

described as the invention of Houdin. The name of the instrument as given by Mr. Whiting was an Electro-Magnetic Thermostat, and was first invented and put into practical use by that gentleman.

JUSTIN HINDS,  
Supt. Salem Machine Co.

Salem, Mass., Jan. 31, 1867.

**Recent American and Foreign Patents.**

*Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.*

**DITCHING FLOWS.**—John T. Miller, Iowa Falls, Iowa.—This invention consists in an arrangement of the cutters and wings of a plow or machine for cutting trenches in wet land, forming by one application of the draft of a powerful team, a ditch about two feet deep, thirty inches wide at top and twelve inches wide at bottom, while the soil and earth removed from the ditch, are laid up in a ridge or embankment on both sides by the wings of the plow. The whole construction is strong, simple and cheap, and especially adapted to the use of the farmers on the Western prairies.

**APPLE PARER, CORER, AND CUTTER.**—W. A. Coe, Greensboro, N. C.—This invention relates to a machine by which apples may be quickly pared, cored and cut into pieces without removing the apple from the fork.

**SUBSOIL ATTACHMENT FOR PLOWS.**—R. J. Wheatly, St. Johns, Ill.—The object of this invention is to obtain a simple and efficient attachment for plows which will pulverize, loosen, or lighten up the soil at the bottom of a furrow made by the plow, and still not increase the draft of the plow to such a degree as to prevent a team from operating or drawing it with facility, when the attachment is set to penetrate into the earth at its greatest depth.

**CORN PLANTER.**—W. J. Hobson, Savannah, Mo.—This invention relates to a corn planter of that class which is designed for planting the corn or seed in check rows. It consists in a novel and improved seed-dropping mechanism, the arranging and operating of the same, whereby the machine may be used on rough or uneven ground and the seed dropped or planted in check rows, without the previous furrowing of the ground.

**COTTON SCRAPER.**—Turner Saunders, Memphis, Tenn.—This invention consists in attaching a scraper to a plow in such a manner that the cotton plants may be plowed or bared off, and scraped at one operation. Hitherto the cotton has been plowed or bared off with an ordinary turning plow, and a scraper afterward used, the latter implement being rather difficult to manage and not permitting the earth to be scraped evenly from the plants. This improvement admits of the two operations specified being performed simultaneously and with the greatest facility, thereby effecting a great saving in labor and preparing the work in a more perfect manner than usual.

**CONSTRUCTION OF PLOWS.**—W. D. Long, Wheatland, Pa.—The object of this invention is to produce a single plate of steel or iron rolled or formed in such a manner that the plow when finished will be thicker at these parts where it is subjected to the most wear, and the plow be capable of being constructed at a very moderate cost.

**EXTRACTING STUMPS, RAISING STONES, ETC.**—J. M. Gleichman, Evansville, Ind.—This invention relates to a machine for extracting stumps, raising heavy stones, logs, etc., and conveying or transporting the same to any desired place, and consists in the employment of one or more levers arranged in connection with a tackle and winch, and a frame mounted on wheels, whereby stumps may be extracted with the greatest facility, heavy stones and logs raised and transplanted or conveyed from place to place, with but a very moderate expenditure of time and labor.

**BUSHING FOR BARRELS.**—David F. Fetter, New York City.—The bushing forms a lining for the bung hole or other holes in casks or vats; it is designed to save the wear and tear of the staves, and is secured by means of barbed creases on the outer periphery of the bush, which catch upon the wood and prevent its removal; the extended plate surrounding the bush may be fastened by rivets or screws to the staves if desired.

**GRAIN VENTILATING AND DRYING APPARATUS.**—James E. Stroebe, Litchfield, Ill.—This invention relates to an apparatus for ventilating and drying grain stowed away in bulk, and it consists in having one or more air ducts passing through the bin, box, or granary, in which the grain is placed, said duct or ducts being composed of slats arranged one above the other with spaces between, with openings in the sides of the bin, box, or granary for the admission of air into the duct or ducts, whereby the grain will be thoroughly ventilated and dried.

**METALLIC HUBS FOR THE WHEELS OF VEHICLES.**—James B. Stuart, Bunker Hill, Ill.—This invention relates to an improvement in metallic hubs for the wheels of vehicles, and it consists in a novel manner of securing the spokes in the hub, whereby the spokes are firmly retained in position and rendered capable of being readily detached and replaced by new ones whenever required.

**RAKING AND LOADING HAY.**—M. S. Rowson, Winhall, Vt.—This invention relates to a machine for loading hay on wagons, while the latter are drawn over the field. The invention consists of a series of rakes attached to endless chains and used in connection with a guide box, a rake and grating or shield, all so constructed and arranged that the hay may be raked up from windrows and elevated upon the wagon or cart to which the device is attached.

**SEWING MACHINE.**—E. H. Craigie, Brooklyn, N. Y.—This invention consists in making the cloth plate of a Wheeler & Wilson sewing machine in three or more parts, one or more of which are movable, so that by taking off said movable part or parts, free access can be had to the feeder and all the parts to be oiled, which in ordinary Wheeler & Wilson machines can only be reached by uncovering the cloth plate. That part of the cloth plate which is situated under the needle consists of a tapering piece inserted in the direction in which the fabric is fed and held in place by the movable part of the cloth plate in such a manner that said edge shaped piece can be readily removed and replaced by another piece if it should be desirable or necessary.

**PRUNING SHEARS.**—Daniel Campbell, Elizabeth, N. J.—This invention relates to an improvement in pruning shears by means of which a drawing cut is obtained, instead of that obtained by the ordinary shears, which is a great improvement, as the drawing cut, whereby one blade is gradually drawn obliquely toward the cutting edge of another stationary blade, insures a better operation and a cleaner cut.

**BORING MACHINE.**—O. O. Crawford, Seneca, Wis.—This invention consists in constructing a machine so that the felloes of carriage wheels may be bored rapidly and in the most perfect and unerring manner.

**CHURN.**—D. O. Blair, Abingdon, Ill.—This invention relates to a churn of that class in which the dasher is attached to a vertical shaft and receives a reciprocating rotary motion by certain devices arranged above the cover of the churn, and the improvement consists in the construction of those parts by which the dasher shaft is revolved, by which the churn is operated in an easy and efficient manner, and which parts are furthermore so arranged that a slower or faster motion can be imparted to the dasher shaft without changing in the least the motion of the lever by which the whole is operated.

**MOP HEAD.**—Joseph Messinger and H. H. Mason, Springfield, Vt.—This invention relates to a new and improved mop head of that class in which a screw and a ratchet and pawl are employed for operating the jaws and retaining the same in position to hold a mop cloth.

**SOWING RICE AND OTHER SEEDS.**—Joseph A. Reynolds, Savannah, Ga.—This invention relates to a machine for sowing rice and other seeds which are grown in small drills. The invention consists in the novel means employed for distributing the seed and in an improved arrangement of furrow openers, whereby a very simple and efficient implement is obtained.

**PIPE TONGS AND CUTTER.**—John Baltimore, New York City.—This invention relates to a tool which can be used with great advantage for screwing up and for unscrewing pipes of any description and also for cutting said pipes. It is provided with a swivel hook that catches over the pipe and is hung on gudgeons projecting from the ends of a nut into which the shank of the tool is tapped. The end of this shank forms a cup-shaped point, the edge of which

bears against the pipe to be screwed or unscrewed. A hole bored in the center of the cup-shaped point serves to receive the cutter, the edge of which drops into a groove in the inner surface of the hook so that its cutting edge can be set up against the pipe to be cut without turning the cutter.

**PROPELLING VESSELS.**—Samuel B. Wait, Mariners' Harbor, N. Y.—The object of this invention is to provide a new manner of propelling vessels employing the oar principle at the stern of a ship, said oars being moved in such a manner by machinery that the full power of each stroke is utilized.

**ROTARY ENGINE.**—Friedrich Fischer, Garibaldi, Iowa.—This invention relates to a rotary engine which is composed of an annular cylinder fitted with a piston which is secured to a piston wheel. The steam is admitted at one side of an abutment in the cylinder and through cavities or channels in said abutment made of two parts which close up by the action of springs and which are forced apart by a wedge-shaped projection or secured to the piston and traveling with the same in such a manner that immediately as the piston has passed the abutment the two halves thereof close up and the steam acts on the piston until the wedge-shaped toe comes in contact with the abutment and forces the two halves thereof back, steam being shut off at the same time until the piston has passed.

**WASHING MACHINE.**—Charly Pennington, Iowa City, Iowa.—This invention has for its object to improve the construction of the washing machine, patented July 12, 1859, and numbered 24,754, to which Letters Patent Schedule of additional improvement No. 281 was annexed May 29, 1860.

**BEDSTEAD FASTENING.**—James Maguire, Trenton, N. J.—This invention consists in the combination of plates or headed pins or bolts with the side rails and posts of the bedstead.

**WASHING MACHINE.**—William K. Short, J. W. Allen, and J. Craig, Mount Pleasant, Iowa.—This invention has for its object to furnish a cheap, simple, convenient, and effective washing machine, which shall be capable of self adjustment to any desired thickness of clothes.

**LIFTING JACK.**—Samuel Gulick, Klines Grove, Pa.—This invention has for its object to furnish an improved lifting jack, so constructed as to be adapted to raising heavy machinery as well as carriages and wagons, and at the same time be capable of raising them to a considerable height.

**TAKE-UP FOR KNITTING MACHINES.**—Samuel Ward, Amsterdam, N. Y.—This invention relates to the take-up of knitting machines, whereby the action of the take-up is regulated by the tension upon the fabric knit in the machine.

**HORSE HOE.**—Moses Chandler and John B. Nickels, Kenaskeag, Me.—This invention consists principally in adjustably attaching wings or blades to the standards, and in the combination of pivoted rake heads with the free rear ends of the wings or blades.

**STOVE-PIPE JOINT.**—H. M. Clifford, Philadelphia, Pa.—This invention consists in forming the joint, where lengths or pieces of stove pipe are put together without lapping them, and in such a manner that while the joint is equally tight the facility with which the pipe can be put up and taken down is greatly increased.

**SPRING BED BOTTOM.**—David Manuel, Boston, Mass.—This invention consists in attaching the slats of the bed bottom, by means of slots, hooks, or notches formed in or attached to the under sides of said slats, to coiled looped springs of a peculiar form, and in the combination of rubber rollers with the loops of said springs.

**WINDOW SHADE FIXTURE.**—L. A. Tripp, Middletown, N. Y.—This invention has for its object to furnish an improved fixture by means of which window shades may be raised or held in any desired position.

**COMBINED TABLE, CUPBOARD, CLOTHES RACK, ETC.**—W. M. Baker, Fortville, Ind.—This invention relates to a table, with which is combined a cupboard, a clothes rack or frame, and a rack or frame for the reception of tinware, together with drawers, trays, and a rolling board, in such a manner as to be most convenient for use when so desired, and when not in use susceptible of being enclosed within the body of the table.

**SINKING BORED WELLS.**—Peter Oillon, Muncie, Ind.—This invention consists in an improvement in the auger and in the manner of hanging and operating the same for the boring of the well.

**BOOT CRIMPING MACHINE.**—John Joslyn, Canton, N. Y.—By the machine embraced in this invention the leather which is to be crimped, is drawn between two plates having series of circular depressions or cavities in their opposite faces, by means of a suitable shaped former, so arranged as to move between the said plates; the circular depressions working the leather, and condensing such portions of the same as are necessarily filled, as well as materially aiding in the filling process, and causing such a hold to be had upon the leather as it is drawn between them, as to stretch it out to the utmost extent.

**SELF-WINDING CLOCKS, TIMEPIECES, AND OTHER MACHINERY.**—F. G. A. Horstmann.—This mechanism consists of a tube constructed with a metallic piston, packed and cupped with one or more layers of leather or other materials, with a spring for keeping the piston pressed close home on the fluid in the cylinder. The piston works up and down within the cylinder, forming a perfect float or floating bucket. The cylinder is in connection with a vessel containing naphtha, spirits of wine, or other expansive fluid—glycerin or other oily matter being used therewith to prevent the evaporation of the naphtha or spirit. The alternation of temperature acting upon this fluid causes the same to expand or contract, thereby causing the piston to rise and fall, thus producing an impulse or motion either in a horizontal or vertical direction. To the said piston the inventor attaches a rod, and by means of a cross bar he causes a drum or wheel to revolve and carry an endless chain, which is passed over the main wheel of the clock, so that it hangs in a loop on either side, and to each of these loops he attaches a weight for giving the necessary working power to the clock and setting in motion the train of wheel work. This principle is also peculiarly adapted for raising greenhouse or hot-house windows, and for other similar purposes.

**DOORS OF SAFES, STRONG ROOMS, AND OTHER RECEPTACLES OF PROPERTY.**—J. Jessop and W. Warburton.—The object of these improvements is to prevent or render difficult the introduction of wedges, chisels, or other such means for the forcible opening of the doors or covers of safes, strong rooms, and other receptacles of property. For this purpose, in place of the edge or that surface of such door or cover which closes into or upon the frame thereof being formed straight, or of a series of straight lines, simply fitting close into one another, as is the usual manner, the patentees form the edge around the door or cover and the surrounding frame, with a series of short corrugations, serrations, or teeth, those of the door fitting closely into those of the surrounding frame.

**ILLUMINATING GAS AND OIL.**—G. McKenzie.—This invention relates to the obtaining of illuminating gas and oil from a combination of coal with shale oil or other mineral oil, and in subjecting the mixture to distillation or decomposition at various heats.

**PREPARATION OF PEAT FOR RENDERING IT APPLICABLE TO THE MANUFACTURE OF ARTICLES WHICH ARE CAPABLE OF BEING PRODUCED BY STAMPING, MOLDING, EMBOSHING, OR ROLLING.**—T. G. Ghislin.—In carrying out the invention the patentee takes any of the common kinds of peat, and having expelled therefrom, either by the application of pressure, heat or otherwise, such of the watery particles as can be easily removed, he mixes with it ground or comminuted seaweed, with the addition, if required, of any suitable gums, such as india-rubber, gutta-percha, or other substances of that class, or in addition thereto may be added resins natural or artificial, bituminous or albuminous substances, pitch, paraffin, stearine, or other oily and fatty matters; to give a body and firmness to the mass, chalk, talc, sulphur, siliceous, and other earthy matters may be added. Waste fibrous and woody substances may be incorporated with the other ingredients when it is desired to form sheets of the material, as for floor-cloths, and if the surface is intended to be painted, metallic oxides, such as white zinc, or ochre, alum, and other analogous ingredients, may be added.

**MANUFACTURE OF ICE TO FIT IT FOR MAKING EFFERVESCENT DRINKS, ETC.**—O. W. Jeyes.—The inventor partly fills a vessel with the water, into which he forces carbonic acid gas; he then hermetically seals the vessel, freezes the contents into a solid state, opens the vessel and removes the ice, which may be employed in more or less large blocks in drinks to be made effervescent.

**Answers to Correspondents.**

*CORRESPONDENTS who expect to receive answers to their letters, must, in all cases, sign their names. We have a right to know those who seek information from us; besides, as sometimes happens, we may prefer to address the correspondent by mail.*

*SPECIAL NOTE.*—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 50 cents a line, under the head of "Business and Personal."

**A. S. J., of N. Y.**—The velocity of water issuing from an orifice depends upon the ordinary laws of falling bodies, making proper allowance for change of direction and friction. Thus the velocity due to a fall or head of water of 16 feet is 32 feet per second. If the orifice, in this case, be placed against a current of water of the same velocity, there will be equilibrium at the orifice; if velocity of current be greater, water will rise in the pipe, if less the water will run out. From such data you can calculate the velocity a ship must have to discharge bilge water by means of a pipe which terminates in the outside water, and has its direction turned backward in the path of the ship. In this case the head of water to be considered is the height of the surface of outside water above the surface of the bilge water.

**J. M. S., of Conn.**—It was promised by Act of Congress that the diameter of the new five-cent coin should be one-fifth of a decimeter. Our correspondent has measured it and found it to be .81 inch and 5/8 x .81 = 4.05. But a decimeter is 3.15-16 inches. We have noticed the alleged error before.

**C. W. D., of —**—When an electro-magnet has become saturated no increase of battery power will give it a stronger lifting power. The diameter and length of the wire used for electro magnets should correspond with the intensity of the battery. A current of intensity will move through a fine wire, and low intensity requires a thick and short wire. But the magnetizing power is always proportioned to the total quantity of electricity passing through the wire.

**J. E. B., of Mass.**—The force of a fly wheel, (its power to strike a blow, etc.) is proportioned to the square of its velocity: double the speed implies four times the force. The formula

$$m v^2$$
 applies to all such cases,  $m$  being the weight of the matter in motion and  $v$  the velocity. The case of the fly wheel is somewhat complicated from the fact that the weight is not evenly distributed, different parts moving with unequal velocities. Thus, though a rule for calculating the force is simple enough, it is impracticable to obtain the data for its application. It is best in practice to determine the force under a given velocity by means of a friction brake or otherwise, and then to this apply the formula

$$m v^2$$
 for all other velocities.

**R. M. H., of Pa.**—The alloy of iron and manganese commonly used in the Bessemer process is produced directly from the ore. In Europe the alloy is known as Spiegeleisen and is produced in Germany. In the United States a similar alloy is found as a residuum in the manufacture of zinc paint from an ore known under the name of Franklinite. This Franklinite "ferro-manganese" can be procured from the N. J. Zinc Co. There is an abundance of ores in America capable of producing "ferro-manganese."

**L. G. T., of Conn.**—You will find information on the subject of beet sugar in our last issue.

**J. W. W., of Ala.**—Water is so little condensed by pressure, that even at the depth of five miles in the ocean it would be but a trifle more dense or buoyant than at the surface. The Atlantic Cable is several times heavier than water, and there is no doubt that it rests firmly on the bed of the ocean.

**S. R. M., of Pa.**—The clarifying of turbid river water by subsidence or spontaneous settling, is cheaper than filtration where a large quantity is needed for manufacturing purposes. We suggest that settling tanks or basins may be more practicable in your case. Perhaps the best filtering medium on the large scale, is simple clean fine sand.

**C. C. P., of Ind.**—It is a disputed question if genuine diamonds have ever been made artificially. But since we know that diamonds are only a form of carbon we may hope to learn how to produce them. The principal forms or conditions of carbon are: charcoal, plumbago, anthracite, lampblack and diamond. We know how to put carbon into all of these forms except the diamond.

**J. L. E., of Pa.**—It is said that an excellent way of preserving natural flowers is to dip them for a moment into a solution of paraffine in benzine, or into melted paraffine. By either of these ways the flowers are covered with a thin film of transparent paraffine which excludes the destructive effect of the air. Perhaps some correspondent will give a better process.

**R. M. L., of Tenn.**—Mica is a natural product, and no solvent for it is known, at least no solvent from which it can be recovered. In its chemical nature and composition it is quite like glass; both are silicates.

**W. B. S., of Pa.**—A substitute for bricks made of sand and lime is not new. There is a company in this city making such an article which looks very well. . . . Meerschmum may be mended with glue or shellac.

**G. D., of O.**—You may find in previous issues several processes for coppering iron. One of the most recent, is to immerse the iron in a solution of tartrate of copper made alkaline by the addition of caustic soda. By practice only can you find the proper method for your purpose.

**B. C. S., of Pa.**—Civil engineering is taught as a specialty at the scientific schools of Harvard, Yale and some other colleges. In this city there is an excellent school for the special education of engineers under the charge of Prof. J. G. Fox. If you have no embarrassment concerning money you should attend one of these schools; otherwise the best course is to secure a place under some practical engineer.

**J. M. P., of O.**—The nebulae of Orion have been resolved since the death of Sir Wm. Herschell. The nebular theory of La Place, however still maintains favor with many astronomers. The telescope at Harvard College is without doubt more valuable for all ordinary astronomical purposes than that of Lord Ross.

**Business and Personal.**

*The charge for insertion under this head is 50 cents a line.*

**Wanted.**—Best wool carding and spinning machines and power looms. Manufacturers send circular and price list to C. Picard Co., Nebraska City, Nebraska Territory.

**Geo. Davis, Martin's Ferry, Belmont county, Ohio, wants a spring, 1 1/2 inches wide, length, 30 coils, to coil up on a 1-inch shaft, and to be twice as strong as an eight-day clock spring. Will some spring maker please write to Mr. Davis?**

**W. T. S., No. 1,702 Chestnut street, Philadelphia, Pa., desires descriptive circulars of metallurgical furnaces of all kinds.**

**Improved wood lathes wanted.** Send cut with description and price list to Geo. W. Sweet, Flint, Mich.

**John G. Clark, Guyton, S. C., desires to correspond with makers of laundry apparatus.**

**Staveless barrels are wanted by T. D. Ingersoll, Monroe, Mich.**

**Wm. S. Corning, Fort Edward, N. Y., wishes to communicate with makers of wooden shoes.**

**Paper-making machinery is inquired for by James Wright, Florence, Ala.**

**S. S. Perry, Utica, Ill., wishes to know where he can purchase asbestos.**