

Scientific American.

NEW YORK, SEPTEMBER 2, 1854.

Subscribers, be sure and get the First Number.

A new volume of the "Scientific American" will commence on the 16th of September, and we hope our readers will be very prompt in renewing their subscriptions. Many delay until the very last moment, and some until the volume has progressed several weeks, and then call for the back numbers without being able to procure them, much to their disappointment.

We always regret to find an old patron of the paper disappointed in this respect; we have noticed it, however, many times, the result of his own neglect. The edition commencing Volume Nine was increased several thousands, and before ten numbers were issued it was exhausted. We intend to start this volume with a number adequate to meet the wants of all, and shall base our calculations upon the number of subscribers who renew their subscription before the volume fairly begins. Those who are engaged in forming clubs will bear in mind that our list of cash premiums is much larger than last year, offering excellent inducements to any who may feel desirous of canvassing for names. Send in your subscriptions early if you wish to secure the numbers from the commencement of the volume, and advise all your friends to do the same.

Another New Rule in the Patent Office.

U. S. Patent Office, Aug. 12, 1854.

Previous to the second examination of any case which has been once rejected, the 7th section of the act of 1836 requires the applicant to renew in substance the oath originally filed with his specification. After thus applying for a second examination, no withdrawal of any part of the fee paid is authorized.

The previous practice of the office having on a recent occasion been seriously questioned, the law has been carefully considered, and there being no reasonable doubt of its having been heretofore departed from in this respect, the change above intimated seems unavoidable.

But the applicant, without renewing his oath or forfeiting his right of withdrawal, may point out any mistake or oversight on the part of the office, which will be cheerfully corrected.

To render this change as gradual and as little inconvenient as possible, this rule will only be held applicable to cases wherein the first rejection shall be made after the promulgation of the foregoing order.

C. MASON,
Comr. Patents.

[The above new rule relates to a question of law, and is very different from a simple form of conducting Patent Office business; it therefore deserves more than common attention from all inventors. Hitherto, the practice of the Patent Office, in re-examining rejected cases, has been very liberal, and this may have led many to give the office more trouble than they should; but on that account, those who have conducted business with the Patent Office in a correct and honorable manner, should not be made to suffer. It is our opinion that the new rule is contrary to the plain letter of the law, and if an appeal were taken from the decision made upon it, we believe it would be decided against the Patent Office. The section referred to in the Commissioner's letter, says, "In every such case if the applicant elect to withdraw his application, relinquishing his claim to the model, he shall be entitled to receive back twenty dollars." The re-examination of any application is a question of privilege with the Patent Office, and even if it should examine an application fifty times, the applicant, if he withdraw his application, is entitled to receive back twenty dollars. There is no authority, not even a hint, in the whole patent code for the Patent Office charging twenty dollars for an examining fee; this is the key to the meaning of the law in judging of the new rule, which is claimed to be the law. The fact is, the law is positive against it, as it makes special provision for the fee of ten dollars only, for examining an application for a patent, and no provision whatever is made

for charging for a re-examination. This is our opinion of the law, and we entertain no small amount of confidence in its correctness.

Car Ventilation.

Traveling in the ordinary rail cars at this season, under a burning heat, and when all nature is parched up, is one of the greatest nuisances imaginable. No one pretends to travel merely for the pleasure of it, consequently passengers rush from the hot and uncomfortable cars, when they stop, like half-smothered sheep through a gap in a wall.—After a half-day's ride on a railroad, one feels like submitting to the usages of a Turkish bath as the only hope for future cleanliness. If there were any excuse for such treatment of passengers, we might feel willing to submit to it with perfect composure, but genius has supplied the remedy, and railroad companies are maltreating their patrons in not adopting it. We have special reference to Waterbury's improvement, which has been introduced upon the Naugatuck R. R., now under the able superintendence of W. D. Bishop, Esq., of Bridgeport, Conn.

This invention consists in inclosing the whole of a train of cars except at the ends, and taking in at the front a current of pure air, which circulates freely through all the cars, and passes out at the end of the rear one. On each side of the tender, air, free from dust, smoke, and sparks, is caught in an open-mouthed conduit, and conducted into one channel of less specific area, and directed at the front end into the train. This creates a current by the velocity of the train through the atmosphere, which freely circulates through the whole train while it is in motion. Between every pair of cars the usual space is inclosed in an elastic trunk formed of two sections—one for each car, which fit close against one another when the cars are coupled, so that the whole central way through a train of cars becomes a long continuous hall. Passengers pass in and out of each car at a side door near the end. It will thus be seen that safety as well as comfort is obtained by the use of this invention, as there is no danger of falling between the cars or from the platform. The whole train is thus converted into a box, into which neither dust, smoke, nor sparks can enter. When the train stops, the windows may be thrown open, so as to admit air when the main current is stopped; these are closed when the train begins to move. This plan of car ventilation is very simple; its merits consist in excluding those great draw-backs to comfortable railroad traveling in our country, viz.—dust, sparks, and smoke. We understand the New York and New Haven Railroad have purchased the right to use the invention for a reasonable sum, and that it will soon be applied on all their cars. We hope that every railroad in our country will adopt this invention or some other (if it can be obtained) equally efficient, for it is our opinion that railroads should now pay premiums to passengers, instead of exacting fares from them for spoiling their clothes and charging their lungs with dust, when they are necessitated to travel.

Spiritual Manifestations and Discoveries.

We live in a professedly civilized age; knowledge is increased, and the lights of science and philosophy are shed around the footsteps of high and low in all places. Yet with all our claims to superior enlightenment, that faculty of man and woman, *curiosity*, is made the subject of as gross deception now, as it was when kings kept astrologers and soothsayers to direct them when to go up to battle, to make new laws, and to read their dreams. It is not in the sequestered outskirts of civilization that imposture stalks and plans to devour its victims, and to deceive the simple. No, in the midst of our crowded cities, and in our most public marts, the wily deceiver spins his thread and weaves his web. In traveling up Broadway, the great luminary of New York streets, you can see in one place the words inscribed in bold letters, "Spiritual Manifestations conducted here by a Medium, entrance 25 cents." A few doors further on another sign tells you that table tipplings and rappings are manifestations and communications of spirits with another medium—a female. (It is somewhat singular that nearly all these mediums are of the gentler sex.) Now as we have always had an idea that a spiritual existence was one of a higher state of intelligence, we cannot but conceive that such spirits as those which are said to manifest themselves here, have a very ignorant and poor opinion of their good names, thus to be rapping on and tipping over tables for 25 cents per head.

The most sensible thing that ever we heard of one of these spirits doing was that of Benj. Franklin's inspiring a medium to construct a new shingle machine. As chronicled by a spiritual paper it was said "to work to a charm, and that measures had been taken to secure a patent." Now the last part of the account of this machine was something which the ignorant medium should rather have consulted us about than his exhibitors. Every inventor who applies for a patent must make oath that he is the original and first inventor: now as Benj. Franklin's spirit communicated the plan of making that shingle machine, we think it will be a pretty hard job for the medium to make oath that *he* is the original and first inventor.

Great Place for Steamships.

The last number of the London "Artisan," presents three long columns containing the lists of the number of steamships and sailing vessels which have been built and are now building on the river Clyde, in Scotland, since March, 1853. In adding up the columns of figures, we find the total number of vessels to be 265, of which 87 were sailing vessels, and all the rest (178) steamers. Of this large number only 31 are built of wood, all the rest (234) are of iron. Of the steamers, only 47 were built with paddle wheels, 131 being screw propellers. The total horse power of the engines, as given, amounts to 26,396. This we know is far below the mark, as we perceive that one wood-built paddle steamer by Robert Napier, of 3600 tons burthen, is set down with 1000 horse power engines, this can mean only one of its engines. Another by Wingate & Co. of 1000 tons burthen, is set down at 200 horse power, which can only be for one engine. In the list as published by the "Artisan," only the horse power of one engine in a vessel, we conceive, is given, and we are thus led to infer that the total horse power of the engines for these steamers, is nearer 40,000 than 26,000. The total tonnage of all these vessels amounts to 166,804 tons or 166,804 ÷ 265 = 629 tons for each of the two hundred and sixty-five vessels. The river Clyde, or that part of it on which these vessels have been or are building, is in length twenty miles—from Greenock to Glasgow. We had no idea that in any place in this world, embracing such a small extent of territory, so many vessels were built, especially steamers. That country appears to be the steamship shop of the world. These vessels have been built for parties in almost every nation under the sun—Ireland, England, Australia, Sicily, France, Egypt, &c. The whole country contains only 2,800,000 inhabitants, and these vessels were built or are building in only one district—but that by far the most important of it.

Government Steamers—The "San Jacinto."

We hope the four new government steam frigates which are to be built, according to the bill passed at the last session of Congress, will not make us ashamed of our country with respect to the way things have hitherto been managed in the Navy Department. Our readers will remember our famous steam frigate "San Jacinto" for its desperate performances have been described more than once in our columns; we learn that this famous steamer has made another trip after her late overhauling and thorough repairs in machinery, and with such success that it had to put into Boston crippled. Her bed-plate was broken, and, as a consequence, her machinery may have to be taken out, in order to get in a new one. If we are not much mistaken, this steam frigate has already had two new sets of machinery, and she is but yet in her trial trips, having done no service worth naming. Is not this a shame? It is. Engineers of the Navy, take care of the new steam

frigates. Your reputation is at stake in their construction. You have much to lose if they prove unsuccessful.

Reaping and Mowing Machines.

In No. 1 of the next Volume of the "Scientific American," we shall commence a series of articles upon reaping and mowing machines. It is our intention to make it a subject of great interest to our readers, and to accomplish this we shall publish illustrations of as many improvements in this branch of the arts as we can possibly collect. We have already collected much valuable matter, and with a view to a complete elaboration of this subject we made a call, some time since, upon all patentees of reaping and mowing machines, to send us their Letters Patent and we would publish their machines free of expense to them. No patentee interested in this class of improvement should delay sending us his Letters Patent to enable us in bringing his invention before the numerous readers of the "Scientific American." It will certainly be for his interest to do so, and we shall regard it as a great favor. Patents can be forwarded at our expense, either by mail or express, and as soon as we get through with them they will be promptly returned.

Our Prizes.

We hope our readers will remember the prizes we have offered; they are free to all, and may be of no small benefit to those who obtain them. Now is the time to begin laboring. Mechanics can canvass for subscribers during spare moments at meal hours, or for an hour or two in the evening. Among shop-mates and acquaintances such extra efforts are worth putting forth. It is not every day that such prizes are offered, and for which any person can enter as a candidate.

Photography.

The London "Mechanics Magazine" tells of two photographs which were recently exhibited at the Polytechnic Institution of that city, which exemplified, in a striking manner, recent improvements which have been made in photography. One picture was a portrait, the full size of life, and the other was a copy of the front sheet of the "Times," on a surface of two to three inches. Both pictures were very perfect; the small one from its distinct and clear lines, could be read without the use of a magnifying glass. In this city, at No. 349 Broadway, (Gurney's) there are on exhibition a number of life size photographic pictures, which we are certain, cannot be surpassed by those in London. The figures look out from their frames, as if they were living and breathing before you. The art really appears to have arrived at such perfection as to supersede the occupation of the portrait painter altogether. Who a few years ago, would not have been considered beside himself if he had asserted that in 1854, artists would be using the sun for a pencil, to perpetuate on the canvas the likenesses of the fair, the grave, and gay, but so it is.—We live in an age of wonderful achievements in science and art.

Battle, murder, sudden death, dry weather, and tightness in the money market, seem to be the ruling features of the day.

\$ 570 IN PRIZES

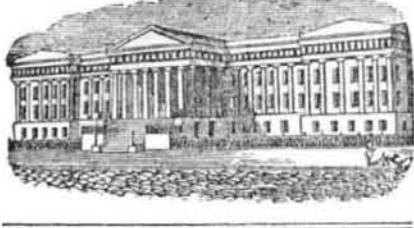
The Publishers of the "Scientific American" offer the following Cash Prizes for the fourteen largest lists of subscribers sent in by the 1st of January, 1855.

\$100 will be given for the largest list,	
\$75 for the 2nd,	\$35 for the 8th,
65 for the 3rd,	30 for the 9th,
55 for the 4th,	25 for the 10th,
50 for the 5th,	20 for the 11th,
45 for the 6th,	15 for the 12th,
40 for the 7th,	10 for the 13th,
	and \$5 for the 14th.

The cash will be paid to the order of each successful competitor; and the name, residence and number of Subscribers sent by each will be published in the "Scientific American," in the first number that issues after the 1st of January, so as to avoid mistakes.

Subscriptions can be sent at any time and from any post town. A register will be kept of the number as received, duly credited to the person sending them.

See new prospectus on the last page.



[Reported Officially for the Scientific American.]
LIST OF PATENT CLAIMS
 Issued from the United States Patent Office
 FOR THE WEEK ENDING AUGUST 22, 1854.

CENTRIFUGAL PUMP—W. D. Andrews, of New York City: I claim the construction of the pump, as described, viz., having a hub, in the shape of the base of a cone inverted, with arms attached to its periphery, of a gradually decreasing width as they approach its base, placed within a shell corresponding in shape to the outer circumference of the arms, and having induction passages of a spiral form gradually decreasing in pitch to their point of delivery and ejection passages, of a spiral form, of a gradually increasing pitch, until they attain a straight line; by which construction the water is made to pass without sudden change of direction or eddies, in an unbroken volume through the pump. And I do not limit myself to the precise mechanical construction, as shown, but may modify the different parts, only retaining the same general combination.

HOT-AIR FURNACES—N. A. Boynton, of New York City: I claim, first, the arrangement and construction of the dome and heating ring surrounding the same, combined by a series of pipes opening into the base of the dome, and carrying the smoke up over the same, as specified. I also claim the construction and arrangement of the smoke pipes, so as to prevent the lodgment of dirt therein, and precipitate the same into the fire chamber, thereby preventing the clogging of said pipes. I also claim the puppet valve cover, arranged and combined with the dome of the furnace, by which I insure a stopper at that point, not liable to the derangement of ordinary valves used for similar purposes.

ROTARY ENGINES—R. C. Bristol, of China, Mich.: I claim, first, the resting of the outer cylinder, by lugs upon a convex bearing, with a plate interposed and made adjustable by set screws, or by wedges, for the purpose of adjusting the outer cylinder to any and all possible variations of the shaft and inner cylinder, as described. I also claim driving out the slides by steam acting upon pistons at each end of them, two being drawn out in equilibrium, while the other two are being acted against to propel the engine, as described. I also claim using a cock or valve in the exhaust pipe to be closed before starting the engine, for the purpose of filling the engine with steam, and causing the pistons to force out the slides, which fall back upon stopping the engine, as described. I also claim the metal rings upon the outer head, fitted over elastic packing, and forced up to the ends of the cylinder by springs, for providing for the expansion and contraction of the metals, as set forth. I also claim, in combination with the rings, thus forced up, the use of set screws for restraining the action of such springs, and preventing the atmosphere from causing undue pressure or friction on said rings. I also claim the peculiar method of making the joint in the abutment, so as to be adjustable and perfect on the face of the inner cylinder at the end of the abutment, and on the periphery of the inner heads, as described.

HOMINY MILLS—Benj. Bridenolph, of Clear Spring, Md.: I claim the compound spiral hulling shaft constructed as described, and operating in connection with a roughened concave for hulling and breaking corn, as specified.

STRAW CUTTERS—A. B. Earle, of Franklin, N. Y.: I claim the arrangement of a vibrating knife and recoil spring, as set forth. I also claim the arrangement of a chopping knife on vibrating arms, fitted on each side with a handle, in such a manner that the force of the blows of the knife may be varied in proportion to the quantity of straw to be cut, and by which the operator may work on either side of the machine at pleasure.

ARRANGEMENT OF THE FRAME ENGINE—W. M. Ellis, of Washington, D. C.: I claim the arrangement of the annular cylinder and piston between the crank and cross-head, and uniting the two latter by a connecting rod passing through the space within the two former, as set forth.

STOP AND WASTE COCK—W. Z. Hatcher, of Philadelphia, Pa.: I do not claim making a supplyway in the barrel of the outlet waste hole, the waste pipe, nor the through ways. But I claim making the waste way in the barrel of the cock so as to convey the water required to be wasted, from the pipe to the through way in the plug, that it may pass through the same to the outlet hole and pipe on the barrel, as described, and so that the plug may be turned in either direction for the purpose; and the notch or extra hole in the plug, and the check pin and stops heretofore used may be dispensed with, as described.

PORTABLE BUREAUX—Levi Haywood, J. L. Ross, and J. K. Otis, of Boston, Mass.: We claim forming in a bureau or case of drawers, which is susceptible of dismemberment, an independent frame or case which, when the parts are disjointed, and back of the bureau attached to it serves as a box or case to receive the front, back, and sides of each drawer, the pieces which compose each drawer being packed in the same compartment of this independent frame in which the said drawer slides when put together.

COATING TELEGRAPH WIRES—J. B. Hyde, of New York City: I do not claim broadly the coating of wires by drawing them through a vessel having holes on opposite sides. But I claim the employment of the molding kettle, with or without the melting kettle, provided and combined with an aperture covered with a disk of India rubber or its equivalent, having a hole or puncture in the center, which admits the wire and prevents the escape of the contained composition, and with the nozzle or die for determining the thickness of compound to be put on the wire, as specified. I also claim the use of the cone (which determines the thickness of the coating) in such manner as that the outer end or nozzle thereof, shall, when in use, terminate in and be covered by water, so that the covered wire shall emerge from the cone directly into or while the latter is in the water, through which the wire will then pass, as described, for cooling the composition. And finally, I do not limit the use of the apparatus for coating telegraph wires.

ACTUATING ENGINES BY BISULPHURET OF CARBON—Bernard Hughes, of Rochester, N. Y.: I claim the application of bisulphuret of carbon to any convenient form of the steam engine, as a motive power, as described, when the vapor of said substance, after it has passed through the cylinder, is condensed by any known means of producing condensation in a suitable reservoir, and preserved for the future supply of the boiler, as described.

KNITTING MACHINES—George Jackson, of Cohoes, N. Y.: I claim the arrangement and combinations of the pressers and sinkers in the frame, as described, whereby the pressers and sinkers move together, and can be adjusted at such distance apart as may be requisite to graduate the size of the stitches, as required. I also claim the arrangement of the cams which are attached to the cam wheels and on one common shaft, to produce the relative movements of the pressers, the sinkers, the needles, and the thread carrier bar, with the carriers, in combination and cooperation with the movement of the face cam, which being revolved by the movement of the spindle, and so as to press downwards, produces the relative movements of the thread carriers to the right and left, and under and above the needles, and gives the peculiar character and figure of

the fabric knit, so that by changing the surface of the face cam, and altering the relative proportions of the spur wheels to each other, the figure of the fabric may be altered indefinitely.

FLOATING DRAGS OR ANCHORS—Abel F. Lewis, of Shoshone, Wis.: I claim the arrangement described of the canting hawser, cable, and floating anchor, whereby a vessel may be held with more or less power, as circumstances require, when ground anchorage is unattainable.

BALANING AND HOISTING SASHES—Robert Marquis, of Xenia, Ohio: I lay no claim to making both sashes mutually operative by means of the same cords which serve to elevate and lower said sashes. I claim the single cord, which, passing around pulleys at the mid width of the sashes, is operated by a winch in the jamb, enabling the simultaneous or separate movement of each sash without liability of binding by the unequal expansion of different portions of the cord or impairing the strength of the sash by the removal of its substance, &c.

MANURE SPREADERS—Elbridge, Marshall, of Clinton, N. J.: I claim the employment of the vibrating brush for the purposes set forth.

GRAIN MILLS—Henry Mellich, of Walpole, N. H.: I claim the arrangement of the ring saws, as set apart by the washers on the bolts, with the cracker rest enclosed by them, in combination with the adjustable case, or its equivalent, for the purpose of cracking ears of corn, and also shelled grain, that it may be more readily received between the burr, and the grinding surface of the adjustable case, and for the further purpose by the oblique direction of the teeth on the outer edges of the ring saws, and that of the teeth on the inner surface of the adjustable case of forcing the cracked grain into the space between the periphery of the burr, and the grinding surface of the adjustable case. I also claim the arrangement of the burr, constructed as described, in combination with the finishing plate and the adjustable case, or its equivalent, operating as the burr does, conjointly with the ring saws, or inside the adjustable case, and the toothed disk of the finishing plate, against the front surface of the adjustable case for the purpose of further grinding and giving the required degree of fineness to the meal as it passes between them, the whole being arranged, combined, and operating conjointly as described.

DIAPHRAGM PUMP—J. A. Pease, of New York City: I claim the elastic diaphragm with the metallic or wooden cylinder, in combination with the air chamber, for the purposes specified.

WOOD GAS GENERATORS—W. D. Porter, of New York City: I claim the construction of a gas apparatus or still, consisting of a metallic or other cylinder, the cones, diaphragm plate, and exit pipe, as described.

FOLDING UMBRELLAS—Henry Richardson, Sheldon Morris, Jr., and A. J. Perry, of Leitchfield, Conn.: We claim, first, the combination of the spring and its hook or catch, with the hinge, the said spring being secured to one part of the hinge or rib, and the hook or catch taking into a notch in the other part of the hinge or rib; when the two parts of the rib are in line, for the purpose of making the joint rigid, as set forth. We claim also, the improved combination of a much more readily made, and more efficient, in operation, and that it is much cheaper of construction, both in material and labor, and further, that it is much nearer in its finish.

Second, attaching the several joints or parts of the stick together, by means of a link which is connected to the ends of the right-hand screw and has a ring, or equivalent, fitting into a hollow part of the nut, and the nut, which prevents its passing through the nut, but which at the same time allows the screw to turn freely within the nut, as described.

MANUFACTURING DOOR KNOBS—Artemas Rogers, of Philadelphia, Ohio: I claim the instrument described, or its equivalent, by the use of which, an encaustic, with one and the same instrument in continuous use, to form the screw threads or other impressions within the socket of a door knob, remove the knob from the mole to the polishing surface, manipulate it during the repositioning, and finally deposit it in the advancing kiln, as set forth.

PAVEMENT WASHER, HOSE HYDRANT, AND HITTING POST—C. M. Alburger, of Philadelphia, Pa.: I do not claim a pavement washer, a hose hydrant, independent of their peculiarities in their construction and combination. I claim, first, making a double waste cock by cutting the two waste nozzles, or their equivalents, in the plug of the cock, so that either nozzle may be put in communication with the usual waste holes in the barrel, by turning the plug in either direction, as described. I claim the said double waste cock as set forth, in combination with a pavement washer, hose hydrant, or other hydraulic apparatus requiring the water in the outlet pipe above to waste in the ground below, when the reservoir pressure is shut off by turning the plug of the cock.

Second, I claim the general arrangement and combination of elements which constitute a hydrant, and hitting post, for the purpose described.

TWO-PLY CARPETS—Thos. Crossley, of Boston, Mass. Ante-dated Feb. 23, 1854: I do not claim the manufacture of carpets composed of different fibrous materials, in which the whole or nearly all of one fiber is shown on one side of the carpet, and all or nearly all of the other fiber on the other side of the carpet, as this has been done in pile carpets and other fabrics. But I claim, as a new article of manufacture, a two-ply ingrain carpet, having the lower ply composed entirely of linen or cotton and the upper ply of wool, when united as described, for the purpose of producing a durable and economical carpet, to be subsequently primed upon one side, as described.

DAQUERROTYPE PLATE HOLDER—Joseph Hill, of Skaneateles, N. Y.: I claim the application of the inward pressure by means of the springs, by their force retaining the daquerrotype plates to the block by the contact of the daquerrotype plates with the plates on the edges of the block. It is understood that the daquerrotype plates may be confined by their ends as well as sides by the same principle: blocks may be made of any substance.

TUNING FORKS—J. C. Jenkins, of Bealsville, Ohio: I claim producing sounds of any required pitch with a single tuning fork by means of a movable cross bar inserted in the proper positions between the prongs of the fork, as set forth.

PREVENTING THE EXPLOSION OF BOILERS—A. W. Jones, of New York City: I am aware that contrivances have been made by which the valve which is raised by the pressure of steam is made to open another valve for its escape from the boiler, and I therefore do not claim to have been the first to have made such a discovery. What I claim is the combination of the rock shaft with the slide valve, piston, spring valve, and steam chest, as described.

SAWING CLAPBOARDS, &c.—D. F. Melen, of Wentworth, N. H.: I do not claim two saws operating simultaneously upon opposite sides of the same piece of lumber. But I claim the arrangement of devices, as described, by which the distance between the saws is varied to meet the varying thickness of the logs to be sawed, and the saws when so adjusted are elevated and depressed together, as required. I claim the method, as described, of feeding the log between each successive cut of the saws, that is to say, causing the feedingawl, or the lever which carries it, to strike against a fixed stop, in combination with the yielding a.g., as set forth. I claim the method, as set forth, of raising and lowering the saws, when it is desired not to raise them at the same time, but alternately, during the forward and backward motion of the log, the same being effected by the combination of the unlocking, shifting, and locking apparatus, in combination with the lever and chains, the whole operating as set forth.

SAW SET—Wm. O. Rust, of Great Falls, N. H.: I claim the rotary bender and its adjusting screw in their combination with the movable lever; I also claim the arrangement of the regulating back stop, on the stationary arm, so that it may be used in connection with the movable lever, and for the purpose as specified.

SECURING GLASSES IN LANTERNS—Hugh Sangster, of Buffalo, N. Y.: I claim the combination of the springs and the frame arranged and operating as set forth, not

intending to claim the springs uncombined with the frame or some device equivalent thereto.

SEWING MACHINES—Edward Shaw, of East Abington, Mass.: I claim, first, the combination of the rack bar, or wiper harness saddle, constructed same shape and forming a clamp capable of receiving a vibrating motion from the diamond-shaped teeth of the pinion, and constituting a clamp for sewing the seams of boot legs in the manner described. Second, I claim feeding the clamp along and guiding it, so as to keep the leather to be sewed always in proper position with regard to the needle, and at the same distance from the same by means of the rack and gear with its diamond-shaped teeth and proper guides, as described.

CARPENTERS' GAUGE—Halcyon Skinner, and William Greenhalgh, of West Farms, N. Y.: We claim the combination of the frame with the adjustable sliding bars, adjustable fences, and set screws in the manner here-in described.

HARNES SADDLE TREES—Robert Spencer, of Southport, Conn.: I do not claim constructing the frame and content of a harness saddle tree in separate pieces, nor the insertion of leather between them. But I claim as a new article of manufacture my improved harness saddle tree, constructed same shape and of combined iron and leather (or the equivalent of leather) the iron serving the purpose of a skeleton, and giving it the proper rigidity, while by trimming the leather portions of the tree the exact conformation is attained.

CATAMENIAL SUPPORTER—Alfred A. Starr, of New York City: I claim the combination of the elastic springs in the manner and for the purposes set forth.

FASTENERS OF PLOWS—David Swartz and Samuel Swartz, of Tonis Brook, Va.: We do not claim constructing the point and outer in separate pieces so as to be attached and detached at pleasure. But we claim constructing the mold board and land side with slots as described, and the point and outer with the tongue or flanges to fit the said slots, so that the said point or outer shall slide in horizontally or nearly so and form a fastening with the mold board and land side without the use of screws or bolts, as set forth.

HARNES SADDLES—Robert Spencer, of New York City: I claim the described new article of manufacture, consisting of a properly shaped harness saddle seat, cast in one piece with the unfinished jockey-shaped side bars, the said seat requiring to be only smoothed and japanned to adapt it to use, and the said side bars requiring to be covered with patent leather or jockeys or kits of sufficient thickness to make a smooth and harmonious finish with the japanned surface of theseats, as represented and described.

CUTTING MACHINE—Paul Stillman, of New York City: I claim the employment and arrangement of the clutches having a spring sideways, so as to catch into the face notches and the styles outside the countwheels by which they are operated to move a series of count wheels, in the manner and for the purpose set forth.

OVENS—Francis C. Treadwell, of New York City: I claim the use of the combination of the furnace, flues, and dampers, substantially as set forth, in combination with an endless band running through the oven, and over drums placed outside of it for the purpose of making a perpetual baking oven, as described.

TRACK CLEARERS TO GRASS HARVESTERS—A. Whiteley, of Springfield, Ohio: I claim the rolling cone moving on the axis and furnished with a joint clearer for the purpose of clearing a track in the cut grass.

CHEESE PRESSES—Philetus Wilbur, of Milan, Ohio: I claim the combination of the two rack slides with the respective attachments of the cam and friction roller, by which means, in connection with the slides and accompanying racks, the press is operated in the manner set forth.

SEWING MACHINES—Melvin Shaw, (assignor to Melvin Shaw and Daniel G. Wheeler) of East Abington, Mass.: I claim the combination of the sliding bar with the curved clamp and the rest, connected and operating together in the manner as set forth, by which means the work is fed through the machine, it is kept constantly up to the needle and the stitches are placed at a uniform and unvarying distance from the edges of the material without dependence upon the care or skill of the workman.

PLANING LUMBER—Solomon S. Gray, (assignor to S. S. Gray and S. A. Woods,) of South Boston, Mass.: I claim the peculiar construction of cutter head described, the cutter head itself being made use of to turn and drive the rollers on the ends of a double iron plane and being further more made concave for the purpose of facilitating this operation.

Second, I claim the clamp as described for the purpose of dogging the lumber to the bed of the machine, the body of the clamp being pivoted and forced up by the screw or its equivalent, the dogs being adjustable therein in the manner set forth.

Third, I claim the described method of securing the dog to the bed of the machine, by means of the teeth or cogs and the mortises in the side pieces, for the purpose set forth.

OPERATING DAMPERS AND FURNACES—Daniel Treadwell, of Cambridge Mass., (assignor to Herbert H. and Frederick H. Simpson, of Boston, Mass.): I claim using the expansion of the stove or furnace for closing the damper through the medium of the devices described, or any other combination of similar devices.

FURNACES FOR MAKING WROUGHT IRON DIRECTLY FROM THE ORE—Thos. W. Harvey's (now deceased, late of New York City), administrators, (assignors to the Harvey Steel and Iron Company): I claim causing the deoxidizing and desulphurizing flames and gases generated in the furnace to act directly in contact with properly prepared ores of iron (and other metals) placed upon suitably arranged tables, while at the same time a high degree of heat is imparted to the under sides of said tables.

COG GEARING—James A. Bazin, of Canton, Mass., (assignor to Alfred B. Ely, of Boston, Mass.): I claim the described manner of manufacturing cog wheels, every alternate tooth being bent in opposite directions from the plane of the plate, as set forth.

TOOL REST FOR TURNING LATHE—M. H. Merriam, of Chelsea, and W. W. Nichols, of Boston, Mass., (assignors to W. W. Nichols & Co., of Boston, Mass.): We claim the combination of the elevating screw with the nut and tool post and slide, in which by turning the nut you can elevate the tool post and the elevating screw, at the same time the elevating screw is prevented from turning by the gibs, as described.

We also claim the groove in the slide, by which the tool post, elevating screw, and nut, are prevented from rising by pins or their equivalent, fitted into the nut and running in the groove when the nut is not turned, but when the nut is turned the tool post can be lowered.

We claim the gibs and the elevating screw as combined with and running in the channels of the slide by which a vertical movement of the elevating screw is produced and a rotary prevented as set forth.

TOOL FOR BORING RECESSES FOR CASTERS, &c.—Benj. F. Graves, (assignor to Wm. C. Knowlton,) of Boston, Mass.: I do not claim the combining the throat of a chisel, with the discharging chip groove of the twist auger, or making the latter to enter directly into the former, whereby its chips are not only discharged through the said throat but by the pressure exerted on them by the spiral form of the groove of the auger they are made to aid in the discharge of the other chips from the throat, and thereby prevent the choking of the chips in the throat.

But I claim the combination and arrangement of the twist auger, the two cutters or chisels and their throats, on the tool post, so as to operate together and simultaneously, and make a chamfer or recess in a piece of wood of the form as specified.

Not meaning to claim a single cutter and a twist auger as applied to a shaft so as to merely bore two cylindrical recesses.

SEWING MACHINES—Sidney S. Turner, of Westboro', Mass., (assignor to Elmer Townsend, of Boston, Mass.): I claim the arrangement of a hook or hook needle underneath and so as to work up through the feeding bar in combination with the arrangement of the presser above the feeding bar, and so as to press downwards towards it in the manner described, such enabling me to obtain an important advantage in operating by the single chain stitch sewing machine.

And I also claim in combination with the mechanism for giving the vertical movements to the needle, the slot, and the screw or pin, (or the mechanical equivalents thereof) for producing reciprocating semi-rotative movements of the needle during the vertical movement of it, as described.

MACHINES FOR CASTING METALLIC EYES OR MAIL OF HEDDLES FOR LOOMS—Jacob Sennet, of Philadelphia, Pa.: I do not mean to confine myself rigidly to the precise arrangement of parts shown and described, as they may doubtless be varied without departing from the present improvements.

But I claim, first, the method described of casting the eyes or mails on the strands of yarn or other material, by inserting the yarns successively within a mold secured on a vibrating frame operated at the proper intervals of time by means of the eccentric cams, said mold being opened at times to disengage the mail therefrom and provided with a core forming the eye in the mail, and capable of being withdrawn therefrom before the mold opens, in the manner and for the purpose set forth.

Second, I claim the manner of operating the core so as to enable it to be so withdrawn from the eye of the mail after the same is formed, and whilst it is firmly embraced within the mold by means of the springs and screws, operating as described.

Third, I claim the core carrier resting in a notch formed in the top of the spring, and having pins on its face, which pass through slots in the mold plates, and springs for moving the core horizontally from the stationary half of the mold and keeping it mid way between the mold plates, when they are opened by the lever and preventing it being thrown violently either way, as set forth.

Fourth, I claim the manner of operating the heddle frame holder, by means of the eccentric cams on the shaft capable of being moved longitudinally over the grooves in said shaft, right angled levers to which the heddle frame is secured and spiral springs for keeping the ends of the levers always in contact with the eccentric cams, and in combination therewith I claim the screw shaft and clamps, and the adjustable gearing at the ends of the screw and main driving shafts, the whole being constructed and operating as set forth.

ROLLING SHOULDERS ON AXLES—William Van Anden, of Fourknoppe, N. Y.: I claim the arrangement of the cam rollers, having the reduced surfaces with the guide and feeding tube or box through the hollow space of which I am enabled to put in the blank bar of iron, and withdraw the finished axle without displacing the forming rollers, or cams, or feeding tube, or box, as set forth.

STEAM VALVE—Robert Ross, of Philadelphia, Pa.: I claim in steam valves the mode set forth of constructing the valve, the same consisting in the loose or detached valve and stem or guide, and combined with the hollow valve rod in the manner set forth.

BANK LOCKS—Augustus C. Harig, and David C. Story, of Louisville, Ky. Patented originally July 25, 1854: We claim connecting the series of male tumblers with the vibrating portion of the bolt in such a manner that all of said tumblers must vibrate with said portion of the bolt, and said portion of the bolt must vibrate with said series of tumblers, whilst any one of said tumblers may be moved endwise independently of said vibrating portion of the bolt, and vice versa, by which they are enabled to be operated in connection with a series of entirely independent stationary female tumblers, that can be adjusted in different positions, as set forth.

Second, we also claim the series of female tumblers which are secured in such a manner to the lock case, that, while they admit of unobstructed adjustment to suit the different positions into which any key can be made to throw the series of male tumblers, they are so arranged as to be independent of the longitudinal movements of said male tumblers, or the bolt which is combined with them, and consequently are perfectly protected from injury or disarrangement by said movements and also from any violence that may be exerted upon the bolt.

Third, in connection with the said series of male tumblers, and the vibrating portion of the bolt arranged and combined in such a manner that they must vibrate with each other, and can be moved lengthwise independently of each other, we also claim the fixed and strongly secured and arranged in such a position that the bolt cannot be shot out until the vibrating portion thereof is brought up to the highest point allowed by the matching of the series of male tumblers, with which it is combined, with the series of female tumblers that are combined with the lock case, by which when the bolt is shot out, both series of tumblers are perfectly protected from injury by any violence exerted upon the bolt, as set forth.

Fourth, we also claim the self-adjusting guard, arranged and operating in the manner in such a manner that the introduction of powder and picking instruments, into to lock through the key hole is effectually prevented, as set forth.

Fifth, we also claim the described arrangement of the inclined notch on the user, with the dog and the bolt moving cam, by which the act of turning the user to enable the key which it carries to operate, the tumblers will throw the dog into such a position as to prevent the said cam from being brought in contact with the vibrating portion of the bolt during the time said user is being moved, by which the possibility of laterally feeling the positions of the tumblers, while the key, (or a substitute thereof,) is in moving contact with them, is entirely prevented, as set forth.

The Ohio State Fair.

The Fifth Annual Fair of the Ohio State Board of Agriculture, which is to be held at Newark, Ohio, commencing on the 19th of September, is to be a grand affair. We have received a list of the prizes offered, and a fine colored lithograph of the Fair grounds. As we have already noticed, Joseph E. Holmes, so well known as Superintendent of the Crystal Palace, is to be the superintendent, and the Ohio mechanics, we believe, will make a show worthy of their great State. The grounds on which the fair is to be held was once an Indian fortification. It is enclosed in embankments made centuries ago. What a change in the destiny of races and nations.—What was Ohio one hundred years ago, and what was our whole country? Almost an unbroken wilderness. What a wave of emigrating conquest has spread over it in such a short time. It looks like a miracle. Those who talk of great periods of time being required to effect great changes in countries and peoples, have but to look to our country and sign themselves "mere sciolists."

An Old Printing House.

M. Barth, printer, of Breslau, (in Prussia,) celebrated last month, the 350th anniversary of the first book printed in his establishment. This book is a German legend of some rank, and appeared in 1504. M. Barth's printing office is the oldest in Europe, and has been for 350 years uninterruptedly in the hands of his ancestors and himself.