters and slats, mode of securing and operating window 380;
Saw, drag 301
Saw, hand 317
Saws 60, 189
Saws, device for gumming 204
Sawing machine, self-feeding 12
Saw-mill, scroll 348
Saw-mill, scroll 348
Saw-mills 60, 348
Saw-set 59
Scabard and guard, bayonet 28
Scale, automatic grain 284
Scale, platform 29
Scarf, reversible neck 29
Scaren, coal 364
Screen, coal 364
Screen, coal 364
Screen for heaters 300
Screen, grain 236

Screen, coal 364 Screen for heaters 300 Screen, grain 236 Screw 283 Screws, machine for

Screen for heaters 300
Screen, grain 236
Screev 283
Screw 383
Screws, machine for cutting square threads of wood 188
Screws, mode of driving propeller 300
Scroll for water-wheels 224
Sccding machines 12, 59, 60, 61 (2) 93, 157, 172, 173, 349
Seed, machine for threshing and hulling clover 12, 349
Seed, machine for threshing and hulling clover 12, 349
Self-rakerf or harvesters 268
Separator, oat 365
Separators, grain 11, 61, 93, 300, 333, 409
Separators, straw and grain 11, 109
Setting for jewelry 284
Sewerage, &c., apparatus for 363
Sewing machines 13, 108, 124, 140 (2), 220, (2), 237, 252, 300, 315, 333 (2) 354, 379, 395, 408 (2)
Sewing machines, mechanism for starting 220
Shade for lamps, incombustible paper 349
Shaking mach ne for separating ores 205
Shears 156
Shears 167
Shears 168
Shears 169
Shears 169
Shears 169
Shears 161
Shears 161
Shears 161
Shears 165
Shears 166
Shears 161
Shears 166
Shears 167
Shears 168
Shears

sive 173
Shells, percussion apparatus for explosive 189

Shield for infantry or artillery, portable 409
Shingle machine 307
Shingles, machine for bunching and pressing 251
Ship-building 316
Ship-sof-war and other batteries for defense against projectiles, construction of 140
Shir-bosoms, apparatus for folding the plaits in 236
Shoe for carriages, metal-plated 364
Shoe for carriages, metal-plated 364
Shoe for replacing cars, rolling 380
Shoe, waterproof 77
Shoes, &c., machine for punching and eyeletting 12
Shoe-pegging machine 345
Shutter for the port-holes of iron-clad vessels 268
Shutters and show-windows, securing 204
Shuttle-driver for power looms 108
Sight for fire-arms, back 108
Silicates and the manufacture of hydrofino-silicic acid, treatment of metallic 316
Sink 93
Skates 12, 60, 92, 93, 221, 284, 364, 408
Skirts, apparatus for clasping 237
Skirts, skeleon or hoop 29, 60, 61, 408
Skirts, skeleon or hoop 29, 60, 61, 408
Skirts, supporter 333
Sleighs, connecting shafts or thills to 141
Sling, knapsack 220
Smu machine and separator (combined)
269
Sow-scraper 173
Soap, manufacture of silicated 317 Shield for infantry or artillery, portable 409 Skitt-supported ood
Skieighs, connecting shafts or thills to 141
Sling, knapsack 220
Smut machine and separator (combined)
209
Snow-scraper 173
Soap, manufacture of 93
Soap, manufacture of 93
Soap, manufacture of silicated 317
Soaps, colors, &c., apparatus for stirring and mixing 284
Soda-water, apparatus for drawing 364
Sole, boot and shoe 59
Sound for the uterus 108
Sower, broadcast seed and manure 77
Spark-arrester 268
Spectacles 301
Spike, marline 365
Spikes, machine for making railroad, boat and other 408
Spikes, machine for making railroad, boat and other 408
Spilnt, surgical 251
Spints for dipping, machine for framing luctifer match 124
Spoke machine 189
Spoons, tinned iron 61
Spouts, bending merallic 13
Spring, door and shutter 251
Spints, fullpite 333
Spring for carriages 141
Spring, rubber 300
Springs, tailroad car 59, 204, 268, 300, 365, 379, 386
Spur 205
Sputting machine 252
Stand, ironing 188
Stand, &c., rolling-mill 59
Stamp, post-office 284
Stamps, &c., apparatus for wetting 348
Stamps, &c., apparatus for wetting 348
Stamps, &c., apparatus for wetting 348
Stamps, machine for canceling postage and other 300
Stamps, self-inking 205, 252
Stave-dressing machine 167
Stave-jointer, saw 204
Steamps, machine for canceling postage and other 300
Steam for heating purposes, method of using exhaust 251
Steel, manufacture of 283, 348
Steering apparatus, steam 108
Stocking-supporter 365
Stone, cement, wood, &c., indurating and preserving 316
Stone, machinery for dressing or working 379
Stopper, can or bottle 28
Stopper for fruit jars 365
Stove for boiling sap 93 Trap, sink 349
Traps, sink 349
Traps, animal 251, 347, 364
Trays, machine for shaping wooden 395
Trimming, machine for making 316
Trowel, plastering 252
Truck, railroad car 395
Trunk 348
Trunnton for disabling ordnance, chambered 205
Truss, hernial 252
Trusses 76, 300
Tub, dumping 188 ing 379
Stopper, can or bottle 28
Stopper for fruit pars 365
Stove and range, cooking (combined) 333
Stove for boiling sap 93
Stove, foot 315
Stoves 77, 204, 236, 284, 316 (2), 318, 365, 380, 408 380, 408 Stoves, camp 77, 220 Stoves, cooking 77, 173, 333, 395, 409 Strap, magnetic razor 268 Strap, razor 189

Straps, manufacture of elastic rubber 380 Straw-cutters 156, 204, 236, 252, 269, 317 (2) Street-crossing, iron 364 Street-sweeping machine 140 Strike for door-latches 285 Strips, modes of operating weather 172, 408 Surfaces, machine for finishing metallic 364
Sugar, &c., in barrels, boxes, &c., machine for compacting 396
Sugar, apparatuses for the manufacture of cube 348, 449
Sugar, purifying and cleansing 109
Sugar, refining 189
Swage for zine washboards 332
Swimming, apparatus for teaching the art of 348
Switch for railroads, safety 333
Syringe, elastic bulb enema 108 Table or stool, camp 348
Tacks, machine for leathering 204
Tactics, apparatus for teaching military
12 Tacks, machine for leathering 204
Tactics, apparatus for teaching military
12
Tags of shoe-strings, mode of pointing
316
Taper-holder for lighting lamps 380
Tape, expanding screw 349
Teeth, artificial 252 (22)
Teeth, bases for artificial 268, 380
Teeth, setting artificial 188, 252
Telegraph, delineating 60
Telegraph, delevice 237
Telegraph, elec vice 237
Telegraphic apparatus 124
Temple for looms, roller 236
Tents, ventilating top-piece for 364
Thimble, clew 284
Thimble, stove-pipe 395
Thrasher and huller, clover 108
Thrasher and separator (combined) 332
Thrasher and separator formined) 332
Thrasher and separator formined) 352
Tircket, passenger 29
Tin from tin-plate clippings, process of utilizing the 395
Tirc, bending and setting 205
Tirc on wheels, fastening 349
Tires, apparatus for upsetting 332
Tires for locomotive wheels, machine for rolling 13
Tobacco, machine for drying 108
Tobacco, machine for pressing and cutting 126
Tobacco, manufacture of chewing 268
Tobacco, manufacture of chewing 268
Tobacco, munificature of chewing 268
Tobacco, munificature of chewing 268 Tobacco, marine for pressing and ex-ting 108

Tobacco, putting-up smoking 252

Tobacco, putting-up smoking 252

Tompton for fire-arms 141

Tongs, pipe 77

Tongs, pipe 77

To utting and beveling barrel-heads 349 Tools for inserting putty beneath vault-Tools for inserting putty beneath vaultglasses 77
Tool for screws, heading 156
Tool-handle 60
Tools, granding edge 140
Tooth-picks, manufacture of 396
Tourniquet's 12, 333
Tow-lines of canal-boats, attachment of the 300
Track and switch for street railways 141
Track clearer for harvesters 237
Track-clearers, railroad 156, 300
Trains up steep gradients or inclining planes, device attached to railroad cars for facilitating the passage of 408
Tram and level for mile 340
Tram and level for mile 340 408 Tram and level for mills 349 Trap, fly 315 Trap, moth 140

Umbrellas 29, 317 w wheels, carriage 93, 379
Wheels, construction and location of paddle 77
Wheels, water 60, 61, 109, 156, 172, 189, 300, 332, 380, 396
Wicks, lamp 20, 59
Wicks in lump tubes, device for adjusting 159
Windlass, ship's 13
Windlass, vertical 382
Wine, sorghum 78
Wire, galvanizing 155
Wire, skirt 332
Wire, skirt 332
Wire, skirt 332
Wood, &c., apparatus for distilling pine 364
Wood, carbonizing 252
Wood-packing device 183
Wood, silk, &c., with aniline colors, dyaing 316
Wrench, soraper and screw-driver (combined) 220
Wrench, soraper and screw-driver (combined) 250
Wringing machine 59
Wrists or pins, &c., turning crosshead 252

Tube, condensing 109
Tubes for lamps, wick 252, 364
Tubes in steam condensers, method of
affixing 251
Tubes, pipes, &c., apparatus for the
manufacture of 61
Twist and cord, machinery for making
covered 284 Valve, hydrant 173
Valve, hydrant 173
Valve for hose nozzles 156
Valve for pumps, lateral waste 156
Valve steam 109
Valves for steam engines 125, 141, 188
252, 365, 395 (2)
Varies for water-closets 28, 379
Varnish for pictures 380
Vat, cheese 108
Vegetable-cutter 252
Vegetable-cutter 252
Vegetables, apparatus for desiccating 395
Vent-bushing for ordnance to facilitate unspiking, divided 29
Ventilator, railroad car 380
Ventilators, window 317, 370
Vessels, iron-clad 396
Vessels, apparatus for launching 333
Vessels, apparatus for the water prop ul sion of 349
Vessels, construction and defense of war
77, 237 sion of 349
Vessels, construction and defense of war
71, 237
Vessels, construction and defense of war
71, 237
Vessels, propering iron 237
Vessels, mode of raising sunken 77, 92
Vessels, pressing and polishing metal 189
Vise, parallel 332
Vises 315, 365
Vulcanizing machine 108 Waiter or tray, table 349
Wagon-body 204
Wagon for transporting medicines 236
Wall forwalt blocks, flue 317
Wardrobe 348
Washboards, clamping and nalling 332
Washer and amalgamator, gold 59
Washing machines 25, 140, 220, 252, 316
(2), 331, 409
Washing and wringing machines (combined) 93, 141
Washing, wringing and mangling machine (combined) 93
Wash-stand and water-closet (combined)
220
Watch, stop 348 Wash-stand and water-closet (combined) 220
Watch, stop 348
Watches 157, 332
Water, apparatus for raising 408
Water, apparatus for raising 408
Water, alloset, ship's 140
Wax, purifying and bleaching 349
Weighing apparatus 124
Wheel, anti-friction car 59
Wheel, centrifugal water 380
Wheel, ceg 140
Wheel for driving machinery, friction 284
Wheel for harvesters 236
Wheel, baddle 124
Wheel, wind 409
Wheels, &c., mode of hanging balance 251
Wheels, carriage 93, 379
Wheels, carriage 93, 379
Wheels, construction and location of paddle 17

Rake for harvesters 349
Register, hot-air 157
Rubber, &c., apparatus for vulcanizing 253
Sash-fastener 238
Sash-fastener 238
Saws and saw-plates, setting teeth in 301
Seat and couch, railroad-car (combined) 221
Fewing machine 157
Shingle machine 301,
Sieve for gas-purifiers, wooden 109
Skate 225
Soap, silicated 205
Soda-water, ice, sirups, &c., apparatus for 318
Spring, door 141
Springs, railroad car 61 (2), 173 (2), 221, 318
Stand for machines 61
Staves, machine for chiming and jointing 366
Stove, coal 157 Writing apparatus, portable 60
Writings, maps, &c., process of copying
253 Zinc. manufacture of 188, 348 Re-issues.

Air, carbureting 173
Bath, electric 78
Bed, spring 409
Beehive 381
Bolt for flour mills, friction 253
Boots and shoes, machine for lasting 62
Boots and shoes, machine for lasting 62
Boots and shoes, machine for sewing soles to 13
Box, cartridge 285
Buckle, girth 381
Button-backs and connecting the eyes therete, machine for forming 269
Cap for scaling cans and bottles, elastic 221
Cars for railroads, metallic 13
Cartridge for breech-loading fire-arms, metallic 290,
Cartridge for small-arms 157
Cartridges, packing 301
Cemes for uniting leather and other composition for blasting powder 221
Dimmond protector 366
Detector for Steam boilers, low-water 365
Door guard, clastic 141
Drawing machines, applying pressure to top rollers of 125
Drills, grain 125 (3)
Fabric for moding, belting, &c. 61
Fre-arm, breech-loading 205
Frunce of steam boilers, fow-water 365
Fluid, burning 173
Fork, hay-elevating 189
Frame, wood-saw 285
Furnaces, cupola and other 141
Gases, apparatus for mixing 157
Gin, cotton 173
Grates for stoves 13
Grain-driers 82 (4), 221
Guard-fingers for harvesters 301 (2)
Harvesters 318, 381 (2), 409 (4)
Heating apparatus 233
Hides for tanning, preparing 269
Hinge, butt 125
Hings for stove-doors 318
Hoe-blanks, manufacture of 381 (2)
Horseshoes, machines for making 189, 1181
Jars, cans, &c., stoppering 366
Joins of railway rails, method of making 18p, 253
Julies, 263
Julies, 263
Linge 186
Linge 186
Linge 186
Linge 366
Li Re-issues. Staves, machine for chiming and jointing 366
Stove, coal 157
Stoves 125, 189 (3), 366 (2)
Trap for steam apparatuses 238
Valve for water-ciosets 62
Vat, cheese 221
Vessels, mode of raising sunken 125
Washing and wringing machines (combined) 62 (2)
Wheel, water 141
Whistle, alarm 397
Winnower, grain and seed 13
Wood, machine for shaping irregular sur faces in 141
Zinc, manufacture of metallic 285 Designs. Board, "solitaire" 221 Breast-pin and ear-drop (combined) £33 Brooches 381, 397 Cane head, umbrella handle, or sword hilt 29 Cone head, umbrella handle, or sword hilt
29
Carpet patterns 13 (3), 109 (12), 189 (9),
318 (3)
Chimney, lamp 157
Cover for a kettle or stove 318
Envelope 318
Floor-cloth, &c., patterns of 13, 109, 221,
Flyer, spinning 318
Frame, picture 238
Goblet 301
Hat, military 13
Lamp, air-jacket of a 78
Links of chains 333, 366
Fen, medalhon 301
Flisto-handle 173
Flitcher, ice 318
Flate for burial cases, &c., metallic 349
Flate, stove 13, 221, 259
Fumps 205 (2)
Skates, metallic 189, 221, 349
Stand for soda-water, &c., draught 318
Stand of an eyelet machine 238
Stautette 157
Stove, cook 253
Stoves 13, 109, 238 (2)

Stove, cook 253 Stoves 13, 109, 238 (2)

, stoypering 366
lap 253
Juices, apparatus for evaporating saccharine 318 (2)
Kees, construction of powder 62
Kiln, lime 366
Lamp 397
Lamp, coal-oil 61
Leg, artificial 29
Lantern for coal-oil 61
Lock and latch 109
Locks 318 (2)
Loom 93
Milk concent Baking apparatus 125
Compound, lubricating 78
Cut-off, adjustable 221
Engine, carding 173
Fastening, bedstead 397
Flour from bran, machinery for separating 173
Gear, machine for cutting teeth of bevel 221
Harvesting machine 253
Lamp, camphene 141
Loom for weaving Brussels carpets, &c., Lock and latch 109
Locks 318 (2)
Loom 93
Mik concentrating and preserving 141
Molding, pipe 318
Motion, mode of converting reciprocating
into rotary 157
Mowing machine 324
Nati or spike, yellow-metal 173
Oil, preparing a paint 366
Fair for evaporating and purifying saccharine juice 173
Pipes from bituminous cement, water and
air-proof 141
Pipes, process of manufacturing waterproof cement 141 (2)
Projectiles for rifled ordnance, banding
157
Propeller, screw 318
Powder, blasting 22
Pulp from wood, &c., for the manufacture of paper 269
Pulp, machinery for grinding paper 62
Pulp, process of grinding paper 62
Pulp, process of streating wood or other
vegetable substances in the manufacture of paper 269
Pump, cream 221 Loom for weaving Brusseis carpets, &c., 2015
Nail or spike, yellow-metal 285
Punns, packing rota ry 366
Register, hot-air 110
Saddle and winch, adjustable (combined) 253
Scoop and elevator 13
Sewing machine 318
Shot, method of manufacturing drop 205
Spoons, methodof making wire-strengthened 333
Steering apparatus 409
Tool for attaching tubes to boilers 285
Valves in direct-action pumping engines, method of ensuring the action of the 269
Valves of steam engines, cut-off and working 221 (6)
Winch, direct and counter-motion 397