

One week's production of the Slaughter House Gulch, in Colorado was recently 3,000 ounces of silver.
 The nine-hundredth mile post on the Union Pacific Railroad west of Omaha has been passed.
 The Union Copper mines in Calaveras county, Cal., have been sold at auction for \$121,250.
 The Indianapolis rolling mills use daily twenty car loads of Missouri iron. One firm in Portland, Maine, have manufactured 24,000 planchettes.

Recent American and Foreign Patents.

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

PRESERVE JARS.—Nat. Raymer, New Sterling, N. C.—This invention relates to a new and improved method or process of preserving fruit and other articles, and it consists in such an arrangement as allows the air to be extracted without the use of steam, thereby adapting the can to ordinary use in families where facilities for putting up fruit on a large scale are not enjoyed.

HOBING MACHINE.—Horace C. Briggs, West Auburn, Me.—This invention has for its object to furnish an improved machine by means of which the ground between the rows of plants may be thoroughly stirred up and turned over, and the soil thrown around the roots of the plants, and which shall at the same time be simple in construction and easily operated.

HAY CUTTER.—Henry Kinsey, F. W. Kissell, J. E. Smith, and J. M. Smith, Ligonier, Pa.—This invention has for its object to furnish an improved machine for cutting hay, straw, and other fodder, which shall be simple in construction, easily operated, effective in operation, and self-feeding.

PAPER MAKING MACHINE.—James Viney, Manchester, N. H.—This invention relates to an attachment to machines for manufacturing paper, whereby the process is greatly facilitated and much valuable time is saved.

STEAM PUMPING ENGINE.—Ralph R. Lee and Geo. H. Wren, Mahaney City, Pa.—This invention relates to the manner in which the valves of pumping and other engines are operated, and it consists in the construction of the main valve and steam chest, and the manner in which steam is admitted thereto for the movement of the valve.

MACHINE FOR SEPARATING THE PULPY MATTER FROM FIBER-PRODUCING LEAVES.—G. Sanford, Bergen Point, N. J.—This invention consists of a wheel arranged to rotate in a vertical plane, which is provided with combs and scrapers arranged upon its sides radially and operating between vertically suspended holders for the material to be operated on, which is previously crushed between rollers, the said holders being provided with means for pushing them against the combs or scrapers as the thickness of the mass being combed varies. Provision is also made for supplying water to the mass as the combs and scrapers are acting upon it.

TANNING APPARATUS.—Silas Hosmer, Concord, Mass.—This invention consists in the arrangement or combination with a vacuum tanning vessel, of an agitating mechanism to produce and maintain currents in the liquor bath containing the skins to equalize the action of the liquor on the skins.

VELOCIPED.—E. K. W. Blake, Chicago, Ill.—This invention consists of an arrangement of loose hollow pulleys on the driving axle, having pawls taking into ratchets within the said pulleys secured to the axle, and belts for operating the pulleys passing over guide pulleys at the front of the machine to the hands of the operator, whereby he may propel the machine by pulling from directly in front of him. Springs connected by cords to smaller drums on the said pulleys are used for retracting the pulley to wind on the operating belts.

SAFETY LOCK FOR FIRE-ARMS.—Michael Tromly, Washington, D. C.—The nature of this invention consists in constructing the hammer in two parts, the upper one, containing the head, being so attached to the lower part that it can slide about a half inch upon the latter, and so operating that when the hammer is bent back to a "full cock" and sprung from that position, centrifugal force throws the head outward so that it can strike the cap and explode it; but when let down by the thumb or sprung from less than a "half cock," the head will not be thrown out in the manner described, but will strike upon a guard near the nipple, and be prevented from coming in contact with the cap. The hammer itself is so formed as to guard the cap when down.

EXCAVATOR.—Barth P. Stowell, Quincy, Ill.—The object of this invention is to construct an excavating machine to be operated by steam or other power, which shall perform its work in an easier and more expeditious manner than those heretofore invented, and which shall be economical and convenient of operation.

CAR COUPLING.—James Osman, and John F. Potter, Linden Hall, Pa.—The object of this invention is to accomplish the coupling and uncoupling of cars in a safe and ready manner.

WATER WHEEL.—J. H. Bodine, and T. A. Hill, Mount Morris, N. Y.—In this invention the gate is made in a peculiar form to adapt it to be opened and closed with less power and a novel device is employed for the purpose of moving it. In addition to this, the curb is so constructed that, as the step wears away the joint between the wheel and the curb still remains water tight.

AWNING OR HORSE CARS.—Manfred C. Battey, Washington, D. C.—The object of this invention is to provide a neat, light, strong, and cheap attachable and removable awning, to be used in connection with horse cars on street railways, for the purpose of protecting the horses from the excessive heat of the sun.

TANNING PROCESS.—C. J. Bugh, Eau Claire, Wis.—This invention has for its object to furnish a superior tanning process by means of which furs and hides may be easily, quickly, and thoroughly tanned.

SELF-SETTING TARGET.—William Stein, Camden, N. J.—The object of this invention is to construct a target which will produce a constant display of passing objects to the practitioner, said objects or aims being hinged, so that they will be turned down, when hit; but after being thus turned down, they will be automatically set up before they are again exposed to the view.

STEAM WHISTLE.—Bernhard Weinmann, Cincinnati, Ohio.—This invention relates to a new steam whistle, which is so arranged that the sound produced in it can be regulated at will. The invention consists in arranging either one or both ends of the tube of a steam whistle adjustable, so as to thereby make the length of the tube variable.

TURBINE.—Albert M. Maynard, Savoy, Mass.—The nature of this invention relates to those horizontal water wheels known as turbines. It consists in the peculiar V-shaped formation of the turbine buckets, arranged on the inner side of a cylindrical box, in combination with a diaphragm through which the shaft passes, together with other devices perfecting the whole.

BRIDLE BIT.—W. F. Clark, Hagaman's Mills, N. Y.—The object of this invention is to provide a simple bit and bridle for horses, which combines several advantageous features, each of which are herein duly set forth.

SPINNING JACK.—Jacob Sands, Waterloo, N. Y.—This invention consists in an arrangement of mechanism for automatically changing the friction belt, whereby the carriage is made to effect the said changes.

HORSE BRUSH.—Amos W. Brown, Lansingburgh, N. Y.—The object of this invention is to furnish a flexible back to a horse brush that the brush may be brought to conform to the animal's body upon which it may be used, and thus cause all the bristles to bear and operate in the rubbing process. It consists in a jointing to the back of the brush and connecting the jointed parts with a steel plate or spring, or by suitable hinges in combination with a spring.

APPARATUS FOR HOLDING SHEEP.—G. D. A. Krigbaum, Zanesville, Ohio.—This invention consists of a bench provided with hinged legs or legs otherwise adjustable connected to it, and with four notches, two in each edge, about the size of the legs of the sheep above the ankles; and also with notched levers which are pivoted to the bench, one to each notch in the bench, so that the notches of the levers are co-incident with those of the bench. The sheep is placed upon his back under the bench and one leg

secured in each notch by the levers which may be held in position by pins or otherwise.

PROCESS FOR DYING AND RECTIFYING COPAL VARNISH.—Desso Duduit, New York City.—The object of this process is to clarify or rectify copal varnish and also to give it in a few hours that peculiar quality which renders it suitable for being used and which previous to my invention required to be "aged," that is to say, to stand from eight to ten months to allow this quality or change to be obtained spontaneously.

WATER WHEEL.—Vincent M. Baker, Preston, Minn.—This invention relates to a new and improved horizontal water wheel, and of that class in which power is obtained both from the percussive and resetting force of the water. The invention consists in a novel construction of gates and chutes and in a peculiar form of bucket, whereby several advantages are obtained.

BEEHIVE.—J. H. Thurston, Rainsborough, Ohio.—This invention relates to a new and useful improvement in the construction of bee-hives, whereby a perfect ventilation is obtained and the hive kept dry during the winter season—free escape of the moisture exhaled by the bees being allowed, and consequently the condensation of the same on the walls of the hive, which is so destructive to bees in a closely confined hive, avoided. The invention also relates to a peculiar construction and arrangement of the bee entrance of the hive, whereby the bees are enabled to protect themselves against the encroachments of the bee-moth.

WIND WHEEL.—R. Waite, Blue Earth City, Minn.—This invention consists in a horizontal wheel having a spiral tapered vane of varying twist, enclosed in a correspondingly tapered case provided with bell mouths at each end, and with the means for regulating the passage of air at the receiving end or shutting it off altogether.

ANTI-FRICTION WASHER.—U. H. Reed, Jeremy Lake, and Luther Sison, N. Easton, Mass.—This invention consists of a washer composed of two rings and a tubular section, one of the said rings and the tubular section formed to have an annular recess, when joined together, which is filled with spherical balls, which take the pressure of the screw or nut from the other ring which is held in contact with the balls by an outer annular projection, taking behind an inner annular projection of the tubular section, and which is free to turn on the balls.

BED BOTTOM.—Gustavus Reneky and Samuel Kiess, Edgerton, Ohio.—This invention consists in the manner of securing the springs to the frame; also, in the manner of securing the slats to the springs; also, in a manner of arranging some of the slats to economize the use of springs and in the arrangement of the parts forming the frame.

GARDEN ROLLER.—James B. Brown, Peekskill, N. Y.—The object of this invention is to so construct a garden roller, in which weights are suspended from the axle, that the said weights can be readily taken off and replaced whenever desired, so that the roller can be made more or less heavy at will, according to the kind of work to be done.

ATTACHMENT TO GLASSES AND TUMBLERS.—Johann Winkler, Hudson city, N. J.—The object of this invention is to prevent the froth of effervescent liquids, such as "white beer," soda waters, etc., from splashing into the face of the drinker, and to allow the real liquid to flow from the glass without being mixed with froth.

WATCH ESCAPEMENT.—Julius Hietel, John Wenzel Hietel, and John Loomis Gessler, Philadelphia, Pa.—This invention relates to a new manner of constructing the lever of an escapement, and consists in the application and arrangement of a self-regulating spring lever, which will, when the watch is shaken or violently agitated, allow the ruby pin to pass, and which will therefore permit the balance to turn freely under the influence of such shock or motion. The object of the invention is to prevent the breaking of the ruby pin, which in ordinary lever escapements is frequently the case, and to still, at the same time, avoid the complications of the chronometer escapement in which the same freedom of the balance is provided.

HARNES TREE AND PAD.—W. A. Sharp and John A. Shannon, Tama City, Iowa.—This invention consists of a tree or yoke made of wood or other suitable material sufficiently arching to bridge the back of the animal, and adjustably connected at each end to pads of improved construction.

LANTERN.—George W. Putnam, Peterboro, Town of Smithfield, N. Y.—This is a useful invention for travelers and others. It burns a piece of full-sized candle, enough to last two and a half hours. It is provided with a magazine which carries extra candles and matches. This magazine draws out behind when the lantern is in use, and is pushed in when the same is closed. The whole thing is quite compact and strong.

WINDMILL.—Charles Goodwin, Beardstown, Ill.—This invention consists in so arranging the wheels upon the shaft of a windmill, with reference to the other parts, as to cause it to act as a vane or tailboard. Also, in providing a vane in front of the wheel, above the shaft, and at an angle with it, to prevent the resistance of the wheel on the vertical shaft from working the wheel edgewise to the wind, and also in providing the wings with springs which will allow them to open when the wind blows hard, and close again when it subsides.

BUTT HINGE.—William Wells, Ashtabula, Ohio.—This invention relates to an improvement in butts for hanging doors and gates, and for similar uses, whereby such doors or gates are made self-closing by the action of a spiral spring.

APPARATUS FOR BURNING PETROLEUM.—Louis Verstraet, Paris, France.—This invention relates to improvements in the use of petroleum, or other mineral oils, for fuel for generating steam in steam boilers, and for other purposes.

FAN BLAST PORTABLE FORGE.—John B. Bolinger, Detroit, Mich.—This invention relates to the means employed to supply the air blast to a portable smith's forge.

BURGLAR PROOF LOCK.—William F. Ensign, New York city.—This invention relates to a new and improved lock of that class which are provided with a series of circular tumblers having notches or gateways in their peripheries to receive a stump and admit of the bolt being thrown back.

FRUIT BASKET.—Charles Moore, Stratford, Conn.—This invention relates to a new and useful improvement in the construction of fruit baskets such as are used for carrying small fruit, berries, etc., to market. The object of the invention is to obtain a basket which may be manufactured cheaper, and be far more durable than the various wooden baskets now in general use.

LOCK.—Amos S. Blake, Waterbury, Conn.—This invention relates to a new and improved lock, and is designed to supersede the various locks used for freight and baggage car doors, and the ordinary padlock generally, as this invention is applicable in all cases where the ordinary padlock may be used. The object of the invention is to obtain a lock which may be used in all cases where the ordinary padlock may be applied, and without the liability of being injured by water getting within it, or being rendered inoperative or incapable of being opened or unlocked on account of ice—objections which attend the use of the ordinary padlock.

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 \$10 a line, under the head of "Business and Personal."

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

W. T. H., of Wis.—The trouble with your microscope is undoubtedly imperfectness in the lenses.

J. T. E., of Mich.—Shellac varnish made with alcohol, is a good preparation to prevent iron from rusting, but it will not stand wear neither will any other varnish.

E. R., of N. Y.—Stains obtained in making cider and paring apples may be removed from the hand by lemon juice, or citric acid, obtainable at any drug store. We know of nothing that will prevent rubber

boots from cracking, but they may be mended by the use of rubber dissolved in benzine.

E. J. N., of Cal.—To separate gold from copper, dissolve in nitro-hydrochloric acid, (*aqua regia*). Precipitate with a solution of protosulphate of iron; the precipitate washed and fused will be pure gold.

J. A. S. of Texas.—We have never had any trouble in keeping our razors in order by the use of an ordinary strap. If you are a barber by trade, and have not acquired the art of keeping your razors in condition, we do not think printed instructions on the subject would be of any value.

P. C. C., of Pa.—"If a boiler with pressure of steam at 30 lbs. to the square inch be heated until its pressure is 100 lbs., has the last mentioned steam less moisture in it, and if so has part of the steam first mentioned (30 lbs) been condensed by additional pressure back to water?" In reply we ask if a bladder be full filled with air and then heated until entirely filled is there more air in it when at the point of bursting than when the bladder was flaccid? In other words, do you in generating steam from water expand the water or the gaseous products of water and heat combined? Suppose you pass your steam at 30 lbs. pressure into a heater having no water, as is done every day in hundreds of boilers, cannot you get the heat of 338° Fah. and the consequent pressure of 100 lbs? In other words, do you know what is meant by dry steam?"

J. W. C., of N. Y.—"I inclose a diagram representing the half of a revolution of an 18-inch crank and ask why, if the ordinates on an indicator card represent the power exerted by the engine, this does not represent the effective length of a crank of 18 inches; the ordinates being measured the same as in an indicator diagram using, however, a common scale rule? If they do then there is a gain in the use of the crank." The indicator is in no sense a crank. It represents the action of a reciprocating body, and even if the ordinates used in measuring the stroke of an engine and the half revolution of a crank were the same, these are all the elements the two cases have in common. The calculations necessary for measuring the proportional powers of the crank between right angles to the piston rod and the dead center have no analogy to those used in estimating the varying powers of steam at different portions of the stroke.

Business and Personal.

The charge for insertion under this head is one dollar a line. If the Notices exceed four lines, an extra charge will be made.

For a complete 10-acre fruit farm, address box 83, Burlington, N. J. Several larger farms, and easy payments.

Patent improvement for sharpening circular saws for sale. Persons buying and selling patents will communicate. D. Huffman, Luray, Va.

Parties about to buy scroll saws should examine the new patent scroll saw which was exhibited by J. W. Mount, of Medina, N. Y., at State Fair. See New York Times, Oct. 16, 1868.

To party paying for foreign patents (\$550) one-half interest. Immediate success. Sale immense. Box 2137, postoffice, Philadelphia.

Send \$1 for 12 new pictures for the zoetrope, or a stamp for complete catalogue to Milton Bradley & Co., Springfield, Mass.

A wealthy person is wanted to assist in developing several new patents. Address Rt. Rev. Adolphus E. Damas, Chief Librarian, Austin city, Texas. Postoffice box 259.

Manufacturers and machinists who want orders, read Boston Bulletin, whose reports of manufacturing news of the U. S., show who needs machinery, etc. Address Boston Bulletin. Terms \$4 a year.

For lighting street gas lamps, address the London Torch and Gas Lighting Company, 569 Broadway, New York.

For the best tin folder for turning a nice fine lock or a nice round lock for wiring. Also, Whitney's patent Tinsmith's stakes. The greatest improvement of the age. Address A. W. Whitney, Woodstock, Vt.

Peck's patent drop press. For circulars, address the sole manufacturers, Milo Peck & Co., New Haven, Conn.

The Lillingston paint, described Nov. 18, in Scientific American, can be had at 528 Water-st., New York. Address Lillingston Paint Co.

Will Ransom Rathbone, of New York, who took out a patent for a wad greaser, please send his present address to A. E., box 1760, New York Postoffice.

For descriptive circular of the best grate bar in use, address Hutchinson & Laurence, No. 8 Dey st., New York.

Hackle and Gill Pins, address J. W. Bartlett, 569 B'dway, N. Y.

For sale—Newhart & Co. plow factory, Terre Haute, Ind.

Wants to sell rights to manufacture the simplest and best cider mill made. Address H. Sells, Vienna, Ontario.

American Watchmaker and Jeweler. By J. Parish Stelle. Jesse Haney & Co., 119 Nassau st., New York. Price 25 cents.

C. J. Fay's patent water-proof roofing, Camden, N. J.

For solid wrought-iron beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for Lithograph, etc.

Portable pumping machinery to rent, of any capacity desired, and pass sand and gravel without injury. Wm. D. Andrews & Brother, 414 Water st., New York.

N. C. Stiles' pat. punching and drop presses, Middletown, Ct.

Prang's American chromos for sale at all respectable art stores. Catalogues mailed free by L. Prang & Co., Boston.

For breech-loading shot guns, address C. Parker, Meriden, Ct.

The paper that meets the eye of all the leading manufacturers throughout the United States—The Boston Bulletin.

NEW PUBLICATIONS.

READY RECKONER FOR SAWMILL MANAGERS.

We have received a chart intended for the use of sawmill owners and operators, giving the amount of lumber, in boards, joists, scantling, etc., that may be sawed from a log or bolt of any ascertained diameter. It is arranged in tabular form on one sheet, convenient for reference and handy to be posted in the mill. It has full directions for use printed on the same sheet, and is as easily understood as the ordinary chart for a screw cutting lathe. The table is the result of experience and observation by a practical sawyer, and appears to be well adapted to subserve its purpose. Copy right, secured by the author, Titus Whitmore, Yankee Settlement, Clayton Co., Iowa. Price 60 cents single. See advertisement on another page under the heading, "To Mill Owners and Sawyers."

THE ATLANTIC MONTHLY for December contains, among other excellent articles, a good one entitled "Our Painters," the second article on "Co-operative Housekeeping," "A Day at a Consulate," etc. The new volume begins with the coming January number, with promised contributions from J. Lothrop Motley, James Russell Lowell, Edward Everett Hale, James Parton, and other distinguished writers. The well-known firm of Ticknor & Fields have dissolved by the retirement of Mr. Ticknor. The successors are Fields, Osgood & Co.