

## THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

#### VOL. XIV.

### NEW YORK, SEPTEMBER 18, 1858.

SCOTT'S IMPROVED LOOM.

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Fig.3

Fig.1

NO. 2.

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#### Advantages of Trees

We do not know the author of the follow ing beautiful and comprehensive notice of trees, but we think its perusal will cause many of our readers to involuntarily and heartily respond to the familiar and popular language of the song "Woodman spare that tree" :-

How beautiful, most beautiful of earth's ornaments, are trees! Waving out on the hills and down in the valleys, in wild wood or orchard, or singly by the wayside, God's spirit and benizon seem to us ever present in trees. For their shade and shelter to man and brute ; for the music the winds make among their leaves, and the birds in their branches: for the fruits and flowers they bear to delight the palate and the eye, and the fragrance that goes out and upward from them forever, we are worshipful of trees.

"Under his own vine and fig tree"-what more expressive of rest, independence and lordship in the earth! Well may the Arab reverence in the date-palm a God-given source of sustenance. Dear to the Spaniard is the olive, and to the Hindoo his banyan, wherein dwell the families of man, and the birds of heaven build their nests. Without trees what a desert place would be our earth-naked, parched, and hateful to the eye ! Yet how many are thoughtless of the use and beauty of trees. How many strike the ax idly or wantonly at their roots. Above all other things in the landscape we would deal gently with trees. Most beautiful where and as God plants them, but beautiful even as planted by the poorest art of man, trees should be protected and preserved.

If he is a benefactor who causes two blades of grass to grow where one grew before, how much greater his beneficence who plants a tree in some waste place, to shelter and shade, to draw thither song birds, and to bear fruit for man. Plant trees, O man, that hast waste land, and be careful of those that are planted.

#### Castor Oil Electuary.

Many processes have been devised for disguising the taste and appearance of castor oil. Valuable as this medicine is, many persons' stomachs revolt at taking it in an undisguised form. To overcome this repugnance, to give a concentrated form, and diminish as much as possible the quantity of the medicine, the following excellent formula has been devised by Mr. Septimus Piesse :- Take castor oil, three ounces; Castile soap, one drachm; simple sirup, one drachm; oil of cinnamon, or ottar of rose, six drops. Rub the soap with the sirup in a mortar; when perfectly blended and smooth add very gradually, and with constant trituration, the above ingredients. By these means a gelatinous electuary will be formed, rather palatable than otherwise, and nearly equal, bulk for bulk, to castor oil in strength.

6

The loom is about one of the oldest of machines, and to develop the simple framing depicted on Egyptian tombs to the power loom of to-day, has called forth much inventive genius and constructive skill. Still the loom is not perfect, and is yet capable of many improvements, the last, and a valuable one, being the subject of our illustration. It is the invention of E. M. Scott, of Auburn, N. Y., and was patented this week. It provides for the operation of the shuttle motion and harness motion by the movements of the lay, thus dispensing with the cam shaft and treadles, and simplifying the construction of the loon.

Fig. 1 is a perspective view of the improvements, in which A is the frame, B the yarn beam, C the whip roll, D the breast beam, and FL the lay. G is the main shaft, H the cranks for moving the lay, and I the connecting rods, connecting the cranks with the lay, all these parts being exactly the same as in an ordinary power loom. J J are the picker staves, working on pins, a a, secured in arms attached to the lower part of D. These staves have arms at their lower ends, connected by rods, c, with two levers, K, which work one on each side of the loom on pins, d d, secured in the framing, the levers being so situated as to be operated, as the lay swings back, by two rollers, e e (seen in Fig. 3), attached to the sole piece. The action of these rollers is to depress the arms of the picker staves, and move the upper ends of the same towards the center of the loom, for the purpose of throwing the shuttles. The picker staves are returned to the outer ends of the shuttle boxes as the lay moves forward, by means of spring, f (Fig. 1), connecting their arms with fixed pins, g, secured in the framing. To cause J to be operated only one at a time, the two rollers, e, are fitted to a shaft, h, which does not rotate, but is fitted to slide horizontally in guides, *i i*, secured to the lay, and these rollers are such a distance apart

K, the other is nearer the center of the loom. and out of the range of its lever; this is effected by the double cam, j (Fig. 3), which shows a portion of the lay detached. j turns on a pin, k, in the sole piece, L, and has fitted to it a plate, l, provided with four pins, m, one of which, as the lay completes its forward movement, strikes a dog, n, and thus causes the cam to be turned one-fourth of a revolution. The dog, n, works on a pin, n', in the breast beam, D, and is prevented getting out of an operative position by means of a spring, o, also attached to D. M M are the heddle frames working in guides, N N. Each of these heddles has attached to its lower rail a lifting rod, O, which works in guides in a stationary plate, P, attached to a rail, R.

K

The parts about to be described are separated, and better seen in Fig. 2. Each rod, O, has a notch, h, on its front side, and the rods are so bent and formed that the notches are side by side, so that they can be operated by two sliding dogs, q q, arranged in a frame, Q, that swings vertically on bearings, r, on the rail, R. The swinging motion of the frame, Q, which raises and lowers the heddles is effected by means of a rod, s, with an arm, f, rigidly secured to the bottom piece of the lay. This connection causes the rear end of the frame which is next the lifting rods, O O. to rise as the lay swings back, and fall as the lay beats up. The dogs, q q, are brought into position to operate on the teeth of the rods by the two double cams, t t, on a shaft that is fitted to bearings in the rear end of the frame, and which receives a quarter revolution every time that part of the frame descends by the action of a dog, v, attached to P, upon one of the pins, w, on a plate, w', on the end of the shaft. The dogs, q q, are thrown out to elevate the rods, O, by springs, and are drawn back when it is proper that they should be inoperative by the cams, tt. The dogs not only raise the that when one ranges with its respective lever, heddles, but also control their lowering, the their observations.

notch resting on q until the heddle arrives at its proper lowest point, where it is retained by stops in N. The dog, n, is kept in operation by a spring.

It will be seen from the above description that the invention is also applicable to hand looms, as all the motions are derived from the lay. The invention is valuable, and every weaver will at once appreciate its advantages. The claim will be found on another page.

Any further information can be obtained by addressing A. W. Johnson & Co., of Auburn, N. Y., or W. H. Halladay, their general agent.

#### The Wonders of Light.

Not only does light fly from the grand 'ruler of the day." with a velocity which is a million and a half times greater than the speed of a cannon ball, but it darts from every reflecting surface with a like velocity. and reaches the tender structure of the eye so gently, that, as it falls upon the little curtain of nerves which is there spread to receive it, it imparts the most pleasing sensations, and tells its story of the outer world with a minuteness of detail and a holiness of truth. Philosophers once sought to weigh the sunbeam. They constructed a most delicate balance, and suddenly let in upon it a beam of light: the lever of the balance was so delicately hung that the fluttering of a fly would have disturbed it. Everything prepared, the grave men took their places, and with keen eyes watched the result. The sunbeam that was to decide the experiment had left the sun eight minutes prior, to pass the ordeal. It had flown through ninety-five millions of miles of space in that short measure of time, and it shot upon the balance with unabated velocity. But the lever moved not; and the

#### philosophers were mute. Arsenic in Cigars. The Eclectic Medical Journal, of Cincinnati, states that Professor Bunsen, of Heidelberg, has had a series of experiments performed in his laboratory by Dr. Reiseg, to demonstrate the possibility of poisoning by introducing arsenic into cigars. It appears from these experiments that about a grain and a half of arsenic may enter the mouth when the cigar has been steeped into a solution of that metal, and the quantity is about one-eighth of a grain when the arsenic is introduced into the cigar in the solid form. That these may be the results of actual experiments, we do not doubt, but as there can be no possible use for introducing arsenic into cigars, either for the purposes of adulteration or improved appearance, we think that the Professor has been dealing with an entirely imaginary evil. Should this be intended as an argument against smoking, it would be better to use only those which are correct, without having recourse to conjuring up fallacious ones

wherewith to frighten the innocent smoker. -----The Comet. The long-expected comet of C arles V is beginning to enter an appearance at last. It has been detected in a faint and dim, but this time unmistakable, presence below the horizon, at the Paris Observatory. Professor Donati, of Florence, on the 2d of June last, first discovered it, and prophesied the point from which it will emerge. A deputation of scientific men have been sent by this country, Great Britain and France, to South America; they will meet at the Isthmus, and fix on some point in the Andes from which to make 10

## Scientific American.

THEFT Paten Riglams

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#### [Reported officially for the Scientific America

\*,\* Circulars giving full particulars of the mode of applying for patents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

REVOLVING FIREARM-Ethan Allan, of Worcester lass. : 1 do not mean to be understood as confining

Mass. : 1 do not mean to be understood as confining myself to any particular angle on that part of the pin, or to the precise form of the guards given. But first, I claim constructing that part of the pin, C, that projects in front of the cylinder, so as to produce a projecting, angle toward the junction of the barrel and chamber that is being discharged, for the purpose set forth. Second, I claim the guards, D and E, when construct-ed and operating as described.

HARVESTERS-R. L. Allen, of New York City: I claim, elevating the cutting apparatus and balancing the machine in going over stones, stumps, and other obstructions, and traversing hill sides by means of the long raker and drivers' seat, in combination with lever p, as set forth.

long raker and drivers' seat, in combination with revea p, as set forth. I also claim constructing the spring axle of three several pieces, clamped and riveted in the manner set forth and for the purpose set forth. I also claim the position of said axle, F, the same be-ing at right an eles with the line of draught, and per-forming the office of spring and axle, and fastened by bolt, x, as described. I also claim the form of the socket piece for receiving the ends of the spring standard, to support the rakers' and drivers' seat, Q. I also claim the construction of the double shoe and

and drivers' seat, Q. I also claim the construction of the double shoe and standard, adaptable to the cutting of grain or grass, as set forth, the same being in three pieces, the pieces be-ing put together in a particular way. I also claim making the shoe under the mortise thick

at edge, a, and thinner at a, in order the bords the data at edge, a, and thinner at a, in order to give greater thickness and strength to the finger board along a a, as set forth.

Set forth. SEWING MACHINES—B. Atwater, of Berlin, Conn.: I do not claim an arrangement of the guide plates together, and with respect to the bed plate, whereby the loop is bent over a rest or plate, so as to cause its how to spring upward into a position to receive the needle, as de-scribed, such being incident to my machine, as hereto-form ontertuded

scribed, such being incident to my machine, as hereto-fore patented. But I claim the improved arrangement of the guide plates, J 1, with respect to one another, the needle, a, and the bed plate, B, viz., so that there may be a space b, between the bed plate and the upper end of notch of the guide plate, J, and the two guide plates be placed so close together as to hold the middle of the bow of the loop in position, and bridged across the recess of the plate, J, substantially in manner for the reception of the needle by the loop, and to effect advantages as set forth.

form. HARROWS—David C. Ayres, of Lumberland, N. Y. : I am aware of the use of tubular framework, and there-fore do not claim it. But I claim the combination of tubular piece, B, globular projections a, cutters, c, and teeth, T, con-structed, arranged and operating together as described.

COEN PLANTEES—A. G. Babcock, of Galesburg, Ill. : I claim the arrangement and combination of the entire machine, for the purpose of planting corn.

CoAL OR ASHES SIFTEES-LOUIS D. Bartlett, of Bos-ton, Mass. : I do not claim using a circular sieve on top, and fitting into the vessel to be rotated back and forth, for that is old and well-known. But I claim using the annular ring and the cover, in combination with the sieve, substantially as described.

JOINTS FOR RAILROAD TRACKS-E. U. Benedict, of Horicon, Wis. : I do not claim, broadly, the placing of a vertical pin or projection upon the bottom of railroad chairs.

chairs. But I claim the combination of the ends of the rail, A, with the peculiarly constructed wrought iron T-shaped joint plate, B, by means of the stirrup bolts, c, which pass from the upper surface of the base, b, of the rail, through the said base, and through the lips, a, of the plate, B, and around the lower edge or pan of said plate, substantially as and for the purposes set forth.

[The object of this invention is to prevent the depres sion of the rails at the junction of the bars, and conse quent battering and lamination of the ends of the bars. by the passage of trains over them. The invention consists in a joint plate constructed, applied, and secured to the ends of the bars in a novel mannner.]

WATER CLOSET-George Blanchard, of New York City : I claim the arrangement of the swinging frame, C C, the pedals. A A, the bolt, B B, the seat, J, the two bars, E and F, the platform, D, substantially as de-scribed, and for the purpose specified.

HANGING BELLS—George R. Meneely, of West Troy, N. Y.: I claim uniting a bell furnished with horns to a yoke, through the intervention of a cap and clevis bolts, as that said bell may be turned in its yoke, in the man-ner and for the purpose specified.

OPERATING WINDOW BLINDS-Theodore Christian, OPERATING WINDOW BLINDS-Theodore Christian, of New York City: I claim the coupling the slats to-gether, as described, and connecting a whole panel by means of a rod in the manner and for the purpose set forth, grooving the rod in a straight line. I also claim taking the bearings of the tenons upon the inside of the channel therein, and beyond the pul-ley, as and for the purpose specified.

CAB SEATS AND COUCHES—R. E. Fowler, of Clayton, N. Y. : I claim, first, Huving a shaft, c, extended from one end of the seat to the other, when said shaft is fur-nished at one end with a crank. E, and at each end with a pinion or friction roller, D, and said pinion or friction rollers work in connection with large spur wheels or large friction rollers, F F, which have the arms, G G, of the back, d, or the arms, H H, of the foot board, c, pivoted eccentrically to them substantially as and for the purposes set form. Second, Attaching the arms of the foot board, c, to the lower spur wheel or friction rollers, F F, by means of turning pivots and hinge joints, i and k, in combi-nation with attaching the suspension rods of the foot boards by lose eyes, h, to long staples or brackets, g g, substantially as and for the purposes set forth. [By this invention one of the occupants of the seat is

[By this invention one of the occupants of the seat is enabled, by turning a crank at one end of the car seat, to adjust both arms, and consequently the back and foot-boards to any position desired or necessary to form

a comfortable sleeping or reclining couch. The adjust ment of the seat for sitting and sleeping purposes is

accomplished in a few seconds, and with ease and con venience.]

MACHINES FOR DIGGING POTATOES—Nathaniel Gear, of Zanesville, Ohio: I claim in combination with the scoop for digging, the skeleton wheel, K, for gathering, carrying, siting, and delivering the potatoes into the box or receiver, substantially as described and repre-sented sented.

sented. CUTTING DEVICE FOR HARVESTERS-C. P. Gronberg, of Montgomery, III. : I am aware that concave fingers have been previously used, and also perforated fingers; and I am also aware that various forms of curved metal finger bars have been employed in order to unrite or combine strength and lightness. I therefore do not claim broadly and separately any of the parts, irrespective of the construction and ar-rangement shown and described. I claim the semi-cylindrical finger bar, A, concave and perforated fingers, B, and the sickle formed of the bar, C, and teeth, D, when the above-named parts are constructed, combined and arranged for joint operation substantially as and for the purpose set forth. [By a peculiar construction of the finger bar and fin-

[By a peculiar construction of the finger bar and fin gers, these parts may be constructed wholly of metal and still be extremely light and durable, and the sickle prevented from clogging.]

FRUT BOX-Nicholas Hallock, of Flushing, N. Y.: I claim constructing a fruit box consisting of two sheets of material, one of which forms the body of the box, the other, the bottom, being ventilated as described, and combining therewith the folding handle, substan-tially as set forth and for the purposes specified.

tially as set forth and for the purposes specimeu. COFFEE ROASTEES—Theodore Heerman, of Mitchell-ville, Tenn. : I claim the employment of two reversely inclined concentrating plates, which have a space ex-isting between their approximating ends on the inner circumference of a revolving coffee-roasting cylinder, substantially as and for the purposes set forth.

With this invention the coffee, as fast as it naturally ollects in piles at the heads of the cylinders, is picked up by the radial rib, and dropped upon the angles of the inclined rib, and thereby thrown to the center of the cylinder's length. Thus picking up the coffee at intervals and inducing it to pass to the center of the cylinder, keeps it constantly in motion, both in the path of a vertical circle and in an oblique direction and every grain is consequently brought in contact

with the roasting surface, and a more uniform, effectual and expeditious roasting accomplished.]

WINDOW BLINDE-A. Herder, of New York City: I claim the wire cloth strips, E, attached to the window blind, to form a combined blind and insect bar or net, substantially as set forth. [A notice of this improvement will be found in an

other column.]

MACHINES FOR MOLDING (LAY-Thomas Hoadley, of Cleveland, Ohio : I do not claim broadly the employment or use of rammers operated by wipers or lap-pets, for such device is well-known and in common

use. But I claim the rotating mold, D, and rods or ram-mers, O, in connection with the rammer elevating plate, Q, arranged for joint operation as and for the purpose set forth.

purpose set forth. I also claim the guides, P P, one or more attached to the shaf, F, and used in connection with the elastic bands, m, on the rammers, for the purpose set forth. [A notice of this improvement is given in another

olumn.]

CONVERTIBLE CARELAGE SHAFTS-Amos K. Hoffmeier, of Lancaster, Pa.: I claim first, The combination of the pole hook with its eyes, Q, and points, R, as they fit into the front ends of the shafts which form the pole. I also claim the arrangement and combination of the

shafts, operating on joints, that when closed together form the pole, substantially as described.

form the pole, substantially as described. **MEAT CUTTEE**—Jacob R. Hoyer, of Reading, Pa.: I an aware that screw knives setting in a spiral position on the periphery of the revolving cylinder, and form-ing a screw feed, have been heretofore used. I there-fore do not claim that part. But I claim the arrangement of the knives in pairs on the periphery of the revolving cylinder, with their edges radiating from the center of the cylinder, so as to operate the same as shears in passing between the knives of the hollow cylinder, when constructed as and for the purpose set forth. PLOWE-Samuel Hubert, of Ogdensburch, N. Y.: I

FLOWE-Samuel Hulbert, of Ogdensburgh, N. Y.: I do not claim any of the parts separately considered. But I claim the adjustable beam. F, slot. D. pivot C, spring clevis, E, and adjustable handle, G, combined, arranged and operating as set forth and described.

KNEADING MACHINE-William S. Reinert, of Phila-delphia, Pa. : I do not claim broadly the employment of a traversing, rotating corrugated roller for kneading purposes

of a traversing, rotating corrugated roter to anomaly purposes. But I claim the shaft, D, with its corrugated roller E, and pinions, dd, in combination with the guides, f, and pinions, when the whole of the above-named parts are so constructed and arranged in respect to the trough, that they may have an upward or downward movement controlled by the weight, I, or its equivalent, indepen-dentiy of the trough, substantially as and for the pur-pose set forth.

RAILBOAD INDIGATOR—Gardner R. Lillibridge, of Wayne co., Mich. : I do not claim the cylinders and scroll or the friction rollers, they being of ancient origin. But I claim the trap or obscurer, in combination with my peculiar method of exhibiting the number of miles

between stations. I also claim a movable cradle, which contains and confines the cylinder's scroll and friction rollers in combination with the screw for regulating the tension of the scroll, for the purposes specifically set forth.

of the scroll, for the purposes specifically set forth. CULTIVATORS—Israel Long, of Terre Haute, Ind.: I claim the employment of two frames, A A, which are furnished with harrowed teeth, c, at their forward end, and cultivator teeth, B, at their rear ends, and con-nected by arch braces, D D, in combination with the propelling wheels, E, arranged on short crank axles, c, the tongue, G, arranged on top of the arch braces, and with the adjusting arrangements, substantially as and for the purposes set forth.

for the purposes set forth. MACHNER FOR FRINTING ADDRESSES ON NEWSPAPERS, &co.—James Lord, of Pawtucket, Mass. : I claim, first, Imprinting the name and addresses of subscribers and others on newspapers, envelopes, &c., by inserting type expressing such name and address in boxes secured spirally on the periphery of a revolving cylinder, and causing the said newspape s or envelopes to be suc-cessively pressed against the type in the boxes by means of a platen or follower, x, which is made to act in concert with the cylinder, in the manner de-scribed.

In otherst with the cylinder, in the manner de-serbled. Second, I claim the combination and arrangement of the connecting rod, z, vibrating lever, p', pawl, r, ratchet, s, and screw shaft, M, for giving the required revolving motion to the pinting cylinder, B, and lon-gitudinal motion to the platen, x, and receiving, con-ducting and distributing rollers, b h i, in the manner and for the purpose described. Third, I claim the combination and arrangement of the eccentric cams, u, longitudinal shaft, Y, and up-right rod, m, for raising the platen or follower, x, to produce the required impression upon the paper, as de-scribed.

Seribed. Fourth, I claim the combination and arrangement of the cima reverse formed slote, n', in the ears, n, and ends of the branch rods, k', of the curved bars, k, with the distributing and conducting ink rollers, h, in the manner and for the purpose set forth. Fifth, I claim the combination of the adjustable plate, d, oscillating bar, c', and plate between which it is secured, and graduating thumb screws, f, with the ink receiving roller, b, as described.

[A notice of this improvement is given in another column.]

column.] APPARATUS FOR PREPARING ELLIPTIOAL FRAMES FOR GILDING-KODET J. Marcher, of New York City: I am aware that a bar provided with pins, and fitted in slots or recesses crossing each other at right angles, forms an old and well-known implement termed a "trammel," for drawing ovals, and such implement has been arranged and adapted in various ways for various purposes. But I am not aware that the implement above-named has been arranged as shown, and used in connection with a foot piece or rest. I do not claim therefore, broadly, and irrespective of construction and arrangement, a trammel, that is to say, a bar provided with pins, which are fitted in cross slots or grooves. But I claim providing the bar. D. with a foot or sup-

Buy a bar providing the bar, D, with a foot or sup-port, E, and sliding plate or tool, F, when the bar, D, is arranged relatively with its upright grooved or slot-ted bar, C, and the frame, B, substantially as and for the purpose shown and described.

[For more information regarding this invention, see nother column.

HOISTICH AND DUMPING APPARATUS—George Martz, of Pottsville, Pa. : I claim the combination of the car, hung and controlled in its up and down movements in the peculiar manner specified, with a sliding gate and stationary frame, which are constructed and arranged in the peculiar manner specified, substantially as and for the purposes set forth.

[This invention consists in a car closed in at top and back, pivoted to a sliding gate, and governed in such a manner that its tail-board lies horizontal while the car is being loaded, and its bottom horizontal while the car is being dumped, said car and sliding frame being ar ranged within a stationary frame, which is furnished with suitable guides for governing its movements and allowing the car to dump, and with a suitable shute, which compels it to tilt and dump a load, and which also holds it in such a condition that while being lowered, its bottom is compelled to stand vertical, and its back lie horizontal when down, and being loaded. By this invention Mr. Martz is enabled to provide a very simple, cheap and compact machine, which is adapted for hoisting dirt out of deep ravines.]

BUTTER WORKER-Ziba Williams, of Ithaca, N. Y.: I claim the combination of a trough and a laddle hav-ing parallelism to the axis thereof for the purpose of working butter, when the same are constructed and arranged in the manner described

PADLE WHEEL FROPELLESS—John May, of Colum-bus, Ga. : I do not claim to be the original inventor of the propeller or paddle wheel, as described. But I claim the arrangement of the buckets or floats, B k, with the guides, E E, with the center, F I K, and the frame, C, arranged in the manner substantially and for the purpose as described.

the frame, C, arranged in the manner substantially and for the purpose as described, GovERNOE VALVE FOR STEAM ENGINES—Stuart B. McCray, of Grand Rapids, Mich. : I claim, first, Har-ranged tow cylindrical valve, B, constructed and ar-ranged to work in suspension over a vertical piston, D, so that it does not come in contact with any horizontal surface, nor has any point of binding confact against said vertical piston, D, substantially as and for the pur-poses set forth. Second, The suspending and working of a hollow cyl-indrical valve, B, by means of an eccentric is so arranged on the shaft of the slotted rocking link that its longest radius is at right angles, or nearly so, with the valve stem, H, when the valve is closed, and its shortest radi-us parallel, or nearly so, with the link, J, of the gover-nor, substantially as and for the purposes set forth. [For more information about this invention see an-

[For more information about this invention see an other page.]

tion. COAL STOVES-S. T. Savage, of Albany, N. Y.: I claim the combination of an open cylindrical or basket grate, with a dome, or a cone-shaped cover placed with-in an outer chamber, having a register for the admis-sion and regulation of a current of air between the grate and the walls of said chamber, arranged near the bot-tom of the chamber, substantially as the same is de-scribed and for the purposes set forth in the specifica-tion. BINDING ATTAOHMENT TO REAPING MACHINES—James Mitchell, of Oscoola, Iowa: I claim, first, The combi-nation of the jaws, oo r, arranged as shown, and at-tached respectively to the slider, m m, and springs p p, whereby they are made to receive and grasp the ends

CALIPEES AND DIVIDERS—Joseph D. Moon, of Chel sea, Mass. : I claim having the parts, a, of the legs made of circular form, geared or toothed as shown, and the screw, C, placed between them and gearing therein, the above parts being fitted within the socket, B, and the screw provided with nuts, E G, when arranged as described, and for the purpose set forth.

E Rije

[By this invention the legs of calipers and dividers can be adjusted and secured at any desired point. It consists in having the ends of the legs which surround the pivots made circular and concentric with the pivots, and having said circular portions, together with a and having sale circular portions, together with a screw, fitted between them, by turning which the legs are operated or moved. The above parts are placed within a suitable socket, and the screw provided with a jam nut, to prevent the casual movement of the same.]

RAKING ATTACHMENT TO HAEVESTEES—John Nelson, of Rockford, Ill. ; I claim the arrangement of the arm, I, and rake connected by an articulating joint at J, the spring, O, and cord, N, in combination with the guide, Q, operating conjointly in the manner and for the pur-yose set forth.

Source Set forth. Source BLADES-Samuel D. Nelson, of Pittsburgh, Pa.: I claim constructing grass and cradle scythes by starting the web of the scythe from one edge of the back, making the back concave on the upper, and con-vexed on the lower side, leaving the heaviest and thick-est part of back on the center, and to the outside of the convexed side of the back, thereby making the scythe stiffer and stronger, as described and represented.

HAREows-Samuel J. Orange and George Bridel-man, of Grayville, Ill. : We claim the combination of the handles, or their equivalent, with the transverse beams, D J, and rollers, E E, and the circular irame, A, substantially as described, by which we are enabled, by regulating the pressure on the handles, to guide the harrow in the line of the draft or detlect it, at pleasure.

harrow in the line of the draft or deflect it, at pleasure. SEED PLANTEES—Benjamin Owen, of Dayton, Ohio : I am aware that covering hoes, T, have been previous-ly used, and arranged to rise and fall as shown, and I therefore do not claim broadly such device, irrespective of the particular means employed for operating it. Neither do I claim separately and irrespective of the means of operation, a reciprocating seed slide. I claim operating the arms, S, and hoe, T, by means of the disks, N R Q, provided with teeth or spurs, and arranged as and for the purpose set forth. "This invantion ensuits in a mean bar and distributed"

[This invention consists in a peculiar seed-distribu-

ting device and a covering device, whereby the seed may be diffused in hills at equal distances apart, and covered with a proper quantity of earth by a very simple arrangement of means. The device is more espe-

cially adapted for planting maize or Indian corn, but it may be used for planting other kinds of seed in hills.]

may be used for planting other kinds of seed in hills.] OPFRATING VALVES OF STEAM ENGINES—H. Uhey and H. A. Luttgens, of Paterson, N. J. : We do not claim the connection of the differential rocker, G, with the link motion or substitute, as this device is secured by us in a patent dated March 20, 1855. But we claim the cam, B4, or equivalent, in combina-tion with the valve gear, adapted to operate a single slide valve, substantially as described.

PORTABLE COPYING APPARATUS—WM. Van Anden, of Poughkeepsie, N. Y.: I claim the improved method of uniting a cylindrical removable back or holder with a copying book by means of a concave or tubular chan-nel cut longitudinally with the face of the cylindrical back or holder, for the purposes and substantially in the manner set forth.

MACHINE FOR TURNING HUBS—Alexander Rickart, of Schoharie, N. Y.: I claim rotating the mandrel, R, of the carriage, D, from the cutter shaft, B, through the medium of the worm wheel and screw gearing, f i n. as described, it being understood that I do not claim broadly, and in the abstract the well-known me-chanical device of a worm wheel and screw gearing, but the parts above-named, when arranged with the cuttershaft, B, and mandrel, K, of the carriage, D, so that the mandrel, K, will be connected with the shaft, B, and disconnected therefrom at the proper time, by the movement of the carriage, D, for the purpose de-scribed,

[A full description of this invention will be found on another page.]

another page.] BILLIARD BALLE—Calvin B., John, and William C. Rogers, of Deep River, Conn.: We do not claim simply the cementing of a series of pieces of ivory together, and turning the same to form a billiard ball, irrespec-tive of the disposition and arrangement of said pieces in respect to each other, as described, for various arti-cles are formed in sections, or of a series of pieces joined together, and turned or otherwiseformed into proper shape. But we claim constructing billiard balls of a series of pieces, a a b, three or more cemented, or otherwise se-cured together, when said pieces are disposed or ar-ranged in relation to each other in respect to their ber or grain, as set forth.

or grain, as set forth.

These billiard balls are constructed in sections, or of a series of pieces, cemented or otherwise secured tocured together, and disposed or arranged relatively with each other in a novel way, in respect to their fiber, whereby several important advantages are obtained.]

COAL STOVES-Silas T. Savage, of Albany, N. Y. : I do not claim a magazine or feeder, nor radiator, nor the introduction of air to complete the combustion of the fuel. But I claim the combination of the magazine, radia-tors, and the air chamber at the base of the radiators, as arranged in reference to and with each other, sub-stantially as set forth and described in the specifica-

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With a printing press, for the purposes and substantial- ly as set forth. I also claim the adjustable plate, E, in combination with the numbering machine, B, for the purposes and substantially as described. I also claim the adjustable plate, E, in combination with the numbering machine, B, for the purposes and substantially as described. I as be forth. I as other the adjustable plate, E, in combination with the numbering machine, B, for the purposes and scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs, R K S', as an ar- scribed aud set forth. I as other the adjustable collars and springs. I as other the adjustable collars and springs. </th <th>ded with bar. J, on the pen [A notice of other page.] PRINTING AR of Buffalo, N. bering machin</th> <th>through the medium of the rack, D, and groov e, E, in connection with the gearing, cd C, or valent, as and for the purpose set forth. leo claim the frisket, G, when arranged as shot it, the frisket being attached to the bar, k, pre with bar, q, and used in connection with the 1 the pen beam, I, for the purpose specified. notice of this improvement will be found on r page.]</th> <th>an, of porta- set forth. Talso claim the combination of the lever clamps, h with the adjusting cavity, C, and the elastic be and so as to operate therewith substantially as d cribed. Talso claim the combination and arrangement of th the bar, cavity, C.</th> <th>ally vice, J, tucking rod, K, and discharge rod, C, combin arranged to operate substantially as and for the p be pose set forth. This invention consists in the employment of clam or band carriers, band twisting device, tacking rod, a deditional device arranged relatively with each oth and operated so that the grain is bound into shear</th> <th>g de- bined on said shaft, the and its appendages at pure to the lay for giving longitudinal motion to the and the dog, n, attached to the breast beam to amps the cam, the whole applied and operating substa as described, to actuate the shuttle motion at or the loom only at a time by the movement of the Third, Operating the harness motion by means with the manner and for the purpose specified.</th>	ded with bar. J, on the pen [A notice of other page.] PRINTING AR of Buffalo, N. bering machin	through the medium of the rack, D, and groov e, E, in connection with the gearing, cd C, or valent, as and for the purpose set forth. leo claim the frisket, G, when arranged as shot it, the frisket being attached to the bar, k, pre with bar, q, and used in connection with the 1 the pen beam, I, for the purpose specified. notice of this improvement will be found on r page.]	an, of porta- set forth. Talso claim the combination of the lever clamps, h with the adjusting cavity, C, and the elastic be and so as to operate therewith substantially as d cribed. Talso claim the combination and arrangement of th the bar, cavity, C.	ally vice, J, tucking rod, K, and discharge rod, C, combin arranged to operate substantially as and for the p be pose set forth. This invention consists in the employment of clam or band carriers, band twisting device, tacking rod, a deditional device arranged relatively with each oth and operated so that the grain is bound into shear	g de- bined on said shaft, the and its appendages at pure to the lay for giving longitudinal motion to the and the dog, n, attached to the breast beam to amps the cam, the whole applied and operating substa as described, to actuate the shuttle motion at or the loom only at a time by the movement of the Third, Operating the harness motion by means with the manner and for the purpose specified.
	with a printing ly as set forth. I also claim with the numl substantially a	INTING AND NUMBERING PRESS-George J. H iffalo, N. : I claim the combination of a nu a gmachine, B, and pawi, F, or its equivale a printing press, for the purposes and substant set forth. lao claim the adjustable plate, E, in combinat the numbering machine, B, for the purposes a tantially as described.	Madville, Pa.: I claim the first balance wheel, the constructed with cogs on its periphery gearing into the print, E, and the second balance wheel, D, move thereby in the manner described, the whole being a maneed in the manner and for the purposes set forth. The mode of forming the corners of a safe with ancho he h h, also the jamb, E, as and for the purposes described and get forth.	<ul> <li>and discharged upon the ground, the whole work:</li> <li>G. automatically as the machine moves along.]</li> <li>the COUCHES FOR RALEOAD CARS-F. R. Myers and</li> <li>ar- H. Furniss, of Cleveland, Ohio: We claim the cou</li> <li>P. with the rods, L W N O, and the collars, L' M',</li> <li>the adjustable collars and springs, R R' S S', as an irangement of means for providing such number</li> <li>the car seats will accommodate a complement of pasengers, substantially as set forth.</li> </ul>	Fourth, The combination of the swinging irac dist dogs, q, cams, t, and turning plate, w the lifting rods, o, below the headle frames, t and The Jay, the whole operating substantially forth to cause the headles to be operated alterna in proper order of succession. (A full description and engraving of this inv appears on another page.] HOSE CARRIAGE_I. S. Schuyler and L. A. Roy of New York City : We claim, first, The arrange

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and combination of two separate and independent rope reels respectively and separately with the bearing wheels rotating on the axle tree to which the reels are secured, substantially as described and for the pur-poses as set forth. Second, The described method of connecting and disconnecting the rope reels, with the bearing wheels of a fire engine, hose cart, or other fire apparatus, for the purpose of taking in the drag rope while the appa-ratus is drawn by it. MACHUSE FOR LEONING CLOTHER—John Sheefer of

MAGINE FOR IRONING CLOTHES—John Shaefer, of Lancaster, Pa. : I claim the combin-vion and arrange-ment of the hollow cylinder, G, with the rollers. J J, the screws and caps, 1 2 and 3, the spigot, 4, the screw plug, g; the screw, E, the tables, K, all secured in the frame, A and B, and operated by the crank and gear wheels, substantially as and for the purposes specified.

CARPET SWEEPER-Reuben Shaler, of Madison, Ct. : I claim, first, The combination in a machine for sweep-ing carpets of a brush, the bristles of which are set at angle of about forty-five degrees from a radial line page ing directly outward from axis constructed substantially as described with a traction roller, substantially as and for the purposes set forth.

Ing directly outward from axis constructed substantially as a described with a traction roller, substantially as and for the purposes set forth. Second, The construction of the traction roller of a sweeping machine in the manner described, that is to say, by winding a spiral flange of india rubber or other flexible and adhesive substance around a cylinder as set forth, by which a very powerful adhesive traction of said roller is insured, and the roller is much more cheaply manufactured than an equally efficient one could otherwise be.

SEDING MACHINES—Samuel Stanbro, of Salem, Mich : I claim the application of a twieted cord, in combina-tion with measuring tubes, arranged substantially as describe I, tor the purpose of measuring and delivering the seed.

METHOD OF MANUFACTURING SHINGLES FROM THE LOG-C. L. Story, of Owensboro, Ky.: I am aware that circular saws, rotary cutters, and traveling car-riages have been used and arranged in many ways for sawing various articles, and I do not claim, broadly, the use of such parts irrespective of their arrangement as shown

I claim the circular saw, C, rotary and laterally I claim the circular saw, C, rotary and laterally moving cutters, h i, the rotary cutters, a a, and tra-veling carriage, I, arranged and combined as shown, whereby the shing less are cut from the bolt, tapered and jointed at one operation.

whereby the shin gies are cut if on the bong -graded jointed at one operation. I also claim the particular means described for ro-tating the bolt, M, at each termination of the move-ment of carriage, I, and thereby setting the bolt to the saw, to wit, the screw, n', worm-wheel, m', actuated through the medium of the arm, o', rod, p', bar, q', rod r', and guide ledge, P.

[This is an improvement in that class of shingle machines in which circular saws are employed for cutting the shingles from the bolt or log. The invention consists in the employment of a circular saw and rotary cutters, arranged and used in connection with a traveling carriage, whereby shingles may be sawed directly from bolts cut from the log; the shingles being properly tapered and adjusted, while being sawed from the bolt, so as to leave the machine in a finished state.

the bolt, so as to leave the machine in a nuisee state. TRAP FOR ANIMALS—R. M. Turner, of Woodland, Mich. : I am aware that tilting platforms have been previously used and arranged in various ways to form self-acting traps; I therefore do not claim separately and broadly such device, But I claim the tilting platform, B, and treadle, C, connected with the spring catch, g, the platform being placed within the base, A, and the platform and treadle, arranged in relation with the box, E, and bait chamber, j', substantially as and for the purpose set forth.

forth [This invention consists in the use of a pivoted or

swinging platform, with spring treadle attached, to which a catch or fastening is connected that sustains the platform in a proper horizontal position, these parts being placed in a suitable case and arranged in such relation to a bait-box, that a rat in attempting to reach the bait will depress the treadle and catch, the platform consequently tilting by the rat's own weight, and turning the animal into a tub or butt of waterove which the trap is placed.

ALARM LOOKS-J. W. Wells, of Pittsburg, Pa. : I claim the use and combination of a bell catch, in the keeper of a lock and a spring catch in the locking bolt, so arranged, as before described, to set the alarm by simply locking the door, and to spring the alarm, and ring a b.11 whenever the door is unlocked, substantially in the manner set forth.

BRIOK MAGINES-HENRY White, of Cleveland, Ohio: I claim, first, The beveled joints of the mold, as ar-ranged and for the purpose specified. I also claim the mechanism as described when rela-tively arranged and combined in its several parts as set forth and for the purposes specified.

Iortn and Ior the purposes specified. METHOD OF ALLOWING FOR EXPANSION AND CON-TRAOTION OF FENOES-Olly Williams, of St. Louis, Mo.: I do not claim, broadly, the tightening of the wires by means of a weight. But I claim the combination of the shaft, B, with the post, A, and the application of the wires to the said shaft, whereby all the wires are tightened at one and the same time, by one and the same weight, substan-tially in the manner set forth.

tially in the manner set forth. SEWING MACHINES—J. B. Woodrnff, of Washington, D. C. I claim, first, the double corrugated yielding spring, between which the thread is guided, the same being regulated by a thumbscrew, or any equivalent device, to bear upon the thread in the manner de-scribed to produce any degree of tension required. Second, I claim making the bowl or shuttle carrier, and atxaching it to the slotted driver, as described, in combination with the circular shuttle race. Third, I claim the application of extension rods for pitmans to seving machines, when used in combination with a hinged foot piece to be placed upon the floor, and the machine upon a table, in the manner and for the purpose specified. LIFEBOAT CONSTRUCTED OF MATTERESSE—Jabez M.

the purpose specified. LIFEBOAT CONSTRUCTED OF MATTRESSES—Jabez M. Woodward, of N.W York City: I claim, first. Construct-ing the mattresses with the strong carvas or duck at-tached to them with the eyelet holds, so that they can be united at their edges by lashing for the purpose of making a boat or life raft, as described. Second, I claim the manner of constructing the berth bottoms or supports into frames in the shape of or sim-lar to right-angled triangles in combination with the mattresses, constructed as described. Third, The combination of the mattresses, canvas and eyelets, with the lashings, diaphragm frames and spar, arranged into the form of a boat, or life raft, as described.

BULLET MACHINE-C. Young, of Auburn, N. Y.: I claim; first, The application of elastic rolls, for the purpose of feeding lead wire into the machine, substan-tially as described.

purpose of leeding lead wire into the machine, substan-tially as described. Second. The application of the arrangement or de-vice for gaging, cutting and depositing the lead into the dies by the same instrument, and the manner of con-structing and operating this portion of the machine, substantially as described. Third, The application of the arrangement, or de-vice of laterel punches, for removing the bullet from the dies, substantially as described. The above is a full describtion of improvements in the mode of constructing machines for the manufac-ture of bullets from cold lead by pressure, in respect to which a caveat was filed, by said Calvin Young, in the month of April, 1857, in the secret archives of the Pat-ent Office.

MANUFACTURE OF BRUSHES-Stephan Barnes (as-signor to himself, Henry S. Parsons and Saml. Row-land), of New Haven: I do not claim to be the first to secure bristles in a clamp, or its equivalent, while their tops are cemented together, for this has already been done.

ane. But I claim the securing of the bristles in separate tufts in the manner described, by the employment of the tubular block, A, or its equivalent, substantially as set forth.

the tubular block, A, or its equivalent, substantially as set forth. Swurse MACHINES-S. C. Blodgett, (assignor to G. B. Sloat & Co.), of Philadelphia, Pa. : I lay no claim to a shuttle, a needle and mechanism for operating them in such manner and while they carry separate threads, as either to cause the shuttle carrying one thread to pass through a loop of thread, formed and held in cloth or other material by the needle, or to cause the loop of the needle thread to be seized by a hook, and cast around the shuttle in such manner as to carry the thread through the loop, as I am aware that such is not new. Nor do I claim the application of the hook to the bobbin in such manner that such hook shall revolve in a circular path, concentric with the axis of the bobbin, and be turned over or reversed in position, so that it shall be caused to point upward and downward while making each entire revolution. But I claim my improved mode of operating the hook about the bobbin, it, and an arm, p, or by two cranks, whereby the point of the hook is made to travel either in an elliptical or a circular path, without being re-versed or made to point upward and downward during its rotation. Also, the particular mode above de-scribed of constructing the hook, viz, so that not only the heel part thereof shall ap over the edge of the bobbin, but the point of the said hook extend obliquely in manner as described, or toward the needle, and so as to operate therewith as explained, and making the said hook with an auxiliary hook or notch, z, the same being to operate together as specified. **TLUES OF ELEWATED OVEN COOKING STOYES-James** 

FLUES OF ELEVATED OVEN COOKING STOVES—James Easterly (assignor to himself and D. G. Littlefield,) of Albany, N. Y.: I do not claim the dividing of the flue of the stove for conveying the products of combustion to separate flues placed at each end of an elevated oven or to the aveit flue huy a conter newsers a neither do I to separate flues placed at each end of an elevated ov or to the exit flue by a center passage : neither do claim an elevated oven having a descending flue, wi its flue space from end to end of the oven an op chowhor.

its nue space from end to end of the oven an open chamber. But I claim combining with flues, D D, and a center passage arranged substantially as described within the stove an elevated oven, having its flue space, on its sides and top an open chamber, in connection with a de scending flue, with its exit at the base, the whole ar-ranged and operating substantially as described and made known.

made known. STEAM PRESSURE AND WATER INDIGATOR-Wm. C, Grinnes (assignor to David Matthew), of Philadelphia, Pa.; I do not claim the mereury cup, containing mer-cury, nor the glass tube embodied in the leg of the si-phon, and showing only the rise and fall of the mer-cury by single end of the mercury column in single tube, as this has been done before, and I do not wish to be understood as claiming any such device. But I claim constructing and arranging the concen-tric glass tubes with the connecting pipes, as and for the purpose set forth. Also, the manner of constructing and arranging the connecting pipes with the boiler and the branch or equilibrium pipe between the concentric connecting pipes at the water line of the boiler, as and for the purpose set forth.

connecting pipes at the water line of the boiler, as and for the purpose set forth. COUCH SEATE FOR RAILSOAD CARS-John Hartman, Jr. (assignor to John Hartman, Sr.). of Philadelphia, Pa. : I am aware that car seats have been made be-fore so as to be isolated from each other, and to swivel round upon their bases. I am also aware that the back has been made adjustable to various angles of inclina-tion to a horizontally fixed seat, and also that an office couch chair has been made with a foot rest and back, so c nuccted together and to a fixed horizontal seat as to move in unison to any required angle of inclination to the said horizontally fixed seat. by the occupant ismply changing his position thereon, but neither of these nave been constructed in such a manner as that the seat proper can be inclined into the sanie plane with an inclined foot-rest frame, so as to adapt them as couches to the requirements of a railroad car, as de-scribed. I therefore do not claim, broadly, a wiveling seat with an adjustable back and foot rest. But what I claim in adjustable, backed, reversible couch seats is the combination and arrangement of de-vices, whereby the seat proper, B, can, at the pleasure of the operator, be arranged and securely maintained eith r in the horizon up bit on of a chair seat as shown in Fig. 2, for in the same plane with the inclined position of the foot-rest frame, E, as a couch, or as shown in Fig. 2, the same consisting of a pedestal, A, seat, B, stem, f, brace, h and foot-rest frame, E, or their equivalents combined, and arranged so as to operate substantially in the manner described.

DIAPHRAGM FOR PHOTOGRAPHIC CAMERAS-C. C. Har DIAPHEAGM FOR FHOTOGRAPHIC CAMERAS-C. C. Har-son and J. Schnitzer (assignors to C. C. Harrison), of New York City; We claim the adjustable disphragm or stop described, compose. of overlapping plates oper-ated concentrically by the ring, D. or its equivalent, said ring being operated from the ou stide of the tube by means of the lever or arm, E, or other appropriate de-yrice, substantially as described for the purposes set forth.

RALEGAD CHAIRS—Adam Hay (assignor to himself, S. W. Miller, and L. B. Miller), of Newark, N. J. : 1 claim, first, The lip or projection, C, formed and adapt-ed substantially as represented, to support the flange of the rail, and iu turn to be supported by the upper por-tion of the wedge. Second, I claim a chair having an aperture for the

tion of the wedge. Second, I claim a chair having an aperture for the wedge substantial, as described, which will in itself contain and secure the wedge, and yet leave it free to support the flange perpendicularly, and to bind the rail laterally, substantially as described. Third, I claim the combination of the lip. C. with the fthe lin C with the

of greater diameter than the journal in manner and for the purpose as specified, And in combination with the intercepting chamber, d, I claim the intercepting groove, f, arranged in the cap, B, in the manner and for the purpose specified.

#### RE-ISSUES.

SIDEWALK PAVEMENTS-John B. Cornell, of New York City. Dated April 28, 1857: I Claim giving such a shape to the described street gutter section, p, that its under surface will securely embrace the top of the wall, d, whilst its upper surface at the same time forms a portion of the street gutter, and also a firm supporting base for a section, c, of street curbing, or its equivalent, substantially as represented and set forth. I also claim forming a sidewalk pavement of a series of metallic plates, a a, when the said plates are com-bined with or form portions of sections of metallic street-curbing substantially as set forth.

TRAP FOR CATORING FLIZE—Joel B. Fuller and George W. Pierce, of Worcester, Mass. : We claim the combi-nation of the wheel or cylinder, having a rotatory mo-tion with the box or case, for the purposes forth.

#### DESIGNS.

COOK'S OVEN STOVE-William W. Stevens, of West-brook, Me., assignor to Nathaniel P. Richardson & Co., of Portland, Me.

STOVES-Nathaniel P. Richardson, of Portland, Me. -

#### **Recent Patented Improvements.**

UPSETTING VISE .- With this invention, the anvil plates adjust themselves to the curvatures, whether great or slight, of the tire, the guide is adjustable to suit the different thicknesses and curvatures of the same and the clamps can be brought instantly into action and as quickly thrown automatically out of action. It is the invention of E. J. Dodge, of Port Washington, Wis., and was recently patented.

OSCILLATING STEAM ENGINES .- With this invention the valve is perfectly balanced and the necessity of using a set screw to keep the valve in proper position avoided ; the steam itself being made to perform both these functions, and thus the easy working of the valve secured, and freedom for expansion and contraction allowed. This invention also allows of the the engine being instantly and completely reversed by simply shifting the valve, the valve when shifted presenting a full, open port. The shifting of the valve is rendered very easy, owing to the valve being balanced. as before stated.

We regard this as an excellent arrangement and think it will go far towards rendering more perfect the operation of oscillating and other engines. It was invented and patented by G. Rieseck, of Pittsburgh, Pa.

WINDOW SASH BALANCE.-The window sash balance patented to Ross Johnson, Esq. of Frederick, Md., August 10, 1858, is a very simple and perfect arrangement, it avoiding thenecestity of having the ordinary end boxes for the weights and cords, and being applicable to all old windows now in use. The invention consists in constructing narrow boxes on the jambs at right angles to, and forward of, the window sash and using flat weights with cords passing over pulleys which have their axes at right angles to the edges of the sash. The improvement is very simple and cheap and presents a very neat appearance when applied, and affords all the convenience of the most complete and expensive box frame balance sash.

The following inventions have been patented this week, as will be found by referring to our List of Claims :-

MACHINE FOR ADDRESSING NEWSPAPERS. James Lord, of Pawtucket, Mass., has produced a most ingenious machine for the purpose of saving much labor in a newspaper office, by directing the wrappers in which the papers are mailed to subscribers. To the periphery of a cylinder a number of boxes are secured spirally, in which boxes are arranged types to print the subscribers' names. One subscriber's name and address is in each box and when combined with ink rollers and a proper bed, by moving certain mechanism, and supplying the wrappers as the cylinder is rotated, it prints the names upon the wrappers quickly and plainly, with much greater facility than by hand, as at present. Each cylinder can be made to contain ten thousand names, so that when this number has been printed from one cylinder, it will have to be replaced by a new one. This will be a very valuable machine for our daily papers, where many copies have to be mailed in a few hours. METHOD OF MARKING MILK CANS .- Much of the milk used in cities is conveyed from or superfluous parts of the hub.

the country producers to the city dealers, by railroad, and the empty cans are returned by the same conveyance, and as in every train or every car conveying milk, there will be cans belonging to several owners, it is necessary that each can be marked in a conspicuous manner, with the names or initials of the owner. The common method is to apply on the breast of the can, letters of sheet brass, which are attached by soldering; but the cans are frequently stolen and their identification prevented by the removal of those letters. To prevent this and other frauds, William Montgomery Storm, of New York, has devised a small portable press which stamps the letters, by dies, in the breast of the can itself and he attaches the trade mark through a, hole in the can, making it part of the can and extremely difficult to remove.

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PAPER RULING MACHINE .- J. C. Foreman, of Cleveland, Ohio, has invented a new machine for ruling paper with variable lines, bounded by curved or semicircular ends, forming borders for cards, checks, bill heads and the like. The invention consists in giving to the bed on which the paper is placed, a movement below the press corresponding to the form of the borders to be ruled, so that the desired lines will be drawn upon the paper; the bed having a frisket attached and so arranged that the paper may be readily shifted on the bed and the machine manipulated with facility.

GOVERNOR VALVE.—This invention allows of the piston valve being hung in suspension, and properly balanced, and thus worked without any loss of power and of being opened with a quick motion at the start, and with a gradually decreasing speed as the governor balls continue their descent. Having the valve open quickly at the start is essential in order to meet with nearly a full head of steam the check to the engine caused by the load brought to bear upon it. We regard this as a most excellent arrangement, as it is exceedingly simple and complete in its working. It is the invention of L. B. Mc.Cray, of Grand Rapids, Mich.

MACHINE FOR PREPARING PICTURE-FRAMES.-Robert J. Mascher, of New York, has invented a machine for this purpose which consists in a peculiar arrangement and adaptation of well-known trammels for the purpose of giving a positive or arbitrary eliptical movement to a tool, this movement corresponding with the shape of the frame to be operated upon, so that the tool may traverse over the frame and properly distribute the composition that receives the gold leaf, upon it. BLIND AND INSECT NET .- This invention consists in attaching a series of wire cloth strips to the blind in such a manner as not to interfere in the least with the opening and closing of the slats, and at the same time effectually close the spaces bet ween them so as to prevent insects from passing between the slats. The inventor is A. Herder, of New York City.

MACHINE FOR MOULDING CLAY RETORTS -The object of this invention is to so mold the clay that it will be of equal density throughout each part or portion of it, as the process of molding is carried on, being subjected to an equal ramming, so that when the articles are molded they will be perfectly free from air-cells, more compact than usual, and consequently more durable and less liable to break on account of porosity, and also less

According to the form of a boat, or life raft, as described. STAMPING MILK CANS—Wm. Mt. Storm (assignor to Allan Cummings), of New York City: I claim the press with the counterpart die-bearers, forming segments of two concentric circles to fit the exterior and interior of the "breast" of a narrow mouthed can, and having the movable S-shaped head block carrying the follower by guide rods, as shown, on the one part of a die-bearer, while the counterpart die-bearer is provided with rods with hands that pass through holes provided in the can to each upon the head block, the whole being so constructed that two parts of the press may be combined and operated through the thickness of the can to perform its office, and thereafter be readily separated and removed, cubstantially as described, the purpose being to facilite the marking of such cans after construction is completed.

[See another column ]

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SEWING MACHINES—M. L. Clinton (assignor to H. F. Hibbard), of lthaca, N. Y.: I claim the cams, B and C. on shaft, A. in combination with spring hook, D, con-structed and operated substantially in the manner and for the purpose described.

Third, I claim the combination of the lip, C, with the flange of the rail, and the wedge, B; in other words, I claim the support of the flange by the lip, and the supports of the lip by the wedge, affording is firm rest for the flange, at the same time preventing, by this combination of wood and iron, all vibration and jar. Fourth, I claim the combination on the chair of the wooden plug, e, and the screw, D, in the manner and for the purpose described.

for the purpose described. STEAM TRAP—J. W. Hoard (assignor to himself and G. B. Wiggin), of Providence, R. I. : I make no claim to any of the parts separately. But I claim the combination with the outer case or chamber, A. of the valve, B. lever, O. diaphragm, F. mercury holder, G. and openings, I and C. constructed and operating as described for the purpose set forth. JOURNAL BOXES—H. H. Thayer, of Sandwich, Mass., assignor to J. A. Woodbury and S. A. Woods, of Bos ton, Mass. I claim the combination of two or any other suitable number of lubricating chambers, as, and hearing surfaces, g , with one trough or chaanel ar-ranged below them as specified. I also claim the combination of the intercepting chamber, d, at each end of the box, with the oil trough, d, the lubricator chambers, a a, and the bearing sur-I also claim the combined.

faces, g g' I also claim making the opening of the chamber, d,

liable to fracture in baking, as the shrinkage will be nearly equal or uniform on account of equal or uniform density, and as there are no air cells, fracture cannot occur by the expansion of the same. The inventor is Thomas Hoadley, of Cleveland, Ohio.

HUB TURNING MACHINE .- This is an improvement in a hub-turning machine patented by the inventor, Alexander Rickart, of Schoharie, N. Y., July 1, 1857. The object of the invention is to obtain by far simpler means the same results that are obtained by the first patented machine, and also to add an automatical device for cutting off the ends

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see that it is kept scrupulously clean, well warmed and ventilated. What commends this improvement more particularly to favor is its extreme simplicity, there not being a hinge or sliding bolt about it, or in fact any part liable to get out of order, and any passenger can as readily convert the seats into couches, and *vice versa*, as to turn over the backs of the present seats, and by a similar process.

As an evidence of the great favor with which it has already been received among the best qualified to judge, we are informed that arrangements have already been entered into with some of the principal railroad managers to introduce these cars as soon as possible on their roads. Among other testimonials, we have seen a very flattering certificate commendatory of the simplicity, efficiency and adaptability to the purpose of the design, of this arrangement of convertible car seats and couches, from Eaton, Gilbert & Co., the celebrated car builders of Troy, who, we understand are now engaged in completing four cars upon this plan for the New York Central Railroad Co.

#### Improved Wet Fuel Furnace.

In the use of waste and refuse carbonaceous matter for fuel, it is quite a new idea to produce such a heat in the furnace or fire chamber as shall decompose the water and make its gases also available as heating matertal, and for the first time a furnace has been constructed on these principles by Gideon Bantz, of Frederick City, Md. Our engravings fully illustrate the invention, Fig. 1 being a longitudinal vertical section of the furnace, showing its application to a steam boiler, and Fig. 2 being a transverse vertical section through the fire chambers.

A A are two arched fire chambers arranged side by side and furnished with bars, a a, be<image>

bright fire.

bustion leave the chambers by the throats | of heat is not required, the two front feeders

At night, or any time when no steam is re-

quired from the boiler. or when the generation





direction to the perforated bottom, H. I is an under inclined grain conducting board, G H I, forming the straw carrier. The bars, G, are to carry the straw to the thresher, and the perforated bed allows the corn that may be loose among it to fall down on to the conducting board, I, so that it does not pass through the threshing machine. J is a footboard at the lower end of the inclined conducting board, I, for the grain to strike against it as it descends. L M N represents the separator, K, Fig. 1, being the shoe or box. The screens, K L, Fig. 2, are both attached to the same frame, M, and vibrate together, the screen, L, being so slightly inclined as to cause the grain to work to its forward end, g. This screen terminates over a spout or chute, N, which has a guardboard, h, and serves to receive and conduct off the tailings and other foreign substances which are too heavy to be blown through the forward end of the machine by the blast of the fan. The second screen, K, inclines to the box, O, into which the cleaned grain empties, and below K are inclined boards to conduct seed passing through K to a receiving box, Q. The wind board, P, of the fan is hinged at its lower back edge, and its other edge is supported by straps so that it can be moved to direct the blast toward any desired point on the shoe or sieves of the separator. x and z, are two dust passages or outlets, so that the dust is conveyed away from the thresher and from the separator without

burning wet tan, bagasse, and such like fuel.

further information can be obtained by address-

ing the inventor as above.

It was patented June 22, 1858, and any

neath which are the ashpits, B B. These fire chambers are not placed below the boiler, H, but directly in front and parallel with it. They may, however, be placed at one side of the boiler, and at any angle to it. Each is provided with a door, b, but these are only used for lighting the fires, and the ashpits, B, have doors, c, to regulate the supply of air through the grates, and permit of the removal of the ashes. On the top of each chamber are feeders, d d, for supplying the fuel. The chambers, A. are covered with a flat floor built over the arches that the fuel may be wheeled to the feeders. At the rear end of each fire chamber, there is a throat-like aper-

A represents the revolving threshing cylin-This machine is intended to separate the loose grain from the straw before it is der and the band wheel by which it is driven, B the stationary concave, and C the blast fan threshed, and also to thresh it, carry away the straw, and thoroughly separate the grain and box, D is a crank wheel, giving motion which has been threshed from the ears. Our to the separators through the link work engravings fully illustrate the invention, and shown, the driving pulley not being seen in we will now proceed to describe them. Fig. 1 our illustration. F are a system of levers is a perspective view of the machine, and Fig. giving a reciprocating motion to the toothed

heated to an intense degree, and a very nearly

perfect combustion of the fuel is obtained

there, and when the gaseous products of com-

at all inconveniencing the operator.

The great advantage of this machine is, that in the one frame and in a compact form it combines two operations, which are both perfectly and efficiently performed. The inventors are J. M. Harvey and N. J. Becker, of Amsterdam, N. Y., and they obtained a patent August 10, 1858. Any further particulars may be obtained by addressing the inventors or the general agent, George Howe, Fort Hunter, N. Y.

giving a reciprocating motion to the toothed Zinc was first mentioned by Paracelsus in bars, G, which move over and in an opposite the year 1541.

## Scientific American.

NEW YORK, SEPTEMBER 18, 1858.

Science of Ocean Telegraphing. Some of our cotemporaries have been indulging in somewhat curious speculations in regard to ocean telegraphing. After the cable was laid, on the 5th of August, it was stated that it would be in working order and open to the public in about two weeks. More than a month has since elapsed, and this promise remains unfulfilled. A few electric messages have passed across the Atlantic, but at long and painful intervals. On the 28th ult., news was received that the Asia was to sail from Liverpool on that day; the next news received from Europe was by the steamship herself, which arrived at Halifax on the 8th inst., thus beating the Ocean Telegraph eleven days.

The New York Herald attributes all the blame to the defective instruments of Professor Whitehouse, which it says are a combination of the Morse and Bain systems, (an impossibility, the one being chemical and the other mechanical,) and firmly asserts that Mr. Hughes' instruments would work the line with great rapidity. The New York Evening Post, of the 6th inst., assumes that the difficulty with the Ocean Telegraph is not due to the instruments, but to the cable itself. This is not a new idea, although it is put forth as such, and upon the most unscientific data.

It says : "We propose to consider the fundamental grounds of the difficulty, and apply them to the general question of ocean telegraphy. The velocity is not determined by the force and intensity of the electric current, nor by the thickness of the wire-these conditions only modify the law which determines the velocity of propagation. Professor Wheatstone sent a current through a brass wire the twelfth of an inch in diameter with a velocity of 286,000 miles per second. Mr. Walker, one of our own electricians, sent a current with the velocity of 18,000 miles per second. Messrs. Fizeau and Gounelle sent a current along an iron wire one-fifth of an inch in diameter 62,700 miles per second, while along a copper wire of double this diameter, they sent a current 110,000 miles per second. So that conductors made of different substances, and of different sizes of wire, do not give velocities proportional to their conducting powers. Hence it follows, that the difficulty of transmission with ocean cables will be one of velocity and not of power. This we might have anticipated from the discussion of first principles; and the Atlantic cable has verified the theoretic inference."

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To derive such an inference and arrive at such a conclusion, extracts from "Gulliver's period of time, without any apparent cause ; Travels " would be as useful as the above, rethen they would flow again, in the same inlating to the experiments with electric conexplicable manner. As Hughes' instrument does not generate, but is operated by these ductors. The reasoning of the Post amounts to this in plain language :- An electric curcurrents, it cannot remedy this difficulty, as it is one which belongs to the cable, not to rent moves with as great a velocity in a copper as in an iron wire; therefore, as the conthe operating instruments. The Hughes' telducting wire of the ocean cable is of copper, egraph also requires a strong current, wherethe difficulty of transmission is one of velocias, the currents sent through the cable have ty. A droll conclusion from such a premise been very feeble. The correct operations of The experiments related prove that currents this telegraph depend on the simultaneous reflow more rapidly in large than in small convolution of a type wheel in Ireland and anductors, and the law of resistance in this reother in Newfoundland. If one revolves an spect is well known. But these experiments instant faster then the other, a wrong message only determined the velocity of currents per is sure to be sent. In such a long line, this second, not according to the length of the must frequently occur, and thus by the inline, which is quite a different question, and struments getting out of register, they will often be rendered incapable of satisfactory the one under consideration. It is well known that a resistance is offered operation. to the electric currents in all conductors, and this resistance is in proportion to the length CRISIS OF THE FRENCH IRON TRADE.-According to the French papers "the very and thickness of the conducting wire. The longer the wire the greater the resistance; existence of the iron trade in France is at the thicker the wire the less the resistance. stake." Several large establishments have closed, many others have slackened work, One mile of copper wire one-tenth of an inch and discharged numbers of workmen, having thick offers as much resistance as one four miles long the fifth of an inch thick. The on their hands the products of the last six Post is correct in one particular. It says that | months.

hot and cold currents in the ocean will affect the time of the passage of the electric current in the cable. Sir Humphrey Davy made this discovery, and it accords with the working of our telegraph lines on land. In very cold weather the current flows freely, while in warm weather telegraphing is greatly impeded. If the Ocean Cable passes through a portion of the warm Gulf Stream, its conducting power must be greatly impaired.

To provide a remedy for this difficulty, the Post proposes that a cable should be constructed with permanent magnets attached at intervals along it whole length. This would increase rather than remove the difficulty. The Ocean Cable partakes too much of the character of a permanent magnet now. It is a sort of Leyden jar, charged with electricity, and thus it presents a counter force to the rapid transmission of signals. The resistance to the current in the Ocean Cable in proportion to the length of the wire, is inversely as its diameter, and the relative difference between the conducting power of the wire and the insulating coating of gutta percha. Thus the seven copper wires in the interior of the cable are one-twelfth of an inch in diameter, and the coating of gutta percha is twotwelfths of an inch, or four times the capacity. Allowing the gutta percha to be fifty million times inferior in conducting power to the copper, the current in a cable 3,157 miles would be restored to equilibrium. As the Atlantic Cable therefore is 2,022 miles long, about two-thirds of the amount of the force of the current must be absorbed in passing through it. When it is also taken into consideration that primary currents produce inductive currents in the cable, the difficulty of ocean telegraphing will be rendered obvious by the use of any instrument whatever. Had the cable been larger, it would have formed a better conductor, but that a current can be sent through it at all, affords some grounds of hope for future improvements in Ocean Telegraphs. This ocean line, we trust, is only the pioneer of others.

The Tribune of the 9th inst. contains a letter from Mr. Field in reference to the silence of the Ocean Telegraph. He attributes the difficulties to the use of the instruments of Professors Whitehouse and Thompson, but states that these will soon be removed, and those of Professor Hughes will be substituted. In reference to this telegraph, he says, "there is no reasonable doubt that Professor Hughes will be able to transmit intelligence through the cable reliably at the rate of about three hundred words per minute."

Mr. Field, we think, is inconsiderate in his statements. In endeavors to send simple currents through the Ocean Cable, these have sometimes ceased to flow for a considerable

The Sewing Machine Controversy.-Important Case

Several suits in equity are now pending in this and adjoining States, in which the Wheeler & Wilson and Grover & Baker sewing machine companies are the complainants. Their purpose is to enjoin the manufacture and sale of certain sewing machines invented by other parties, and which, the complainants allege, violate their patent in the apparatus for feeding the cloth. One of these suits, in which the Atwater (\$25) Sewing Machine Company is the principal defendant, was set down for argument, on a motion for a preliminary injunction, on August 25th, before Judge Ingersoll, United States District Judge, sitting in circuit at New Haven, Conn.

A large number of parties, inventors and others interested in sewing machine patents, were present in court. The complainants were represented by ex-Senator Baldwin, of Connecticut, George Gifford, of New York. and the Messrs. R. and C. J. Ingersoll, of Connecticut. James T. Brady and Edward N. Dickerson, of New York, with whom was associated George G. Sickles, of New York, appeared for the defendants.

In these cases the complainants filed bills for injunctions, and on the 25th ult. the motions to restrain the further manufacture of the Atwater and Herron sewing machines, came on to be heard at New Haven. After reading the papers, and before the opening of the case on the part of the complainants, it was suggested to the Court by the counsel for defendants that upon the face of the bill there appeared a fatal defect in the title of the complainants, and that it would be a waste of time to enter upon any extended discussion of the questions of infringement or of invention until that was settled.

The bills disclose the fact that the present owners of a portion of the patent granted to A. B. Wilson, November 12, 1850, have, from time to time, conveyed their interests to the patentee, for the purpose of procuring reissues at the Patent Office, and that after each re-issue the new patent had been re-conveyed to them, but that they had not procured the consent or co-operation of the owner of the remaining portion, whose title to the original patent is still existing and valid.

Messrs. Baldwin, Ingersoll, and Gifford, for the complainants, contended that an owner of any portion of a patent might surrender and re-issue it at pleasure, leaving his joint owner the privilege of selecting between the original and re-issued patents, and of retaining the original, so far as his interests were concerned, in full force against the public, if he thought it better than the re-issued patent.

Messrs. Brady and Dickerson contended that but one good patent could exist at a time for one invention ; and that as the original patent in this case had never been surrendered by all the owners, it must be true that any other patent for the invention covered by that original existing patent must be void.

Thereupon the counsel for the complainants asked for a week to prepare themselves more fully to argue this interesting point; and the Court, after making some suggestions somewhat favorable to the views of the defendants, but without expressing any decisive opinion upon the question, adjourned the further hearing till the third Tuesday in September, in order to give the complainants the opportunity they desired for more mature reflection.

veled. To his dying day, George Stephenson remembered him with gratitude and affection, and Mr. Pease was always pleased to exhibit a handsome gold watch. received as a gift from his celebrated protégé, bearing the words :--- " Esteem and Gratitude, from George Stephenson to Edward Pease."

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#### ----Among the Statues.

Powers' colossal statue of Daniel Webster recently lost on the voyage to Boston, is now in course of reproduction from the original model. The process will require about twelve mon<sup>+</sup>hs.

Mr. Hart's marble memorial of Henry Clay. for the ladies of Virginia, is in progress, and will be completed this year. The same artist is occupied on a model for a colossal bronze figure of Clay for the city of New Orleans.

Mr. Jefferson is also being commemorated in marble, for the State of Virginia, by a young sculptor-Mr. Galt.

Harvard University has secured another of Powers' busts-that of Jared Sparks, the late President. "California," his latest effort in art, is completed, and will be immediately shipped to New York, for Wm. B. Astor.

New Appointments at the Patent Office. R. R. Rhodes, of La., to be Chief-Examiner of Class I. (Harvesters).

A. M. Smith, of N. Y., and John Shugert, of Pa., to be Assistant-examiners of the above class.

Henry Wurtz, of N. Y., to be Assistantexaminer of Class IV. (Chemical Processes).

H. N. Taft, of N. Y., to be Assistant-examiner of Class IX. (Civil Engineering).

Robert D. Clark, of Mich., to be Assistantexaminer of Class X. (Land Conveyance).

Joseph Fales, of Iowa, to be Assistant-examiner of Class XVII. (Household Furniture). Edward Holmead, of Md., to be Assistant-examiner of Class XVIII. (Firearms).

All the above appointees are able and accomplished gentlemen. Mr. Rhodes, the new chief of the Harvesters, is very highly spoken of. Mr. Wurtz enjoys an excellent reputation as a practical chemist.

We believe it is now generally admitted that the Patent Office has suffered nothing, but rather gained, by the removal of sundry of the elder examiners, who were chiefly distinguished for their dogged adherence to old-fashioned views. Under the generous and liberal interpretation of the Patent Law introduced and insisted upon by the present Commissioner, Mr. Holt, the Office is working with admirable harmony and efficiency.

#### Something for onr Friends.

If at any time we should reasonably entertain fears for the immediate prosperity of the SCIENTIFIC AMERICAN, they would probably have taken hold of us at this particular period. We know that there is now nothing like a "panic," such as we encountered at this time last year, just as we were beginning a new volume; but there is that which is sometimes worse than a panic-a deadness in the arteries of the mechanical trades of our country-the result of a commercial depression. Yet in spite of these adverse influences the SCIENTIFIC AMERICAN has a host of true friends who are now actively canvassing for it; and at no former period in its history have subscriptions come in more ouragingly than at present. Our friends are doing nobly, and we heartily thank them. Their good words and their fine lists of names cheer us, and we hope they will continue to persevere in their well-doing until they have increased the subscription-list of their favorite paper to at least five thousand above what it had at the close of the last volume. The editorial force employed upon the SCIENTIFIC AMERI-CAN was never so strong as now; and altogether we can confidently promise our readers that the present volume will afford a rich and rare treat of useful and entertaining

#### Death of Edward Pease.

This amiable and talented gentleman died a few weeks since, aged ninety, at his residence in Darlington, England. He was a member of the Society of Friends, and had lived a calm and peaceful life, ever doing good and encouraging humble and rising genius. He it is to whom Great Britain, in a great degree, owes her railway system, for when George Stephenson was a humble colliery engineer, Mr. Pease believed in his ideas, and advanced the capital and used his vast commercial influence to construct. the first railway on which a locomotive ever tra- | matter.

#### The Gulf Stream. TO LIEUTENANT MAURY, U. S. N.

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DEAR SIR :- A few evenings since I was engaged in conversation upon a subject in which I had previously devoted some considerable thought, and on which I had proposed to lecture, but other things having occupied my time I have not done so; but as you, as an authority, were appealed to during the conversation, pardon me for addressing you upon this subject. You have taken a deep interest in making soundings of the ocean and a general chart of its waters; you may, therefore, be better able than any other man to say whether the theory entertained by me for the cause of the Gulf Stream is correct. If you think it worth your while to examine into that theory and understand what it is, you would oblige us. In order for you to do so. it is proposed you should take a map of the world, and examine the position of the rivers of this continent lying between the Alleganies and Rocky Mountains, those of Mexico, and in our southern States that border on the Gulf of Mexico, those of Central America and the northern part of South America, and observe into what they flow, and then the narrow gorge or outlet between the coast of Florida and the island of Cuba. These innumerable and hundreds of thousands of miles of rivers, some of the largest capacity and greatest length of any on our globe, throw their accumulated waters into the Gulf of Mexico, and have to make their exit to the ocean, dammed up as they are from escaping in any other direction by the long reach of the Antilles, which by their own heads, or by their sunken rocks, affords a complete barrier to their passage in any other way than through this narrow gorge, and then ask yourself the question whether this great accumulation of waters in the Gulf of Mexico, subjected as they must be to the tropical heat of the sun through the Gulf, having to flow so great a distance, and presenting it to so large a surface, subjected to the heat of 90° to 100° or more, might not explain the fact that when they arrive off the eastern coast of Florida they should have attained to a degree of heat of 76° (that being the heat of the waters in the Gulf), and that they should rush through that gorge with the velocity they do, every particle of which is ever and continuously pushed on by the constant rush of these rivers. Then take into consideration that there is a tide setting into the Caribbean Sea, commencing at Cape St. Roque, on the north-east point of South America, which continues through that sea and through the Gulf of Mexico to add to its waters, after being subjected to the same tropical sun, through the vast extent of this sea and Gulf and along the coast of South America, to be added to those of the innumerable rivers that flow into the Gulf, and all to have their outlet through the narrow space between Florida and the island of Cuba. It has seemed to me that this is a proper solution of this great phenomenon, and the meeting of these heated waters with the salter and colder waters of the ocean is the occasion of the phenomena that takes place at this outlet of them, walled up, as they are, between the coast on either side. In looking at the map and considering attentively these facts, and your superior knowledge of the position of things there (for I have never been there to examine them), you may be able to confirm or disprove that such causes could produce such results. Again, look at the map of the waters that run into the Mediterranean Sea, and what is the course they must take? We understand it has been ascertained that while the water is. apparently, constantly flowing into that sea from the ocean, there is an under current that flows into the ocean, shooting, as it were, under it, producing, till that current was ascertained, the unaccountable phenomenon of inward flow of the ocean through the Straits of Gibraltar, which led the scientific to suppose there must have been sufficient evaporation going on by the Sun to carry off these waters, accumulating, as they apparently did, | failed to make any change in the health of a | disclaimer, the patent was not obtained untij

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from so many sources. We understand there is a tide commencing at the Bay of Biscay, (supposed to be occasioned by the trade winds) running south on the coast of Africa till it meets with a current running from the Cape of Good Hope, occasioned, as is supposed, by the monsoons; and perhaps, I may add, a current round Cape Horn, both of which are, perhaps, occasioned by the waters that flow into the Pacific on the western coast of South and North America, and the southern and eastern coast of Asia, which, joining with the current as it shoots off the north-western coast of Africa, strikes the north-eastern coast of South America at Cape St. Roque; then you will perceive by the formation of that coast, it would lead this current into the Caribbean Sea, and meet the waters that flow into the Gulf of Mexico. Now, keeping vour eve on the course of the Gulf Stream. the question has arisen in my mind whether, after striking the coast of Europe, it does not continue down that coast till meeting with the waters that flow into the Bay of Biscay and the waters of the Mediterranean, as they arise from their submersion, and continue on in their course, making thereby the great circle of the waters, and accounting for the immense currents that are constantly circulating through the ocean.

I have heard that the influence of the Piscatiqua river is felt in the ocean twelve miles from its mouth. You may know, perhaps, in the Exeter, Newmarket, and Durham rivers there are what are called the great and little bays, containing a number of thousands of acres, which have to be filled and emptied at every rise and fall of the tides, which, together with the waters which come from the other branches of that river, probably producing its rapid flow-so rapid that it never freezes over. The question has arisen if so small a river and bays, comparatively speaking, can produce such effects that their influence can be felt so far out at sea, and other rivers on the coast are felt in a similar manner, what may or what must be the effect of so large a number of rivers of such extreme length, many of these three or four thousand miles long, and bearing on their bosoms, as has been expressed, whole forests of trees, and acres of land sunk beneath their waves? and these continue ever flowing, and are, without cessation and without ceasing, pushing before them, for an eternity of ages, the waters that immediately preceed them.

Taking this view of the subject, the question arises, will these facts, in your mind, explain the currents of the ocean? and will the observations you have made in your valuable surveys confirm this theory, and enable our navigators better to understand the currents, counter currents, and eddies which it is presumed they meet with in all parts of its waters? G. W. F. Mullen.

Boston, Mass., August, 1858.

The above letter was sent to us for publication in the form in which it now appears. We have not made any alterations, even in the heading, as it contains so much that is new, that we thought the author should state his theory exactly in his own way. Should Lieut. Maury think it worthy a reply or comment, we shall be happy to publish that also. -Eds.

The Color of Wall Paper. MESSES. EDITORS-On page 320 of Volume

whole family he was attending, all of whom were affected alike with a stupor of mind and languid state of the nervous system. At length, upon entering the room one day, he observed the dingy, yellow color of its walls. This struck him very forcibly, and he immediately caused them to be whitewashed, when to his surprise and satisfaction, he found, upon his next visit, the patients who had been confined for months, almost entirely recovered. No more physic was necessary.

I well know the depressing effect which the color of my office has upon my mind and body. I cannot sit down with any satisfaction, and I often fall asleep in five minutes when I attempt to read; thus causing stupor and a languid state of body. The office next door, being whitewashed, has no such unpleasant effect, everything being much more cheerful, and tending to promote lively spirits. The color of my office is a light green, made so on account of my eyes for ease in operating upon the mouths of patients. Who has not experienced an elevation of spirits when the sun shines out after a dark and gloomy storm? You well know the effect it has upon organic matter-the animal and the vegetable worlds. After the dark night, all hearts leap for joy on the dawn of the bright morning. Pure white light is necessary to health, and more attention should be paid to the coloring of the walls of rooms for the sake of promoting W. G. A. B.

Dover, Del., August, 1858.

#### Submarine Cables.-Who is the Man?

A correspondent of the New York Tribune asserts that J. J. Craven, a Newark mechanic, was the first to apply, in 1846, gutta percha to the covering and insulating of submarine electric wires, and claims for him a share of the praise now so freely bestowed upon a certain few whose names have been brought prominently before the public in connection with the Atlantic Cable. This is a mistake. Mr. Craven made application for a patent for the application of gutta percha to the covering of wires in the summer of 1848; and the patent was refused, on the same ground that one was refused J. Reynolds, of this city, for the same purpose, some months previous. We do not know who was the first to apply this important non-conducting material to telegraph wires, but we do know that as early as 1846, before gutta percha had been known to any useful extent in this country, Mr. Reynolds constructed a machine for idsulating wires, one or more in number, with india rubber softened by camphene, and macerated by forcing the gum so softened through a seive-like die connected with the same machine in which the insulating was effected. Samples of iron and copper wire thus coated were shown to Professor House, the inventor of the printing telegraph, Mr. J. Richards, the constructor of the House instruments, and others. In the autumn of 1846-'47, two lines of wire were thus insulated with a compound of india rubber and sulphur for Mr. Hugh Downing, the President of the House Telegraph Co., for connecting this city and Philadelphia by telegraph; and in the months of April, May and June, 1848, a large amount of small iron and copper was inculated and covered with gutta percha by Mr. Reynolds, for persons connected with the Morse lines; and in July of that year four miles of No. 9 iron wire were insulated with a double coating of gutta percha by the same gentleman, a part of which cable was placed at the bottom of the river between New York and Jersey City. The persons for whom this cable was made were supposed to be in the employ of Professor Morse. In the years '55, '56, '57, ten miles of No. 9 wire on reels of one mile in length were covered with a double coating of gutta percha by Mr. Reynolds, and a great quantity of No. 16 with a single coating. The machinery for performing these results is of the most ingenious character, and a patent for it was applied for in 1848, but on account of Mr. Reynolds declining to make a

1856, when, through our Agency, this patent and four others were secured for working gutta percha into useful articles. We also secured a patent for the same inventor in 1850 for covering wire.

In reference to the claims of Samuel T. Armstrong, who has also received a prominent notice in the Tribune for his supposed agency in insulating wire with gutta percha. we would state that all the useful machinery ever employed by him for this purpose was invented and made by Mr. Reynolds, and operated by Lorenzo Higgins, of this city.

Those who are so willing to rushinto print, claiming the honor of great discoveries, should be careful not to spread too much canvas at the start, as they are liable to have their honors ruffled, and the wind finally taken out of their sails.

#### The Potato Rot.

In regard to the Henderson insect theory and cure of the potato rot, the Country Gentleman remarks :---

"Now if the theory that the potato rot is caused by this insect is correct, there are these difficulties, which must occur to any one acquainted with entomology :----

1. The insect referred to has always been known in this country, and was probably quite as numerous fifty years ago as it ever has been since. From the earliest times the farmers have found it infesting their potato fields, and have consequently given it the common name of the "the potato bug." Why did it never cause the rot until so recently?

2. The insect referred to has never infested Great Britain; the only examples of it seen there, so far as we can ascertain, having been carried thither as curiosities in collections gathered in this country. Why did the potato rot appear there? Could the devastations of the insect in the crops of America have caused the rot that carried off all the potatoes in Ireland one or two years before?

Lest there might be some mistake on our part, we submitted this subject to Dr. Asa Fitch, who will surely be received as an authority, and whose endorsement we have for the statements in the last two paragraphs."

In answer to these inquiries, we would only say that the Phytocoris has not been known in this country as causing the potato rot, and the insect that farmers have known from the earliest times as the "potato bug," is the. Aphis, and not the Phytocoris. Mr. Smee has observed this insect in Great Britain, and we are not aware of any entomologist in England who would look upon a Phytocoris as a curiosity. We think that were Dr. Fitch, with his great entomological knowledge, to investigate the matter carefully, he would do much good, both to practical farmers and pure science. The savant can never be better engaged than when verifying, by attentive observation, the discoveries of only practical men, and at the same time separating truth from the weeds that often surround it. Perhaps the Dr. may be induced to reconsider what is apparently an unfavorable verdict, and if he does, we shall look anxiously for a report of his investigations.

In confirmation of Mr. Henderson's statements we publish the following communication :-

MESSRS. EDITORS-Now is the time for each one to verify for themselves, by experiment, the value of Mr. Henderson's statements in th notato rot forth in a late number of the SCIENTIFIC AMERICAN. I confess I was led to experiment because the SCIENTIFIC AMERICAN indorsed Mr. Henderson's statements, which I did simply as follows :--- I took a perfectly healthy piece of vine and placed it in a bottle of water, and put thereon a few of the bugs, and set it out of the way of other insects. In twenty-four hours half of the leaves of the vine had all the usual symptoms of the disease. Seeing is believing; and as at the present moment each one can try an experiment, they should do so, and make the result as widely known as possible. The information is too important to Yours, truly, WILLIAM CLEMSON. be neglected. East Woburn, Mass., September, 1858.

6

XIII. of the SCIENTIFIC AMERICAN, I find an article on the poisonous qualities of certain green wall paper, where arsenic was made use of in its manufecture, causing, as was supposed, the air of the room to be impregnated thereby. I think I can say a few words upon this subject, which, if they do not satisfy you as to the real cause, may assist, by further research, to clear up the case.

But few persons have any idea of the baneful influences which different colors have upon the mind and body. Some two years ago, I noticed in one of the New York papers the account of a physician, who had for months



\*. PERSONS who write to us, expecting replies through this column, and those who may desire to make contributions to it of brief interesting facts, must always observe the strict rule, viz., to furnish their names, otherwise we cannot place confidence in their com munications.

WIRE GAGE -A very complete wire gage, which ha met the approval of the first brass manufacturers in the country, can be procured of Messrs. J. R. Sharpe & Brown, of Providence, R. I.

J. C., of Mass .- Shears and scissors of all kinds, and of the very best quality, can be obtained of Messrs. Wendt & Seymour, No. 31 Gold st., this city.

POISONED DOGS .- A correspondent from Alabama informs us that he relieved two valuable dogs, poisoned with strychnine, by the administration of about a teaspoonful of camphor gum to each. The relief was almost instantaneous. They were down, and unable to move

A. W., of Me .- Dr. Scoresby (a good authority on such subjects) asserts that the highest waves of the Atlantic are not over forty feet; but it is said that the al-titude of the waves of the Indian Ocean exceed fifty feet. It is also asserted that at the depth of three hun dred feet no disturbance is felt in the water of the ocean.

J. T., of Ind.-It has been told to us by at least one hundred different persons within the past ten years, that they had discovered "perpetual motion," and without any other knowledge of the special contrivance beyond the simple assertion, we have replied : "Impos-sible—you are deceived." Now, we confess that we have no sympathy with visions of this character, and the sooner all such dreamers learn that to accomplish this result they must needs have the power of creation, the better it will be for them. Theorists and specula tors who search for such chimeras are usually wholly ignorant of the laws of dynamics, and are, therefore unsafe advisers in such matter. We once conversed with an ingenious Bohemian, who acknowledged having spent nearly ten years vainly looking for it. He several times almost got it, but at last gave up in des pair, and declared it impossible-a dearly purchased experience. You are in the same boat, and the quicker you swim ashore the better.

F. S., of N. Y .- The point of contact of one sphere with another is a mere point, no matter what may be the size of the sphere.

G. W. H., of N. Y .- We cannot help thanking you for the compliments you pay us; and in answer to your suggestion for laying the cable, we would say that the same plan has been proposed many times before; but there are many practical difficulties to paying a cable through the bottom of a ship.

C. L. R., of Wis .- The samples of leather are excellent in appearance. but how about the durability ? Many things look well, but it is dangerous to become very familiar with them. Our experience in the use of rapidly tanned leather has been rather disagreeable, and somewhat expensive. RED-HOT WATER.—A correspondent inquires :—

there any such thing as heating steam red-hot, so as to explode like gas by ignition?" Water is composed of explode like gas by ignition?" two gases, oxygen and hydrogen. It can be decomposed and resolved into elementary gases by the action of incandescent platinum, and when the gases are thus ignited they explode with great violence. We have heard of red-hot steam, but have never seen it.

PATENTEES .- We are glad to receive so many letters from our clients, thanking us for our services in pro-curing patents for them. These friendly expressions are always gratefully received and duly appreciated.

B. B. L, of Ohio.-Although water is theoretically incompressible, it is, in common with all other bodies composed of molecules, and at the great depths of the ocean these are pressed nearer together by the weight of the superincumbent water, so that, in fact, water is capable of some compression, and as we have no me chanical means for testing the amount, we can only form our ideas from a course of inductive reasoning.

L. B., of Cal.-You had better write to the Secretary of the Society of Mechanical Engineers, Manchester, England, who will, we have no doubt, forward your let ter to Mr. Siemens, and by that means you will obtain all the information you desire.

G. M., of N. Y .- You ask : "What would be the effect of mixing twenty-five per cent of atmospheric air in the gasometer, with the gas which supplies the city Would it not effect a saving ?" It would not be of any benefit to the consumers, although it might increas the profits of the gas company. The addition of air to gas dilutes it, and depreciates its quality.

Dr. I. Hendree, of Selim, Ala., inquires where he can get a good machine to make a very finished and

to their habit of drinking their bread instead of eat

ing it. D. B. W., of N. Y.-We are not acquainted with any published work on Selenography.

C. Y. P., of Mass.—No saving of cost is secured by evaporating liquids in vacuo. You therefore could not obtain a patent for economising fuel by evaporating salt brine in vacuo.

S. M. C., of Wis .- There are quite a number of the "Corliss cut-offs" in operation. They give satisfaction, so far as we are aware.

E. P. B., of Me .- You are correct in regarding inertia and gravity as the causes of the peculiar motions of the rotoscope; but so much has been published on this question that it has become stale and uninteresting.

EFFECT OF AN EARTHQUAKE.- A short time ago there was an earthquake in the Granite State. A letter from Rumney says that the shock was felt in that town and in Hebron; it shook the houses quite perceptibly. But the worst effect of the earthquake was. that it shook the confidence which has always been felt in the primeval rocks of New Hampshire.

J. A. R., of Mass.-You had better wait until it is ositively determined to lay another cable across the Atlantic, and then propose your plan to the company.

P. L., of Ga .- The kind of compass and sundial you described is made and sold by every philosophical instrument maker. The patent must have been granted on some peculiar feature in the combination of the needle with the dial.

W. M. K., of N. Y .- We thank you for your compli mentary allusions to the SCI. AM. We mean at all times to make its columns utter the honest conviction of our sober judgment, without reference to the selfish views of cliques and parties; and when we wrote upor the canal question, the "smell or taint of the Central Railroad influence" did not hang upon the skirts of our garments, however it might appear to those who can see virtue only in a canal, or vice versa. We are so fortunate as not to need the smile or favor of any soulless corporation, and are prepared at all times to defend or oppose them, as we think proper.

GROUND AND HAZEL NUTS .- Ground nuts are quite an institution with "Young America," eight hundred tuns having been imported into the United States from Gambia in one year. But France is the great market for ground nuts, where they are used for oil, of which they contain large quantities. The insignificant hazel nut, so agreeable to the palate, but so difficult to get, is exported from Tarragona, to the extent of 25,000 or 30,000 bags, of four to the tun. A kind of chocolate is prepared from them, and they have been sometime made into bread. The pressed oil of hazel nuts is little inferior to that of almonda

Money received at the Scientific American Office on account of Patent Office business, for the week ending Saturday, September 11, 1858 :--

I. W. H., of L. I., \$50; H. B. T., of Wis., \$30; W. & N., of Ill., \$30; D. W. T., of Ill., \$30; W. B. B., of Conn., \$30; P. H. C., of Ala., \$25; W. W. L., of Ohio, \$55; O. H.M., of Iowa, \$30; J. F. H., of Ky., \$55; A. W. L., of Mass., \$30; H. B., of Ind., \$30; J. R. H., of Conn., \$25; R. & M., of Vt., \$35; J. F., of Mass., \$30; A. H. G., of N. Y., \$31; N. & Y., of N. Y., \$25; W. T., of Ill., \$30; C. N. S., of Conn., \$25; J. P., of Tenn., \$15; F. H., of N. Y., \$27; O. B. T., of Ohio, \$30; J.
C. T., of N. Y., \$15; E. W., of Mass., \$60; E. B., of
N. Y., \$25; F. R., of Mass., \$25; J. C., of N. Y., \$25; of La., \$50; F. Y., of Ky., \$25; A. C., of N. Y., \$25, D. S. McN., of N. Y., \$55; G. C., of Ky., \$30; J. D. R., of Pa., \$30; H. G., of Ill., \$25; J. H. B., of N. Y. \$20; N. W., of Ala., \$30; C. C., of Ind., \$50.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Septem ber 11, 1858 :-

C. N. S., of Conn.; F. Y., of Ky.; L. H. M., of R I.; R. & M., of Vt.; J. W., of Ind.; F. H., of N. Y.; E. S., of Vt. ; G. I. C., of Vt. ; F. R., of Mass. ; J. R. H.. of Conn. ; J. H. B., of N. Y. ; E. B., of N. Y. ; P. A. C., of Ala.; G. C., of Ky.; P. P. J., of Pa.; G. B. C., of N. Y. : D. S., of Wis.

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Patents we commend to the perusal of all persons in-terested in obtaining patents :--

terested in obtaining patents :--MESSES. MUNN & Co.--I take pleasure in stating that while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL THE BUGINESS OF THE OFFICE came through your hands. I have no doubt that the public confidence thus indicated has been fully de-served, as I have always observed, in all your inter-course with the Office, a marked degree of promptness, skill, and fidelity to the interests of your employers. Yours, very truly, CHAS. MASON.

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**GREAT FAIR OF THE AMERICAN IN-**STITUTE at the Crystal Palace.—Articles will be received and located on and after Tuesday. September 7th. Entrapee on Fortieth st. Exhibitors are requested to send their articles without delay. 12 F. W. GEISSENHAINER, Jr., Chairman.

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6 (m) (C)	<ul> <li>superior pine shingle.</li> <li>C. F. H., of PaBorden's condensed milk is prepared in vacuo, at a low temperature. The office of the company is in this city.</li> <li>C. H., of S. CThe first telegraph line lain in England (in 1839) had the wires insulated in glass tubes, and laid in the ground; your suggestion, therefore, as to the use of such tubes, is not new. We agree with you that in many situations this plan would be the best, although the most expensive.</li> <li>POBTER AND ALE-Temperance people will find an argument to enforce their doctrines, in the fact that 41,071,636 bushels of grain, paying \$25,000,000 duty, are annually converted into malt in Great Britain, for ale and porter. From this, some idea may be formed of the vast quantity of the most important staple of life wasted in the production of these beverages there. Franklin was not far from the truth when he ascribed much of the poverty and misery of the people of Great Britain</li> </ul>	on the corner of F and Seventh streets, opposite the general superintendence of one of the firm, and is in daily communication with the Principal Office in New York, and personal attention will be given at the Patent Office to all such cases as may require it. In- ventors and others who may visit Washington, having business at the Patent Office, are cordially invited to call at our office. We are very extensively engaged in the preparation and securing of patents in the various European coun- tries. For the transaction of this business we have offices at Nos. 66 Chancery Lane, London; 29 Boulevard St Martin, Paris and 26 Rue des Eperonniers, Brussels. We thin we may safely say that three-fourths of all the European patents secured to American citizens are procured through our Agency. Circulars of information concerning the proper course to be pursued in obtaining patents through our Agency, the requirements of the Patents Office, or, may be had gratis upon application at the principal office or either of the branches. The annexed letter from the late Commissioner of	economical in the use of water, and giving the highest percentage, with a partially raised gate, of any yet dis covered. It gives from 75 to 97 per cent of power, ac- cording to the size of wheel and head employed. For information address S. K. BALDWIN, Laconia, N. H. N. BFor low falls of one, two, or three feet, also for any fall, it will surpass all others. 2 13° WARTH'S SELF-ACTING WOOD-TURN- ING LATHES. The best and most practical men. State and County rights for sale. Address. A WARTH, care W. H. Bertling, 23 Chambers st., New York, or the manufacturers, who have machines of all sizes on hand. Also a general assortment of machin ists tools. Circulars sent. Address CARPENTER & PLASS, 479 First ave., New York. 2 13° <b>TTENTION</b> -SCREWS 50 PER CENT CHEAP- er than any other manufacturer. Manufactory of all kinds of metal screws, of every description, and for every trade, such as manufacturers. Manufactory of all kinds of metal screws, pleanofortes, Machinists, Guussmitha, Clocksmiths, Watchmakera, &c. C. DU- CREUX, 510 Broadway (opposite St. Nicholas Hotel), New York. 2 13'	emery. Casks contain 200 poinds each. Testimonials of its superiority from Collins' Aze Co. and many others. GEO. H. GRAY & DAN FORTH. 19" Boston, Mass. These machines have no rival[Scientific American WHEELER & WILSON'S SEWING MA- CHINES, 343 Broadway, New York, received Institute, New York; Maryland Institute, Baltimore and at the Majae, Connecticut, Illinois, and Michigan State Fairs. Send for a circular containing editorial and scientific owninons, testmonialsfrom persons of the highest social goettion, &c. 1tf HARRISON'S 20 AND 30 IN'H GRAIN Maufacturing Co., New Haven, 113 IRON PLANERS AND ENGINE LATHES ters, Gear Cutters, Chucks, &c. on hand and finishing. These tools are of superior quality, and are for sale low for cash or approved paper. For cuts giving full descrip- tion and prices, address 'New Haven Manutacturing Co., New Haven, Conn.'' 113	6 (m) (D)
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# Science and Art.

16

#### Burglar's Alarm Clock and Lamp.

This invention consists of a novel and ingenious combination and arrangement of levers, rods, and other devices, in connection with the doors or windows of a building, and a bell or clock and lamp in any desired apartment therein, so as to give alarm on the entrance of burglars into a room or building, and to furnish an instantaneous light in the chamber or room in which the lamp is placed, when the parts are operated either by a person entering the room or building, or by an alarm clock set to awaken the occupants of the room at a given hour.

In our illustrations, Fig. 1 represents an alarm bell and self-lighting lamp in immediate connection with a door, and a window within a frame in the same, in order to show the manner of operating the parts by the raising of a window. Fig. 2 is a front elevation of an alarm clock, with a self-lighting lamp combined therewith; and Fig. 3 is a section of the lamp, and parts for operating the same.

A is the door of an apartment, on the inner surface of which is arranged a window sash, B, and frame, B', in order to illustrate the method of operating the alarm by both the opening of the door, A, and the raising of the window sash, B. C is an arm or button, secured to the inside of the door by a pin, upon which it can be moved, so as to operate upon the end of a right angled lever, D, hung inside the door frame or not, as desired. The opposite end of this lever, D, is attached by a wire rod, E, to an oscillating lever, F, suspended on a fulcrum above the door; or it may be arranged in any portion of the building, with the necessary rods and levers between its end and the lever, D, to give it the required movement. G is a rod attached to the end of the lever, F, and extending downward in the frame of the door, and attached at its lower end to the end of an elbow lever. H, turning on a fulcrum at its angular part, with its opposite curved end extending upward between the door frame and the horizontal segmental flange, J, on the upper end of a tube, K, surrounding another vertical tube, K', in which is formed a vertical slit, which tube K', is secured to projections on the inside of the door frame, and is provided with a screw cap at its lower end. The upper end of an upright rod, L, is inserted in a notch in the edge of a segmental flange plate, J, which is provided with a hammer at its lower end, and connected to the necessary alarm clock movements for operating the same, arranged between the door frame and a bell, M.

The window sash frame, B, is connected to the end of an oscillating lever, O, by a rod, N, the opposite end of which lever is connected by a rod, P, to the oscillating lever, F.

To the upper surface of the flange plate, J, is attached a spring bar, Q, to near the upper end of which is attached by a set screw, R, a horizontal match passing through an opening in the said spring bar, and h ving its end on which the chemical igniting substance is placed, in contact with the emery paper surrounding a vertical lamp, S, secured on top of the tube, K', and having a wick tube, T, at its upper end. The lower end of the spring bar, Q, projects through the slot in the tube K', and rests on a spiral spring, s, arranged within the same, which spring is depressed by pressing the flange, segmental plate, J, and tube. K. and their attachments to the lower part of the tube, K', and retained in its compressed state by turning the segmental plate, J, and tube, N, slightly around, so as to bring the lower projecting end of the spring bar, Q, in a horizontal slot in the tube, K', extending at right angles from the upright slot in the same. When the spring is thus compressed, and the several parts in the positions represented, the spring bar, Q, is sprung back, to press the igniting end of the match against | The lighting apparatus and alarm can be ar-

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the emery paper, with a sufficient degree of segmental plate, S, and tube, K, to be turned by the action of the elbow lever, H, until the force to produce the required friction to inflame the same. The opening of the door, A, | lower projecting end of the spring bar is deor raising of the window, B, will cause one tached from the horizontal slot in the tube, end of the oscillating lever, F, to be depress- K'. The spring bar, Q, or match holder is then ed, and the opposite end to be raised, and the | carried upward by the spiral spring, s, with

# **MATTHEWMAN'S BURGLARS ALARM CLOCK AND** LAMP. Fig. 1 0

the required degree of force to ignite the | match by its rubbing over the surface of the emery paper, to light the lamp, and simultaneously with this movement, the rod is detached from the detent or notch in the edge of the segmental flange plate, J, and the previously wound-up clock alarm rings an alarm to awaken the occupants of the room. In the same manner the clock represented in Fig. 2, | the match is in contact with the emery paper

can be set to ring the alarm at a given hour, in which event the lamp will be lighted by the movements of the before described parts, through the action of the hammer, W, of the clock upon the bent end, V, of a bar, U, connected to the flange plate, I. The turn given to the spring bar or match holder, Q, to release it from the slot in the tube, K', when



New Haven, Conn., on the 6th of July, 1858. Any further information can be obtained by addressing him as above.

WOOD EMBOSSING .- A newly invented process for so softening wood that it may be pressed into iron molds, and receive permanent and sharp impressions in bas-relief, has, under the name of Xyloplasty, attracted much notice in Paris. The wood is softened by steam, and imbued with certain ingredients, which impart to it sufficient ductility to enable it to receive bas-relief impressions from four to five millimetres in hight. For medallions, bosses, &c., mastic is forced into the hollows, so that all tendency in the compressed wood to split or open is completely overcome. For bookbinding purposes much seems to be expected from this process, as it is applicable to the scented or odoriferous woodscedar, teak, cypress, rosewood, &c.-which are vermifuge in their nature; so that through their covers, books will in future be protected from the ravages of insects.

road contractor in France near the Pyrenees, having lately found the process of blasting an overhanging rock rather difficult, and a mortar battery of the 10th regiment happening to be passing along, he telegraphed to Paris for leave to open fire upon a crag seventy yards above the road, over which it impended. A few rounds of ten-inch shell soon brought the entire mass to fragments. About ten minutes served for the operation.

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on the lamp cylinder, S, gives that cylinder a | ranged in any convenient position in the room, and be operated by wires leading from rotating movement equal to the movement of the holder, so that a fresh surface of the the exposed doors or windows liable to be cylinder is presented at each operation to be forced and entered by burglars, and when the lighting apparatus is operated by the clock as operated upon by the match, and the difficulty which a stationary surface would present. of stated, a person can have a light when he is having the same worn smooth, or filled up awoke by the ringing of the alarm. The patent for this highly ingenious conwith the gum from the match, is avoided. trivance was issued to John Matthewman, of

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