

SEED PLANTERS.—N. C. Sherman & J. Mason, of Hazle Green, Wis. We disclaim the wedge-shaped jaws...

We claim the double plunger, E, having bars, F, G, operating and combined with the seed box, A, and jaws, B, C, in the manner substantially as set forth.

[This improved planter has a double plunger, composed of two bars united at their upper ends into one handle, while their lower portions are separated. One of the bars passes through the seed box and lifts a certain quantity of seed from it at each stroke; the other bar opens the jaws at the base of the implement, allowing the seed to drop down, and then presses it gently into the soil. It is an excellent hand planter.]

SEWING MACHINES.—A. F. Johnson and F. A. Houghton, of Boston, Mass. We do not make any claim now to the manner of vibrating the needle arm by means of an eccentric stud working in the slotted arm.

But we claim the described arrangement of parts of a spring power mechanism, here combined with a sewing machine, and located in a box forming the pedestal of said machine.

We also claim the device by which the machinery is made self-regulating, as to speed, consisting of the lever, G, broken in combination with the fan wheel, A, attached to the looper collar, C, in the manner described, and operating as set forth.

GRINDING PAPER PULP.—Joseph Kingsland, Jr., of Frank in, N. J. I claim the process of reducing fibrous material in water to pulp, by grinding it under hydraulic pressure, which creates a current that feeds the fibre into the grinder, and removes it therefrom as fast as it is sufficiently reduced, and renders the feeding independent of the grinding, substantially as set forth.

SMOKE CONSUMING FURNACES.—John Case and Isaac Soules of Amherst, N. Y. We claim, first, the arrangement of the fire and smoke chambers, the direct and the return flues, the gas and the air pump, the pipes to supply air above and below the grate, and the waste pipe for the spent gases, substantially as described.

Second, the combination with the smoke chamber and direct and return flues, of the dampers, to direct the gases downward and backward as they enter the smoke chamber, to facilitate the precipitation of the sparks and thoroughly oxydized gases from those gases which are but partially burnt, and require for the completion of their combustion to be returned to the live chamber.

Third, the arrangement of or near the bottom of the smoke chamber of an open grate, for the fire and constant escape of the waste gases, in combination with the smoke chamber and direct and return flues, substantially as set forth.

Fourth, in combination with the smoke chamber, arranging the hot gas and cold air pumps, substantially as described.

RAY RAKE.—John J. Squire, of St. Louis, Mo. I claim the clutch, and lever, operating the same, in combination with the arm, F, of the rake shaft, and the connection between said arm and lever, B, whereby the rake is lifted by the moving power, and automatically released, substantially as specified.

CALENDER ROLLS.—John Worsley, of Providence, R. I. I disclaim the manner or form of making the rollers so that has long been in practice by manufacturers of other rolls.

I claim the use and employment of the husks of maize (Indian corn) for making rolls, instead of cotton wood, paper, or any other substance now in use.

REFRIGERATORS.—Charles Winship, of New Haven, Conn. I claim the method described of causing the fresh air to be cooled, and the combined double function, first, of ventilating and refrigerating the interior of the provision chamber, and then of protecting the exterior of said chamber, as set forth.

[The air in this refrigerator is maintained cold and moist, and permeates with a brisk circulation through the provision chambers. The moist air is maintained at a low temperature to prevent decomposition, and its nature prevents its carrying off any of the juices or sap of the provisions in the chambers, thus preserving them with all their original taste and flavor.]

SEWING MACHINES.—Jerome B. Woodruff, of Washington, D. C. I claim, first, the construction of a feed bar, g, sliding in a dovetail or slotted guide, and moved by a lever, E, connected with the feed bar, g, by a swivel joint or its equivalent, so as always to move the feed bar, g, in a plane with the material being sewed, the feed bar, g, being moved back and forth, and the combined double function, first, of ventilating and refrigerating the interior of the provision chamber, and then of protecting the exterior of said chamber, as set forth.

Second, the arrangement of a series of pins, through which the needle thread is laced, for the purpose of giving a uniformity of tension without affecting its twist, or the fabric.

Third, I am aware that needle bars have been made to vibrate in the arc of a circle, which I do not claim. But I claim a balanced needle bar for sewing machines when constructed in the form of a segment of a circle, operating the shuttle driver by one end direct, and carrying the needle by the other end, when the whole or said bar forms the arc of a circle, or which the point of suspension is the center, as described.

Fourth, a slotted shuttle driver, the same being operated direct from the needle bar, and so arranged that the shuttle may pass through the loop of the needle thread in its proper time, gradually decreasing its speed, and stopping it, or about the same time with the needle, as described, or its equivalent.

Fifth, I do not claim the carrying the shuttle back and forth by two pins, one at the heel and one at the point, independent of shuttle carrier, for this has been done by Messrs. Brodget & Lerow, and patented to them.

I claim carrying the shuttle back and forth by a single pin, as described.

SOWING SEED BROADCAST.—E. K. Haines, of Hanover, N. H., assignor to himself and A. M. Mow, of Lebanon, N. H. I claim the scattering wheel armed with air agitating wings, when located between obliquely arranged parallel directing boards, in the manner substantially as set forth.

[It has been difficult to obtain an even distribution of the seed in broadcast sowing by machinery. This improvement, combining the use of fans with the distributing wheel, and an adjustable bottom connected with the hopper, for regulating the discharge of seed, renders it very accurate in its operations, while, at the same time, parts are few, and not liable to get out of order.]

COUNTING MACHINES.—James A. Bazin, of Canton, Mass. I do not claim operating a series of numbering wheels by a corresponding series of mutually dependent pawls, when the pawls are arranged upon the outside of the wheel.

But I claim the described arrangement of the numbering wheels, and the parts immediately connected therewith, that is to say, hanging the pawls to the central drum within the rings, and operating them in the manner substantially as set forth.

RE ISSUES.

MAGAZINE, REPEATING, AND NEEDLE GUN.—Edward Lindner, of New York City. Patented June 27th, 1854. I do not claim the barrel, B, containing the charges.

But I claim, first, the application of the rack, E, situated between the gun barrel, A, and the cartridge barrel, B, and the construction of the piston, W, in connection with said rack, for the purpose of passing the cartridge into the revolving breech piece, substantially as described.

I do not claim the needle, for the purpose of igniting the priming.

But I claim, secondly, the spiral spring round the needle, together with the jointed arm, B, at the upper end of the hammer, L, constructed as set forth, and acting upon the needle in such a manner that after said jointed arm has pressed the needle sufficiently far into the cartridge to ignite the priming, said arm is forced upwards, allowing, thereby, the needle to spring suddenly back, and pass under the arm by the action of the spring, by which any heating of the needle is prevented.

I do not claim the revolving of the breech piece by the pin V, in the manner substantially as described, i. e.,

when the said pin is so constructed and arranged that it will rotate after the revolution of the breech piece, and turn over at the moment it shall have passed the spiral groove, and return to its former position inclined, as described.

Fourth I claim the ramming hammer, M, worked in the manner and for the purpose set forth.

MAGAZINE, NEEDLE, AND REPEATING GUN.—Edward Lindner, of New York City. Patented June 7th, 1854. Re-issued on division. I do not claim the igniting needle or the revolving cylinder, separately considered.

I claim the combination of the igniting needle with the revolving cylinder or breech piece, when constructed, arranged, and operated in such a manner that the needle can only be projected when the proper aperture is presented to it, and will always be withdrawn previous to the revolution of the cylinder, substantially as described.

MANUFACTURING CARPETS.—John G. Macnair, of Norwich, Conn. Patented Aug. 7th, 1855. I claim the fabric, substantially as described, produced by the double wefts, one of both of which are parti colored, in combination with the two sets of warps, one to divide and ingrain the wefts, and the other to bind in the wefts, and substantially as and for the purposes specified.

MOLDING PLANE.—Thomas D. Worrall, (assignee—through Miffin Paul—of Thomas Worrall.) of Lowell, Mass. Patented August 29th, 1854. I claim the combination of a separate molder part or slide with the handle supporting part of the plane, and applied the one by means of plate, and screws, or equivalent devices, substantially as specified, and for the purpose not only of enabling it to be removed from said handle part or body, but to allow another such slide, provided with a plane iron or cutter, whatever may be its pattern to be used in the application of, or in combination with such handle part or body, as circumstances may require.

REAMING AND TAPPING GAS FITTINGS.—Henry A. Chasin, of Springfield, Mass. Patented July 1st, 1856. I do not claim a tool holder which can turn independently of the jaws which hold it, as in a shoemaker's punch.

Nor do I claim a revolving tool holder, capable of holding and operating a variety of tools, one at a time, as in an ordinary bit stock.

But I claim the combination of the tool holder with its spindle, when the said tool holder is armed with its complement of bits or tools, and is capable of being turned upon an axis, at right angles to, and independent of the axis of the spindle, so that either tool may be revolved in the axis of the handle, substantially in the manner and for the purpose described.

Second, I claim the rotating tool holder, as constructed and operating in combination with the revolving chuck or clamp, B, for holding the fitting, the whole being arranged in the manner substantially as set forth, for the purposes described.

ADDITIONAL IMPROVEMENT.

BREECH-LOADING FIRE-ARMS.—Abner N. Newton, of Richmond, Ind. Patented June 7th, 1856. Additional improvement granted June 17th, 1856. I claim, first, the combination of lever, W, with the breech pin, L, substantially in the manner and for the purposes set forth.

Second, I claim one or more lips, C, in combination with the breech pin, as set forth.

Third, I claim cocking the gun by the tension lever, J, as described.

Fourth, I claim forcing the part m, or its equivalent, between the main spring and barrel, for the purpose of imparting tension to the main spring.

Fifth, I claim relaxing the main spring by removing the part m.

Sixth, I claim attaching the main spring, H, to the barrel.

Seventh, I claim the combination of the hammer, F, with the barrel, by means of the tappet, G, as shown.

Eighth, I claim sliding the breech pin, L, wholly within the barrel, as shown.

DESIGNS.

COOKING STOVES.—S. W. Gibbs, of Albany, N. Y., assignor to G. W. Ball & Co., of Cincinnati, O.

COOKING STOVES.—Garretson Smith & H. Brown, of Philadelphia, Pa.

PARLOR GRATES.—John T. Davy, of Troy, N. Y.

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METALLIC BEDSTEADS.—John B. Wickersham, of New York City.

FLOOR CLOTHS.—Antoine Glominski, (assignor to Deborah, Albert E., and Nathaniel B. Powers,) of Lansingburg, N. Y.

Patent Case.—Heavy Damages.

Franklin Ransom against the Corporation of the City of New York.—This suit, which was brought against the city for an alleged infringement of a patent for a method of working fire engines, so as to enable them to throw a higher column of water, was concluded on the 24th ult.

The patent is described in the specification as an invention for "employing the pressure of a column of falling water, or the tendency of the hydraulic pressure on water at rest, to assist in the working of fire engines by combining a hose or pipe, inducting said water with the receiving tubes of an engine or pump, operated by animal or mechanical power."

The plaintiff claims \$20,000 for actual and treble that amount by way of exemplary damages. The defence is that the plaintiff's invention is not a novelty. After an elaborate charge by the Court, the Jury retired to their room, and after an absence of five hours brought in a verdict for the plaintiff, assessing the damages at \$20,000. C. M. Keller for plaintiff; James W. Gerard for defendants.

Heating the Feed Water of Steam Engines

MESSRS. EDITORS—I wish to communicate to you and the public through the columns of your invaluable journal, a discovery I made in heating the feed water of a non-condensing steam engine; it is very simple in its application, and the cost a mere trifle. I made this discovery while running an engine at New Orleans nine years ago. The feed water of this engine was only heated to about milk heat, and I essayed to find out the cause. I stopped up the waste water pipe with a piece of cotton which was near at hand, and to my satisfaction I discovered that the water became instantly, as if by magic, heated to the boiling point. The cause is simply this: a

quantity of air rushes up the pipe into the heater at the intervals of the steam escaping, this partially separates the steam from the water, and therefore prevents it from heating. To retain the use of the pipe, I placed the end of it in a tub of water; the water, acting like a valve, prevents any air from getting into the heater, and with this arrangement I have always found the force pump to work better. J. McLewie.

Cincinnati, Ohio, 1856.

A Search for Readers of Scientific Works.

MESSRS. EDITORS.—My efforts to raise a club for the SCIENTIFIC AMERICAN, at Grand Rapids and its vicinity, this year, has resulted in a grand failure. I cannot get my brother farmers to take that interest in scientific subjects which their importance demands. In a new country like this, the necessity of doing this by rule, or scientifically, does not appear in a right light, to the busy people, whose universal answer is, "I take more papers now than I can find time to read." The political news must all be read, for each party is very confident that the prosperity of the nation depends upon its ultimate triumph. Then come newspaper stories, and a long catalogue of "words without knowledge," better calculated to empty the head of any common sense it may possess, than to fill it with useful knowledge. Some plead poverty and hard times; but most of these, I am sorry to say, spend a much larger sum, yearly, for tobacco, which injures their bodies, than what would be required to secure the reading of the SCIENTIFIC AMERICAN to elevate their minds.

My help was taken sick about the time your new volume commenced, and this threw upon me an unusual amount of labor, and prevented me from giving that attention to the SCIENTIFIC AMERICAN, by visiting people in person, so I accordingly made early arrangements with W. S. H. Welton, President of our Kent Co. Agricultural Society, who was doing business at the Rapids, to receive subscriptions, and gave notice that such arrangements were made. But people would not hear a word of any thing but politics till after election. Immediately after, I prepared the notice in a plain hand-writing, with the intention, first, of posting it up in the Grand Rapids P. O., but the editor of the Eagle volunteered to insert it in his paper, and I concluded this would be the better way. The result has proved that the only sure way of raising a club is to see them personally. The benediction under the caption of "Pats on the Shoulder," in No. 13, seemed to demand this explanation.

With a full determination to continue to urge the claims of the SCIENTIFIC AMERICAN upon all classes of men as I have opportunity, I remain sincerely yours. J. C. ROGERS.

Wyoming, Mich., Dec. 15, 1856.

[Our correspondent is a lover of useful scientific knowledge, yea more, he is an apostle of science, for he spreads its light among his fellow men, for their benefit, not his own. We have no doubt but all the persons to whom he has especially alluded would be greatly benefited by becoming readers of the SCIENTIFIC AMERICAN. We say this not for the purpose of impressing them with such an idea to increase our circulation, but because our heart is also interested in the work of spreading useful information.]

The Compass on Iron Ships.

MESSRS. EDITORS—I notice in the SCIENTIFIC AMERICAN of the 13th inst. an article with the above title, containing a notice of some experiments by Dr. Scoresby, of England, having for their object the removal of local attraction of the mariner's compass. A compass which accomplished not only this end, but also gave, invariably, the true meridian, was invented by John R. St. John, of Buffalo, N. Y., some years since. It was used to some extent upon the lakes and the ocean, as well as on land; and any man, whether seaman or "land lubber," who understood the four elementary rules of arithmetic, could always ascertain by it the true meridian. The compass card has upon its face two additional needles, which are reversed by the attraction of the main needle, and by a peculiar method of charging these "satellites" they

show the amount of variation of the larger needle, and under all circumstances correctly. What more can Dr. Scoresby do?

Mr. St. John has never urged this matter upon the public, and for this reason it has never come into general use. Any further particulars may be obtained by writing to the inventor. Let us give American certainties preference over foreign theories, and render honor to whom honor is due."

C. C. HASKINS.

Monroe, Mich., December, 1856.

Terrestrial Magnetism.

The Editor of Chambers' Edinburgh Journal states that Major Gen. Sabine, Vice President of the Royal Society, (and whose name stands foremost among philosophers who make terrestrial magnetism a study) has prepared a large new map representing various magnetic phenomena. Accompanying this map, the history and philosophy of the subject are treated in a lucid style. Halley, more than a hundred years ago, constructed a magnetic map, and anticipated some results that have since been arrived at. He showed that, contrary to the very common opinion, there were "two poles attracting the north end of the needle in the northern hemisphere, and two poles attracting the south end of the needle in the southern hemisphere. Two of these (one north and one south) were stronger than the others, and they were not fixed, but movable, the movement being of that slow progressive nature described by the term 'secular,' in contradistinction to 'periodical.' For want of sufficient data, Halley felt himself baffled in his attempts to explain the phenomena; 'whether these poles move altogether with one motion,' he says, 'or with several—whether equally or unequally—whether circular or libratory; if circular, about what center; if libratory, after what manner, are secrets as yet utterly unknown to mankind.'

By enlightened and persevering research, some light has been thrown on these secrets—an achievement, indeed, of the science of our own day.

The present position of the four magnetic poles have been determined exactly or approximately. Hansteen, Erman, and Due traveled to Siberia, in 1828-9, and found the weaker pole of the northern hemisphere to be 'in or about the meridian of 120° east.' In Halley's time, it was not far from the meridian of the British Islands; and here we see a remarkable instance of secular change. In 1843 and 1844, Lieutenant-colonel Lefroy, then at Toronto, determined the position of the stronger pole; it was in 52° 19' north latitude, and 268° east longitude—the change in this case having been but small. A similar state of things prevails in the southern hemisphere. The antarctic expeditions of Sir James Clark Ross (1839-43) acquainted us with the fact, that the stronger southern magnetic pole had moved but little from the position assigned by Halley; while the weaker, which he placed 265° east of Greenwich, must now be placed between 30° and 40° to the west. Thus the system in the south is a duplicate of that in the north.

These mysterious movements, as is well known, are the cause of that change in the direction of the magnetic needle, the 'declination,' as it is called, which has been noticed almost from the time the compass was brought into use. The magnet makes a long and slow oscillation from east to west—that is, its northern end points sometimes to the east of north, sometimes to the west, and points exactly north only when it reaches that point in its 'secular' movement. Having attained its westerly maximum, it is now slowly returning to the east. 'We know,' says Major General Sabine, 'from thoroughly trustworthy observations, that the westerly declination at St. Helena has increased during the last two hundred years at a nearly uniform rate of eight minutes in a year; and not only so, but that this annual increase takes place in equal aliquot portions in each of the twelve months.' It does not surprise us to be told that 'we are as yet wholly without a clue to guide us to the discovery of causes at once so general and so systematic; and we are quite prepared to admit that their discovery will undoubtedly rank as one of the greatest discoveries in the progress of natural knowledge.'