Scientific American.

NEW YORK, AUGUST 26, 1854.

To Our Readers.

We take the present opportunity, according to our usual custom, of directing the attention of our readers to the Prospectus for our next volume, and also to the Prizes we have offered for the largest lists of subscribers. As we employ no traveling agents, we have for the past five years adopted this method as an inducement, to any person who desired, to labor in extending the circulation of the "Scientific American." Last year we offered 12 prizes—four hundred and fifty dollars; this year we offer 14—five hundred and seventy dollars. We consider this plan a fair, free, and honorable means of exciting an interest in the minds of many to do some good to themselves, their acquaintances, and us, by endeavoring to increase the number of readers to a paper devoted to American inventions, and the dissemination of reliable and useful information.

With respect to the cheerful reception which those who obtained prizes last year, met with, when soliciting subscribers among their acquaintances and brother mechanics, we would refer to their letters acknowledging the receipt of the amount awarded to each, which will be found on pages 150, 174, 182, and 205, this volume. We commend these letters to all who may desire to compete for the prizes now offered. Nearly all of those who obtained prizes last year, asserted, that it did not require much trouble to obtain them, they attributed their success to the popular character of the paper more than anything else.

To those who have heretofore exerted their influence in extending our circulation, either by obtaining lists, or inducing their friends to subscribe, we feel deeply grateful. A great number of those who obtained lists of subscribers last year, and previous years, acted the part of free, generous knight errants in the field of scientific literature. Our circulation is now far greater than that of any periodical published in the world devoted to such objects, and it is the only weekly paper of the kind published on our continent. It has now a circulation of 23,000 copies; a large number to be sure, but not so large as it should be by 33,000, according to our population: nor as large by 20,000, as we mean it shall be within three years. We are aware that the readers of such a paper cannot be so numerous as those for some other periodicals, because the cast of mind which feeds on sound, solid information, of a scientific and mechanical character, is more select than that which finds delight in light literature. We are of opinion, however, that in many places there are persons who only want to have the matter clearly brought under their notice, to become constant readers and subscribers to the "Scientific American." It is greatly to the credit of some villages in our country, containing but a small population, that they contain so many subscribers. Thus in Columbia, S. C., there are 139—the greatest number, we believe, for its population, of any village or city in the Union. In Jacksonville, Ill., we have 94; in Lancaster, Ohio, we have 80. We are positive that the constant readers of the "Scientific American" comprise the deepest thinkers and the most intelligent portion of the inhabitants in every place where it circulates; they must necessarily be so in order to feel interested in the scientific and mechanical subjects which are constantly brought forward for discussion.

Two more numbers, after this, will complete the present volume. We earnestly solicit subscribers to send in their names at as early a date as possible, in order that we may form a proper estimate of the number of copies with which to commence the next volume. We certainly anticipate a large accession of new subscribers, and relying on the kindness of good old friends we believe we shall not be disappointed. We have added improvement to improvement every new volume, and t e next—Volume 10—we shall endeavor to make superior to all its predecessors.

Models for the Patent Office.

Inventors will save themselves, ourselves, and the Patent Office an amazing sight of trouble if they will but obey the following instructions concerning the construction of models We have had no less than ten models refused by the Office within a month for being too large or too frail, and it will no doubt cost the inventors more than one hundred dollars to supply their places with those of suitable size and quality. The Commissioner is growing more and more strict every day, and if inventors wish to save themselves trouble and expense, they must follow the rules of the office. We again publish the rules of the office concerning models, and we *do* hope attention will be paid to them by those who are constructing models with a view of applying for patents:—

"The model must be neatly and substantially made of durable material, and not more than one foot in length or hight, except when a larger model is permitted by the Office for special reasons to be shown by the applicant. If made of pine or other soft wood, it should be painted, stained, or varnished."

"A working model is always desirable, in order to enable the office fully and readily to understand the precise operation of the machine. The name of the inventor, and also of the assignee (if assigned,) must be fixed upon it in a permanent manner."

"Models for the U. S. Patent Office must be fastened in all their different parts by other means than by glueing, as such will not endure the handling and atmosphere to which they are necessaily exposed."

The New Patent Bill.

We understand from a reliable source that the Committee on Patents in the Senate have modified the Patent Bill reported by them, and have stricken out some of the objectionable features, as explained in the "Scientific American," page 341. This is certainly very gratifying intelligence, and we regret the necessity which compels us to ask the committee to a further pruning down of this curious bill—for curious it is that in this advanced age, our national Congress should attempt to saddle down genius with so incongruous a system, called "protection to inventors." We learn that in the main, no changes have been made in the amount and number of fees required on passing claims through the Patent Office. Now if the Committee desire to increase the Patent fee, why dont they come square up to the business and say it shall be thirty, forty, or fifty dollars, as the case may be, without attempting to deceive inventors by throwing in a batch of petty fees, from fifteen cents up to one hundred dollars, compelling them to carry around one of Dabol's Arithmetics in order to cypher out what amounts are expected of them. Simplicity and clearness ought to form the ground work of our patent system—let us have this or nothing.

Patents in Great Britain.

Our London agents caution American inventors against the operations of parties in and about Washington, who act in concert with agencies in London, for introducing good improvements into Great Britain as soon as the patents are issued here. They mention one case where the inventor, upon reaching London, found to his great mortification that his invention had already been secured by another, who had received it as a communication from some one on this side. Cases of this character are represented as not uncommon. We have no personal knowledge upon the subject, and write upon the hint of our agents in London. It is a very dirty business to purloin the invention of another and we hope to hear no more of it. If well authenticated facts come to our knowledge, implicating parties in such transactions, we shall not withhold their names from the public.

Fair of the American Institute.

This Institution has come to the conclusion of having no Fair this year. The last one entailed a heavy loss, but it was honorably managed. This is the first gap in the annual fairs of the Institute for twenty-two years. We hope it will be able to have a first rate one next year.

Trimming Welts of Boots and Shoes.

The annexed views represent an improvement in an instrument for the above named purpose, for which a patent was granted to Lyman Clark, on the 13th of last June, and one half of it assigned to Joseph Sawyer.

Figure 1 represents the improved instrument, and figure two shows its application and the manner in which it is operated in contrast with the common instrument now used.

Fig. 1

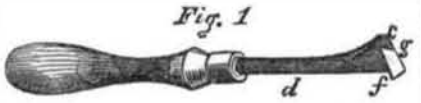
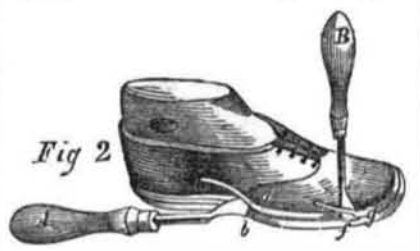


Fig 2



In pegged work it is desirable that the welt should show as thick as possible, while, at the same time, as there is but little wear upon it, it is generally made of inferior leather, and in order that it may be prepared for the head which it receives, it is necessary that its upper edge be pared evenly and smoothly. There are two ways in which this has usually been done. In the first method the welt is first hammered down, and the edge is then taken off with a shoe knife. This leaves a smooth and perfect surface upon the upper side of the welt, but is objectionable on account of the danger of cutting the upper leather of the boot or shoe. In the other process, which is the one commonly in use at the present time, the instrument, A, represented is employed. This tool has a small pointed guard, *a*, projecting from beneath the welting edge, *b*, and is used as follows:—The welt, in place of being thickened up by hammering, is laid over towards the sole by the welt bone, which is inserted between it and the upper leather. This is necessary in order to enable the pointed guard to pick up the edge of the welt. The latter is then trimmed by applying the instrument as shown. The point, *a*, however, is very liable to injure the body of the shoe, particularly at the place where it is seen applied. After the welt is thus pared, it is again to be thickened up by hammering, which again produces a rough surface, which is afterwards made smooth by the use of the Rand file; this instrument, as well as the paring tools, is very liable to injure the upper leather, and it is estimated by the largest manufacturers that all their job work is deteriorated to the amount of ten or twelve per cent. upon its value by the various instruments used to trim the welt. To remove all these inconveniences, and to produce an instrument which cannot possibly injure the upper leather, and which may be operated upon the welt after it is hammered down, thereby leaving a smooth and perfect surface, without the use of the Rand file, is the object of this invention. Figure 1 is a view of the instrument; *c* is a broad flat guard formed by the extension and flattening of the shank, *d*. Nearly at right angles with the guard is the blade, *f*, having its cutting edge at *g*, set at an angle somewhat less than a right angle with the surface of the guard, for the purpose of pressing the welt down as it is cut. The instrument is operated as at B, in figure 2. The guard, *c*, being inserted beneath the welt which is previously hammered down, and the tool is worked rapidly without the possibility of injuring the upper leather even in the most careless hands, while the surface which it leaves is smoother and more even than is produced by any other method of trimming the welt.

More information respecting this instrument may be obtained of Sawyer & Clark, South Royalston, Mass.

New Motive Power.

An ingenious Swedish machinist, P. Lagergreen, has invented a new power engine, intended to supersede steam. The moving force is the pressure of the atmosphere, which acts on a vacuum in a copper reservoir, connected with two cylinders provided with pistons, as in a common steam engine. The vacuum in the reservoir is produced by the admission of a certain quantity of alcohol and of atmospheric air, each time the machine makes a stroke. Explosive air is hereby produced, is fired at each turn, and instantly burns away; one of the pistons being at the same time opened, an atmospheric pressure is obtained equal to fifteen pounds on the square inch. This machine is light and simple, and its fuel (alcohol) takes little space. Whether it will be superior to or cheaper than steam, is a question others must decide.—[N. Y. Times, Aug. 11.

[The above we have seen copied into a number of our cotemporaries. It is neither a new motive power, nor does it possess a grain of modern science, in the line of inventions, to supersede steam. The same plan has been proposed over and over again. A patent was granted in 1823 to Samuel Brown, of London, for a gas vacuum engine, the vacuum of which was produced by mixing hydrogen and oxygen in a cylinder, and igniting them under a piston to produce a vacuum. The hydrogen of the alcohol referred to in the above is mixed with air, then ignited for the same purpose. It has also been proposed a number of times to ignite gunpowder under a piston to produce a motive engine, and Commissioner Ewbank suggested the benefits that might be derived from annihilating air under a piston, but the query was how to do this;—that was the rub.

American Carriages.

The well known coach manufactories of the Messrs. Abbott and Lewis Downing, at Concord, N. H., employ 300 men, and turn out each year about one hundred and fifty stages, and nine hundred express and other wagons. These are ordered from every part of the United States, and even South America and Australia—the greatest demand being from the newly settled States of our Great West.—Through the agency of the Messrs. Abbott, a stage company has been formed to run a daily line of coaches between the cities of Valparaiso and Santiago, in Chili, and in their establishment are several stages, elegantly finished intended for this route

Miller's Car Brake.

The Detroit papers give an account of some experiments which were recently made near that city with the steam brake of Henry Miller, of that place, on a train of cars. When the train of cars was running at the rate of 20 miles per hour, it was brought to a dead stop by the brake in a distance of 15 rods without reversing the engine. When the train was going with a velocity of 30 miles per hour, it was stopped in a distance of 30 rods in 20 seconds of time. These were excellent tests of the working of this brake.

Dederick's Parallel Press.

On page 384, in the description of Dederick's Press, it was stated that it had been applied as a cloth press; this was not correct.—It is a new press which he has invented, that he has applied to the pressing of cloth, and which acts vertically. Messrs. Deering & Dederick make good machines at their Agricultural Works, corner of Bleecker and Franklin Streets, Albany, N. Y.

$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 15, 1854.

CLOSING THE MOUTHS OF BOTTLES, &c., AIR-TIGHT—Robert Arthur, of Washington, D. C.: I do not claim any method of rendering vessels air-tight by the aid of caps or stoppers screwed or cemented in places: but only the vessel so contrived as to be made tight by means of a groove or receptacle containing a yielding medium which is to be penetrated by the caps or cover, with the receptacle so contrived that the bottle may be inverted to pour out its contents without spilling the liquid or yielding medium from the groove or receptacle, as set forth.

PEGGING BOOTS AND SHOES—J. A. Bradshaw, of Lowell, Mass.. I claim, first, the combination with the grooved wheel of the arm, for the purpose of presenting the pegs to the wheels longitudinally, arranged and operated as set forth.

Second, the application of the grooved wheel in combination with the burr wheel and tube, as described.

Third, the levers, pawl, and ratchet, on a grooved wheel, or their equivalents, arranged and combined as described.

Fourth, the clamps or forceps to receive the peg from the wheel, in combination with the detectors, the punches, and the double channel, for the purpose of insuring the proper presentation of the peg with the point downward.

Fifth, the combination of the forceps, the wedge-shaped driver and the adjustable stop screw, as set forth.

Sixth, the apparatus for holding the boot or shoe during the operation of pegging, consisting of the plate revolving upon the ring of the plate, and having the clamps, or their equivalents, the whole arranged as set forth.

Seventh, the combination of the hinge joints, the shaft, and the levers or their equivalents, as and for the purpose set forth.

GLASS MOLDS—Wm. Brooke, of Jersey City, N. J.: I claim the shoulder when used in combination with the cap plate and plunger, as set forth.

HOT-AIR RANGE AND SIDE OVENS—John H. Cahill, of Philadelphia, Pa: I do not claim passing fresh hot air into an oven, nor radiating flues applied to a range, with an elevated side oven independently of their peculiar mode of construction and arrangement.

But I claim, first, the use of the fresh hot-air pipe, when constructed and combined with the hot-air chamber, and elevated side oven and vent hole, especially for the purpose of preventing the fumes or vapors arising from the substances being cooked in the oven when in operation, from being drawn or forced out by the oven into the hot-air chamber, as described.

Second, I claim making the elevated side oven flues of square section, and united together by the partitions, as described, so as to leave equal and flat surfaces in the oven and hot-air chamber, arranged so as to radiate heat therefrom on all sides of the oven, excepting the door side, and also so as to radiate heat into the hot air chamber from the flues on four sides of the oven, as described.

RAILROAD CAR BRAKES—M. P. Coons, of Brooklyn, N. Y.: I do not claim any particular device, or the construction of any plan of leverage for the purpose of operating the brake, as that may be accomplished by various modes.

But I claim a lever-form brake, which, when in action, shall bear and brake simultaneously, both upon the wheels and rails, the friction upon the latter supplying the braking force upon the former, and the whole being adjustable and self-acting through the combined agency of an eccentric or cam, bearing, or resisting point between the brake and car, all for the purpose set forth.

TURNING IRREGULAR FORMS—A. D. Crane, of Newark, N. J.. I do not claim the principle of the cutting irregular surfaces by means of a cutter or a series of cutters revolving in contact with the materials to be cut, said materials also revolving in the same direction with the said cutters.

But I claim the cutting wheel combined together, guided, and controlled, as set forth.

RAKES—D. M. Cummings, of Enfield, N. H.: I claim the mode of fastening the head of the rake to the handle or tail by the use of the head fastener containing the socket, and the clasp, in combination with the handle, the head, and the screw, as set forth.

HAND PRESS—B. F. Day, of Philadelphia, Pa.: I am aware that levers and toggles have been used in a variety of presses; these I do not claim.

But I claim so arranging the levers, toggle, and follower, that by grasping the handles of the levers in the hand of the operator, the platen shall be brought down hard upon the bed, the whole being arranged for the purpose of a seal hand press, as set forth.

SECURING HUBS TO AXLES—Cook Darling, of Utica, N. Y.: I do not claim the holding on the wheel by means of a groove encircling the front end of the axle, because that feature of the fastening has been used before:—neither do I claim operating the guard plates, or collar closing over the groove by means of the key in front.

But I claim the combination and arrangement of the several parts, viz., the axle with the conical end, the guard plates, and the means of operating the same by the use of the key in front.

PUNCHES AND DIES FOR PUNCHING WATCH HANDS—A. L. Dennison, of Roxbury, Mass.: I claim the construction and arrangement of the punch and die, as set forth, the punch being of elementary parts, formed to the same figure, or nearly so, in their cross section throughout their whole depth, and braced between blocks or clamps made to the figure of the article to be formed, by which construction the most delicate and complex punch can be formed in a cheap and expeditious manner, and readily renewed or changed, and being throughout of the same magnitude, are readily and perfectly hardened, without injury, which has heretofore been found an insuperable difficulty in punching small delicate work.

PLOWS—Joshua Gibbs, of Canton, Ohio: I claim, first, making the working surface of the mold board in the form of a section of the interior surface of a hollow cylinder, the center or axis of said cylinder being parallel or nearly parallel horizontally to the base of the mold-board or bottom of the plow as described.

LAMPS—Joseph Harris, Jr., of Boston, Mass.: I claim the arrangement and construction of the lamp, as described.

SAFETY APPARATUS FOR STEAM BOILERS—A. H. Judd, of St. Louis, Mo.: I claim passing the stem of the valve through an enlargement in the supporting tube, by which I am enabled to give short bearings to said stem for the purpose of preventing it from becoming fastened in its bearings by oxydation, or the action of the heat upon the earthy matter driven through the same, when the valve is opened, and also for the purpose of producing a fuller and clearer sound, when the valve is opened, and also for the purpose of producing a fuller and clearer sound, when the valve is opened, than is produced by the escape of steam through the ordinary gauge cock.

I also claim removing portions of the sides from that part of the valve stem which passes through its inner bearing aperture, so as to leave narrow bearing surfaces to guide and steady the valve, for the purpose of preventing said valve stem from becoming fastened within its inner bearing aperture, and also for causing a large volume of steam to escape and give the alarm when a lack of water in the boiler or excessive heat of the steam causes the float to sink, as set forth.

I also claim combining the valve stem with the float, in such a manner that when the float shall sink and open the valve, the valve stem may be detached therefrom for the purpose of again closing the same by simply giving a partial turn to said valve stem by means of its handle, as described.

I also claim giving an alarm whenever the steam in the boiler is allowed to accumulate to a dangerous degree of pressure, by placing a plug of fusible alloy in an aperture in one end of the float which is connected with my improved arrangement of gauge cock, as specified.

GRINDSTONE FRAME—J. L. Lord, of Chester, Ct.: I claim the grindstone frame, constructed as set forth, that is to say, cast in two pieces of such form that when put together, as described, it shall furnish the bearings for the shaft and friction roller, both of which shall be protected from injury and from dust or water, and also from being displaced from their positions in the frame, either by accident or design.

RAILROAD CAR BRAKES—T. G. McLaughlin, of Philadelphia, Pa.: I am aware that many of the devices described are well known and in common use, particularly that portion which relates to the operation of the brakes by hand, I therefore do not claim them.

But I claim a sliding rod of the peculiar form described, that is to say, I claim forking the sliding rod in such a manner as not to interfere with the king joints and bumpers, but to have a longitudinal motion separated from and independent of both.

I also claim the slotted connecting rods attached to the sliding rod, for causing the automatic action of the brakes without interfering with the ordinary hand brake, or the hand brake in its action interfering with or producing any movement of the sliding rod, as specified.

HARROWS—Jacob Myers of Powhatan Point, Ohio: I claim the triangular wings upon the turned up-portion of the teeth, with their land sides so inclined as to have a tendency from the plant when the implement is moving forward, constructed and arranged as set forth, for pulverizing the earth and otherwise facilitating the cultivation of cotton.

LIME KILNS—Robert Neisch, of New York City: I claim, in combination with the fire chamber, the air-conducting passage for the purpose of bringing in the air from above the fire, as described.

I also claim, in combination with the arched fire chamber, the inclined and curved berth for concentrating the fuel and throwing the flame or heat towards the stack, as described.

UNLOADING COAL AND OTHER CARS—A. Patrick, of Alleghany Co., Md.: I claim the manner of liberating the pin which holds the door of the car by a lever attached to said pin, calculated to lift it and open the door when the car enters upon a tilting frame.

Also I claim the iron bar upon a tilting frame forming a hook to hold the car: and at the same time a means of lifting the lever to open the door of the car, or in other words, the combination of this lever and tilting frame to facilitate the unloading of mine cars.

SEWING MACHINES—S. H. Roper, of Worcester, Mass.: I claim the groove tube or thread passage, in combination with a needle made to operate a thread, as described, said passage being for the purpose of supporting the thread and preventing it from kinking or injuriously springing back or towards the cloth immediately after the release of the thread from the needle, as described.

I do not claim the invention or employment of a slide or an equivalent contrivance to close down on the barb and over the opening of the hook of a needle; nor do I claim the application of such closing slide to a hook needle, in such manner that said slide shall play or move in a groove made in the side of the needle, as the same does in the machine patented by William Wickersham, on the 19th April, 1853.

But I claim the mode of applying the closing slide to the needle, that is, the making the shank of the needle tubular, and inserting the closing slide within the same, whereby such closing slide is better protected from accident, or being broken by catching in the cloth or thread, or otherwise broken, as it is liable to be when made to run in a groove formed in the side of the needle.

And in combination together and used with a hook needle, I claim the two thread benders, as made to operate on the thread, and lay it in the opening of the needle, as specified.

And in combination with the thread benders, I claim the lip or nipper and the spring nipper, the same being for the purpose of seizing the thread, and enabling the needle to draw it closely into the cloth, as specified.

I also claim the above described improved mode of connecting the two connecting rods to one crank pin, viz., by the projections from the rods and the covering tube or ferrule, as specified.

TURN-TABLES—J. C. Robie, of Binghamton, N. Y.: I claim, first, balancing the platform of the turn-table upon a transverse central shaft or other suitable axis resting upon the roller carriage in a line intersecting the line of the axis upon which the turn-table rotates, in such a manner that the table, when in an horizontal position, is elevated or has its rails above those of the track, to admit of the free swing of the table over its under supports or bearings, and so that the table may be rocked with facility from its center, or tilted to bring the ends of its rails on either side of the balancing shaft into line or level with the rails of the track, for the purposes set forth.

Second, I also claim the manner described of holding the table steady at its horizontal set whilst rotating, and tilting or depressing it on either side of the balancing axle when required, by means of the cams arranged to bear upon the roller carriage, and operating in connection with the roller carriage and table, as set forth.

MACHINES FOR CUTTING IRREGULAR FORMS—O. L. Reynolds, of Dover, N. H.: I claim combining a series of patterns, and the chucks for the blocks, with each other and with the collar, the vertical slides, the pawls, the ratchet wheels, and the recesses in the arms, or their equivalents, in such a manner that said series of patterns and blocks shall have corresponding compound rotary and longitudinally reciprocating movements imparted to them, as set forth.

I also claim supporting the weight of the cutter wheel upon a series of rotating and longitudinally reciprocating patterns, when said patterns are combined with chucks for a series of blocks, in such a manner that corresponding movements shall be imparted to said patterns and blocks, and said blocks be so situated as to be operated upon by the cutters, as set forth.

COMBING WOOL—Chas. G. Sargent, of Lowell, Mass.: I claim, first, drawing out and stapling the material, as set forth, previous to commencing the combing operation.

Second, I claim the continuous motion of the nippers or other parts which operate upon the wool, whereby I am enabled to keep a number of them in operation at the same time, the different steps in the process proceeding simultaneously upon different portions of the material without the necessity of interrupting any one of them for the performance of another, and without retrograde motion of any of the parts of the machine.

I claim the method described of opening and closing the nippers, by means of the cam, O, in combination with the cam, Q, or its equivalent, whereby the nippers are closed suddenly upon the wool, whatever may be the rate of motion of the nipper cylinder.

RAILROAD CAR WINDOWS—George Spencer, of Utica, N. Y.: I claim the combination with the side of a car of a revolving window, consisting of two separate circular sashes connected by hinges, so that one sash may be opened to its full extent, and having a small part of the circle cutoff, so that by revolving it upon its center a small opening may be made at the forward part of the window, whichever way the car may be moving, the residue of the window remaining at the same time covered, as described.

FIRE ARMS—W. A. Sweet, of Pompey, N. Y.: I claim, producing the compound longitudinal and vibratory movement of the breech, and afterwards immovably securing it in contact with the barrel, by a single forward and return motion of the actuating lever, viz: by means of the cam-piece, provided with a shoulder, a cam surface, and a wedge surface, against which said lever acting successively, substantially as herein described, produces respectively the backward longitudinal and vibratory motion of the breech, then the forward longitudinal motion thereof, and finally presses it against the barrel with immense force.

I also claim the link, one end of which is hinged to the lever, and the other end provided with a slot that receives a pin on the hammer dog, when arranged and operated as specified, for the purpose of cocking the gun by the action of the actuating lever in operating the breech, while at the same time the hammer remains free to be raised in the ordinary way without moving said lever. I also claim the arrangement of a broad cavity in the face of the hammer with a sharp edge on its rear side, in combination with the compound movement of the breech, and the properly regulated motion of the hammer, substantially as herein described, for the purpose of removing the exploded caps from the nipple. I also claim the combination of the mouth piece attached to the extremity of the feeding tube, and provided with a notched tongue, projecting forward from one side, and of the short tube, which is held in front of said mouthpiece by a spring, and has a wedge shaped projection extending forward from the side opposite to the tongue, when the whole being situated and arranged in such a manner as to receive the nipple and supply it with a cap whenever the breech is fully opened, as specified.

SEED PLANTERS—I. T. Wait and L. P. Wait, of Waterloo, S. C.: We are aware that two shafts have been used before, one or both of which have been operated by gears or some equivalent device, therefore we do not claim the agitating and delivering shafts independent of the means we use to operate them, but we claim making one wheel larger than the other, and putting them on separate axles, so as to make one operate the burr or apparatus which stirs the seed, and the other the burr or apparatus which delivers the seed, as described, without the aid of gearing or other equivalent devices.

HORSE RAKES—Moses D. Wells, of Morgantown, Va.: I am aware that various forms of spring bars are in use for holding the teeth of horse rakes. I therefore make no claim to spring bars, nor to anti-friction rollers of themselves. But I do claim the described method of regulating the action of the rake teeth, by the reverse anti-friction rollers, arranged and operating as set forih.

INSULATORS FOR LIGHTNING RODS—Timothy U. Webb, of Jersey City, N. J.: I do not claim making the outside of the insulator with a horizontal groove in the middle, and a flange on each side of the groove.

But I claim making the inner surface convex in the manner and for the purposes described.

PRINTING LONG-NAPPED FABRICS—Wm. A. White, of Roxbury, Mass.: I claim the described process of coloring and finishing a napped fabric after the fibers have been laid in one direction by the ordinary or common process of finishing them; the said process consisting in raising and turning the fibers over and down upon the cloth in a contrary direction, and printing figures or devices upon them in one or more colors, and finally returning the fibers or restoring them to their original position or direction, as set forth.

GOLD AMALGAMATORS—A. S. Wright, of San Francisco, Cal.: I claim the method described for amalgamating gold in hollow revolving cylinders upon horizontal axes, said axes, journal, or trunnion being hollow to admit the pulverized quartz or ore from one cylinder into another, the in ets through the trunnion being smaller than the end of the outlet; the said cylinders connected by flanges or pipes with grooves turned into the axes or trunnions, and rings fitted into the grooves and covered by the flanges: the whole being so connected as to make them water or steam tight, and so arranged as to give a fall of about six inches to each cylinder, said cylinders containing rollers, knives, burnishers, and other analogous arrangements to produce friction, scour the ore, and produce the amalgam with quicksilver, the whole arranged and combined, as set forth.

PEGGING BOOTS AND SHOES—William Kidder, (assignor to William Kidder & Nehemiah Hunt,) of Newburyport, Mass.: I claim the combining with the handle of the machine, and the machinery for driving the pegs, a feeding mechanism by which under the movement of the awl and stock, the feeding or regulating of the feeding of the machine along on the sole is effected.

I also claim the combination of mechanism by which the feeding of the machine is regulated while the machine is held in the hand and pressed against and along on the edge of the sole as stated, the said combination being the serrated wheel, the spring catch, the slide, and the cam on the awl driver or stock.

I also claim the combination of the movable or sliding peg receiver with the pegwood carrier, and the awl driver or stock, the same being applied and made to operate as stated.

WINNOWERS—Henry H. Beach, of Chicago, Ill.: I claim the board (delivering the grain to the front edge of the blast) in its arrangement with the drum and inclined planes, as set forth.

DESIGN.

COOKING STOVES—Francis Heller & Elias Young, of Cincinnati, Ohio.

Great Trial of Reaping Machines.

A trial between a Reaping Machine of J. L. Wright, of Chicago, Ill., and one of J. H. Many's of Rockford, Ill., took place at Squaw Prairie, Ill., on the 26th of last month. The trial was for a prize of $1,500. The contest occupied parts of five days: the judges were M. L. Dunlap, H. Miller, and R. Emerson, Jr. The machines are known by the names of "Atkin's Self-raking Reaper," (Wright's, which has been illustrated in our columns,) and the adjustable combined Reaper and Mower of Mr. Many. Each machine was to cut 20 acres in one day, and the points to be decided were, the relative amount of manual labor in Raking, Binding, and Shocking. We have received the report of the judges,—but the result of the trial and the report are anything but satisfactory. The machines cut down their 20 acres each per day, with ease, and they did their work well; but the judges made the trial a drawn game. Each machine has superior qualities of its own, and the report speaks of both with enthusiasm.

A Great Railway Bridge.

Some of our Western exchanges speak of the bridge of the Illinois Central Railway Company, over the Illinois River at La Salle, as fully equal to any structure of the kind in America. It extends across from bluff to bluff, is more than half a mile long, and seventy feet high, supported by seventeen massive stone piers and the abutments. The estimated cost is $750,000. The lower floor is for common vehicles, the upper for cars. Spanning, as it does, the entire valley of the Illinois, it can be seen at a great distance up and down the river, and the effect is exceedingly imposing. The American railway companies at the present day, build works which in ancient times would be considered monuments that required the whole available wealth of a nation to construct.

Sulphuric Acid—Phosphate of Lime—Chemical Ignorance.

The French Academy of Science at a recent sitting received a communication of a discovery which may become very advantageous. In some experiments made at the laboratory of the Sorbonne, the operator has succeeded, by an ingenious employment of chlorohydric acid acting in presence of charcoal, in decomposing the sulphate of lime (plaster) in such a manner as to extract sulphuric acid from it, and to obtain from bones, either first transformed into animal black, or in a natural state, all the phosphorus they contain. With regard to the former of these results, the manufacture of sulphuric acid by means of sulphate of lime is one of the great desiderata of practical science, and there will be from the latter a great advantage in diminishing the price of phosphorus by a more simple and rapid production."

[We have seen the above paragraph in at least a dozen of our exchanges. Our cotemporaries should be exceedingly careful of such notices. The ingenious employment of "hydrochloric acting in the presence of charcoal in decomposing the sulphate of lime," is certainly a puzzler. The use of hydrochloric acid to obtain sulphuric acid from plaster of Paris would be a very foolish operation, as it would be using a dear to obtain a cheaper acid. Sulphuric acid is now used to decompose bones, to render them soluble in water, and how in the name of science and common sense the above-described *new* discovery can be a *desideratum*, as stated, of practical science, and diminish the price of phosphorus, is more than we can conceive. The whole paragraph exhibits a great amount of chemical ignorance.

To Destroy Rose Bugs.

MESSRS. EDITORS.—Under your "Scientific Memoranda" head of the 29th ult., I notice a method for destroying the rose bug, which, though doubtless an effectual remedy, is not always to be obtained, and if obtained must have a limitation in quantity. May I suggest a remedy that I have used with satisfactory results for many years, which is within the reach of all, without limitation of supply, and in point of economy to be commended to consideration.

Air-slacked lime is my remedy, and I apply it as follows, viz.:—I attach a sieve, (with rather coarse meshes) to a common cane fishing rod, the elasticity of which aids materially in sifting the lime upon the vines, trees, &c, and at night before the dew falls to any extent, sift it upon the foliage infected with the insect, and have never had occasion to repeat the application more than once, or been troubled a second time the same season. By this simple process I have saved my roses, grapes, and trees, while my neighbors have lost all.

Yours, B. T. E.

Boston, Mass., July 29th, 1854.

Boiler Feeder.

On page 323, (June 13) there were published the claims of a patent for an improvement in feeding and regulating the hight of water in steam boilers, granted to H. C. Sergeant, of Cincinnati. Having been inquired of regarding the nature of the invention, we would state that it simply consists of an arrangement and combination of valves and a float within a box, which has means of communication with a reservoir of water and with the steam and water spaces of the boiler, by means of which the boiler is continually supplied with water from the reservoir, and the desired level is thus maintained.

Bad American Flour.

The Belfast "Mercantile Journal," an Irish paper, asserts that American flour is now losing its character in the Liverpool market, and that it is inferior to the French. It asserts that No. 1 is a disgrace to American millers. We regret this exceedingly, and hope it is not true. Our millers must not permit their ancient fame to be thus depreciated.