

BRIDLE BIT.—A. H. Rockwell, Harpersville, N. Y.—This invention relates to a new bridle bit, which is an improvement on the ordinary four-ring bit, and which has on a flexible mouthpiece two sliding bars, which are connected with an nose strap or face piece, in such a manner that by pulling the reins the said bars will be forced together, thereby pressing with great force against both sides of the upper jaw of the horse.

VACUUM AIR ENGINE.—J. R. Cameron, Pittsburgh, Pa.—The object of this invention is to form a vacuum by the expansion of air by heat, and by other appliances, by which the piston of a working cylinder may be driven by the simple pressure of the atmosphere, and power obtained thereby for driving machinery or other purposes.

SCREW DRIVER.—T. D. Voorhees, Easton, Pa.—This invention consists in making a portion of the ordinary screw driver just below the handle of a round form, and placing upon it a loose ferrule or thimble.

ROTARY STEAM ENGINE.—Edwin Chapman, Rochester, Minn.—This invention relates to a certain useful improvement in the class of steam engines known as rotary engines, and it consists principally in the manner in which the abutments are operated, and in the manner in which the steam is discharged with the cylinder, and exhausted therefrom.

CHEESE PRESS.—E. J. Crane, La Porte, Ind.—This invention relates to a new and improved method of constructing cheese presses, whereby the same are made self acting, and the invention consists in arranging two levers with suitable supports in such a manner that the cheese presses itself when properly arranged upon its table.

COMBINED SCHOOL DESK AND SEAT.—J. P. Scott, Lewisburg, Pa.—This invention relates to an improvement in the construction of a school desk, combined with a seat, and consists in such an arrangement and combination of parts that the seat and the desk may be separately adjusted in height to suit pupils of different sizes, and that the seat and a lid of the desk may be folded up when not in use, and to be compact and out of the way when desired.

MACHINE FOR CUTTING PAPER STOCK.—Abijah L. Knight, Baltimore, Md.—In this invention the rags are fed to a vertically cutting knife, by means of a combination of smooth and fluted rollers, to which an intermittent motion is imparted.

CAR AXLE.—Samuel S. Burt, Marquette, Mich.—In this invention the axle boxes are fixed to a stout iron yoke, the ends of which pass over the wheels. Each wheel runs on a short axle, independently of all the others.

GOLD SEPARATOR.—Wm. C. Stiles, Nevada City, Cal.—This invention is an improved instrument for panning or separating gold from earth. It consists of an inclined vibrating table, having a series of pannings, screens, and counter inclines, arranged along its surface, and operating in connection with gentle streams of water fed to it from different points above it.

LATCH FOR GATES, ETC.—Mark J. Bria, Oxford, Ind.—This invention consists in a novel arrangement of a lever latch for gates, etc., whereby a person may open the gate from either side, without reaching over the top of the same.

LATCH FOR DOORS, ETC.—Edward King, Taunton, Mass.—This invention consists in a novel connection between the latch and handle, or knob spindle, whereby the action of the latch is made free and certain, and the same are rendered more durable.

SKATE.—George W. Shearer, Crown Point Center, N. Y.—This invention consists in a novel manner of connecting the runner or blade to the foot rest or block of the skate, through an arrangement of springs and levers, whereby an easy and elastic movement is imparted to the skater, and also of so grooving the under surface of the runner as to combine all the advantages of both a plain and grooved runner.

HAND DICE BOX.—Justus E. Zender, New York city.—This invention consists in making a hand dice box of metal, and of lining any hand dice box with felt cloth or its equivalent, whereby the same are made stronger and more durable, and whereby the noise occasioned by the shaking of dice is partly diminished, or prevented altogether.

DEVICE FOR SUPPORTING AND FASTENING WINDOW SASHES.—Amos Cutter, East Boston, Mass.—This invention consists in an attachment for the sash or window frame, so as to be susceptible of being brought against the window or sash frame, as the case may be, with a greater or less amount of force, by the simple turning in or out of a thumb screw, or its equivalent.

VALISE OR TRAVELING BAG.—N. Groel, Newark, N. J.—This invention consists in an application to the corners of the leather constituting the sides of the bag or valise, of metallic corner pieces, in such a manner as to partly stiffen and strengthen the same, and thus to increase their wear and durability.

TAG HOLDER.—A. Grushus, St. Paul, Minn.—This invention consists of a holder made of spring wire, in a peculiar shape, whereby a tag may be fastened to and detached from the cloth, or other material, with great facility.

ADJUSTABLE WATCH KEY.—J. S. Birch, New York city.—This invention has for its object to furnish an improved key for watches, which may be so adjusted as to fit any watch, whether large or small.

ATTACHMENT FOR DOORS.—C. J. Fisher, Waukon, Iowa.—This invention has for its object to furnish an improved attachment for doors, which will prevent the knob or latch from injuring the wall, which will hold the door securely in any position to which it may be opened, and which will also securely fasten the door when closed.

SASH FASTENER.—George Brosius, Ranch's Gap, Pa.—This invention relates to an improvement in sash fasteners. The breaking of window weight cords, the difficulty and annoyance of putting in new, and the rattling of the guillotine window, have stimulated the invention of various devices dispensing with the sash weights and providing for the locking of the sash, and to this class of devices the present invention belongs.

SELF ACTING SLEIGH BRAKE.—C. Gardiner, Esperance, N. Y.—This invention relates to a self-acting sleigh brake, and consists of a cross bar carrying two bent levers, one on each side of the sleigh; hinged in each lever is a pawl, which catches on the ice or snow when the cross bar is forced back. The bar is operated by means of a connecting rod, secured to a sliding on the tongue or pole, and fastened to the neck-yoke pin, or attached in some other suitable manner.

SHEEP TROUGH.—Frank Ketcham, Monongahela City, Pa.—This invention relates to an improved sheep trough, and consists in a reversible trough so constructed that one trough is always dry and clean.

RAILROAD SUPERSTRUCTURE.—J. A. Maxwell, Savannah, Ga.—This invention relates to an improvement in railroad superstructure, and consists in a combination of the cross-tie and stringer systems of laying the rails, whereby the advantages of both are secured.

TOBACCO PRESS.—T. N. Reed, Danville, Va.—This invention relates to an improved tobacco press. It consists of a box of iron, or some other suitable material, in which are two false sides, or boards, movable within the box frame in the direction of a line at right angles to their planes.

QUILTING FRAME AND CLOTHES HORSE.—G. A. Mallory and J. J. Fish, Oxford, N. Y.—The nature of this invention consists in constructing a frame so arranged as to be adapted equally to use as a quilting frame and a clothes horse, and capable of adjustment for either purpose, as desired.

CARPENTER'S SQUARE.—O. H. P. Robinson, Belfast, N. Y.—The object of this invention is to enable carpenters and builders to lay out the mortises in framing houses with dispatch and accuracy. It consists in making a slot in the main bar of the square, for scribing the mortise directly within it, instead of measuring and scribing on the outer side of the square, in the ordinary manner.

YOKE FOR GRAIN ELEVATOR.—Eliza Jane Jewell, Brooklyn, N. Y.—This invention relates to a new manner of constructing and arranging the sliding yoke of a grain elevator, and consists, first, in making the yoke of cast iron instead of wood, as has heretofore always been done; and second, in the use of adjustable guides between the yoke and the wooden frame, whereby unqualities arising from the expansion or contraction of the frame or yoke, either, can be regulated.

PUNCH AND SHEARS.—J. C. Jordan, Watertown, Wis.—This invention relates to a machine wherein sheet iron and other metals can be cut or punched, as may be desired, and the invention consists in so shaping the main lever of the machine that it will at the same time force down a punch, by a cam, and operate the shears, one of the blades of which is secured to the said lever.

STRAW CUTTER.—Hiram Parks, Athens, N. Y.—This invention relates to a straw cutter in which a curved knife is used, and is secured to a revolving shaft, so as to make a drawing cut, and so as to cut a whole bundle of straw with the same facility with which the usual machines cut a small quantity.

BLACKING BRUSH.—Chas. A. Paret, Nashville, Tennessee.—This invention relates to an improved blacking brush and consists in passing an endless elastic band crosswise through four staples upon the back of the brush stock to hold the box of blacking and in a groove along the side of the stock to receive a scraper.

MACHINE FOR SHAPING AND PRESSING HOODS.—Solomon and Henry Squire, Monson, Mass.—This invention relates to a machine for shaping and pressing hoods and consists of hollow metal block of the required shape into which a heater is inserted or the same may be heated by a gas jet or lamp. This block is hinged upon a stand midway between two uprights which work in grooves in the side of the frame and are surmounted by a yoke piece supported by springs a jointed presser is suspended loosely from the center of the yoke by an adjustable suspension rod and metal lip overlapping the plates.

CULTIVATOR.—M. Barnett and Eli Wood, Hardinsburg, Ind.—This invention has for its object to furnish an improved cultivator, so constructed and arranged as to run lighter, be more durable, and less liable to get out of order than the cultivators now in common use.

WASHING MACHINE.—Allan Neilson, Allegheny City, Pa.—This invention relates to a washing machine in which two or more corrugated conical rollers, which are secured in such a manner in a swinging frame above a flexible washboard, that their axes cross each other, while their under surfaces are with their whole length on the said board, so that by oscillating the said frame, the rollers will rotate on their larger diameter and slip on their smaller end, and will thus at once beat and rub the clothes to be washed.

FRICTION CLUTCH AND PULLEY.—C. D. Palmite, Oswego, N. Y.—This invention consists in the employment of a pulley fitting loosely upon a shaft, and driven by a belt from any suitable power, in combination with an elbow-shaped friction lever, may, by the said wedge, be pressed against the inner circumference of the pulley rim, thereby connecting the pulley with the sleeve and shaft, and driving the latter.

EXCAVATOR OR DITCHING MACHINE.—Isaac V. Adair, Varick, N. Y.—This invention has for its object to furnish an improved machine designed especially for use in removing the earth from ditches after it has been loosened by a ditching plow.

PENCIL HOLDING ATTACHMENT FOR CARPENTERS COMPASSES.—W. G. Hillegass, Philadelphia, Pa.—This invention relates to a device by which carpenter steel pointed compasses can be provided with a pencil point, whenever desired so that the said pencil can be applied in a convenient manner; while heretofore the pencil had to be tied to one of the legs of the compass by means of a thread or string.

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."

All reference to back numbers should be by volume and page.

G. A. D., of Me.—"How can stains be removed from soap stone and the polish renewed?" It depends on the nature of the stains. If grease, soap will remove them.

R. R., of Canada.—"Do you know of a cheap composition to coat glass for making mirrors; I have heard of such a thing being used in Europe?" We know of no process or material cheaper than those usually employed.

J. K. B., of Canada, desires to know the value of "magnetic or black sand," large deposits of which have been discovered near his place of residence. In reply we would state that the black sand ore is in high repute for facility of reduction. The ore in the United States varies so greatly in quality that its mining is attended with uncertainty.

L. A. L., of ——"Is there any fluid or solid substance through which a magnet will not attract?" None known.

S. A. G., of Ind., wants to know what glistens in the small bits of stone he has sent us. It is mica, utterly valueless except when found in large masses. He asks, also, what to put in his plating solution to make the gold or silver deposit bright. You cannot deposit blacking on your boots and have it bright without brushing or burnishing; neither can you deposit metals by the galvanic battery and have the coating bright without burnishing.

H. C., of Mass.—The "skivers" or knives used by carriers in dressing the flesh side of skins have no edge similar to that of an ordinary cutting tool. The edge is quite "stunt," or of a short bevel, and the feather edge is turned by a "steel"—a round spindle—so that it forms an angle with the blade of nearly if not quite 180°. There is much art and experience required in its use.

P. McC., of N. J., says that mill picks should not be drawn at the edge, but should be forged thick and drawn back of the edge, the cutting portion being left as hard as water can make it.

F. G. W., of Mass., asks several questions relative to steam engine vacuums, condensation, pressure of the atmosphere, etc., all of which can be more readily answered by a treatise on natural philosophy or the life of James Watt than through these columns. We respectfully refer him to elementary works on steam engines.

A. F. F., of Ill., asks if he can construct an annealing furnace for sheet brass and do the work properly by means of an endless grate, or a grate attached to an endless apron. We see no reason why the plan is not practicable.

J. J. N., of Pa., asks for a rule to set the heads of a lathe when it is designed to turn a taper, the length of shaft and degree of taper being given. He offers for an example a piece one foot long the taper to be half an inch; "how far should I set the head from the taper line?" If the taper is to reach from end to end of the shaft the head should be set over just one quarter of an inch, in all cases one half of the taper required. But it may be he makes no allowance for the space taken up by the dog. We know of no absolute rule perfect under all circumstances. The experienced eye is the best rule for ever varying cases, always keeping in view that for every quarter inch the tail is thrown over double the taper is given, etc.

J. V., of Ala., sends a diagram and description of a flying machine which he thinks will work, and asks us to publish it. We prefer to wait until we receive some account of a machine actually at work. We have piles of these suggestive and conjectural letters on aerial navigation, not one of which seems to us at all practical.

A. G., of Fla., replies to J. H. S., of O., that he can harden his cultivator plow without springing by chalking it well upon both sides, heating it to a cherry red and dipping it gradually into water.

E. B. Y., of Pa., asks "what acid or other substance will separate the carbon from carbonic acid or carbonic oxide so as to leave the oxygen only?" The information, if we could give it, would be acceptable not only to E. B. Y., but to the scientific world at large. We regret that we share in the universal ignorance of any means of accomplishing this end.

F. R., of N. Y., propounds a series of questions to which we reply: 1st; The article sold by druggists under the name of benzine is derived from petroleum, and is identical with naphtha. 2d; Common petroleum or burning oil is better than benzine for preserving sodium. 3d; Naphthaline is a solid camphor-like substance, found in gas tar. Gasoline is one of the most volatile liquid products of petroleum. 4th; Albumen is preserved on a large scale by drying. 5th; The atomic weight of oxygen is 16; the equivalent is 8. 6th; "Maynooth's iron battery" has not come into use. The inference you may draw is that its merits have been over stated. 7th Fressenius' Analysis and Miller's Chemistry are among the best authorities on chemistry.

E. C., of N. Y., referring to the instance given in our issue of the 16th inst of a piece of wood having imprinted itself upon a bar of iron states that he noticed recently in Fitchburg, Mass., a granite boulder, upon which was a representation of the bottom or end of a post which had been standing upon it for a number of years, the impression being about one-sixteenth of an inch deep. He calls upon some correspondent for a satisfactory explanation of this singular fact.

"Inquirer" calls for some table giving the percentage of alcohol in the various liquors, wines and brandies, more reliable than that of Brande, which is usually found in the books? Any such table can be only correct for particular samples, the percentage varying with the honesty of the distiller and age of the liquor. We refer Inquirer to an exhaustive article on alcohol in Muspratt's Chemistry.

B. F. E., of Ohio, replies to the inquiry of F. K., of Mo., for a simple recipe for softening hard water "that one quart of bran confined in a bag and boiled in ten gallons of hard water will bring the lime to the top which can then be skimmed off." This plan, he asserts, is superior to using sal-soda or wood ashes and is just the thing F. K. wants.

Business and Personal.

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

Pattern Letters and Figures for inventors, etc., to put on patterns for castings, are made by Knight Brothers, Seneca Falls, N. Y.

A metal-working shop, with two patents, for sale or exchange for Real Estate in city or country. Townsend & Sears, 218 Fulton st., room 7.

Manufacturers of Portable Saw Mills and Engines please send circulars and cash prices immediately. Address J. J. Hovell, Avon, Ill.

For sale low—the patent right of an improved Tag Holder—best out. Address A. Grushus, St. Paul, Minn.

Wanted—a Horizontal Face Plate Boring and Turning Lathe to swing 8 or 9 feet, new or second-hand. Address, with description and price list, T. H. Risdon, Mt. Holly, N. J.

Inventors Take Notice.—Having Spare Machinery, Power, etc., we would build light machinery, models, tools, or a patented article, requiring good machinists' work. Address Littlefield Brothers, Randolph, Mass.

Wanted!—Joshua Beal, Baton Rouge, La., wishes to communicate with Agents or Manufacturers of machinery used for the manufacture of cotton wrapping twine.

Parties desiring the services of a first-class inventor to get up new machinery, drawings, etc., address, with confidence, A. E. W., inventor and draftsman, 114 Fulton street.

Geo. W. Douglass, of New Haven, Conn., wants a heavy Power Press immediately.

We want a contract to build Sash, Blinds, and Doors; have New works. Address A. Woodworth, Cambridge, N. Y.

Wanted—A Second-hand Fire Dryer for Paper Making. Address S. D. Paddock, Elbridge, N. Y.

Sleigh Bells.—Manufacturers of Sleigh Bells will please send their address to Wm. R. Oatley, Rochester, N. Y.

The Babbitonian Penholder has advantages over any in the market, receiving pens of all sizes, holding them outward to prevent spattering, and having both the English and the famous French scales of measurement. Babbitt Bros., 42 John street, New York, furnish them, postpaid, at 35 cents for the silver, and 15 cents for the white holder.

H. N. Winans, 11 Wall st., New York, Manufacturer of The Anti-Incrustation Powder, for removing and preventing scale in boilers, desires the address of parties using Steam, that he may send circulars of interest on the subject.

Jones & Stelfor, Austin, Texas, wish to procure the best Tire Bending Machine, and Foot or Hand Punching Machine.

Stationary Engine For Sale, 10 Horse-power, modern build, short stroke, with tubular boiler, 2 1/2-inch tubes, was only used about six weeks. Price \$450 on board cars. Apply to Abram Logan, Tidionc, Pa.

Wanted Immediately—Address of all Manufacturing Companies in United States—especially of Tin Plated Ware—for entirely new articles of Manufacture. Jno. I. D. Bristol, Detroit, Mich.

J. N. Bebon, Savannah, Ohio, wishes to communicate with makers of pumps suitable for operation by a wind mill.

NEW PUBLICATIONS.

ASTRONOMY. An Elementary Work on Physics, by W. T. Rolfe and J. A. Gillet, both teachers in the High School at Cambridge, Mass. Boston: Crosby & Ainsworth. New York: O. S. Felt.

The authors show how we know the earth rotates on its axis; that the earth and planets with their satellites revolve in elliptical orbits about the sun; and that the sun and the stars are moving through space, or about other stars. They have also endeavored to show how, by measuring a line a few miles in length on the surface of the earth, and a few angles, we are able to find the size of the earth, and to pass out into space and measure the distance from the earth to the sun, from the sun to the planets, and from the earth to the fixed stars—a distance so vast that the velocity of light is the only unit suitable for expressing it.

ELEMENTS OF NATURAL PHILOSOPHY. By the same authors and publishers as above.

This work is designed as a first book in physics, to be used in grammar and district schools. The work consists of three sections: the first treating of pressure; the second of motion; and the third of machines and sources of mechanical power. Under the latter are taken up the so-called "mechanical powers," and the sources of mechanical power—namely, hand power, horse power, wind power, water power, and steam power; and an account is given of the most important machines by which each of these is made to do work. Under water power are included the subjects usually put under hydraulics. This work, as well as the work on Astronomy, is profusely illustrated.

EXTENSION NOTICES.

Samuel G. Lewis, of Kellyville, Pa., having petitioned for the extension of a patent granted to him the 14th day of February, 1854, and reissued the 22d day of October, 1867, for an improvement in making thick paper, for seven years from the expiration of said patent, which takes place on the 14th day of February, 1868, it is ordered that the said petition be heard at the Patent Office on Monday, the 27th day January next.