

VOLUME X.1

# NEW-YORK NOVEMBER 11, 1854.

# **(NUMBER 9.**

# SCIENTIFIC AMERICAN, PUBLISHED WEEKLY

тне

At 128 Fulton Street, N.Y. (Sun Buildings,) BY MUNN & COMPANY.

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

Agents

Agents. Taylor, Baltimore, Md. Dexter & Br derien & Co., Boston. B. Dawson, Ness & Bro., Philadelphia. M. Boulleme B. Mitchel, Savannah, Ga. E. W. Wiley G. Courtenay, Charleston. E. G. Fuller, M. Dewey, Rochester, N.Y.S. W. Pease, rery Bellford & Co., London M. M. Gardis ter & Bro., New Yo

Cincinnati, O. ssal & Co., Paris Responsible Agents may also be found in all the principal cities and towns in the United States.

TERMS-\$2 a-year :-\$1 in advance and the remainde

# Improvement in Propellers.

The annexed engravings are views of an improvement in Duck's-Foot Propellers, for which a patent was granted to Geo. Seibert, formerly of Hagerstown, Md., on the 7th Nov. 1848, and to which we referred two weeks ago, in commenting upon a new propeller, constructed on this principle, as described by the New York Tribune.

Fig. 1 is a perspective view showing two propellers, one for each side; fig. 2 is a vertical section of a duck's-foot propeller and its actuating links, and fig. 3 is a plan view of the same. The same letters refer to like parts.

This propeller operates under water, and has a straight backward-and-forward motion. The blades are formed like the covers of a book, which are closed when drawn forward, but are spread out when pushed backward, so as to press against the water and force it back, thus giving motion to the vessel to which it is applied. A A are the two wings of the propeller, which is made exactly like a hinge with a pivot axis, m, which passes through a bar, D, connected by a joint, k, to the short arm. M, which is also united by a joint to the curved arm, L, firmly secured to a sector, c, with an axis, a', which passes through a bearing box, b, and supports another sector, c''. The upper sector is attached to a jointed arm, d, which is connected to a rod, e, secured to the end of crank, f. By supposing power applied to the winch, g, or the shaft of crank, f, the sectors, c c'', will rock, and the teeth of the upper one move the under one in such a manner as to give the arm, L, a rocking -back-and-forth-motion, and thus operate the duck's-foot propeller backwards and forwards; PP are two guide bars, the upper parts of which move in a groove in the frame, and the lower parts have grooves, and embrace a rail, R, on which they slide.

The leaves of the propeller are opened and closed as follows:-BB' are two pair of compass arms secured by joints at their feet to the leaves, A A, and at their apex by a pivot, n, passing down through a slot, O, fig. 3, in the bar, D. This pivot also unites the arms, B, to a side lever, C, which is secured by a pin to a peculiar curved tappet lever. This tappet has a stirrup, t', secured by an axis pin to a block, T, on which it vibrates. This tappet lever, when the guide bars, P, P, are pushed backwards, strike against the check block, Z, near the end of the stroke, and this vibrates it on its axis pin at T, drawing forward the lever, C, and the compass arms, B B', the pivot of which slides in the vertical slot, O, figure 3, and the pivot, t, of lever C, in the horizontal slot of the bar, D, thereby closing the leaves, A A, of the duck's foot propeller, and allowing it to be drawn backward with but little resistance in the water. When the propeller has made its back stroke, the tappet lever, S, strikes the check block, Z', which throws its top towards the stern, thereby pushing back the lower end, and throwing the leaves, A A, open, so as to present a large propelling or resisting surface to the water. One of these propel-



lers may be used in the central part of a boat manner the leaves, A A, are opened and at the stern, or two of them may be em- closed, will, we conceive, be readily underployed-one on each side, as shown in fig. 1. stood by this description, as they are not Fairview, Washington Co., Md., of which The operations of this propeller, and the very complex in motion or device.



More information may be obtained respecting it by letter addressed to Mr. Seibert, at place he is now a resident.

The nature of the invention consists in providing the rod of the hammer with a piston fitting and working in a cylinder which is so constructed and furnished with valves that the air may be excluded from under the piston, and admitted in such a manner and in such a degree as to control the force of the blow of the hammer at the pleasure of the operator; also to increase the force of the blow independent of the weight of the hammer.

The machinery is erected on and secured to a strong and neat iron frame. H is the anvil; I is the hammer secured to a vertical rod or shaft, B, which is furnished at the top part with a trip block at each side, which have slides running in guide grooves in the two upright standards, D, which are firmly secured to the head and to a block of the frame, G, by bolts and screws; E is the driving shaft with a fly wheel on it, at one side, and double toes or trippers, F, at the middle, which, as the shaft, E, is revolved, rotate between the standards, D, and lift up and let go the trip blocks, C, and consequently the hammer, giving to the latter its up and down reciprocating motion. On the hammer rod B, is a piston fitting air tight into the cylinder, A, which is open at the top, but closed at the bottom, the rod, B, working through an air tight stuffing box in the bottom, as will be understood by referring to figure 2. On the side of this cylinder is a valve box having two valves, the one, c, figure 2, to allow air to pass from the outside to the inside of cylinder A, and the other, e, figure 3, to allow air to pass from the inside out, from under the piston. By the working of these two valves, the useful effects stated as comprising the nature of the invention, are obtained. The valve which allows the air to pass out of the cylinder is a nicely suspended spring plate valve, e, hung on a stud, figure

The annexed engravings represent an improvement in Trip Hammers, for which a last May, and since that period patents have "een taken out by us in Europe.

Figure 1 is a perspective view; figure 2 a vertical section through the atmospheric cyl-United States patent was granted to Bernard | inder, showing one of the regulating valves, Hughes, of Rochester, N. Y., on the 16th of and figure 3 is a broken vertical section through the cylinder showing a second regulating valve. Similar letters refer to like parts.

# © 1854 SCIENTIFIC AMERICAN, INC.

66

3, covering the passage, f; it is cushioned on its inner surface. When the piston is working with the small slide value, c, closed, the full pressure of the atmosphere is obtained on the piston. The tendency of the value, e, is to open outward when the piston descends, consequently as the piston is raised a vacuum is created under it in the cylinder, and the air then presses on the outside of the plate value, e, pressing it against the face of the box, and closing the port or passage, f. Working in this manner with a vacuum of fifteen lbs. on the square inch, and with a piston of only 12 inches diameter, the pressure will be 565 lbs. added to the weight of the hammer, with an increased velocity of motion. To regulate the blow and graduate its force, there are bearings secured on the sides of the valve box, and a small transverse roller shaft, a, figure 2, is secured in them. On this roller is a small stud for lifting the projection of the slide valve and raising it to admit air through the passage, g; this small slide valve is kept in its seat by a spring secured to its bottom, and it can only be raised upwards; d is a small flap valve opening inwards in the passage, g. Supposing valve, c, figure 2, to be open, and the valve, e, figure 3, to be completely closed, no air could pass out of the cylinder, A, consequently it would be impossible to strike a blow upon the anvil because of the resistance of the air (it requiring to be compressed) under the piston. But if we suppose the inlet

slide valve, c, and the outlet valve, e, to be so regulated as to admit different quantities of air into, and out of the cylinder during each stroke, then any force of blow in the whole scale-from the maximum to the minimum-can be given, because the resistance can be regulated at will. This is done by a cam toe on the roller, a, figure 1, set in front of value, e, and which, by turning handle b, can close the said valve entire, or so much of it as to allow the exact quantity of air to escape as is desired. By operating the handle, b, the slide valve, c, is raised, and the valve, e, actuated at the same time. By this method of operating these valves, an experienced attendant can graduate one blow so as to strike its full force, and the next one to come down so gently upon the anvil as to touch an egg and not crackit.

This trip hammer is very compact, occupying but a very small space, it gives a true vertical blow, and when made to work with a vacuum at about 14 lbs. pressure on the inch, there is always a cushion of air under the piston to make it start freely at the end of each stroke. Hammers of this kind have been in operation in Rochester for more than six months, and their qualities have been fully tested. They are now being manufactured by the Rochester Iron Works at the rate of six per week, and another company to make them is now in the process of organization in New England. Four different sizes are manufactured, so as to adapt them for heavy and light work-for forging iron and steel, and for hammering brass, tin, and copper, by tin and copper smiths.

More information may be obtained by letter addressed to Rufus Keeler, President of the Company, at Rochester, N.Y.

In No. 7 of the Scientific American, I find some deviations from my solution to the problem,-"How to cut Elbows of Stove Pipes by Rule and Compass," some of which I can only impute to misprinting. I would not mind them in any other namer but the

0000

# Scientific American.

Indigestibility of Soup soup, with the exception of the vegetable matters and shreds of meat that float in it, is idea of raising fine calves on hay tea, who tities, a very healthy diet.

give their children soup for dinner, under the It is asserted by a late medical writer, that | idea that it is very nourishing.-[Exchange. against soup, may be advanced against the even milk being coagulated into a curd to digestible, then it must be the latter which is" farmers who have long since given up the ered good soup, partaken in moderate quan-



Georgetown, D.C., now of Richmond Va., for the improvement in saw mills represented by elevation, and fig. 2 is a vertical longitudinal section.

The invention relates to that class of saw mills in which the vertical reciprocating saw cut more free and easy. The main framing, turned by handspikes, which wind the lifting A, the ways, a, and carriage, B, are similar to chain round the roller. Below the level of

On the 21st day of last February a patent | those in an ordinary mill. C C' are two up was granted to Frederick T. Andrews, of rights on each side of the main frame; they have grooves on their inner sides from the top downwards to receive a vertical sliding frame, the annexed engravings, of which fig. 1 is a side | D, to which are attached two V-shaped guides, c c', at a suitable distance apart from the upper cross head of the saw to work between; at the lower ends of these guides are bolted adjustable clamps, which are intended to is used, and it consists in communicating in a steady the saw above and near to the timber compact and convenient form, and in a more to be cut. The frame, D, together with the uniform, gradual, and effective manner, the guides and clamps, is raised or lowered to usual advance movement to the saw during its | suit the thickness of the log to be cut, so that downward action, and its receding motion the clamps which steady the saw will always during its upward strokes, also freeing the be as near the log as convenient. This frame saw from gum and sawdust, so as to make it is elevated and lowered by a windlass, E,

wheel, J, from which-when used as a portable mill, as represented—projects a crank pin [The same objection that is here urged for the pitman of a steam engine. But when this saw mill is used in connection with other entirely indigestible in the stomaches of chil- use of water as a drink, for assuredly, if all machinery, the power may be applied to the dren. The stomach digests only solid food, in soup, as is stated above, but its water, is machinery by band and pulley. The feed motion is communicated to the carriage by a undergo this process, and yet there are many indigestible. Able physicians have consid- pinion on a cross shaft gearing into a rack on the under side of the carriage, in the usual way. A ratchet wheel is placed on the outside of the feed shaft, to feed up the log (it being secured in the ordinary way, with head and tail blocks, m m,) on the carriage during the upward motion of the saw, by a finger attached to and operated by a lever, L, on the end of rock shaft G; this finger is suspended by a cord to one end of a balance beam over head, the other end being attached to a rod, S, which reaches down and rests on the main frame, and bears up the finger out of gear with the ratchet wheel, when tripped by the projection O, on the side of the carriage .--There is a spur wheel, p, gearing into a pinion, q, which, is loose on the main shaft, H which can be clutched through the agency of a lever, at the will of the attendant, to gig back the carriage preparatory to making another cut. Beneath the main frame, at either end, are axles, t t, so that the entire mill, with steam engine attached, in regular working order and ready for use, can be mounted on wheels and transported from place to place at pleasure, a portable and compact saw mill, as

> represented in the figures. The claims of the patent are, first, the method described of communicating the advance and receding motion to the saw for the purpose specified. Second, the combination and arrangement of the lever, F, and rocking link, h, with the saw, when operated by a crank, (or its equivalent) and pitman connected at any point between the fulcrum of the lever and the saw.

> More information may be obtained by letier addressed to the patentee.

## Brick Machines.

GENTLEMEN-As several of the manufacturers of this city are largely engaged in the fabrication of bricks, and therefore greatly interested in labor and time-saving machinery used in this branch of industry, I would respectfully request you, dear sirs, to induce the proprietors of one or two of the most improved patents for brick machines, to send their most explicit pamphlets, with price and descriptions, of the different sizes, to my subjoined address, as soon as possible and convenient to you, after which I shall take pains to make their advantages generally known. I have no doubt of the ultimate future success of American brick machines if they could be introduced here, as yet most of the work is done by hand, and the few machines used in the environs are very defective.

Relying on your well known liberality and love of progress, I remain, yours, MAX WAGNER.

MUNICH, Bavaria, Oct. 5th, 1854.

### California Academy of Natural Science.

We have received from some scientific friend in San Francisco, a copy of the proceedings of the above Association, held at their rooms Sept. 4th. We perceive that our brother editor, W. J. Steene, of the Pacific, presented a curious specimen of a cabbage grown on the Sacramento bottoms; Dr. Kelly presented specimens of a plant from



per end of which is pinned to the saw, and the lever beam, F, made to form a direct con-

the carriage, are attached to the main frame | may have accumulated thereon; in its downtwo V-shaped guides, f, to guide the vertical ward action the saw will be made to advance action of the lower cross head to which the gradually and regularly to its work. Were saw is attached by a rocking link, h, the up- the sliding rocking link dispensed with, and the lower end connected to the end of the nection with the saw, a less effective and the salt marshes of the Bay, named Salt

	SCIENTIFIC AMERICAN. 10th line. Drop the word "ten" 12th line. The proportion is 1 : 3·1416=ra- dius : × 16th line. Drop the word "ten" 19th line. From a 1 to a10. 33rd line. Distance between the "ordi- nates" does not—instead of "abscesses." ADOLPH MAHLER. The Atlanta (Ga.) Examiner says, that a company of enterprising gentlemen, who some time since leased a lot of land on the Chatta- hoochee river, with a view of mining for sil- ver, had met with great success. Three shafts	driving beam, F; the center of it swings on a wrist in the middle of the cross head, or it might be made with trunnions fitted into brass- es, to slide between the guides, $ff$ . The lev- er beam, F,—having its fulcrum on the rock shaft, G, and its extreme end attached to the rocking link, $h$ ,—will describe the arc of a cir- cle, consequently in rising, as the end of it approaches the horizontal plane of its fulcrum, it will gradually extend the lower end of the rocking link beyond the vertical line of its axis, and cause the upper end, which is at- tached to the saw, to recede within said ver- tical line, thus drawing the saw away from its work in a line very nearly the angle of the	gradual receding action would be giv- en to the saw, according to its stroke, with the same length of lever beam, and to make it longer would be objectionable on many accounts. The gradual and uniform action given both in receding and advancing, by the arrangement described, of the sliding rocking link with the lever beam and saw, effects the objects specified in describing the nature of the invention. The weight of the lever, F, is thrown entirely on the saw, to as- sist in its cut, and it acts as a counterbalance in its upward motion to equalize the work.— The motion is communicated to this lever by a crank pin, <i>i</i> , on the main shaft, H, through	Weed, from its being often coated with crystals of salt. Dr. Ayres seems to be an active ex- plorer among the finny tribes. He has dis- covered a number of new species in Califor- nia, and he has always something new at every meeting of the Academy. Gun Cotton for Cannon. Some very interesting experiments have recently been tried at Vienna by the artillery with "exploding cotton" instead of gunpow- der; they have succeeded so well that the cot- ton will in future be used. New 6-pounders have been cast, which weigh 6 cwt. less than those formerly used, and they answer the
	hoochee river, with a view of mining for sil- ver, had met with great success. Three shafts	tical line, thus drawing the saw away from its work in a line very nearly the angle of the	The motion is communicated to this lever by a crank pin, $i$ , on the main shaft, H, through	have been cast, which weigh 6 cwt. less than those formerly used, and they answer the
	have been sunk, and rich silver ore has been found in large quantities.	back of the tooth, which is best adapted to free it from gum, or other substance which	the pitman, I, and on the end of said shaft, outside of the main frame, A, is hung a fly	purpose—if exploding cotton is employed in- stead of gun powder—perfectly well.
1006				

# Science.-No. 3.

MEDICINAL LEECHES-John Richardson, surgeon-dentist, of Hull, read a paper "On the medicinal leech, and its mode of reproduction." The object of the paper was to show that the medicinal leech is oviparous, it having been a disputed question among naturalists whether the animal is oviparous or viviparous, or both. The author showed that by procuring the ova he had been able to hatch leeches without the aid of the mother. and he produced some fine, though small specimens. He explained the developement from the egg, and exhibited some of the cocoons which, coated with a viscid mucous secreted by the animal, had the shape of a cockle, and resembled sponge. The author said that by accustoming the animal to its own peculiar habits, he had been able to grow an immense number of leeches. Professor Henslow said that the process which Mr. Richardson had described was very much like what took place with regard to the common horse leech. Dr. Lankester said that sometimes the eggs of the leech had been found mistaken for sponges; not only had one naturalist made the mistake, but several had done so.

ELEVATION OF LAND-R. Chambers read a paper on "Glacial Phenomena in Scotland," in which he showed how a double beach extended on the coast, rising from 40 to 100 ft. high, indicating that the land had gradually risen, but that 10,000 years at least must have intervened. He further enlarged upon the numerous traces of glacial action in Scotland, which indicated a previously intensely cold climate.

Hor AIR ENGINES-A paper was read on this subject by W. J. M. Rankine, C. E., one of the patentees of the engine illustrated on page 19, this volume SCIENTIFIC AMERICAN. It embraced four sections; in the first were explained the fundamental 'laws of the mechanical action of heat, and their application to determine the efficiency of theoretically perfect engines working between given limits of temperature. It stated "that, as the efficiency increases with the distance between those limits, and it is easy to employ air with safety at temperatures far exceeding that at which the pressure of steam would cease to be safe and managable, and therefore the maximum theoretical efficiency of air-engines, consistent with safety, is much higher than that of steam-engines. For example, at the temperature of 650° Fah., at which the air-engine has been successfully worked, the pressure of steam is 2100 lbs. on the square inch, while that of air is optional, being regulated by the density at which the air is employed."

This, we conceive to be an argument in fawho, for all desirable qualities, fear no comwards the close of last autumn. Since that vor of steam and against hot-air, for the efparison with any other class." time, however, we have heard nothing of the ficiency of any propelling agent depends upon efforts of the artist, but several visionaries its pressure, not its heat. In calculating the American Progress in Manufacture. who were anxious to take the voyage are still power of an engine, the pressure on the area "We manufacture here at this day every awaiting, with impatience, the completion of of piston, and the velocity of piston, is the thing which the heart of man can desire : one the apparatus, while gentlemen who have inindex of its power. Well, upon this plain by one we have gradually encroached upon vested funds in the speculation have abanprinciple, as air at 491° exerts a pressure of the peculiar privileges of our transatlantic doned the hope of a declaration of dividend only 15 lbs. on the square inch, and as air at neighbors, till now there is nothing which is from the profits of the concern. 650° can exert a pressure of a little more than not, or cannot be manufactured here. The Mr. Porter is a fair specimen of genius 17 lbs on the square inch, we have steam at looms of Manchester or Birmingham, the 650°, 2100 lbs. pressure, and air of the same struggling with difficulties; and, for his own forges of Sheffield, the ateliers of Sevres or sake, it is to be regretted that he did not turn temperature at only a little over 20 lbs .--Brussels, all have their counterparts here,his talents into a channel of business which Here then, any man not blinded by enthusichildren in the wilderness. vet some years ago an American who wore a asm in favor of hot-air, can see that steam could promise to yield him prompt returns for coat of American cloth, or carried a knife of American Clippers in England. has greatly the advantage. The concluding the cash, intellect, and mechanical ingenuity American steel, was deemed behind the age. invested in the enterprise .- [Washington Senpart of the above extract is calculated to de-One by one has England vielded her preistry laws, a great number of A lude those who have not investigated the subrogatives in different branches of man's workject thoroughly, there being no advantage in manship. Five years ago, Americans admitted Magnetic Observatory. using compressed air of great density. that we could never equal England in the During the past year a magnetic observa-IRON SHIPS AND COMPASSES-An important construction of steamships. That theory has discussion recently took place relative to the been at length successfully refuted and will the Smithsonian Institution. It principally comparative trustworthiness of compasses on never be repeated so long as the Atlantic, Paconsists of an underground room, enclosed cific. or Baltic. and would we could add the board iron ships. During the debate, it was within two walls, (to insure an equable tem-Arctic, plow the ocean. Again, it has alargued that careful examinations, made by perature,) between which a current of air is ways been and still is doubted whether we Dr. Scoresby and other scientific men, tend to allowed to pass, in order to prevent dampshow that the variations of compasses are could ever equal England in the manufacture ness. This observatory has been supplied nearly unavoidable on board of iron vessels; of cutlery. Many a good and patriotic Amer that except where azerunth, or mast-head ican is here ready reluctantly to admit that. continued variations in direction and intensity of terrestrial magnetism. By an ingecompasses are used, there is no safety what-England yet bears the palm, still indulging soever, and that even with both of these, obthe fond hope that the day is not far distant nious application of the photographic process, when we can compete with and excel them. servations cannot be taken too often, or too much care exercised. Facts were adduced to We think that the hour is come. Rodgers & instruments are made to record, on a sheet of ships, to render them better sailers.

adelphia, her commander, Capt. Leitch, took time he left Liverpool until the day preceding the disaster off Cape Race. On that day the weather was foggy, and having only his compasses to trust to, he lost the right direction, and notwithstanding all his experience and skill as a navigator, his vessel was wrecked.

# Is Medicine a Science.

Dr. Parker, of this city, recently delivered a lecture in the Medical College, in which he touched clearly and eloquently on this question. He said :

"It is a proverb, that 'Doctors disagree,' and therefore, they cannot be guided by any fixed scientific principles.

He would ask, in what science we would In none. And why then should the disagreement of doctors be alleged as an argument against their science ? The facts with which they have to do, are much more difficult of translation than those of other sciences.

But, if a science, it is very incomplete,though its principles are as fixed as those of any other of the natural sciences; and its progress to perfection, if it has not been so great within the last twenty years, was much earlier commenced, and is carried on with a surer and steadier progress. To some notable instances of progress, allusion might be made, if delicacy did not forbid. Every medical man knows, that in the treatment of those fearful diseases, consumption and cancers, the labors of men on both sides of the Atlantic have enabled us to make great advances. The existence of either of them is not now a doom to death. Consumption has been cured; and now that it has been demonstrated that cavities already formed in the lungs can be safely injected with medicaments, we cannot but hope the time will come, when these fearful maladies shall prove as amenable to treatment as other diseases.

Another great cause of unbelief in medical science is, that it happens to the most diligent and skillful to lose their patients .---But, alas, all are under the same penalty, and death has passed on all.

The practice of medicine is based upon true science, stretching back beyond the age of Hippocrates, than whom no greater genius is boasted by his nation, enlarged and built up by the labors of men in every age, second to none in intellect, industry, and integrity; never lagging in its progress behind other sciences, but always in the foremost rank, and now embracing in its students a body of men

British Association for the Advancement of prove that particularly in certain latitudes Sheffield have long been the synonyms of all of sensitive paper moved by clock-work, their and under certain conditions of the vessel it- that is excellent in this department of manuself, compasses will unavoidably vary; and facture, but we think a strong rival to their every soil on the globe; clocks, to chime the observations of the sun each day from the hours in every nation's ears, and now we hope we are making swords to hang at every soldier's side, and knives to be carried in every citizen's pocket. Plated ware, more particularly, we have been obliged to purchase from abroad hitherto, as the process which has brought it to so much perfection seemed to be unknown here. But it is no longer so. Take

for example the work of the Ames Manufacturing Company, of Chicopee, Mass. Who does not recollect its beautiful display at the Crystal Palace? In articles of domestic use how successful it has been. Its cake-baskets, side dishes, waiters, casters, &c. Their style and perfection do really, without any exaggeration, exceed those of any imported goods we ever saw. After many years of toil and study, this company has been enabled to produce these articles, plated on German silver, in quality, material, and appearance, equal at least to that so long and favorably known as Sheffield plate. If Americans should be proud of their ocean steamers, their clipper ships, their Lowell mills, and their large machine shops, they certainly ought not to overlook the more obscure, but not less important progress which our Chicopee friends have made in this both useful and ornamental art."

[The above extract is from the correspondence of the Commercial Advertiser, and is truly gratifying to every American citizen.-Those Americans, however, who five years ago admitted we could never equal England in making steamships, &c., were not amongst our acquaintances. We can make anything in this country if we can get the material (raw stuffs,) that is now made in any country in the world. And why not? our people have genius equal to any other, and we can obtain mechanics and artists from any part of the world, to engage in any new branch of manufacture.

# The Flying Ship.

Two years or more have elapsed since Prof. Rufus Porter issued his proposals for constructing a machine for carrying passengers through the air, and commenced receiving subscriptions to aid him in his novel enterprise. The model which he exhibited in Carusi's Saloon worked very well, and convinced some of the spectators of the feasibility of his plans. With the perseverance which attaches to enthusiastic genius, he set himself to work, determined, if he could, to construct a machine of sufficient "float" and steam power to convey a pleasure party to the New York Crystal Palace, and fixed the period of departure to-

own motions. It is proposed to keep these instruments constantly in operation, for the that sometimes out of many on board an iron fame has arisen. We have made plows and purpose of comparing results with other obship, no two will agree. In the City of Phil- plowshares, rakes and hoes which are used in servations of a similar character in different parts of the world, and also for the purpose of furnishing a standard to which the observations made at various points by the Coast Survey, and the different scientific explorations which are now in progress in the western portions of the United States, may be referred, and with which they may be compared.

# All Fools not Dead Yet.

A queer case was lately tried in Albany, N. Y., wherein a charge was brought against a certain Dr. Duval for playing some extraordinary feats of legerdemain on some green geese. One man-James Diamond-being sworn, stated that he called on Dr. Duval. alias Andrews, and told him that he understood that he had things to find hidden treasure; he said he had; that he could let deponent have one for \$10; he said he hadn't the money, and could give him but \$4,50; Andrews said he would let him have one for that now, and trust deponent for the remainder; he then gave deponent the bottle produced in the case shown, and deponent paid him \$4.50; a clerk in the office told him what to do with the bottle : take it to a field where he thought treasures were hid: he must kneel down on his left knee, and rest his right arm on his right knee, and suspend the indicator by winding the string three times around the end of his forefinger; put all his attention on the indicator, and watch which way it moved : if it moved he must mark the place; then move across and mark four places in the shape of a cross, get the center as near as he could, and then he would find the treasure to a certainty. He tried the indicator a great many times in Waterford, but never found any treasures.

We scarcely suspected that there was one such a simpleton as this in our country, but it came out according to the statements of this magic doctor, that he had succeeded in deluding quite a number persons by bamboozling them with far more ridiculous notions than the above.

## Railroad. Collisions.

A terrific railroad collision took place on the Great Western Railroad, Canada West, on the 27th ult., whereby no less than fifty-seven persons-mostly emigrants going Westwere killed, and fifty-one wounded. The passenger train was four hours behind time,caused by the bursting of a cylinder head, and was proceeding at the rate of 20 miles per hour, when it met a train carrying gravel, going at the rate of 12 miles per hour.-The shock was terrific, and the scene heartrending. The first passenger car was of the second class, conveying a number of German families to their new home in the far west. Had this railroad been constructed with a double track, or employed a railroad telegraph, this accident might have been prevented. No railroad should be allowed without having a special telegraph, or a double track. What a sad consummation of life to these poor Germans who had left Fatherland-the scenes of childhood and early affections-with bright hopes, to establish a better home for themselves and

Since the abolition of the British shipping built ships have become the adopted clippers of British merchants, and are employed in every trade, such as the India, Chinese, Amertory has been erected within the grounds of ican, and Australian. The American clipperbuilt ship Red Jacket, by recent accounts from Liverpool, has made the quickest trip out to Australia from Liverpool and back, ever performed. The run out was accomplished in 691 days, and the return voyage in 78½ days. These facts speak volumes in with a set of apparatus for determining the favor of the superiority of American built ships, and the progress made by our countrymen in nautical architecture. The absurd tunnage laws of Great Britain operated for a the invention of Mr. Brooks, of England, the long period against improvements in the form

# 67

Hew Inventions.

**68** 

Valve Gear for Locomotives. Various devices have been employed for the purposes of operating the valves of locomotives so as to cut off at any portion of the stroke, and also to give steam during the whole length of stroke, at the will of the engineer. An improvement upon those devices heretofore employed, has been devised by James Freeland, of Alleghany City, Pa., who has taken measures to secure the same by patent. The object of it is to transmit motion from the common eccentric to the slide valve in such a manner that the whole or a greater part of the movement of the valve may be performed during a very small portion of the revolution of the eccentric, whereby the full width of opening may be given to the steam and exhaust ports of the cylinder, during a very small portion of the stroke. The rock shaft of the slide valve carries an eccentric arm, which is connected with the valve arm on the common valve shaft by means of a lever, and an arc-formed slot, a rocker, and links, all of which are arranged and combined to effect the objects specified.

# Carving Machine.

An improvement in pantograph carving machines has been invented by Edwin Allen, of South Windham, Conn., the nature of which consists in the combination of two pantographs in such a manner, that a tracer and cutting tool applied thereto may be capable of moving, not only over every point in a plane, as in a single pantograph, but also perpendicularly to the plane, for the purpose of tracing over an undulating surface, and cutting a corresponding one. By this combination, statues, bas-reliefs, and ornamental compositions of an extremely complicated character, may be carved to pattern with great accuracy. Measures have been taken to secure a patent.

# **Oval Turning Lathe.**

Messrs. Cahoon & Ross, of La Grange, Mo., have taken measures to secure a patent for an improvement relating to lathes for turning spokes and other articles of oval shape, which is designed to simplify their construction and render them more perfect. The nature of the invention consists in providing the face plate of the spindle with a sliding rest in combination with a sliding standard, that its axis can be moved with great facility out of line with the axis of the spindle, to stand eccentric thereto, and also the axis of the wood to be turned as it revolves, to describe an oval, so that, as the wood comes in contact with a stationary cutter, it will be turned into spokes and such like articles, for which the lathe is set.

Machine for Filing Saws.

The filing of saws by machinery in an accurate manner, and to operate equally well on saws of different sizes, is a matter of no small importance. Various machines have been invented to accomplish this object, and some have been illustrated and noticed in our columns. An improvement on those heretofore used has been made by C. W. Buck, of Norway, Me., which consists in having a cross bar in the file frame to which adjustable file holders are attached, and which, by being moved laterally, (the bar) through slots in the frame which holds the saw, the teeth of the saw are filed with great exactness. Mr. Buck has taken measures to secure a patent for his improvement.

those on the principal stories. They can be rolled up so easily into such a small space, and are so safe against the operations of the burglar, that we do not wonder at their rapid and extensive application within the past five years. Mr. Mettam has taken measures to secure a patent for his improvement.

# Hanging Saws.

gate, and securing it in its place again with of time, and even by a very unexperienced the greatest accuracy and dispatch, has al- person.

ways been a desirable object. These objects have been obtained in a very satisfactory manner by T. M. Chapman, of Old Town, Me., who has applied for a patent. The nature of the improvement consists in having a stop at each side of the saw-both at its upper and lower ends-said stops being placed in stocks rendered adjustable, so that the saw

IMPROVED FIRE ENGINE PUMP.

can be taken from the gate and also secured An easy method of taking a saw from its therein with accuracy, in a very short space

The annexed engravings illustrate a very suitable term, for each valve is composed of excellent improvement in pumps, by Mr. two spheres, viz. : a central metallic sphere Ambrose Tower, of this city, who has made covered with india rubber, or other suitable application for a patent.

side sectional elevation. Similar letters of reference indicate the same parts.

improvement has been to construct a pump. which, while it serves all the purposes of the ordinary lift and force pump, may also be used at any moment as an effective fire engine; as such it requires to be substantially made, and to be free from liability to disorder, whether by choking or the wearing of the parts.

This pump is furnished with ball valves, they did it would matter little, since the D D'-double ball valves would be a more valves are self adjusting, and their elasticity

elastic substance. In consequence of this Figure 1 is a side elevation, and fig. 2 is a elastic covering the balls always fit their seats closely, while the rush of the water causes the valves partially to revolve at ev-The great object of the inventor in this ery stroke, so that the surface contact of the valves, with their seats, is continually chang-

ing. Hence the wear of the valves is even, and very slight. The spherical form and elasticity of the valves are safeguards against the choking of the pump. The valves being free from hinges and other appurtenances, it is plain that for-

eign substances can find no lodgment.<sup>e</sup>even if



# pipe in the usual manner.

As a ship's bilge pump this improvement is of great utility, since grain and other articles may be carried in bulk without any danger of choking the valves; the same pump is also available in case of fire. There is another novelty connected with this pump, when used on ship board, that deserves mention. By applying a whistle, which Mr. Tower's furnishes, to the escape aperture of the air chamber, an alarm, equal to the steam whistle, is produced. In foggy weather this contrivance will be found very serviceable, as the inventor states that the alarm can be eard for a very long distance.

Placed upon a small platform with wheels, the pump is adapted as a fire engine for steamboats, villages. &c., the cost being very small when compared with ordinary engines. The ends of the brake bar, L, are furnished

with cavities into which the brake levers are introduced. The power of the pump may at any time be increased by lengthening the levers.

Further information may be had on application to the inventor, No. 93 Cedar st., New York.

# Grinding Circular Saws.

William Clemsen, of Boston, Mass., has taken measures to secure a patent for an improvement in machinery for grinding circular saws. The two faces of the saw are simultaneously brought in contact with two or more grindstones on each side of the saw.---These stones are so arranged as to be adjustable in their frames, so that they can be set to grind saws of different thicknesses. The axes of the stones are set at right angles to the axis of the saw to be ground, for the peripheries of the stones to act upon the saw.

# Fork Bending Machine.

An improved machine for bending hay and other forks for agricultural purposes, has been invented by Nathan Brand, of Leonardsville, N. Y., who has taken measures to secure a patent for the same. The nature of the improvement consists in the combination of a stationary and movable jaw and movable side levers constructed and arranged in such a manner that the forks after leaving the hands of the forger, have their times and shanks bent in it in the most correct and expeditious manner.

# New Railroad Brake.

The Courier describes a new brake for railroad cars, an invention of Col. Elisha E. Rice, of Hallowell, Me., which, it thinks, will ultimately be adopted by the railway corporations of the country. The brake is in the form of a shoe, is located between the wheels, and is intended to act upon the rail, instead of upon the wheel. It is worked by levers in precisely the same manner as the present wheel brakes. It is composed of a substance softer than the rail, so that there can be very little expense on account of "wear and tear." When the train is in motion, the "shoe," which turns up at each end. so as to avoid hitting bluntly any slight unevenness, is about a quarter of an inch from the rail, and when the lever is applied, the "shoe" is pressed down in such a manner as to lift the wheels from the track. The capacity of Mr. Rice's invention was tested on Saturday last, on the Kennebec and Portland Railroad, on a baggage train, to the entire satisfaction of the superintendent.-[N. E.

### Iron Shutters.

An improvement in iron rolling shutters has been made by Charles Mettam, architect, this city, which consists in giving the slats an arched form in the central part, and a flat. form towards the edges, so as to insure greater stiffness to prevent deflection, and at the same time produce a flat close lap when unrolled, like that of the flat slat; also to afford the same facility for rolling up. Rolling iron slat shutters are fast superseding all barrels-to pass through stuffing boxes, J.

would permit their accommodation to the seats | the case of fire) the packing in the stuffing boxes becomes loose, it is quickly tightened, and to any foreign matter that happened to without removing the plungers, by turning be left upon them.

the stuffing box screws. The inventor re-The plungers, C, are hollow, the connectgards this as a very desirable advantage over ing rods, C', being attached at the bottom thereof, as shown. Instead of packing the ordinary pumps.

In the operation of this invention the wapiston head in the common manner, the vacter enters the supply pipe, F, chamber, E, uum is produced by causing the plungersand passes through valve boxes, B, and air which are almost of the same size as the pump chamber pipes, H, alternately, into the air others for stores and warehouses, especially If from long use, or unusual pressure, (as in chainber, G, whence it is discharged by hose not to be disturbed for the present.

### Farmer.

[This Brake appears to be the same in its method of action as the one of Benjn. Burling, Danville, N. Y., illustrated on page 252 Vol. 4. SCIENTIFIC AMERICAN. On the page referred to, nearly the same language as the above is employed, such as "forcing down the shoe wedge (brake) under the wheels, and raising them off the track."

The Crystal Palace.

This Building for exhibition purposes closed last week, but during the removal of goods, and the sales by auction within the Palace, visitors will be admitted for one shilling each. The paintings and the statuary are

NEW YORK, NOVEMBER 11, 1854.

### War, and its Effects upon Mechanics and Inventors

"It is an ill wind that blows nobody any good." If a hurricane sweeps across the country, and in its desolate track leaves prostrate a dwelling, and perchance destroys the life of a human being, it would not require any great stretch of the imagination to think of the builder and the undertaker as likely to find their business increased out of this evil wind. Providentially we are obliged to live upon each other, not literally as cannibals, or human flesh eaters, but in the way of business and social enjoyment.

There is now raging in and about the oriental seas a great war,-human beings are armed with bludgeon, cutlass, and sundry other harmonizing projectiles, and are actually engaged in killing each other and bombarding and blowing up the cities and villages of an innocent population. This barbarous business (for war is barbarous) is conducted on one side by the two most enlightened nations of Europe, and the science and skill of genius is taxed to its utmost in contriving mighty engines of destruction. If any man could have invented, one month ago, a machine capable, at one mighty eruption, of throwing down the stronghold of Sevastapol,-even to the swift destruction of its men, women, and children, whose only offence is one which Nature and Nature's God has forced upon them,-orders of the Garter, Bath, St. George, Cross of the Legion of Honor, etc., and a princely fortune, would have all been showered upon him to his heart's content, for England and France have never proved ungrateful to their men of genius, whether civil, military, or scientific. The question naturally arises, Who reaps the benefit of this carnage and slaughter? Surely not Russia, with her blockaded ports, prostrate commerce, crippled resources, besieged cities, and suffering, wounded populace, whose cries and groans pierce the very heavens. Not England and France, with their stupendous national debts, and whose best blood is wasting upon foreign shores from the effects of war and pestilence; for nationally speaking, the Eastern war is an incalculable disaster, and is weighing most heavily upon the exchequer of every participating nation .-But "it is an ill wind that blows nobody any good," and while Christianity is bleeding at every pore, and the nations in conflict are seeking every expedient except the right one, to relieve themselves from the unhappy consequences which are being entailed upon them, the hammers of Birmingham are redolent with the sound of busy industry forging out the means of destruction. The mechanics and the manufacturers of England and France are reaping the incidental advantages growing out of all this human destruction, and it seems almost incredible to those away from the seaboard, where commerce centers, that the ill effects of the war should be felt so many thousand miles away from it as we are, still this is true. Our once active commerce in the Mediterranean is tied up to our wharves with strong cables, and good stanch vessels are begging in our harbors for another journey upon the broad ocean. The current of trade in this country runs sluggish, and de-

gives a flattering account of affairs in all those busy districts. He represents that orders for patent machinery were refused by several concerns as being calculated to draw them from their regular business. Many also were so completely occupied with government contracts for the war and its requirements, that they could think of nothing more. Improvements in cotton machinery, he says, will find their full value at this time; also selfacting mechanism of all sorts; and that the people are fast falling into our track, and are looking out for time and labor-saving machinery. Some of the recently established houses are working themselves into profitable connections by adopting improvements, and by attending to affairs rejected by the larger establishments as beneath their notice. Railway managers are coming to their senses, and are more open to the favorable contemplation of improvements calculated to reduce their working expenses and cost of plans.

Scientific American.

This is as it should be, or rather ought to have been from the commencement of those gigantic operations, and there would not have been better property in existence. The larger establishments being at work almost exclusively for the government, the smaller ones are left to supply the great demand for machinery designed for home use: this opens fine opportunities for inventions of a practical and to acknowledge the fact, but the people will, some how or other, in spite of them, bear testimony to the skill of American inventors agency in foreign countries, have proved to be of much value to the patentees.

elastic qualities of india rubber as applied to nished with any data of our bituminons coal law and the arts, every new development, so trade. The amount of bituminous coal, however, mined and consumed in our country anfar as it relates to its excellent adaptations nually, must now be very great; we do not for extending law business-rendering it more know that it equals the anthracite, but it cerdurable and elastic-seems to rebuke us for tainly must come close up to it. It is now being far too cool and modest in our language. At the term of the U.S. Circuit Court, held used on the steamboats on the Ohio and the Mississippi, and in all the cities and villages in this city, before Judge Betts, in June last, upon. there was a trial for an infringement of Chafon the banks of these rivers. We also per-\$570 IN PRIZES. fee's india rubber patent, Horace H. Day ceive that the ferry steamboats which ply on The Publishers of the Scientific American being the plaintiff, and the New England Car the rivers bounding our city, have been using offer the following Cash Prizes for the four-Spring Company the defendants. The counthe Cumberland coal for a month past, and teen largest lists of subscribers sent in by the we are told that a number of foundries use sel for the latter, Chas. O'Connor and James 1st of January, 1855. H. Brady, claimed the right for their clients nothing else. We may safely set down the pression seems to have settled down, briefly, \$100 will be given for the largest list, amount of allkinds of coal consumed in our of using the patent of Chaffee by a license upon the hopes of many of our manufactur **\$75** for the 2nd, \$35 for the Sth. which was produced, made to them in writcountry at 10,000,000 per annum. This is \$65 for the 3rd, \$55 for the 4th, 830 for the 9th, 825 for the 10th, ing establishments. ing by Wm. Judson, under his hand and seal, certainly a great amount, but when we con-It is a good time to develope and produce \$50 for the 5th. \$20 for the 11 th sider that Great Britain produces 31,500,000 for \$20,000, bearing date Nov. 20, 1851, \$45 for the 6th, \$15 for the 12th, improvements; and if at the present moment tuns per annum, we have some efforts to make under Chaffee's extended patent. Upon the \$10 for the 13th. 840 for the 7th, things are dull with us, there is a great and yet before we reach that figure. But it will and \$5 for the 14th presentation of this paper-or license-to expansive field open in Great Britain and upon the Court, the counsel of Day, Mr. Stoughton, not require many years to accomplish this, The cash will be paid to the order of each the continent of Europe. We publish in anfor if our anthracite coal has increased in successful competitor; and the name, resicalled witnesses to prove that Wm. Judson. other column a letter all the way from Bavawho granted the license, was the attorney of thirty-four years from 365 tuns to half a mil- dence, and number of subscribers sent by each ria, in which the writer asks about our excelwill be published in the SCIENTIFIC AMERI-Chaffee, and had obtained the instrument by lion, what increase may we not expect both lent brick machines. He has seen them noin it and the bituminous coal produce during | CAN, in the first number that issues after the fraudulent representations and practices.ticed in the SCIENTIFIC AMERICAN : such is the The counsel for defendants objected to such the next twenty years. As the anthracite re- 1st of January, so as to avoid mistakes. ubiquity of its circulation. gion of Pennsylvania embraces an area of but Subscriptions can be sent at any time and testimony on a trial at law, and insisted that We have now before us a letter from an en-437 square miles, only a 304th part of our from any post town. A register will be kept a specialty could only be impeached for terprising firm in London, which is suggesbituminous coal area, we can form some con- | of the number as received, duly credited to fraud by a bill in equity filed against all parception of what the coal trade will yet attive of the subject under conside mon. One the person sending them. tis having an interest in the instrument of the firm had just returned from Manches-(license,) praying for it to be set aside and tain to, in the future history of our country. Je See new Prospectus on the last page.

er and other great manufacturing marts, and cancelled. Judge Betts decided that it was competent for the court on such a trial to take such evidence, and so the trial went on, but was terminated indecisively, by the sudden death of one of the Jury. In summing up for the defense on that occasion, Mr. O'-Connor declared the decision of the Court, regarding such testimony, contrary to law, and offered \$1,000 to any person who could produce a case from Johnson's Reports in support of it. The offer was not taken up, but Judge Betts has just published his opinions respecting the controverted point at great length, quoting innumera ble authorities in favor of his decision, and we think it is likely that if an appeal be taken to the Supreme Court of the United States, it will be sustained. At any rate, it is an important point of law, in relation to patent property, and we present it in substance, for the information of all interested in such property. The case being an india rubber one it is still before the Court, and will not come up again before the next term-in April 1855—as it was brought up on the 31st ult., (Tuesday last week) and postponed to the next term, because the plaintiff was not ready to proceed. In view of such knotty points of law involved in this case, and the checks and delays already thrown in the way of a complete decision, it may not be terminated for some years.

The Coal Industry of the United States. useful character. English periodicals are slow It is scarcely possible to appreciate the at a distance of ten miles." vast internal resources of the United States : Alarm Whistle at Sea. they are unequalled by those of any other country; no person can doubt this after readin the production of simple and effective mespecting the use of a steam whistle at sea, to ing "Taylor's Statistics of Coal." Our bitchanism. Several patents secured through our uminous coal fields embrace an area of the unfortunate Arctic used a whistle, there 133,132 square miles, whilst that of all Europe would have been no collision; we would amounts to only 17,504 miles. Yet with all state that an alarm whistle to be used for We state this fact as an encouragement to our inexhaustible coal fields, some of them such purposes was described on page 388, American inventors. It is worth something the easiest worked in the world, our coal even to know that our efforts and productions trade is but of yesterday in comparison with are appreciated. It is worth more to find that of England. The great abundance of Europa, in that year, while running into them a source of remuneration and value to wood found in the Atlantic States by the their originators. Genius is upon tireless Liverpool during a fog, ran down an Amerearly settlers, afforded an abundance of cheap ican ship. Well, after that event, a whistle wings, and it must go on to higher and mightand clean fuel for a long time, but owing to ier accomplishments, because the necessities of it having become so scarce and dear in many the times are of a Protean character, and places within the past twenty years, attenwhat is useful to-day may be called upon totion has been directed to its substitutemany nautical men. The article in our colmorrow to surrender its office for something American coal-which is now becoming a more perfectly adapted to its requirements. trade of vast importance. It is a singular The inventor and the mechanic are the masfact, that the coal trade of our country comter-spirits of Great Britain. Her people unmenced with 365 tunsin the year 1820, which derstand this fact better than we do: take were sent to Philadelphia by the Lehigh them away, and the Allied armies would be Coal and Navigation Company. This small and in distress." Had the person who comcompelled to leave Russia in her glory, and amount completely filled the market, and seek refuge at home amidst the retreats of was only disposed of with some difficulty England and France. If there are wars to during that year. In 1827, it-the coal trade prosecute, there is no class more deserving of -increased to 48,047 tuns; in 1837 to the advantages to be reaped from its destruc-881,026 tuns, in 1847 to 3,000,000, and 1852 to hearts with grief, might have been prevented. tive tendencies than the inventor and the me-4,383,730 tuns; this year, it is calculated that chanic. it will exceed 5,000,000 tuns. These statis-The Art of Dyeing and Coloring. tics relate only to the anthracite coal trade India Rubber for Ever. of Pennsylvania, for we have not been fur-Much as we have extolled the tough and

# Steam Harmonicon.

**69** 

"We suggest to the ingenious manufacturer of steam engines the construction of a magnificent instrument of music, composed of steam whistles, to be played with keys, the same as an organ. What, for instance, could be more 'grand and pleasant' than the music of the locomotive three or four miles off, coming on steaming you 'Hail Columbia,' 'We come with songs to greet you,' 'Come rest in this bosom, my own stricken dear,' &c., &c. What ingenious mechanic will be the first to put this good hint into practice? When patented, we speak for half the proceeds as a compensation for this suggestion.

SCIENTIFIC AMERICAN, please notice."-[Lafayette American, (Indiana.)

If our brother chip of the Lafayette American gets ahead of the SCIENTIFIC AMERICAN in the line of new inventions he must get up three years earlier than he has in this case. If he just turns over the leaves of volume 6, SCIENTIFIC AMERICAN, until he comes to page 173, he will find that a citizen of his own State-Wm. Hoyt, of Dupont, has described his grand steam harmonicon. And it is not a little remarkable that Mr. Howt concludes his epistle in nearly the same language as the above. It is as follows :--- "It is my candid opinion that the Western boys will yet hear 'Old Dan Tucker,' 'Auld Lang Syne,' &c., played on the Western waters by steam,

As a great deal has been said recently rebe used by steamers during fogs; also that had Vol. 4, SCIENTIFIC AMERICAN, (1849.) It will be remembered by many that the steamship apparatus for ships was constructed and exhibited at Lloyd's Rooms, Royal Exchange, Liverpool, and was highly approved of by umns, to which we refer, stated that "it was the prevailing opinion of those who saw it that all vessels proceeding to sea should be furnished with one, not only to prevent collisions, but to be used when off a lee shore manded the Arctic been a constant reader of the SCIENTIFIC AMERICAN, and had the above been treasured up in his memory, the sad accident which has filled so many homes and

Two weeks from the present date we shal commence a series of articles on the above subject, which will be thoroughly practical and useful for both operatives, and those who, like our farmers, do a considerable portion of their own dyeing. The instructions will be plain, and a great number of recipes will be given for every color on silk, cotton, and woolen goods, all of which can be relied



70

## [Reported Officially for the Scientific American.] LIST OF PATENT CLAIMS

### Issued from the United States Patent Office. FOR THE WEEK ENDING OCTOBER 31, 1854.

FOR THE WEEK ENDING OUTOEER 31, 1834. STEAM ENGINES—Nathan Atherton, of Philadelphia, Pa.: I do not claim a driving cylinder having screw-like grooves in combination with a piston rod. for the purpose of convert-ing reciprocating into continuous rotary motion. But I claim the connection of such a cylinder with in-celined projections, constructed and arranged substantially as described, for operating the valve gear by motion taken di-rectly from the cylinder, whereby the proper lead may be given to the steam, whether the cylinder be turning to the right or left, and the engine is rendered more convenient, compact, and durable than any heretofore known, in which the axis of the driving shaft is parallel to that of the pis-ton.

ton. KEY FOR TUNING PIANOFORTES—Abraham Bassford, of New York City: I claim combining the socket spindle with the handle spindle, by the interposition of cog gearing, or the equivalent thereof, to increase the leverage of the han-dle spindle relatively to the socket spindle, and have the axis of the two in or nearly in the same line, substantially as and for the purpose specified. And I also claim, in combination with the two spindles combined, together with interposed gearing, substantially as specified, the employment of an arm or lever rest projecting from the place of the interposed gearing to form a rest, sub-stantially as and for the purpose specified. Durgs con Drugwing up (2000, A. M. end C. H. Beb

stantially as and for the purpose specified.
PRESS FOR PRINTING IN COLORS—A. M. and G. H. Bab-cock, of Westerly, R. I. : We claim, first, the arrangement and combination of the polygonal platen and beds, substan-tially in the manner and for the purposes set forth.
We also claim the construction and arrangement of the inking rollers, consisting of the vibrating arms and springs for holding out the rollers in place, as described.
We also claim the combination of arms g. h, i, 1, 2, 3, &c., 12, or their equivalents, and connecting rods, i e4, or their equivalents, for giving a series of impressions, forming pro-gressive levers, in the manner specified.
We also claim the apparatus for turning the prism consist-ing of the vibrating arm, 44, disk, s1, springs, and pins, f1, or their mechanical equivalants, with the apparatus for en-gaging and disengaging the same, as set forth.
We also claim the arrangement and combination of the friskets with the platens, as springed, and the springs, y1, at-tached thereto for giving a firm hold while drawing the sheet from the type.
KNIFE DIE FOR CUTTING LEATHER STRAFS FOR WHIPS.

KNIFE DIE FOR CUTTING LEATHER STRAFS FOR WHIPS, --Chas, Daeder, of New York City: I claim the use of the spiral knife die, to cut gradually tapering strips of leather, for the manufacture of raw hide and braided whips, sub-stantially as set forth.

GRAIN WINNOWERS—Joseph Barker, of Honesdale, Pa. : I claim the combination of the conical hopper, C. circular screens, D G, with inclined sides, or of conical form and fan, F, the above parts being constructed and arranged substan-tially as shown and for the purpose set forth. [A notice of this invention is published in No. 1, Vol. 10,

SCIENTIFIC AMERICAN.]

SCIENTIFIC AMERICAN.] BURGLAR'S ALARM—Ephraim Brown, of Lowell, Mass.: I claim making the knob of the drawer movable, and so combining it with an alarm apparatus as to cause an alarm to be sounded whenever an attempt to open the drawer by pulling on the knob is attempted. I also claim the combination of the latch or spring bolt, and the secondary bolt and key or lever with the movable knob and the drawer, the same being to operate together, as specified.

specified. I also claim the combining of the alarm pawl, m, with the knob rod by means of a movable hanging lever, n, to be oper-ated or moved by a stud or its equivalent fixed to the knob

aceu or moveu by a stud or its equivalent fixed to the knob rod. I also claim the decoy key and its connections with the hanging lever, so as to operate as specified, also the connect-ing the said hanging lever to the secondary lever, so that a forward pull on the secondary lever shall move the hanging lever so as to effect the sounding of the alarm. I also claim the combination of the counter or numbered wheel and its operative mechanism with the knob rod, the same being to exhibit the number of the attempts at opening the drawer, meaning also to claim the so combining the op-erative mechanism of the counter wheel with the hanging lever that a movement of the latter will effect a movement of the said wheel.

APPARATUS FOR TEMPERING AND FLATTENING SAWS-Wm. Clemson, of Boston, Mass. : I claim making those ends of the plates which the saw enters, with their faces of bev-eled or other receding form, substantially as shown at cf, whereby they are enabled to impart heat to the saws by ra-diation before as they enter, and thus cause every part of the saw to be heated to a proper degree before being submitted to the pressure of the upper plate, substantially as set forth. Use description of the imparement in No 52 Vol 0. Set [See description of this improvement in No. 52, Vol. 9, Sci-

### ENTIFIC AMERICAN.]

ENTIFIC AMERICAN.] SHINGLE MACHINE-Harry H. Evarts, (assignor to H. H. Evarts & A. J. Brown,) of Chicago, Ill.: I claim placing the blocks to be sawed into shingles in a rotating carriage, which is combined with inclined tables, p p, or a single ta-ble, and with saws, o o, or a single saw, in such a manner that the blocks will be carried continuously forward and be automatically operated upon, to convert them into shingles, substantially as set forth. I also claim the arrangement of the weighted levers, H H, the fastening teeth, i, and the inclined planes, l 1, with each other and with the inclined tables, p p, and the outer series of teeth in the ledger, r, substantially as set forth. I also claim presenting the sides of the fibers of the wood to the action of the saw in the sawing of shingles or equiv-alent articles, for the purpose of giving them smoother sur-gues than can be produced by the usual mode of sawing, substantially as set forth.

BURGLAR'S ALARM-Junius Foster, of Green Point, N.Y.: I claim the spring barrel, d, with the zig: zag groove around its circumfreence, in combination with the lever, h, bell, l, and stop, g, or its equivalent, for the purposes and as spec-ified.

MACHINES FOR FILLING MATCH FRAMES-WM. Gates, Jr. of Frankfort, N. Y. : I do not claim any of the parts rela-ting to the operating of the match sticks, viz., forcing them from the box or hopper, F, for that has been previously in-vented

But I claim the feeding bar, N, with its projections, r r, pressure rods, o o, and gauge block, v, with the springs, w

# Scientific American.

shoulders are even with the external surface of the cylinde<sup>r</sup>, my invention having no reference to teeth disconnected and diriven into a cylinder or surface, but only to such as are formed and made to extend from a plateor strip of metal, as described

formed and made to extend that a practice strip of matting of described. And in such so made, I claim so arranging the base plates of the teeth on the periphery of a cylinder or the surface to which they are to be fastened, that one of said base plates shall overlap the other, and extend over and cover the spa-ces, b, or out of which the teeth of the latter plate may have been formed, the same serving not only to give sup-port to the teeth, but to prevent such spaces from becoming clogged with fibrous material or other matter, when t e cy-linder is in use, and also to increase the pitch of the front trelower surface of each strip made to rest upon the sur-face of the cylinder. face of the cylinder.

face of the cylinder. FIRE ARMS-J.C. Howe, of Milwaukie, Wis.: I am aware that the breech has been before similarly held in its place and made capable of the double movement described by means of a slot, e, and stop, d, also that a sliding cam key at the back of the breech has been used to keep the breech steady against recoil, and serving to admit of the swiveling of the breech when required, but such devices have been differently constructed and less simply and perfectly ar-ranged or combined with and operated on by the lever be-neath : such, therefore, of themselves alone I do not claim. But I claim the arrangement specified of the breech oper-ating lever, C, by its hinges or joints, a and b, with the breech, A, hung and operating as described, and movable guide orslide, D, at the back of the breech: the whole be-ing constructed, combined, and operating together, sub-stantially as set forth. [This improved fire arm is secured by patent in Great

[This improved fire arm is secured by patent in Great Britain.]

Britain.] MACHINERY FOR MAKING ROPE AND CORDAGE—John Harris, of Lansingburgh, John B. Scott, and Galen Rich-mond, of Troy, N. Y.: We claim, first, the arrangement of the gears, s and t, upon shaft h, in combination with the clutch, o, and shaft, I, so that by changing the position of the clutch we increase, retard, or arrest the motion of the friction rim. B, and reverse these motions instantly in the manner described. Second, the spider, G, arranged and constructed substan-tially as described, in combination with the cam, K, and the spiral spring upon the shaft, to give it a revolving motion, to rub the strands for the purposes described.

SEATS FOR WAGONS—Chesley Jarnagin, of Clinton, Tenn. I claim the making and attaching to the running gear of wagons of a safe, comfortable, and convenient seat for wag-on drivers, as described.

on drivers, as described. MACHINERY FOR PICKING COTTON AND OTHER FIBROUS SUBSTANCES—Richard Kitson, of Lowell, Mass.: I do not claim the employment of a series of toothed bars attached to fans with spaces between them for the issue of currents of air. But I claim, first, providing the cylinder or other founda-tion, to which the picking teeth are secured, with orifices or perforations distributed in all directions among the teeth for the purpose of blowing a number of streams of air among thereby expelling outwardly during the picking operation all dust and dir', and loosening the fibers, and finally blowing them from the teeth, substantially as set forth. Second, I claim the method of securing the teeth, H, in the cylinder, by means of notched sitips I, and shoulders, h, on the teeth, substantially as described. [The inventor of this excellent nicker is engaged in their

[The inventor of this excellent picker is engaged in their nanufacture in Lowell, Mass.]

manuacure in Lowell, Mass.] TAILORS' MESSINING INSTRUMENTS—John M. Krider, o Newtown, Stephensburgh, Va.: I claim the use of the pro-tractor, T, at the point indicated by stud No. 2, for the pur pose of determining the cardinal point, A, at the top of the back seam, in the manner described.

ATTACHMENT TO SYPHON-Saml. Lenher, of Philadelphia, Pack seam, in the manner described. ATTACHMENT TO SYPHON-Saml. Lenher, of Philadelphia, Pa.: I claim so constructing a syphon that its long leg near the lower end thereof shall be surrounded with an elastic substance, as tow, cotton, india rubber, &c., forming a pis-ton, c, upon the exterior of said hollow leg, in combination with a cylinder, B, as described, in which said pistor may slide for the purpose of creating a tiow of liquid through the syphon by a quick withdrawal of the cylinder, without its ner described.

TAILORS' MEASURE-Warren and Chas. F. Lillibridge, of Zunesville, Ohio: We claim the construction of flexible measures, substantially as set forth, so as to retain and show the form as well as the dimensions of the surface measured.

RAILROAD CAR AXLES—Jas. E. McConnell, of Wolverton, England: I claim the constructing of hollow axles of bars of wrought iron running lengthwise, the edges lapping into each other by joints, substantially such as are shown by fig-ures 8 and 10, and which are welded and worked into form, as set forth each other b ures 8 and 10 as set forth.

CARTRIDGES FOR BREECH-LOADING FIRE ARMS-Daniel Moore, of Williamsburgh, N.Y.: I claim the cone, I, of pa-per, or other suitable substance attached to and entering the rear end of the breech-loading cartridge, to concentrate and pass the flash from a detonating cap, substantially as spec-ified.

POWDER FLASE FOR BREECH-LOADING GUNS.—Daniel Moore, of Williamsburgh, N. Y.: I claim the method de-scribed and shown, of loading fire-arms from the breech by means of the pipe, c, so constructed and attached to the powder flask that the same forms a ramrod to force the ball into the barrel the required distance, and at the same time measure the powder for filling the chamber behind the ball, substantially as specified.

MECHANISM FOR SAWING OFF PILES UNDER WATER-Vincent Palen, of Portsmouth, Va. : I am aware that a bear ing has been used at each end of the saw shaft, and I do no therefore claim this when not combined with the guides. But I claim the combination of the devices for guiding and holding the saw up to the kerf, so as to prevent it from cramping and buckling in its kerf, the same consisting

or guiding in the arrangement of the guides and saw shaft on the ad ustable frame, in the manner and for the purpose set forth

**PEN AND PENCIL CASE**—John Richardson, of New York City : 1 claim the construction and arrangement of a pen and pencil case, substantially as described, so that by the acts of extending and contracting the case, either the pen or pencil can be protruded and drawn in, as set forth.

acts of exheming and contracting the case, either the perior pencil can be protruded and drawn in, as set forth. MANUFACTURE oF BRICKS-L, E. Ransom, of Havana, Ohio I wishit understood that I make no claim to any portion of the processes of manufacturing bricks set forthin the Freuch patents or Cagorns and Chanon, June 21, 1843, and Chas, H. Maigret, May 22, 1840. But I claim the munufacture of bricks, substantially as described, that is to say, by first spreading the tempered mortaror clay at once upon the ground, where the bricks will be left to dry, and in beds of certain desired length, width, and thickness, and then while the mortar is in a soft sate, or before it shall crack by too much drying, producing therein lines of weakening or separation, defining the di-mensions of the bricks, without regard to their smoothness rimal frings the thickness of the same by rubbing over them the metallic tool. P. or otherwise substantially assetforth, the desired thickness of the bad being produced by means of guide bare or molds, and scraring row lusts moting these and defining the thickness of rule same by rubbing over them the metallic tool. P. or otherwise substantially assetforth, the desired thickness of the bad being produced by means of guide bare or molds, and scrarer or lute, substantially as specified, whereby I am enabled to dispense with off-barers and other wise to simplify the manufacture of bricks. MANUFACTURING MAST HOOFS-E. W. Scott, of Lowell,

ODOMETERS-Julius Thompson, of Middleboro', Mass. : I claim communicating motion from the wheel of the vehicle to the working parts of the odometer by means of a cylin-drical weight or wheel. D, placed within the case of the im-plement and detached therefrom, so that said weight or wheel will, by its own gravity, remain at the lower part of the case, and in one position, and by the arrangement shown, viz., the fork E, and eccentric, F, or other suitable device, communicate the necessary motion to the working parts of the implement as the case, A, rotates. ['This is an ingenious contrivance for the purpose.]

GRATE BARS-Samuel Vansyckel, of Little York, N I claim the casting or forming of the pin, dowel, or cat I claim the casting or forming of the pin, dowel, or catch is one bar, or set with a corresponding hole or its equivalent in the next bar or set, so that when put together they shall be held from warping, twisting, or dropping from the end plate or walls, substantially as described.

ARRANGEMENT IN SPARK ARRESTERS FOR HEATING FEEL WATER-R, A. Wilder, of Schuylkill Hayen, Pa. : I claim the arrangement of the water space, f ff, the flue spaces n and c, and the perforated cone, e, all concentric with each other in the manner and for the purposes set forth.

other in the manner and for the purposes set forth. WATER METER-S. R. Wilmot, of New Haven, Conn. : I claim, 1st, extending the sides of the piston upwards in the form of a tube, E, to enter an open bottomed but close top-ped chamber, b, in which a quantity of air, is so confined as described, as to press equally on the water above and below the piston, and thus preven it is overflowing the top of the tube on either side, and hence to form an effectualair seal or packing, and allow the piston to be fitted to the cyllnder, so loosely as to produce no friction. 2ud. Inclosing all the mechanism by which the valves are actuated within the cylinder itself, or in a chamber in free communication with the same as shown, whereby the neces-sity for stuffing boxes or other packing, for the valves, rods, or other parts connected with the valves, and the consequent expense of construction and friction of such packing, obviated as set forth.

s set forth

[In Vol. 8, No. 52, our readers will find apnotice of this in vention.]

MACHINERY FOR CUTTING RAGS FOR MAKING PAPER-Alongo S. Woodward, of Lowell, and Benjamin F. Bartlett, of Pepperell, Mass. : We do not claim a spiral cutting cyl-inder with the central part of it solid, as in the patent grant-ed (for cutting straw) to A. P. Macomber, in 1854, as such will not work successfully to cut paper rags and other paper stock.

stock. Neither do we claim a combination of the said spiral cut-ting cylinder with the stationary cutting knife, as in the said Macomber's patent. Nor do we wish to claim any other thing, device, or part, as claimed or covered by grant of Letters Patent to said Macomber.

as claimed or covered by grant of Leiters Fatent to said Macomber. But we claim, first, the cylindrics made, and constructed, and used (as described in this specification and the drawings which form part of it) for the purpose of cutting paper rags, and other paper stock, substantially as set forth. Second, we claim our before described cylindrics in combi-nation with the cutting knife, F', when arranged and opera-ted, essentially and for the purposes as set forth. Third, we claim the combination of the two sets of feed rolls, running at a greater speed than the other set, for the purpose of evenning the stock before itreaches the cylindrics and cutting knife, F, as set forth.

SURFACE CONDENSERS—Wm. Sewell, of Brooklyn, N. Y. Patented in England, Jan. 13, 1854 : I claim, first, the elastic supplementary tube sheet constructed and applied substan-tially in the manner and for the purpose herein described. Second, I claim the method substantially as herein de-scribed of preventing the endwisesliding or creeping of the tubes.

scribed of preventing the enuwiscenting of cropping of the tubes. Third, I claim so constructing the guard that it performs in addition to its own duty the further office of holding down the edges of the elastic tube sheet preventing the entrance of water behind the same. substantially in the manner specified. And lastly, I claim the injection or showaring apertures in combination with a surface condenser, wherein the steam space is outside of the tubes, and which is also provided with proper entrances and dischargers for circulating water through the tubes whereby a surface condenser may be converted at will with a jet condenser for the purpose and in the manner substantially as described.

### ADDITIONAL IMPROVEMENTS.

ADDITIONAL LAFACTERENT. WHIFFLETRE HOOK-MARTIN VERMAN, 2nd, and N. C. Whitcomb, of Lanesborough, Penn., and G. C. Cole, of Hartford, Conn. Additional to patent dated Feb. 21, 1854 We claim as additional improvements in our whiffletree hooks the construction of a trace fastened on the ends of a whiffletree consisting of a rolling latch, D, turning on a pin, a, spring, E, in combination with a hook, B, and catchor dehiffletree consisting of a rolling laten, D, turning on a particular pring, E, in combination with a hook, B, and catchor d nt, C, thereon, operating in the manner and for the purpose

set forth. SAFETY WASHER FOR SECURING WHEELS TO AXLES-Wm. Thornley, of Philadelphia, Pa. Additional to patent dated Sept. 19, 1854 --- I claim a washer with a projecting flange and two stops as described, for the purpose specified.

## DESIGNS.

DESIGN FOR BRACKETS-Isaac De Zouche, of Troy, N. Y. DESIGN FOR DEALERIS - LOGAC DE DOUBLE, OF ANO, AN AL DESIGN FOR FRANKLIN FIREPLACES -- Nathaniel S. Prince, of Boston, Mass., (assignor to Franklin, Muzzy, & Co., of Bangor, Me., and Allen Lambard, of Augusta, Me.)

### RE-ISSUE.

RAKES TO GRAIN HARVESTERS-Jearum Atkins, of Chica-go, Ill. Original patent dated Dec. 21, 1852: I claim the means described of transmitting motion from the driving wheel to the raking apparatus substantially as set forth. I also claim, secondly, the collecting, grasping, and de-positing of the cut product by means of a rake and palm sub-stantially such as described herein.

Eight of our clients will find their names in the above list Inventors should not omit to send us sketches and descrip tions for examination. Circulars of information forwarded

free of expense.

### Patents in Canada.

A bill amending the patent laws of Canada was defeated in the Legislative Assembly on the 23rd ult. The object of it was to encourage the introduction of inventions and dis coveries of foreign countries into the Province by allowing foreigners to obtain patents in Canada in the same manner as patents have been and now are obtained there, by inventors who are subjects of Her Majesty and residents of the province, the duration of such patents to be limited to seven years. It was introduced by Mr. Sanborn, and defeated by a motion of M. Cartier, to postpone its reading | for four hundred persons, with water and profor six months. Sir Allan McNab, and Attorney-General McDonald, objected to the bill at sea. Every steamer and sailing vessel on the grounds, that the laws of the United | should be compelled to carry life boats of States charged \$500 for patent fees to Canadians. We think the fee is far too high, but those members who spoke against the bill did not seem to have sense enough to consider that a good patent in the United States was far more valuable to a Canadian, than a patent in Canada, with its sparse population. to

amended at the next session of Congress.-The charging of \$500 as a patent fee to the subjects of Great Britain, and retaining \$200 when a patent is refused, to an English or Canadian applicant, is a disgrace to us as free people, professing to be guided by the laws of honor and uprightness.

We also hope that those members of the Canadian Parliament who have defeated the above Bill (for the present,) will act very differently when it comes up next year. There should be complete reciprocity between the two countries in the matter of patent fees and patent rights.

# The Wood Gas Controversy.

A rather sharp but distant firing is being carried on by some persons interested in wood gas patents; and we perceive that the smoke of their cannon has somewhat obscured their vision. Dr. C. G. Page, as the attorney for W. P. McConnell, having presented his claims through our columns, L. R. Breisach, of this city, has presented those of Pettenkofer & Ruland, of Bavaria-he being their assignee -through the columns of the Daily Times of the 3rd inst. He states that the first patent for the Bavarian invention was issued on Feb. 24, 1851, an authenticated copy of which has been filed in our Patent Office ; also that the claims of his assignors were filed in the Office, to protect their rights, more than a year ago. As no patent can be obtained for making or using wood gas, the disputed point relates to the apparatus, which embraces the reheating of the gas-passing it over a redhot surface in its way to the cooler-after it is generated; this is clearly stated in Dr. Page's letter, on page 50. Now, as McConnell claims to have invented the apparatus for re-heating wood gas, as far back as 1849 -two years previous to the granting of the Bavarian patent,-and as he obtained a patent for the same, on the 26th day of September last, although contested by Pettenkofer & Ruland, we cannot well conceive who L. R. Breisach wants to frighten, by declaring through the columns of the Times, that he will prosecute the violators of the Bavarian invention. He gives this notice to all who take an interest in the introduction of this invention, but in doing so, he forgot to present any fact upon which the public can rely, to show what patent rights he possesses. When he again writes to inform the public that he has certain patent rights, and will prosecute those who infringe them, we hope he will be so good as to state what these rights are, so that the public may know what he means. It is our opinion, however, that he need not be under any apprehensions from the public going into the wood gas manufacture while there is such an abundant supply of cannel coal in our country.

# More Life Boats.

The great loss of life by the unfortunate Arctic, having made a deep and sad impression upon the minds of the principal agent and the principal stockholders of the Company, they having lost so many near and dear friends, it appears, that they have become thoroughly convinced that there was not a sufficient supply of life boats on board, for Mr. Collins has just given orders to have five new ones (Francis' Metallic) built for each of his steamers. The letter of Mr. Collins ordering these new boats, states, that with those which his steamships now have, and the additional ones, they hope to provide visions for several days, in ordinary weather sufficient capacity to carry all the crew and passengers, with provisions and water for a week at least. We hope that a law will be made by the next Congress embracing an inspection for all vessels before they proceed to sea, on every voyage, in order to see that each is provided with a sufficient supply of life boats.

presenterious, o o; and gauge block, V, which he springs, w w, or their equivalents, combined and arranged substantial-ly as shown, for the purpose of feeding the slats or strips, cl, properly to the match frame, J, and adjusting them therein, and also causing the ends of the match sticks to be on a lev-el to insure an equal immersion in the necessary compound with which they are covered.

# [This is a very excellent machine.]

81)

[Ins is a very excentent machine.] Toorst CLOPTING FOR FICEER CYLINDERS-Robt. Hene-age, of Lowell, Mass. : I am aware that teeth for card cloth-ing of cylinders have been made of short pieces of wire bent and inserted in leachter. I am aware also that it has of late been customary to make teeth of a short piece of metallic place having its two ends bent up at right angles to the rest of the plate, and each reduced to a triangular form or tooth, such combined teeth being inserted in a band or sheet of leather or a flexible material wound on and fixed to the curv-ed surface of a cylinder. I therefore do not claim either of such modes of making teeth or the clothing of card or pick-er cylinders. But I claim the described improved manufacture of a me-tallic clothing of a pick cylinder, the same being made of a

But I claim the described improved manufacture of a me-tallic clothing of a pick cylinder, the same being made of a thin plate of metal with the teeth cut or stamped out of it, and bent from and directly above, and so as to stand at an-gles with the spaces from which they are cut, as specified. Ido not claim securing disconnected teeth in a cylinder, by providing said teeth with shanks to be driven into the cylinder forming said shanks with shoulders at the back of the teeth, and covering or overlapping the same by notched strips or plates of metal screwed to the cylinder and made to receive the teeth in their respective notches, when such

MANUFACTURING MAST HOOPS-E. W. Scott, of Lowell, Mass.: I do not claim revolving cutter heads for dressing lumber, as they have been known and used. Neither do I claim stationary feed rolls as such, for they have also been known for planing board and other straight timber

nber. I claim the feed rolls, L and K, the feed rolls, I and J, and I claim the feed rolls, L and K, the feed rolls, I and J, and the cutters and cutter heads. C and D, when they are so con-structed, arranged, and operated as to round or finish and shope the mast hoops, while passing the said cutters ame rolls, which shape, round, or finish them, parallel to the grain, the hoops being at liberty to take their natural course excepting where they are held by the feed and friction rolls and where the cutter heads and cutters are operating to dress them, essentially and for the purposes set forth.

Soldering FURNACE-Wm. J. Stevenson of New York SolDering FURACE-wm. J. Stevenson of New York City: I claim providing a soldering furnace with an air nube, and a recess, a a, or their equivalents, so that the en-tire circumference of each of the joints of the can shall be soldered all at once, and during the performance of the same no other parts of the can beddes the lap, and that portion of the bottom or top upon which the ring of solder lies exposed to a melting heat, substantially as and for the purpose spec-ified ified

[A very good improvement in soldering furnaces.]

ODOMETERS-S. R. Thorp, of Batavia, N. Y.: I claim the peculiar combination of the spring, a b, al bl, with the band, d d, dl dl, and the ratchet wheel No.11'; all else I disclaim.

an American. It appears to us, that, as a matter of political economy for the benefit of Canada, those who opposed the Bill exhibited a great want of sagacity and good statesmanship.

We hope that our patent law relating to the fees charged upon foreigners, will be on the 1775h of August last.

# The Telegraph in Australia.

The electro-magnetic telegraph is making decided progress in Australia. A line from Melbourzeto Geelong was to be completed

## TO CORRESPONDENTS.

H. H., of La .- The principle of propelling vessels by forcing out water at the stern by means of pumps, is very old as it was the plan firstfried by Rumsey, shortly after the Revolution. Ruthven, of Edinburgh, has employed an improved method of propelling by water, but we do not think

t will take the place of the paddle or screw. S. S., of Mass.—A self-supporting sun-shade secured to the shoulder of the wearer, was shown to us by a Western lady some months ago. We have heard nothing of it since. S. S. U., of Ct.-Models can be made of any durable ma

terial, iron, brass, tin, wood, etc. E. M., of Va.—'The papers relating to the washing ma-

chine case were sent to Washington Oct. 13th. E. P. B., of Me.—As a general remark we can truly say

that it is quite difficult to procure a patent on a water wheel, so much having been done in them. We do not discover any novelty in yours upon which a claim can be sustained.

T. O., of Pa.-Street sweeping machines and knife clean-ers have been patented. There are a number of inventions for these purposes.

A. J., Jr., of Mass.-We cannot prepare your specifications and drawings without a model. Some inventors do not understand that models are required by law. We send a circular of instructions free to any one who desires to know

how to proceed to make application for a patent. C. H., of Va.—We have examined the sketch and de tion of your improvement in hurdle fences. We would refer you for the same thing to volume 7, SCIENTIFIC AMERICAN, page 132. You can procure this volume bound for \$2,75.

A. B. L., of N. Y .- We would not advise you to apply for a patent on your static pressure locomotive. It is no doubt as good (as you say) as other perpetual motions, but then it is not a perpetual motion.

W. R. H., of Wis.-We like your communication ; send on the other and let both go together ; this is the best way. F. F. H., of N. Y.—The only way to find out whether o

not the banks will adopt the paper you describe, is to try them. The bankers of Boston offered a reward for such paper, but the time is past for you to take advantage of the

C. L., of Mass.-We do not understand your question res pecting the running of a belt correctly on two cones of pul leys of different sizes.

W. B., of Baltimore -- The matter which you wish to correct is of no importance whatever, because no error was committed in science or fact, relating to the three modes of using steam.

C. C., of Ohio-Your process of separating the fatty and oily from the membraneous portions of animal and vegetable substances, is not new. Mollett's English patent 1844, des cribes the same thing.

C. R. E., of Mass .- Your communication cannot be pub lished. It is not suitable for our columns.

G. P., of Montreal-The model must not exceed twelve inches in length, breadth, or hight. Gas has been made o grease of all kinds, asphalt, water, coal, resin, and a great many other things.

H. F. W., of N. Y.-Common green paint, with some white lead in it, is good for iron, but you should varnish the iron first then paint on the top of it. Don't use tar in the sulphuric acid for cleaning castings; use four parts of water to one of acid.

Jr., of Pa.-There is a very extensive market in England for such an invention as you speak of, and if yours can be made to operate well there will be no difficulty in finding a purchaser for it. Our Agents in London will attend to its sale.

A. P., of N. Y .- Your improvement in car trucks is quite different from anything we know of for the purpose. You had better send us a model of it for further examination .-Bear in mind that the model must not exceed one foot square in size.

A. B. & Co., of London-We shall transmit without delay the powers of attorney for the Norway, Sweden and Denmark patents. It takes some time to get them legalized by the executive.

C. J., of N. H.-Send us a sketch of your cloth folding machine, and we will examine it. A convolute die is not

G. S., of N. Y .- Your drill is a good one, and ought to find ready sale. It contains some novelty. You can ex pect only a limited claim.

G. J. L., of N. Y .- We are not acquainted with any work on medical galvanism

The following amounts have been received from the parties to whom these initials apply, on account of razeeing their models at the Patent Office: -- R. W., of O., \$7; E. Y., of Pa., \$3; N. B., of N. Y., \$2,75; A. E., of N. Y., \$1,5•; H. W. P., of N. Y., \$3; T.S. W., of N. J., \$30.

# Money received on account of Patent Office business fo

the week ending Saturday, Nov. 4:--A. H. B., of N. Y., \$60; J. W. Y., of Pa., \$35; G. B. C. of N. Y., \$25; J. B., of Ill., \$55; W. H. B., of Ind., \$20; B. & C., of Tex., \$15; L. B., of N. Y., \$50; G. H., of Tex.; N. Y., \$55; T. H., of N. Y., \$30; J. H. B., of N. Y., \$55

E. G. O., of N. Y., \$33. Specifications and drawings belonging to parties with th following initials have been forwarded to the Patent Office during the week ending Saturday, Nov. 4 :--

J. H. B., of N. Y.; L. C. C., of Ct.; J. W. H., of Ct.; G. B. C., of N. Y.; Mrs. G. P. F., of Ind.: C. & R., of

# American and Foreign Patent Agency.

Agency. IMPORTANT TO INVENTIORS.-MESSRS. MUNN & CO., Publishers and Proprietors of the SOTENTIFIC MARRICAN, continue to prepare specifications and drawings, and attend to procuring patents for new inventions in the United States, Great Britain, France, Belgium, Holland, Austria, Spain, etc., etc. We have competent board of Scientific Examiners, which enables us to despatch with great facility a very karee amount of business. Inventors are reminded that all matter in-trusted toour care are strictly confidential, and hence it is unnecessary for them to incur the expense of at-tending in person. They should first send us a sketch and description of the invention, and we will carefully examine it, state our opinion, and the expense of at-tending in person. They should first send us a sketch and description of the invention, and we will carefully examine it, state our opinion, and the expense of at-tending in person. They should first send us a sketch and description of the invention, and we will carefully examine it, state our opinion, and the expense of mat-ting an application, if deemed new and worthy of it. Models and fees can be sent with safety from any part of the country by express. In this respect New York is more accessible than any other city in our country. Circulars of information will be sent free of postage to anaking anapplication, if deemed new and worthy of it. Models and fees can be sent with safety from any part of the country by express. In the preparation of the par-pare accessible than any other city in our country. Circulars of information will be sent free of postage to anaking anapplication, if deemed in securing patents, as pres, as well as integrity in takting proper care of the case until the inventor is duly invested with his legal rights. Farites intrusting their business in our hands on rely upon prompt and faithful attention. Most of the patents obtained by Americans in foreign countries are well as integrity in takting proper care of the c

MPORTANT TO MANUFACTURERS OF R. R. Cars, Doors. Sash Blinds, and other wood work.— We are n'w fitting "p largely for the manufacture of Wardwell's Patent Tenoning Machine, for which a pat-ent was granted the 29th of August last. They will do the work of from 3 to 8 ordinary machines. They will do he work of from 3 to 8 ordinary machines. They com-plete at one operation, even to chamfering tenons of any length, width. thickness, or style. They cut double ten-ons, which no other machine can do. They are sub-stantially made, and by far more durable than any other in use. They have been in successful operation for the past 10 months. COLE, DAVIS, & CO. Lave Village N. H. For rights, address C. P. S. WARDWELL, at Lake Village. 93

TO IRON FOUNDERS—Wanted a situation as Manager or Foreman, or take the work by the piece, in a large shop. The advertiser, who has been foreman for the last two years, in a large shop in this city, and five years in England, and understands the business in all its branches on the most improved plans and good reference given. Would have no objection to so South or West. Address H. M., Jeweler Store, No. 533 Eighth Avenue, New York.

**TROFATTER'S IMPROVED WELT** Machine-The best, cheap-st, and most durable Machine in use. It cuts to the width, and splits from corner to corner at one passage through II will make a set of 60 pairs from the whole stock in ten minutes, without any waste of stock. Size of Machine, II by 16 inches. Price \$15. Right for any State except Massachusetts. \$300. S. J. & C. H. TROFATTER. 1\* 4 Beaver Street, Salem, Mass.\$

WANTED—To take charge of the sale or introduc-tion of certain valuable Patented Mechanical In-ventions, a person who can furnish satisfactory evidence of character and ability for such business. Address, stating views as to remuneration, &c., L. P. C., Post Of-fice, New York. 93\*

CTFAM ENGINE-Wanted. a good second hand Horizontal Steam Engine, with Boiler. About 25 or 30 horse power. Address, Box 586 P. 0. 91\*

CARRIAGE MAKERS-And Patent Dealers, who will address me, pre-paid, will receive information of my improved Carriage Top. patented June 20th, 1854, and will not regret their trouble. S. F. HUNTINGTON. Syracuse, N. Y.

MATHEMATICAL INSTRUMENTS-Separate and in cases. McALLISTER & BRO., 48 Chest nut street, Philadelphia. 94

PHILOSOPHICAL APPARATUS-Of every de scription. McALLISTER & BROTHER, 48 Chestnut street, Philadelphia. 94

SPECTACLES-Spy Glasses, Microscopes, Platina Points, &c., &c., McALLISTER & BROTHER, 48 Chestnut street, Philadelphia. 94

STATIONARY STEAM ENGINES—The subscription of the stress of the subscription of the sub

THE STAIR BUILDERS' GUIDE-By Cupper. I now ready: price \$6. By remitting, the book will be sent by mail or express to any part of Canada or the United States. W. GOWANS, 175 Fulton street. 94

THE EXCLUSIVE RIGHT TO MAKE AND sell Gale's Eagle Feed Cutters, for cutting all kinds of fodder, particularly cornstalks, by hand power, is offered for sale for the Western States, and fifteen com-ties in Western New York. Nourse & Co., of Boston, Mass., manufactule and sell for the balance of the Uni-ted States. Retail price in Boston for bestize, 486. Par-ties wishing to buy rights can get the refusal of the ter-ritory wanted, long enough to send to Nourse & Co. to get a machine, and cut, if they choose, a hundred tuns of feed with it by that time it is fair to presume they can form an intelligent opinion as to its value. The pat-nt is a good one, and cannot be dodged by pirates.— Letters in reference to rights should be sent direct to WARREN GALE, No. 4 North Market st., Boston, Mass. THE EXCLUSIVE RIGHT TO MAKE AND

To MACHINISTS. RAILBOAD COMPANIES, and others-SHRIVER & BROTHERS. Cumberland. Md., have now on hand. for sale, Engine Lathes, 8 feet hed, swing 19 inches: ditto. 10 feet bed, swing 24 inches; Hand Lathes. 8 feet bed, swing 18 inches vide. We are al-omanufacturing a variety of other sizes and descrip-tions of machinist's tools, all of which are built in the hest style. and warranted to give perfect satisfaction.-First premiums have been awarded us by the Maryland Institute, Baltimore ; and the Ohio Mechanic's Institute, Cincinnati, O., at their Exhibitions this year. 84

**D**RAUGHT BOARDS-Patent. 23 by 29 inches.-Instruments in use. Complete for \$10. Sent by Express. Direct (post paid) to CHAMBERLIN & Co., Pittsfield, Mass. 85t\*

DRICES GREATLY REDUCED-JOHN PARSH LEY, New Haven, Conn. will have 12 of his No.3 Iron Planers finished by the 1st of January. 1855, to plane 12 feet long, 36 inches wide and 30 inches high with down and angle feed in the cross-head, they weigt about 8.000 lbs, and are in workmanship and design equa to any planers built in New England. Price 550 dollar: cash. Boxing and Shipping extra. For cuts address a above. 8tf

above. Sti TFE ILLUSTRATED-A new first class Weekly Newspaper, devoted to News, Literature, Science and the Arts, to Entertainment Improvement, and Progress. To embrace every human interest, and to supply aliment to every mental faculty, is its aim-Bound to no theory or party. but seeking the highest in-terests of all; advocating whatever tends to promote the physical, intellectual and moral good of man. but exposing evils and their causes, it shall merit, and. we hope, command, a world wide circulation and influence. It will point out all available means of profit and com-fort, and especially expound the laws of Life and Right, including the normal exercise of all our powers, besides encouraging in all a spirit of hope. maniness, and self-reliance. A large folio sheet of excellent paper. with twenty-eight columns of new type, printed in a superior manner, at \$% a-year. Published by 74 FOWLERS & WELLS, 308 Eroadwar, N. Y. 5? a-vear. Published by FOWLERS & WELLS, 308 Broadway, N.Y. nanner, a

**100** HORSE POWER ENGINE, \$2800; four each; 2 four-horse, and 2 eight-horse power Engines, by J. W. HOOKER, Buffalo Machinery Depot. Terrace st., and 36 Lloyd st., Buffalo, N. Y. H. C. BROWN, Supt. 73

TO FXHIBITORS—All applications for space to exhibit in the French Palace of Industry, in 1885, should be addressed to the undersigned hefore the 15th of November next. Commissioner for the State of New York. Office Scientific American, New York City.

DictionNAIRE TECHNOLOGIQUE Francais-D'Anglais-Allemand. redige d'apres les meilleurs ouv-rages speciaux des trois langues, donnant avec leurs di-verses acceptions et applications, tous les termes tech-niques employes dans les arts industriels et dans la mecanique, la physique etla chimie manufacturieres : suivi d'un tableau comparatif des monnaies. poids et mesures, Francais. Anglais, et Allemands. Par MM. Tolhausen et Gardisal. New York. chez MUNN et CIE, 128 Fulton Street. Prix, \$1,31

MECHANICS' ROOMS, WITH STEAM POW-has just erected a large three story brick building, tin roofed, two hundred feet long, and one hundred feet wide, and to be furnished with two large steam engines expressly designed for the growing mechanical wantsof this vicinity. The apartments will be divided and pow-er rented. to suit the wants of tenants. The location is central, conspicuous, and convenient to canal. railroads and lake shipping. Few mechanics or manufacturers are aware of the vast number of articles which are used in immense quantities in the Western States, which have been hither to wholly manufactured in the Eastern States and which may be made here to better advantage. The premises will be ready for occupation early this fall. For further information apply to J. L. HEWITT, Cleveland, Ohio.

**EXTABLISHED IN 1796**—Philosophical, Mathe-matical and Optical Instruments. Our priced and illustrated Catalogue furnished on application, and sent by mail free of charge. McALLISTER & BROTHER, Opticians, 48 Chesnut st., Philadelphia.

New HAVEN MANUFACTURING COMPANY Machinists' Tools. Iron planers and Engine Lathes of all sizes. Hand Lathes, Gear Cutters, Drills, Bolt Cutters, Chucks, &c., on hand and being built by the quantity, which enables us to sell low. For cuts giving rull description and prices, address New Haven Manu-facturing Co., New Haven, Conn. 1 tf

WOODWORTH'S PATENT Planing, Tonguing Grooving Machines-Double machines plane both Growing Machines—Double machines plane both sides, tongue, and groove at one and the same time, saving one half of the time when lumber is required to be planed on both sides. Large assortment constantly on hand. Warranted to give entire satisfaction to pur-chasers. JOHN H. LESTER, 46\* 57 Pearl st., Brooklyn, L. I.

YOU CAN GET THE NEW YORK WEEKLY SUN three months for 25 cts.; six months 50 cts.; one year, 75 cents, 16 months, \$1. Or three copies one year, 82; eight copies \$5; twenty-five copies \$15; and by canvassing for subscribers you may get one of the five cash prizes \$50, \$20, \$15, \$10, and \$5-for the largest lists sent in before 3rd Feb.—Specimen copies gratis.— Send letters and money (post-paid) to MOSESS. BEACH, Sun Office, New York.

TO CAPITALISTS AND MANUFACTURERS TO CAPITALISTS AND MANUFALTURENC —The New York Cast Steel Works, corner Second Avenue and 47th street, are for sale or to let, affording a desirable opportunity for those desiring to engage in the business. Address or call on DANIEL ADEE, Agent, 107 Fulton st. N. Y. Steam Engines for sale, cheap for cash, one of six-horse power, and one of two-horse power. Apply as above. 64<sup>4</sup>

COTTON AND WOOLEN MANUFACTUR-or ers' Supplies of every description ; also machinery of all kinds; wrought-iron Tackle Blocks of all sizes; Leather Belting superior oak tanned ; Bolts, Nuts, and Washers of all sizes on the most reasonable terms. 613° SAML B. LEACH, 51 Broad st.

**K**ENTUCKY LOCOMOTIVE WORKS-Corner of Kentucky and Tenth streets, Louisville, Ky.-The proprietors of the Kentucky Locomotive Works would respectfully inform Railroad Companies and the public generally, that, having completed their establish-ment, they are now prepared to receive and execute or ders with fidelity and dispatch. They will contract for Locomotives, Passenger, Baggage, Freight, Gravel, and Hand Cars, of every style and pattern, as well as all kinds of Stock and Machinery required for railroads.-Particular attention will be paid to Repairing, for which they have every facility. They are also prepared to con-tract on favorable terms for building all kinds of Ma-chine Tools, such as Turning Engines, Laths, Planers, Drills, Solting, Splining, and Shaping Machines of ev-ery variety of pattern. Having also a large Foundry connected with the establishment, orders for castings are solicited, and will be filled with promptness. Car Wheels of any pattern can be furnished on short notice. Double and single plate and Spoke Wheels of all sizes constantly on hand. Communications or orders must be addressed to OLMSTED, TENNEYS & PECK, Louis-ville, Ky.

OIL! OIL! OIL!-For railroads, steamers, and for machinery and burning-Pease's Improved Ma-chinery and Burning Oil will save fifty per cent, and will notgum. This oil possesses qualities vitally essen-tial for lubricating and burning, and found in no other oil. It is offered to the public upon the most reliable, thorough, and practical test. Our most skillful engi-neers and machinists pronounce it superior and cheap-er than any other, and the only oil that is in all cases reliable and will not gum. The Scientific American, af-terseveral tests, pronounced it "superior to any other they have ever used for machinery." For sale only by the inventor and manufacturer. T. S. PEASE, 61 Main st., Buffalo, N. Y. N. B.-Reliable orders filled for any part of the United States and Europe.

**DUFFALO MACHINERY DEPOT**—Terrace St. Dand 36 Lloyd st., Buffalo ; J. W. HOOKER, Proprie-tor, H. C. Brown, Superintendant, offers for sale Ma-chinists' tools of all kinds : Engine Lathes, Planers, Drills, Chucks, Boring Mills ; also machinery of all kinds on hand or furnished to order. 7tf

1854 --MICHIGAN CENTRAL R.R. LINE General Forwarder. having been a practical machinist, is prepared with skill and implements to handle and ship by any line, all kinds of machinery and manufac-turers' wares. Mark plainly, care D. W. WHITING, Buffalo, N. Y. 7tf

STEAM ENGINES AND BOILERS FOR SALE. —One new eight-horse engine. One second hand five-horse engine. Tubular boilers, second-hand, suitable for same. One second-hand two horse portable engine and boiler. THOS. PROSSER & SON, 28 Platt street, 4tf

**STAVE AND BARREL MACHINERY**—Hutchin-son's Patent. This machinery which received the highest award at the Crystal Palace, is now in daily op-eration there. Staves, heading, &c., prepared by it are worth to the cooper 20 to 40 per cent. more than when finished in any other way. Special attention is invited to the improved Stave Jointer. Apply to C. B. HUTCH-INSON & CO., Crystal Palace, or Auburn, N.Y. 1 tf

**PATENT DRIERS**—Zinc Driers, Graining Colors, Stove Polish, Gold Size, &c., 114 John street, New York. QUARTERMAN & SON, Manufacturers. 16m

**JOHN PARSHLEY**, fmanufacturer of machinist's tools, No. 5 and 7 Howard street, New Haven, Ct., is now finishing a lot of iron planers to plane 8 5-12 feet long, 30 in. wide, and 26 in. high, having the down and angle feed in the cross head, the planers all of the best quality, and prices extremely low for the quality. Cuts with full particulars can be had by addressing as above, post-paid.

B. ELV, Counsellor at Law, 52 Washington st., Boston, will give particular attention to Patent Cases. Refers to Messrs. Munn & Co., Scientific Ameri-can. 16 1y\*

ARRISON'S GRAIN MILLS-Latest Patent.-equal. A supply constantly on hand. Liberal Commis-sions paid to agents. For further information address New Haven Manufacturing Co., New Haven, Conn., or to S. C. HILLS, our agent, 12 Platt Street, New York. 1 tf

Representation of the second s

THE MERIDEN MACHINE CO.-Successors to L. Oliver Snow & Co., West Meriden, Com. Have on hand and make to order a great varlety of Lathes, Plan-ers, and other machinists tools of superior quality and finish. Cuts of these tools may be had on application as above, with full particulars. They also manufacture Farnam's Patent Lift and Force Pumps of all sizes. For mines, factories, railroad stations, &c. Having a large and extensive variety of patterns, the accumulation of over 20 years business, and extensive facilities for mak-ing light or heavy castings, are propared to contract for any kind of mill work, mining machinery, &c. New York Office and Sample Room, No. 15 Gold, cor. Platt st. 13m\*

71

Ę,



Scientific American.

Science and Art.

72

Palm Oil Candles Until of late years, candles were solely manufactured from bees-wax, spermaceti, or tallow. The application of scientific chemical research, however, to this branch of art, coupled with the withdrawal of the vexatious excise supervision, which prevents improvements in every trade which comes under its influence, has so improved the materials used as well as the manufacture itself, that all the best candles are now made from pure solid and crystallizable margaric and stearic acids. These are freed from the fluid oleic acid, and from glycerine, which exist in combination with them in ordinary tallow, as well as from other analogous substances-paraffine, (a carbo-hydrogenous substance resembling spermaceti, prepared from tar and peat,) the stearic and margaric acids of the cocoa-nut oil, besides the old substances, spermaceti and wax, both vegetable and animal. Only the coarsest description of candles are now made from the tallow of the ox or sheep; but as the illuminating power of these candles is small compared with the improved candles, while their rapidity of consumption is much greater, they are absolutely dearer as articles of consumption than the candles of improved manufacture. . . . The discovery by the celebrated French chemist, Chevreul, that fats were composed of three highly inflammable bodies, stearic and margaric acids (solids,) and oleic acid (a liquid,) combined with a comparatively uninflammable body, glycerine, has led to the creation of the great new manufacture of stearic and composite candles, the growth and importance of which will be understood when we state that, while in 1833 the new candles were unknown in England, and the quantity manufactured in France amounted to only twenty-five tuns annually, a single London house (that of E. Price & Co.,) manufactured last winter (1854) more than that quantity of stearic and composite candles daily, and employs in the business above 900 hands, and a capital of nearly three quarters of a million.-[Encyclopædia Britannica.

[We believe that there is no manufactory of palm oil candles in the United States, lard and tallow being the substances which our chandlers employ in making stearine candles. We do not know whether palm oil is cheaper or dearer than lard and tallow; if cheaper candle manufacturers would do well to direct their attention to procuring a supply of it.

### --Tubular Bridges in Canada.

The people of Canada seem to be going ahead with extraordinary energy and enter prise in the construction of splendid iron bridges. The editor of the Quebec Observer thus describes some new bridges recently erected over some of the rivers, in the line of the Quebec and Richmond Railway :---

"The one over the Silk River is made of boiler plate, the tops, bottoms, and connecting plates being of double or treble thickness and, in form of construction, like a wooden trestle bridge, the interstices being filled in with common boiler plate. The river, at first glance, seems to be spanned with an ordinary steamboat boiler, on which a road is placed It is, however, inconceivably strong, resting as it does upon substantial stone piers. We came next on the bridge over the Etchmin. The span is immense. A tubular iron bridge of 155 feet span, rests upon two solid stone piers of some fifty feet in hight, one of which is connected with the left bank of the river by an iron girder bridge fifty feet in length, the same as thrown across Silk River, but of more than double the strength. The tubular bridge, which is like a square boiler, strongly arched in the interior, is only the width of the road, on the very outer edge of which the rails are laid, and to which two iron galleries are attached for the employees of the road to pass over when necessary, and about ten feet from bottom to top-in a word, it is as it were a solid bar of iron seven feet in width by ten in depth, and of one hundred and fifty-five feet in length, laid across two A belt passing over the pulley, n, on the reel, own.

stone piers, for the structure is so scientificala large locomotive, on being put on it, only of an inch in the whole span."

# History of Reaping Machines.-No. 7.

Figure 24 is an isometrical perspective view and fig. 25 a plan view of the cutters of the reaping machine invented by the Rev. Patrick Bell, of Carmyllie, Scotland, in 1826. The horses are placed behind the machine; its cutters are of the spear-shaped character; it carries a reel, and has a delivery apron, which discharges the cut grain in lines at the one D, which moves two pinions, one of which turns

FIG. 24.



motion to the former one.

In this machine there is the adjustable reel

(which was also in Ogle's on page 64,) clipping

cutters, (each made separate,) a method of

raising the cutters, and also a mode of deliv-

ering the cut grass in line on the ground, to

allow any number of binders to work after it.

Various trials were made with this machine

in 1828 and 1829. One made in September

1828, in the presence of fifty farmers, elicited

from them a signed declaration, that moved

by one horse, it cut down an acre per hour of

oats. In September 1829, the same machine

was worked at Monckie, in the presence of a

large number of persons, who also attested

that it cut half an acre of heavy lodged oats

in half an hour. It was also tried in a num-

described in Loudon's Encyclopædia of Ag-

Although there is unquestionable proof

respecting the successful working of this ma-

chine in 1828, it does not seem to have at-

tracted much attention, as it was lost sight of

entirely until England was awakened to the

utility of reaping machines in 1851, at the

Great Exhibition. "The credit of effecting

this (the whole English press has declared,)

is undoubtedly due to American inventors,

whatever may be the ground for disputing the

novelty of the two rival American reapers,"

(McCormick's and Hussey's). After the ac-

riculture.

to the coupling wheels, L L, upon the top of the frame. The crank rod, K, as the machine is pushed forward, moves the crank, M, which gives a reciprocating motion to the cutters .----N is a coupling strap of iron, connecting the crank, M. and the movable bar, O, which is kept in place by sliding hooks, P, working in sockets, Q, screwed upon a supporting plate, R. In fig. 25, the attachment of the crank to the bar, O, is shown, which exhibits the mode of giving the cutters a vibratory motion. To lessen the friction, the inventor placed two antifriction rollers under the reciprocating bar, O,(a good idea, but not shown in the cut, and not required.) The cutter was six feet long, so that the machine cut a swath six feet wide .-In fig. 24, S S S represent an underset of cutters, or fixed blades (immovable,) which answered the same purpose as fingers, making the cut a clipping one, the upper movable cutters, U U, and the under ones, S S, acting like shears. As the wheel, D, gives motion to the coupling ones, L L, these move a horizontal



counts of the American reapers at the World's shaft having a wheel, W, on its extremity Fair were published abroad, it was then claimwhich gears into another, X, on the end of a ed that the American reapers were no more long roller. From this roller there passes a than copies of British reapers, and that one of chain,  $\alpha$ , over spoke pinions, to another roller, Bell's machines had been early sent out to and around these two are placed an endless America, from which, it was hinted, the Amerapron of canvas, so that as the grain is cut it falls upon this apron, which by its rotary moican inventors had supplied themselves with ideas. We questioned the truth of a Bell tion towards the side of the machine discharge machine ever having been sent to this counes the cut grain in a line on the ground. The try and called for information on this point pole and whiffletrees of this machine were through our columns. On page 54, Vol. 8, placed behind it for the horses, and the ma-SCIENTIFIC AMERICAN, Geo. K. Fuller, Esq., of chine was moved forward, but the whiffletrees Chittenango, Madison Co., N. Y., furnished were attached to the poles for the horses to draw, and not push, a principle which all will easily understand. e e are two roller wheels, placed behind the wheels, C C, and inside of them, and are hung about two inches above the ground, but can be depressed by the shaft g, so as to bring them to the ground, to ele vate the front wheels, C C, and the cutting gear, so as to allow the machine to be turned conveniently. The reel, O O, is placed exactly above the cutters, and revolves in a spindle; it has supports, k k, which are bent at p p, and l are the wings; this reel could be placed further forward or back, for long and short grain, by screws at q q q. The reel can also be elevated and lowered, as its bearings are strap boxes capable of being shifted.

side. A is the frame, B B are two large, and ly put together, that the immense weight of C C two small wheels, upon which the frame is mounted. The axle of the main wheels, B caused a permanent depression of an eighth B, is so constructed as to turn with the wheels, or the wheels to turn on it. There are cross flanges cast upon the nave, which catch hold of the coupling box, E, when the machinery is to be moved, and are disengaged by the handle, F, when the machine is going, without moving the machinery. There is a coupling box at each side, and the driver standing at the handle, H, can, by moving it, operate both

The Rubber Trade.

A correspondent of the Boston Post, writing from Para. Brazil. under date of Sept. 17th, says: "The American commerce of Para will this year reach about five millions of dollars, or one-third of the whole commerce of Para, and of this great valley .--This commerce consists, too, in one article whose demand is every day increasing; so much so, that instead of five millions it must very soon be twenty millions. Nor is it a less interesting fact that four-fifths of all the boxes. Upon the main axle is a bevel wheel, rubber produced here is manufactured in the United States, and that the whole increase of its trade, if properly conducted, will yield a vast wealth to hundreds in the manufacture andsale of these rubber goods in the United

# LITERARY NOTICES.

States.

LLUSTRATED HYDROPATHIC REVIEW—This is an excellent work for 1855, published by Messrs. Fowlers & Wells, Broad-way, N.Y., and contains an article on "Patin Human Food" wherein the author animadverts severely and justly on the very general habit of using so much fat in cooking, especial-ly in frying articles of food in grease.

19 in trying articles of food in grease. Increments' HorsencoLD Words-For November, is an excellent number. It is disguised in a cover fashioned after the similitude of Harper's Magazine, which may be regarded as a "lick back" for the ill treatment by the Messrs. Harper's in publishing an edition of Hard Tienes, a late work by Dickens, which seems to have justly belonged to Mr. McElrath, the American publisher of Household Words. Mr. McElrath, thery perfuently defended his rights in the matter by a published statement.

by a published statement. THE WESTMINSTER REVIEW—The new number of this excellent Review has been promptly issued by its American publishers, Leonard Scott, & Co., Fulton st., this City. The leading article is on the "Odin Religion" (that of the old Northmen.) It contains eight original articles, every one of which is able and prfound. One on the "Character and Conditions of the Greek People," should be read by every American.

THE ILLUSTRATED NEW YORK JOURNALcontains over twenty very beautiful engravings, and the tales, sketches, miscellany, and postry, are all very excellent and spirited. It is taken altogether, a very fine publication-Price 18% cents. P. D. Orvis, 180 Fulton st., Publisher.

JOURNAL OF INDUSTRIAL PROGRESS-Edited by Wm. K. Sullivan : monthly : Dublin, Ireland, W. B. Kelly.-This in teresting exchange comes very regularly, and is very ably managed. We hope it has a good circulation.

NATIONAL MAGAZINE—For November. Carlton & Phil-lips, 200 Mulberry st., N. Y.—This excellent serial is choice-ly stored with first-rate matter. It is all the more interest-ing from the religious tone which pervades it.

UNIVERSAL EXHIBITION—A pamphlet containing the de-crees, regulations, and instructions, in regard to the French Exhibition, can be had upon application to this office.

HALL'S JOURNAL OF HEALTH-For November, is received. It is a good number.



### ber of other places in the same year. It is Inventors, and Manufacturers

The Tenth Volume of the SCIENTIFIC AMERICAN comnenced on the 16th of September. It is an ILLUSTRAT-ED PERIODICAL, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all inter-ests which the light of PRACTICAL SCIENCE is calculated to advance.

Its general contents embrace notices of the

LATEST AND BEST SCIENTIFIC, MECHANICAL. CHEMICAL, AND AGRICULTURAL DISCOVERIES, --with Editorial comments explaining their application notices of NEW PROCESSES in all branches of Manufactures; PRACTICAL HIN'IS on Machinery; information as to STEAM, and all processes to which it is applicable; also Mining, Millwrighting, Dyeing, and all arts involving CHEMICAL SCIENCE; Engineering, Architecture; comprehensive SCIENTIFIC MEMOR-ANDA: Proceedings of Scientific Bodies; Accounts of Exhibitions .- together with news and information upon THOUSANDS OF OTHER SUBJECTS.

Reports of U.S. PATENTS granted are also published every week, including OFFICIAL COPIES of all the PA-TENT CLAIMS; these Claims are published in the Scientific American IN ADVANCE OF ALL OTHER PAPERS.

The CONTRIBUTORS to the Scientific American are among the MOST EMINENT scientific and practical men of the times. The Editorial Department i sally acknowledged to be conducted with GREAT ABIL-ITY, and to be distinguished, not only for the excellence and truthfulness of its discussions, but for the fearlessness with which error is combated and false theories are exploded

Mechanics, Inventors, Engineers, Chemists, Manu facturers, Agriculturists, and PEOPLE IN EVERY PRO-FESSION IN LIFE, will find the SCIENTIFIC AMERICAN to be of great value in their respective callings. Its OF DOLLARS annually, besides affording them a con tinual source of knowledge, the experience of which is beyond pecuniary estimate. The SCIENTIFIC AMERICAN is published once a veek; every number contains eight large quarto pages, forming annually a complete and splendid volume, illustrated with SEVERAL HUNDRED ORIGINAL EN-GRAVINGS.

the desired information, stating in a letter that one of the Rev. P. Bell's horse power reaping machines was imported by John B Yates, of that place, in 1834, and put in operation in his presence (the writer's,) superintended by Mr. Bell himself, who it seems had paid a visit to this country in that year. It reaped a level field of wheat at about the rate of an acre per hour. Two years after this Mr. Yates died, and we suppose his machine was never used afterwards. In future articles on American reaping machines, it will be shown that their inventors were not indebted to Mr. Bell, or any other foreign inventor for their ideas-that their improvement were distinctly and independently their

TERMS! TERMS!! TERMS!!! One Copy, for One Year Six Months \$1 Five copies, for Six Months Ten Copies for Six Months, \$8 Ten Copies, for Twelve Months Fifteen Copies for Twelve Months \$15 \$22 Twenty Copies for Twelve Months \$28 Southern, Western, and Canada Money taken at par for Subscriptions, or Post Office Stamps taken at their par value. Letters should be directed (post-paid) to MUNN & CO. 128 Fulton street, New York. For LIST OF PRIZES see Editorial page.