# scientific American.

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

VOLUME XI.]

NEW-YORK, SEPTEMBER 29, 1855.

NUMBER 3.

## Scientific American,

PUBLISHED WEEKLY At 123 Fulton Street, N. Y. (Sun Buildings.) BY MUNN & COMPANY.

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

Responsible Agents may also be found in all the princi-pal cities and towns in the United States. Single copies of the paper are on sale at all the periodi-cal stores in this city, Brooklyn, and Jersey City. TERMS-#2 a-year,-\$1 in advance and the remain der in six months.

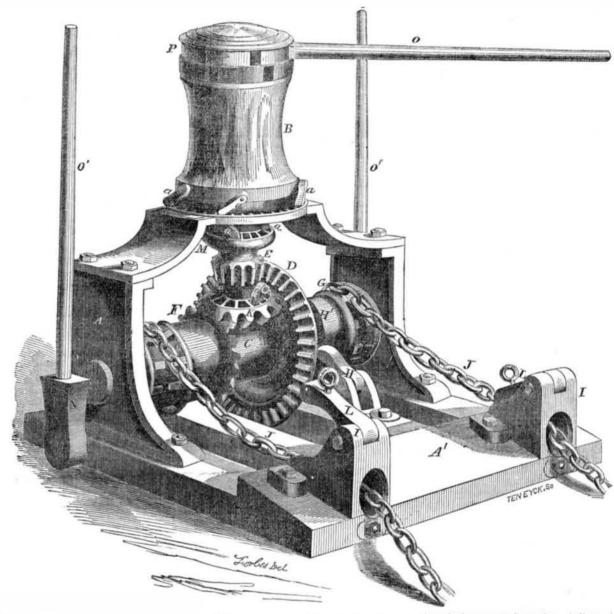
#### Improvement in Windlasses

The accompanying engravings represent an improvement in ships windlasses, for which a patent was granted to James Emerson, of Worcester, Mass., on the 28th of last month (Aug. 1855.)

Fignre 1 is a perspective view, and fig. 2 is a transverse vertical section. This invention consists in a peculiar combination of capstan and windlass, by gearing and devices, so arranged and operating that the shaft or axle of the windlass will be moved with a quick or slow, continual or intermittent rotary motion, and with a corresponding degree of power, one set of the working gearing being independent of the other, thus allowing the windlass, iu case of the breaking of one set of gearing, to be operated by the other, and also to prevent a vessel, riding heavily at anchor, from sudden over-straining upon the cable.

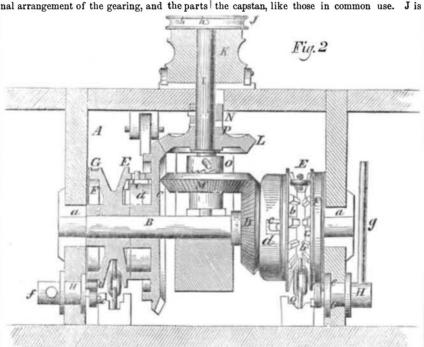
In fig. 1, A A' represent a framing for a windlass and capstan, both of which are represented in combination. B is the capstan loose barrel, and P its cap, secured firmly on its vertical shaft or axis. It has boxes or holes for the reception of the handspikes or levers, O, to turn it. a a are the common ratchets or pawls for gearing the barrel of the capstan, B. The vertical axis or shaft of the capstan, B, extends down through the sole plate, and has two loose bevel wheels, E K, on it, which are brought into work as required, by ratchets, a a, secured to the shaft of the capstan, and which take into bevel notches on the top or caps of the wheels, to make the latter clutch with the shaft in a well known manner. The one bevel wheel E, gears into a large bevel wheel, D, on the windlass shaft, and the other, K, gears into a smaller bevel wheel, F, on the other side of the windlass barrel, C. These two wheels on the windlass shaft have collars, and are operated by slides or clutches, to slide in and out on the shaft, to gear and ungear with the bevel wheels, E K, on the capstan shaft, so as to give a fast or slow motion, as may be desired, to the windlass. G G are two grooved pulleys on the windlass for receiving the cable chains, J J, which are worked over them, and through openings in the blocks, I I, in which they are properly held by the brakes, LL. The windlass can also be worked by the handspikes, O' O', set in the boxes, N. H is the windlass ratchet working in the ratchet teeth on a sleeve, H'. When great power is to be applied to the windlass, for hoisting or weighing the anchor, of course a slower motion is required. This is given to it by throwing over the ratchets, a a, in the cap of wheel K, so as to throw it out of gear with the shaft of the capstan, and then setting the ratchets, a a, in the cap, M, of wheel E, so as to gear it with its shaft, and with the large wheel, D, on the shaft of the windlass, C; the wheel, F, being thrown out of gear on its shaft by a clutch. It is evident that if the large wheel, D, has two, three, or four times more cogs on it than E has, it will require just so many revolutions of the capstan to impart one to the windlass. On the other hand, a

EMERSON'S PATENT SHIP WINDLASS.



power can be brought into effect, as may be wanted, according to circumstances.

described, and thus a high speed of windlass | of the capstan and windlass. I is the verti- | into the larger one, C, on the windlass shaft, and a low power, and a low speed and a great | cal shaft of the capstan, extending below its | B, and the larger one into the smaller wheel, sole plate, and B is the horizontal shaft of the D, so as to impart the slow and the great speeds windlass, with its gudgeons revolving in proper of the windlass, as has been set forth. cd Fig. 2 will convey a better idea of the inter- bearing boxes, a a. K is the loose barrel of represent the clutch or slide of the collar of



quick motion can be given to the windlass by its cap plate, with holes, h h, to receive the with the shaft, I, when required, are more throwing the wheel, D, out of gear by a clutch ends of the handspikes to turn it. P and M | clearly shown in fig. 1, represented by a a. L with wheel E, and bringing wheels K and F are the loose bevel wheels on the windlass shaft, is the upper bevel wheel on the capstan shaft, into gear in the same way as the wheels already I. Their ratchet clutches, N P O, to gear them and M its lower one. The smaller one gears ed in improving these machines for economising

wheel D, and e d the clutch of wheel C, to gear and ungear these wheels with their shafts and respective wheels of the capstan. E E are two grooved pulleys, with teeth, b, in their faces, to hold the links of the chains or cables, Q. FF are smooth pulleys cast with the grooved pulleys, E E. Around each of these is a metal strap, G; the lower ends of these are attached to pins, e e, which are fitted to the faces of small shafts, H, having holes, f, for the reception of handspikes or levers, g, to work the windlass shaft.

If the cables, Q, are to be hoisted slowly by the windlass, the wheels, L and C, are geared together by their ratchets, N P, and clutch, ed, and the capstan is then set in motion. If a rapid motion is to be given to the windlass, se wheels described are thrown out of gear, and the ones, M D, are geared together by the ratchets, and the clutch, cd; and thus the different speeds are given to the windlass, for the purposes already stated. When the anchor is out, and the ship riding, the straps, G G, may be adjusted sufficiently tight around pulleys, F F, to prevent them from turning easily, and yet allow said pulleys to give a partial turn when the vessel rides heavily, so as to prevent a sudden overstrain upon the cable. The advantages claimed for this compact combined capstan and windlass deserve the attention of all nautical men, and all those interestlabor and space on shipboard. It has re ceived the approbation of many shipmasters; one is now building for a new ship at Medford,

More information may be obtained by letter or otherwise, of T. L. Ranlett, No. 157 South street, this city, or George P. Tewksbury, 140 Commercial street, Boston, where working models can be seen.



[Reported Officially for the Scientific American.] LIST OF PATENT CLAIMS Issued from the United States Patent Office FOR THE WEEK ENDING SEPT. 18, 1855.

LOOMS FOR WEAVING SUSPENDER WEBBING—Wm. V. Gee, of New Haven, Conn. I claim, first, the method descrited of forming lutton holes, or other holes, in suspender webtling, and other fabrics, by weaving one side of the hole condinuously, from the weaving of the full width of the web, Liner running tack the wee the length of the hole, and proceeding with the other side of the hole. Second, the employment for operating the harness of a sliding lifting carriage, E. furnished with a number of catches, a a, corresponding with the number of leaves of harness, said catches teing employed below the harness, opposite the lifting tars, C. C., thereof, and being allowed to itall into the notches of the lifting tars of their respective leaves of harness, or being thrownout by a corresponding number of levers, ff, which are operated upon by a pattern cylinder, G., or its equivalent, substantially as described.

a pattern cylinder, G, or its equivalent, substantially as described.

Third, the method of throwing off all the levers, f f, from the pattern cylinder, at every stroke of the loom, to admit of the turning of the cylinder, by attaching all the said levers to a superior lever. H, which is operated upon by inclined surfaces, i, upon the connecting rod of the lifting carriage, E, substantially as described.

Fourth, the mechanism, by which thesuspension of the operation of that part of the harness which carries that part of the warp which forms the side of the hole which is first woven, is effected, consisting of a rock shaft, s', carrying catches, s s, to hold up the harness, and a finger lever, t, attached to the lifting carriage, E, to act on a cam, St, or its equivalent, on the said rock shaft, the said finger lever having imparted to it, by suitable means, a vibrating or side-to-side movement, at the termination of the weaving of each side of the hole, to actuate the rock shaft, to throw the catches, s, in or out of operation, substantially as described.

Fifth, the method of returning the pattern cylinder to

ing of each side of the hole, to actuate the rock shart, to throw the catches, s.s., in or out of operation, substantially as described.

Fifth, the method of returning the pattern cylinder to the position for commencing the pattern, after the weaving of the hole, by fitting the cylinder loosely to its shaft, and furnishing the end of the shaft with a fixed stilde, R. to receive a movable slider, R.', which is raised at intervals by a lever operated by a cam on a shaft, U, parallel to and geared with the cylinder shaft, and at the end of the formation of the hole, suddenly fallsover a step on the cam, and throw adown the slider, and thereby causes a fork, 2', on the cylinder, and return it positively to the required position, substantially as described.

Sixth, forming those dents of the reed, which correspond with that part of the warp which forms that side of the button hole, is to be first woven, with a backward crook, n, above or below the plane, in which the closing of the sheds takes place, in order that by raising or lowering that part of the warp, of which the first woven side of the hole is composed; the said woven side may be allowed to go back the length of the hole, without obstructing the lay, in weaving the other side of the hole, as fully set forth.

Seventh, I claim the method of liberating the take-up

ing the lay, in weaving the other side of the hole, as fully set forth.

Seventh, I claim the method of liberating the take-up roll from the pawls, m2 m3, to allow the backward movement of the web, and re-engaging it with the said pawls, y means of the lever, M, the hooked bar, q, the catch, q', and the arm, r, all operating substantially as described. Eighth, I claim fit ing the arm, r, loosely to the take-up shaft, and engaging it by means of a pawl, r', with the ratchet, and providing a fixed stop, r2, to arrest the said arm at a suitable psint, whereby the take-up shaft is caused to carry the said arm. r, the requisite distance from the catch, q', corresponding with the length of the button hole, and then the arm to become stationary, till the ratchet is liberated, and then to return with the ratchet, to throw out the catch, q', substantially as described.

Ninth, the application, in connection with each of the let-off rolls, oo, of a brake lever, o', and a spring lever, q, the said levers operating as described, to control the let-off, and the spring lever acting as a backward take-up, to take back the web, to weave the secondside of the hole, substantially as described.

[This invention relates, for the most part, to improve-

[This invention relates, for the most part, to improve ments in the mechanism by which the harness of the loom is operated, for the purpose of weaving button holes or openings in suspender webbing and other fabrics. It also relates to the construction of the reed, and to peculiar take-up and let-off motions for the same purpose; also to the construction of the harness, stop motion, &c. We should need engravings to convey a clear description of the parts. We regard it as an important and valuable improvement: we have seen some specimens of work done by it, and they are indeed beautiful. Mr. Gee is the inventor and patentee of other improvement, in this line. which have been already noticed in our journal.]

Which have been already noticed in our journal.]

Corn and Cos Mills.—Rensselaer D. Granger, of Philadelphia, Pa.: I do not desire to confine myself to any particular numer of arms on the bridge tree. C. or jeces. F and H, as that must be determined by the size of the mill; neither do I wish to ci-im any particular size or :rras, geneet of I reaking or grinding teeth.

But I claim the adjustal le horizontal guide rollers, i, in combination with the bridge tree, Ge, spindle, D, and spri g, d, for the purpose of maintaining an uniform relative position of the shell with the bur, and at the same time allowing the former to yield from the latter.

CUTTING WIRE—Wm. Grover, of Holyoka, Mass.: I claim the use of the circular plates, B, having radial slots, A, formed thereon, for the purpose of holding and cutting wire, together with the gauge, E, constructed and operating in the manner described.

This instrument differs from the common knife-edged nipper; only in the shape of its jaws. They are made round; in other words they are complete disks of steel. with holes of different sizes through their surfaces, for the reception of the wire to be cut. In its operation the handles are opened until a certain sized aperture in one of the diks comes in line with its equivalent opening in the other disk, the wire is then passed through and clipped by compressing the handles.

The ordinarynippers are apt to bend the wire in cutting; they also leave a rough burr on the ends of the pieces. But with Mr. Grover'simprovement, wire may be very rapidly cut to any size or length, without the least bending, and with perfect smoothness. It is evidently a valuable improvement. Pianoforte makers and all others who have occasion to use large quantities of wire, reduced to particular shapes and dimensions will appreciate its excellence.]

STEAM GAUGE COCKS—Albert Bisbee, of Chelsea, Mass.: I claim the arrangement, substantially as specified, of the india rubber disk, or facing, to the screw plug, or stopper, imbedded and bound at its rdges by an extension of the body of the plug, as described, with the stationary annular stopper seat of the cock, essentially as set forth.

FEED WATER APPARATUS OF STEAM BOILERS—Jod Densmore, of Blooming Valley, Pa.: I claim the arrange ment of the tube C, to enter the boiler at the water line B, with the steam chest and pump cylinder, constructe and operated in the manner described, by which the steam of the boilers assists the pump worked by the engine, to force water into the boiler, as herein set forth.

MACHINE FOR FELLING TREES—Thomas Durden, of Montgomery, Ala. I claim the employment of cutters, C. C. C. C. of the peculiar form shown, in combination with the feeding arrangement K. L. M. substantially as, and for the purpose set forth.

I like wise claim, providing each of the jaws of the dog with a projection, 6, and arranging and operating them as shown, for the purpose set forth.

In the above improvement no saw is used, the cutting eing done by means of knives which project horizontally from an upright shaft. Rapid motion is communicated to this shaft by means of cogged gearing; there is also a connection between the gearing and a screw which feeds the cutters up towards the tree as fast as they enter; the feeding parts are therefore self-operating. The frame of the machine rests on a four-wheeled truck, so that it may be conveyed about from place to place with facility. The apparatus is firmly attached to the base of the tree by means of a pair of iron spurs; a hole is bored, the spurs

This appears to be an excellent machine for the purposes intended. It is very compact, light, portable, and per-forms its work with rapidity. By the use of cutters, instead of saws, all the difficulties which attend the use of the latter, such as gumming up and sticking, are totally avoided.]

Mowing and Reaping Machines—Win. Burgess, of London, England. Patented in England, Aug. 16, 1854: I am aware that a "spiral or screw" has been employed for the purpose of clearing the track, in order that the wheels may operate upon the ground, and I make no claim to such a device.

But I claim as my improvement in addition to reaping or mowing machines, combining the archimedean screws with the platform thereof, for the purpose of delivering the cut crop off from the same, substantially in the manner as described.

[There is such a large number of American improvements in harvesters already existing in this country that the bringing of one over from England seems almost like carrying coals to Newcastle. The above improvement, however, strikes us as a very good one.]

CARD PRINTING PRESS—D. K. Winder, of Cincinnati, Ohio: I claim the combination of the connected chambers, C and D. of the platen, with the spring driver, E. of the bed, constructed, arranged, and operating substantially as specified, for the automatic feed and delivery of cards.

ester, N. Y. Ante-dated June 20, 1855; I disclaim the arrangement of lateral flues, as a pplied in the lamp case of Salmon Bidwell; also the arrangement of flues, as used in the patent of J. A. Williams; my invention being an improvement on both of these.

I claim the construction of locomotive lamp cases, with vertical descending flues open at bottom only, constructed substantially as set forth, for the purposes specified.

MACHINERY FOR PICKING FIBROUS MATERIALS—Richard Kitson, of Lowell, Mass.: I do not now claim, broadly, the application of a fan to the cylinder, in any manner, as one method of applying a fan is embraced in my patent of Oct. 31, 1854.
Without claiming here the use of a notched plate for securing the teeth to the cylinder, I claim casting or forming the notched plate with locking pieces, for the purpose of entering between the prongs, ft, of the teeth, into the grooves, which are formed in the cylinder to receive the teeth, and fitting down to the bottem parts or crotches, g, of the teeth, and thus securing them in place.

[In machines for picking cotton and other fibrous materials, the picking cylinder is generally covered with what is termed a "fillet;" this consists of a sheet of leather filled with ordinary card teeth. The heavy work at which pickers are employed requires that the teeth should be very firmly secured—else they break, bend, or otherwise refuse to do good work. Mr. Kitson's improvement consists in making the teeth separate and in attaching them, without any fillet, to the cylinder. His mode of attachment is such that they may be made larger and stronger, with corresponding advantages in durability, economy and thoroughness of operation.

The above is a good invention. Mr. K. is the patentee of several other ingenious improvements in machines for preparing and manufacturing fibrous goods.]

preparing and manufacturing fibrous goods.]

FIRE ARMS—Wm. W. Marston, of New York City, I do not limit myself to the size or character of arm fitted with my improvements; neither do I make any claim for rotating and cocking a fire arm simultaneously; neither do I claim the seer K, to act upwards and rotate the barrels, as this is also well-known.

But I claim, first, elevating the hammer to cock and discharge the piece by means of a cam, d. revolving with the barrels or chambers, and formed with as many points a there are learnels or chambers, so that the hammer shall be raised and discharged by simply rotating said Larrels or chambers, as specified.

Second, I claim the revolving face-plate e, formed with projections on its face, to take theseer, k, and with notches on its edge taking the stop, 13, on the trigger, the two acting to rotate and stop the barrels at the precise point required, and prevent the strain on the trigger from turning the barrels too far, as specified.

Third, I claim the mode specified of constructing and fitting the parts of the cam, d face plate, e, trigger, k, seer, k, and stop, 13, so that the hammer shall be cocked by one, two, or more pulls on the trigger, in the manner, and as specified.

Sapery Apparatus for Steam Boilers—John M.

SAFETY APPARATUS FOR STEAM BOILERS—John M. Reeder, of Nashville, Tenn.: I claim conrecting the valve stems, D, and F, so that the valve, I, may be raised by hand from the outside to fixed the fixes, but cannot be weighted from the outside to increase the steam over a given quantity, as set forth.

PLANE Bir—Horace Harris, of Gorham, N. Y.: I claim the adjustment of the cap and bit with the grooves teach side, and of the thumb-screw at the two of the cap and bit, for the regulation of the cut of the li, while the iron is held fast in the stock by the wedge fastening.

DOVETAIL KEY CUTTER-A. P. Hughes, of Philadelphia, Pa.: I claim the combination of two angular V-sha; ed and adjustable cutters, with the guiding tube, or its equivalent, substantially in the manner and for the pur-pose specified.

INSTRUMENT FOR DETERMINING LATITUDE AND LONGITUDE—John Stinson, ef Dawville, N. J.: I claim the use of the circle, C. with its shafe or handle provided with the cross piece, G, and the cross piece, H, or their equivalent, the whole being suspended from at, or near the center of the circle by means of the plumb wire and red, I, which rod is jointed so as to move the ly in the plane, passing through the axis of the circle, the whole teing for the purpose above described.

[If we understand the design of this invention, it will (provided it operates successfully) enable the navigator to ascertain his exact position at sea at any time of day or night, without quadrant or chronometer, the only requis ant improvement truly-if it will do the work.]

BRICK MACHINES—G. W. B. Gedney, of New York City: I claim the off-bearing boards applied and arranged as specified.

I also claim the fingers for placing the board from the mold on to the endless apron.

Cooling Cast Iron Car Wheels—J. M. Sigourney, of Watertown, N. Y.: I claim the arrangement of the mold, chill and ring, F. operated in the manner set forth, for equalizing the cooling of the car wheel.

[To cast a car wheel, so that it shall come forth from

the mold, perfectly sound in all its parts, and sufficiently strong in those parts where strength is required, is what many have essayed but few successfully accomplished The great difficulties to be overcome lie in the unequal contraction of the metal while being cooled in the mold.

We are told that Mr. Sigourney has so successfully masered these obstacles as to be enabled to cast car wheels with almost as much rapidity and certainty as the com-

monest iron castings are produced.

His improvements relate to a peculiar treatment of the mold, after the metal has been poured in ; also in proportioning certain parts of the pattern to accommodate shrinkage. It is said that car wheels can be turned out on Mr. Sigourney's plan at a cost less by 50 per cent. than any other, while the article produced is much superior. We regard the above as an important im

provement.]

REVOLVING FIRE ARMS-Frederick Newbury, of Albauy, N. Y. I do not claim the use of an oblique toothed ratchet wheel, nor the revolving mandrel attached to both cylinder and ratchet wheel.

But I claim the method of operating an oblique toothed ratchet wheel by the direct action of the upper limb or camend of the trigger, which trigger, also, by the same action, cocks and discharges the hammer, and holds the cylinder firmly in place during the tirring of the piece, substantially as set forth.

I also claim the employment and use of a slot in the trigger directly upon the hammer, in order to enable the trigger to replace itself behind the hammer as before the discharge of the same, substantially as set forth.

I claim the apparatus for attaching and detaching the barrel to the stock, underneath the cylinder, with its hook, finger-piece, and spring, together with the recess and stop in the block.

SEAL AND STAMPING PRESS—Edmund Morris, of Tran-

SEAL AND STAMPING PRESS—Edmund Morris, of Trenton, N. J.: 1 claim the causing of the frame which contains the die, or plate, to work to and fro on a joint or hinge, so that the latter may be turned over with its face upward, as described, in a convenient position, to receive a supply of ink.

PIANOFORTE ACTION—Jno. S. Morton, of New York City: I claim the arrangement and operation together, shown and described, of the lever, b, pivoted to the jack, post, or cushion, e, and block, c, with the jack and hammer to effect the repeat; and whereby, while the use of an additional spring or weight, is dispensed with, the weight of the hammer operating on the lever, returns the jack to its notch in, or position under the butt, essentially as set forth.

[ I'his invention consists in the peculiar application of lever to the jack, in combination with a block attached to the hammer, whereby, after the hammer escapes, it ss caught at a short distance below the string, and held in readiness for a free and rapid repeat; whereby, also, the return of the point of the jack into the notch of the hammer butt is facilitated.

In all pianoforte movements, one of the most important requisites is such an arrangement and connection of the keys with the hammers, as will permit an easy and perfect repetition of the same rate. Mr. Morton's improvement appears to possess superior excellencies in this respect. It has been practically applied to several of the ordinary instruments, and is said to render them equal in touch and tone to the best grandaction pianos. If this is so it is certainly a very valuable invention.]

so it is certainly a very valuable invention.]

METALLIC PLATES FOR PRINTERS—S. W. Lowe, of Philadelphia, (assignor to himself and J. M. Beck, of liar-risburgh, Pa.): I do not claim engraving or etching designs, or figures of any kind, upon metallic plates or surfaces of any material, for the purpose of printing therefrom, as these processes have been known and practiced for a long time.

I claim coating the plane or unengraved face or surface of the plate (which is intended for leaving the white or unprinted surface of the paper,) with a mercurial amalgam, that will have the effect of preventing the ink used in printing therefrom, from adhering to er soliting the same, whilst the fluctures engraved or etched thereon, readily receive the ink, and thus admit of printing from the plate, by a letter or any other press, either from the plate alone, or from the plate in the same "form" with the type, without the "wiping" heretofore required in printing from steel or copper plates, substantially as described. I also claim the coating the plane surfaces of etched or engraved steel plates, with an alloy of tin and mercury, substantially and for the purposes as described; and also the coating of etched or engraved copper plates, in he same manner and for the same purposes, and the coating of the plane surface of metallic embossing plates, in the same manner and for the same purpose, and the coating of the plane surface of metallic embossing plates, in the same manner and for the same purpose, and the coating of the sunken parts, when filled up with a resinous substance as a plate to print from, thus saving an extra color-plate, when it is desired to have the parts to be embossed, first printed in any color.

[The finest specimens of engraving are produced by the

[The finest specimens of engraving are produced by the se of flat plates, composed of steel or copper. The picture is first drawn upon the plates, and then cut out, line by line, by means of a tool called a "graver." To obtain an impression, the plate is smeared all over with a thick paste-like ink, care being taken to fill up the sunken lines of the engraving. The plate is now put upon a small

stove and slightly warmed, and then the printer wipes off with a cloth, and with the palm of his hand, all the ink

that is on the surface of the plate, but leaves the engraved

lines full. The plate and the sheet of paper on which the print is to be taken, are now passed through a press of greatpower; the latter forces the paper into the inked lines of the engraving, and the picture is thus produced. The operation, it will be observed is a slow one compared with printing from types and analogous raised surfaces. One of the most extensive uses for which copper and steel plate printing is at present employed, is in the production of bank notes. In no other way can those beautiful pictures which adorn our paper currency, be so distinctly and accurately produced. It is a species of printing which is very costly, comparatively, but its results are

for this purpose; it is certainly very novel. The inventor intimates, in his claims, that if the steel or per plates are covered with a mere he proposes, they may be printed on common presses, with types, the same as wood engravings. Should this discovery prove thus practicable, it will be a glorious aux iliary to the typographic art.]

very perfect. Many vain endeavors have been made to cheapenit; the invention aboverecorded seems intended

iliary to the typographic art.]

SAWING MILL—D. S. Howard, of Lyonsdale, N. Y.: I claim the method of setting the log forward, after each board is severed, by mechanical devices, operated by the weight of the log, substantially as specified.

Second, the method de.eri ed of cutting from either end of the log, with a circular saw, by hanging the saw in a vil rating frame, or its equivalent, so that the axis of the saw may be above the log, when cutting from one end, and teneath it when cutting from the other end, so as to cut either way, against the grain of the wood I claim the self-setting arrangementdescribed, whether in connection with the circular saw, or the single or double-edged, reciprocating saw, as equally applicable to either.

COOKING STOVES—Ino. Van, of St. Louis, Mo.: I claim the arrangement of the water cylinder, with separate chambers, fire cylinder, or space, in its center, opening through its top and cross heating the combined and operating, substantially in the manner and for the purposes set forth.

KNITTING MACHINES—Clark Tompkins and Jno. Johnson, of Troy, N. Y. We claim, first, the manner in which we cause the frame which carries the take-up mechan is m, to revoive in the same direction and with the same velocity as the needle cylinder, as specified and for the purpose set forth.

purpose set forth.

Second, combining the web-shaping plates, S and C, with the take-up mechanism, substantially as described, for the purpose specified.

CURTAIN FIXTURES—P. H. Niles, of Boston, Mass., (assignor to R. C. Webster, of Watertown, Mass.) Ante-dated March 18, 1825; I claim the combination of the bracket, having a hole of double diameter with the spring pin and the reller end, either with or without a spool thereon, fitted to correspond to said hole, and dispensing with the knob or cap, on the other end of the roller, substattially as described.

CLEANING COTTON—Samuel W. Brown, of Lowell, Mass.: First, I claim my within-described dome, having a rack or grind, in the upper portion of it, under which the cotton is thrown by the first beater, in connection with the fan in the exhaust pipe, leading from the top of the dome, for exhausting the dust from the cotton as it is thrown forwards by the first beater, essentially in the manner, and for the purposes set forth.

Second, I claim the use and application of two or more sets of secondary fied rolls, in connection with the heaters, which rolls take the cotton from the dome and deliver it of the second beaters, in several different places, so as to completely separate and agitate the cotton, to straighten and even the fiters and free the dirt from it, essentially in the manner, and for the purpose set forth.

HEATERS FOR SMOOTHING IRONS—Newell Cleveland & James J. Johnson, of Alleghany, Pa.: We claim the grated, or lattice worked heater for box smoothing irons, substantially as described and represented.

DESIGNS.

OVENS OF COOKING STOURS—G. W. Chambers, of Troy, N. Y. assignor to P. A. Palmer, of Leroy, N. Y. CAST IRON MONUMENT—J. H. Wilson, of Chesterfield, Ill.: I claim a design for a cast-iron monument for the head of graves, combining the figures of the harp and heart, with a recess for the insertion of a miniature likeness and inscription, and a locket for hair.

### Scientific Notes.

REVOLUTION IN GAS LIGHTING-We were much interested the other day, at the store of Mr. N. W. Turmer, with the inspection of an apparatus for generating gas from a new material, and the joint patentees for which are Messrs. A. A. Davis, of Lowell, and Mr. Cunningham, of Nashua, N. H. The materials for generating the gas, which is effected without the application of external heat, and by mere chemical action, consist simply of zinc and hydrochloric acid. This yields a gas of great purity and brilliancy as contrasted with the coal gas, the same quantity yielding twice the illuminating power. The whole apparatus is contained in a cylinder three feet in hight and sixteen inches in diameter; and by it every family may be its own manufacturer. Nor is there much care or attention required in its management, but a machine capable of generating sufficient for eight lights will require looking to and feeding only once a month or so. The residuum is chloride of zinc, and it is estimated will be fully equal in value to the original substances. -[Boston Evening Traveler.

This extract we have selected from one of our exchanges which gives the above credit to the Boston Traveler; and the New York Tribune of the 15th inst., under the head of "new inventions," presents the same article with some additions, and giving the same credit. We are surprised that the Traveler which often contains much correct scientific matter, should publish such scientific errors. The gas produced in the manner described will not give a good light, and the method of making it is not new. The gas is nothing more nor less than hydrogen, produced by the decomposition of the water—the oxygen of it combining with the zinc and leaving the hydrogen to escape. This gas requires carbon to make a white light, as it produces only a faint blue light burned by itself in the atmosphere. The machine described must contain some camphene, benzole, or naphtha to carbonize the hydrogen gas or it will not be able to produce a good light—and yet nothing is said about this. The same gas can be produced in the manner described by the use of hydro-sulphuric acid to dissolve the zinc, as in galvanic batteries. This gas cannot be produced so cheap as coal gas.

ALCOHOL FROM GAS .- Berthelot, the eminent French chemist, has succeeded in preparing alcohol by causing olifiant gas to unite indirectly with two equivalents of water. This discovery is interesting, because, except alcohol of sugar juice, it has been exclusively formed by fermentation. Pure and previously boiled sulphuric acid by long agitation with olifiant gas slowly absorbed the latter; and this on being diluted with water and distilled vielded alcohol. This is a discovery in synthetic chemistry. Olifiant gas can be obtained by heating a mixture of one volume of alcohol with two of oil of vitriol—sulphuric acid.

PIANOFORTE WIRES .- The excellent wire strings of the American piano of Ladd & Co. Boston, which has been so successful in Paris' were made at the wire factory of Washburn & Co., Worcester, Mass.