Recent American and Foreign Patents.

Improvement in Revolving Fire Arm.

Otto Schneeloch, Brooklyn, N. Y.—The object of this invention is to throw as many balls of a given size as possible from a barrel of minimum weight; and this is accomplished by constructing the several bores of a triangular shape, one angle of the triangle having its vertex near the center, while the other two have their vertices near the circumference of the cylinder. These triangles may be plane or spherical, and isosceles or otherwise, since the principle involved consists in causing the balls to approximate as nearly as possible to the center of cylinder, and in the closest juxtaposition to one another. This utilizes the greatest portion of volume of the cylinder without impairing the necessary strength of the metal.

Improvement in Pipe Tongs and Cutters.

James E. Roache, New York city.—This invention relates to an adjustable and very simple instrument for clamping pipes, tubes, and other objects of varying diameters, and to means whereby the same instrument can be converted into a cutting tool for pipes and cylindrical or prismatic rods or tubes. The invention consists in the new general arrangement of parts whereby the tongs will be operated by a strong jaw resting on a lever that is vertically adjustable, and has its fulcrum on the end of a screw, so that, by turning said screw and raising or lowering the lever, the size of the tongs will be adjusted for smaller or larger articles. The invention also consists in the arrangement of a cutting tool, which is placed upon the recessed griping edge of the movable jaw, and thereby held with sufficient firmness to operate in the desired manner.

Improved Oil Cake Stripper.

Washington Hawes, Port Richmond, N. Y.—This invention consists of a revolving cylinder with one or more hooks or points in its surface combined with a table, whereon the oil cake to be stripped of its cloth covering is placed under the cylinder in such manner that one end of the cloth cover is hooked up by pins on the cylinder, and attached to it so that the revolution causes the cloth to be wound on it and stripped from the cake, which is first moved from under the roller and then over it and partly under it again, in such manner that the cloth which is wrapped over the cake endwise will be unwrapped from both sides and the ends, and the cake delivered upon the table, to be removed. The motion of the cylinder then ceases, and the cloth pulled off by hand, the cylinder being revolved by pulling the cloth An elevating device is also combined with the table for use, if necessary, in pressing the cake upon the roller, to cause the pins to engage the cloth.

Improved Rudder for Vessels.

Augustus H. Murphy, New York city.—This invention consists of adjustable bearings, with friction rollers for the rudder post, placed on the deck and adjusted around it under a collar attached to it by screws, so as to make a close bearing that will prevent lateral play, and at the same time allow it to turn freely, also so as to support a portion of the weight by the collar which, said bearings and the collar being removed, will allow the rudder to be unshipped and a new one to be shipped readily at sea, in case of necessity. The invention also consists of a rod so applied to the rear edge of the rudder in such manner that in case it becomes desirable to support the lower end of the rudder with brace chains, they can be attached above the water and afterward let down to the lower end, or, in case of shipping a new rudder, the chains, after doing service at the lower end, can be raised up to the surface of the water to be detached.

Improved Water Ram.

Christopher Hodgkins, Marlborough, N. H.—The invention consists in holding the valve beam by a slide. The two supply pipes of the ram are provided at their outer ends with valves which are suspended from a beam, for the objects specified in the letters patent of the United States numbered 119,764, and dated October 10, 1871. Instead of communicating directly with the air chamber, the pipes are in the present case separated thereform by diaphragms of leather, rubber, or equivalent fabric, made slightly bagging above the apertures of the pipes. The spring water or liquid to be raised is admitted through a pipe to a chamber, which is interposed between the diaphragms and the bottom of the air chamber. A valve closes a hole in the bottom of the air chamber. Thus it will be seen that the operating water in the pipes is separated from the water to be raised by the bagging diaphragms. The water to be raised is further separated from the discharge pipe by a suitable valve. When a valve of one supply pipe is raised, the pressure of water within causes the diaphragm above it to be swelled up, and the water in the chamber, being thereby pressed and being less elastic than the air in the air chamber, enters the air chamber, whence it escapes to the discharge pipe. The same action will be effected alternately by the two pipes, as their respective valves are closed.

Improved Wagon Brake.

Ezra T. Bucknam, Sonora, Cal.—This invention relates to improvements in that particular class of self-acting wagon brakes in which the reach passes loosely through the rear axle and permits it to move forward when the wagon is descending a hill and thus put on the brakes. The improvements consist, first, in the peculiar manner of suspending the brakes, and the arrangement of the levers for applying them; secondly, in an improved manner of securing the wagon bed upon the bolsters and rear axle bed so as to cause the full weight of the load to regulate the pressure of the brakes upon the wheels. It also relates to an arrangement of rollers or a revolving sleeve upon the front standards, for the purpose of acting in combination with the rollers on the bolster, to allow the bed to slide forward freely.

New Mixing Apparatus for Soap, Paste, Clay, etc.

James Atkiss, Brooklyn, N. Y.—This invention relates to a new machine for mixing soap, clay, paste, or other material of any kind; and consists, first, in making the rotary mixing tool, which turns within the containing cylinder, up and down, movable while being revolved, so that it will reach and agitate all the stratums of the contents of the cylinder. This adjustment is done by mounting the rotary mixing tool upon a spindle which has a screw thread cut upon it beneath he containing vessel, and which passes through a female screw secured in or under the bottom of said vessel, so that when the spindle is revolved it will be screwed up or down, as the case may be. A sleeve embraces the said spindle benea h the containing vessel, and is connected with an arm of a rock shaft, from which another arm connects, by a rod, with a weighted lever, so that as the sleeve, by the rotation of the spindle, is moved up or down the rock shaft will be vibrated, whose connection with the weighted lever will cause the same to first swing in one direction and then in the other. This connection of the weighted lever serves to regulate the position of several gear wheels, by which motion is transmitted from the driving shaft to the aforementioned screw spindle. The object of this connection is to reverse automatically the motion of the spindle without reversing the motion of the driving shaft; and this object is attained by the aforementioned connection of the rock shaft with the weighted lever; for when the sleeve has been worked up to its greatest hight the weighted lever will be projected to one side and tipped to carry the opposite gear in connection with the driving shaft; and when, on the other hand, the sleeve has been carried down to its greatest extent the weighted lever will be once more tipped in the opposite direction to reverse the transmission of motion from the driving shaft. Thus it will be observed that the invention appertains not only to the mixing tool and mode of turning and operating the same, but also to the means of regulating the direction of motion transmitted from the driving shaft to the screw spindle.

Improvement in the Manufacture of Horse Shoe Nails.

Hazen R. Underhill, Derry, N. H.—This invention has for its object to furnish improved horse shoe nails, stiffer, smoother, and more uniform than nails made in the ordinary manner, being thus more readily driven and less liable to injure the hoof, and which shall at the same time be no more expensive; and it consists in the mode of forming horse shoe nails, that is to say, by rolling, forging, or swaging them into round form, and then flattening them with a drop hammer; and in horse shoe nails made with rounded edges and flat sides.

New Process of Treating Grain.

Alexandre Sezille, Paris, France.—Heretofore grain has been prepared for bread making by grinding. This grinding allows but about eighty per cent of the grain to be utilized, leaving twenty per cent of bran and residuum. his eighty per cent of flour allowing a high yield of forty per cent of white bread, produces one hundred and twelve kilogrammes of white bread, out of one hundred kilogrammes of grain. By this process, without grinding a yield of from one hundred and forty-five to one hundred and fifty kilogrammes of white bread is obtained out of one hundred kilogrammes of grain —a yield exceeding the ordinary one by thirty-three per cent. The grain is slightly wet with two or three per cent, according to its dryness, of water heated to 30° or 40 centigrade. Steam may be employed if desired. This wetting is made mechanically and gradually as the grain is required for decortication. In three or four minutes after being moistened, the pellicle of the grain expands and is ready for decortication, for which any suitable apparatus may be employed. The grain after being moistened should not tand more than fifteen minutes before being submitted to the decorticating process, as the dampness, instead of being confined to the pellicle, would begin to affect the bodies of the kernels and make the decortication more difficult. The grain when properly decorticated can be preserved for any desired length of time, to be afterward converted into paste, when required. To remove the coloring matter of the grain, which is located directly under the epidermis, and which, upon fermentation, produces the brown bread, the decorticated grain is steeped in a bath of water heated to 80° centigrade for half an hour, by which time the temperature of the water has fallen to 46° or 40°. The water is then decanted, and new water of the same temperature—namely, 45° or 40°, and no more—is put on the grain three or four times in the space of three or four hours. By this time the grain has absorbed enough water to be easily converted into paste, which is done by passing it twice through cylinders similar to those used by chocolate dealers. The paste thus obtained is ready for fermentation, and has then only to undergo the ordinary baking process to become good bread.

New Apparatus for Graining Gunpowder.

Paul A. Oliver, Wilkesbarre, Pa.—This invention has for its object to facilitate the reduction of gun and blasting powder into grains of the requisite size and configuration; and consists principally in the use of a series of reciprocating knives, which cut the cakes of powder into pieces and gradually reduce the pieces until the desired degree of fineness has been obtained, all without creating waste in the form of dust to such an extent as the same is being created by the devices now in use. The invention also consists in the combination with said reciprocating cutters of adjustable feed devices for moving the powder to be cut, and of means for cleaning the knives of any powder that may adhere to them.

Improvement in Oyster Tongs.

Isaac Smith, Bruceport, Washington Territory.—This invention consists in providing the head of a pair of oyster tongs with transversely perforated ribs so as to render the bars more readily and conveniently detachable.

Improved Cultivator Plow.

Cealy Billups, Norfolk, Va.—This invention relates to double mold board or shovel plows, and consists in constructing the wings not only with a perforation by which they may be bolted to the shoe, but also with a separate stud on the inside of each shank, which serves to take the strain off the screw and hold the wing securely in position. The ratchets or notches on the side of the shank and shoe, by which this object was accomplished in the improved cultivator plow, patented May 7th, 1872, are somewhat difficult to cast, and hence more expensive than the simple stud under the present plan, while parallel series of perforations allow the required adjustment. The invention also consists in the mode of giving adjustment to the pitch of the plow by a sliding slotted wedge arranged between the standard and beam, whereby, by simply loosening a single clamp screw and moving the wedge in either direction, any desired degree of pitch may be obtained. The invention also consists in a new mode of arranging the handles with respect to the plow irons by attaching them about midway between sole and beam, and so that they will be brought into an oblique plane passing under the shovel or plow. This arrangement is found by practical experiment to give the plowman an easier and more complete control of the plow.

Improved Manufacture of Jewelry.

Shubael Cottle, New York city.—This invention consists in a new method of forming an inner barrel on a jewelry base, and in certain novel means by which it is effected with great celerity and economy.

Improved Piano Action.

John Shandelle, Huntsville, Ala.—This invention has for its object to produce a pianoforte hammer head, which shall present a thin and elastic surface to the string and retain its original elasticity after long and constant use, and the invention consists in constructing the hammer head of india rubber, and in providing the same with an opening near its tip or striking surface.

Improved Smut Mill.

Charles Kuderli, Waumandee, Wis.—This invention relates to a new smut machine in which a vertical shaft, having a series of horizontal disks and vertical wings, is caused to revolve within an upright cylinder of perforated material having horizontal inwardly projecting ribs, so that the disks and wings will throw the wheat or other grain outwardly against the cylinder, while the ribs of the latter will again throw it in toward the shaft, thus reciprocating the grain and insuring the desired result.

New Mixing and Grinding Apparatus for Ink, etc.

Joseph Martin, New York city.—A suitable vessel, the interior of which is made in the form of an inverted truncated cone, forms the outer part of the grinder. The inner part of the grinder is also made in the form of an inverted truncated cone, and fits into the interior of the vessel, space being left between the bottoms of said parts for the ink and paint to pass from the center of the core to its circumference. Upon the top of the core is attached gearing connected with the driving pulley. A tube extends down through the center of the core. To the upper end of the tube is attached a vessel in which the ink and paints are mixed. A post of a smaller diameter than the interior of the tube passes through the core. The lower end of the post is secured to the bottom of the vessel, and its upper end projects into the mixer. A valve retains the ink or paint in the vessel until it has been thoroughly mixed. To the upper part of the post is rigidly attached a cross bar or scraper, in such a position as to be close to the bottom of the vessel, so that the ink or paint may be thoroughly mixed before it is allowed to flow down into the grinder. The valve moves up and down upon the post. As the ink or paint passes down through the tube into the space between the bottom of the core and the bottom of the vessel, it is forced, by its own gravity and the centrifugal force engendered by the revolution of the core, to pass up between the outer surface of the revolving core and the inner surface of the stationary vessel, being thoroughly rubbed and ground during its passage. In the upper edge of the vessel is a spout, through which the ground ink or paint is discharged into a receiver.

Improved Car and Cable Coupling.

Winfield S. Nearing, Morris Run, Pa.—This invention relates to a new kind of clamp which is to be attached to railroad cars or other moving devices for connecting them to wire or other cables that are in motion, so that whenever such car or device is by the clamp connected to the cable it will be propelled by the same, while it will remain at rest as soon as disconnected. The invention consists in constructing a clamp of two pivoted jaws which are held apart by an intermediate spring, and can be drawn together against the rope or cable by a cam attachment to a lever that turns on a pin projecting from one of the jaws.

Improved Insect Trap.

Japhthah W. Stell, Gonzales, Texas, assignor to himself and William B. Cavitt, of same place.—This invention has for its object to furnish an improved ant trap which shall be so constructed that the ants can get into it readily, but can not get out, so that they may be easily destroyed; and it consists in the ant trap formed of the ring plate or disk, the two inclined plates roughened upon their outer sides and smooth upon their inner sides, and the two inclined plates smooth upon both sides.

Improved Cultivator.

Frederick W. Tolley, Coxsackie, N. Y., assignor to himself and A. V. D. Collier, of same place.—This invention has for its object to furnish a malleable or wrought iron plow standard, which shall be so constructed that it will not clog or choke with sods, grass, weeds, or other obstructions, and to which the plow plate may be easily and quickly attached and detached. By suitable construction, when the cultivator is being used, the pressure of the ground will tend to force the plow plate upward, and thus more securely fasten it in place.

Improved Wash Boiler Attachment.

Edward Choate, New York city.—This invention has for its object to furnish an improved automatic circulator for wash boilers, and other boilers and vessels in which steam is used as a cleansing, bleaching or cooking agent, and it consists in the flanged plate provided with a discharge pipe, and having one or more openings formed in the flange at the end of the plate furthest from the pipe, and half an inch, more or less, below the said plate.

Improved Wagon.

John N. Stewart, Belfast, Me.—This invention has for its object to improve the construction of slung bodied carts, in which the cart body rests upon springs which rest upon the middle part of a crank axle, so that the cranks of the axle may be securely supported in position; and it consists in the slotted stakes in combination with the bends or cranks of the axle, and with the cart body resting upon springs attached to said axle. By this construction the axle will be held firmly in position, however much the body may move up and down upon the springs.

Improved Turn Table for Railroads.

John Enright, Cleveland, Ohio.—The invention consists in a turn table for railroad cars or locomotives made in two parts, constructed and applicable to each other so as to exclude dust and prevent obstructions to its easy movement. It also consists in forming a step and groove enlarged to receive lubricating material.

New Steam Coupling for Heating Railroad Cars.

Wm. N. McDuffey and Benjamin F. Jaques, Petersburg, Va.—The invention consists in a coupling wherein the steam inlet and outlet valves and the grapples which hold together the two parts are operated simultaneously by the same device and by the same movement. The invention also consists in combining, with the heating pipes or coil, a pipe which carries the condensed steam back to the feed water chamber, tank or vessel connected therewith

New Machine for Bending Bars and Tubes.

Amos Harris, of Minneapolis, Minn., assignor to himself and Franklin L Putnam, of same place.—This invention relates to an improved apparatus for straightening or bending metal bars, shafts, tubes, rods, etc.; and it consists in the combination of a hook, a screw, and a bearing plate, forming a clamp adapted to control wearing substances on opposite sides of an article to be bent or straightened, and can be used to draw such surfaces nearer together or spread them further apart until the desired effect has been obtained. The invention is applicable to all shafts, etc., while the same are in lathes or hung in bearings in shops, or in any other position whatever.

Improved Elevator.

Andrew Blass and David Brown, Brooklyn, N. Y.—This invention relates to elevators in hotels and other buildings, whether used for elevating passengers, baggage, or merchandise, and consists in one or more plates or shutters connected by chains or ropes with the bottom of the car or freight platform, so as to partition off and close the elevator well when the car or platform is raised, thus preventing danger to life from falling down the well, and stopping the draft of air and closing the communication by which fire is apt to spread from one story to another.

Improved Oscillating Chair.

William T. Doremus, New York city.—This invention has for its object to furnish an improved oscillating chair, and consists in the combination of one or more hinges and one or more rubber blocks with a pedestal and chair seat, and in the combination of a stationary nut, hollow screw, rigid plate, hinged screws, and rubber block or blocks with each other and with the pedestal and seat of a chair.

Improved Saw Filing Apparatus.

Frederic E. Frey, Bucyrus, Ohio.—This invention relates to a new grinder machine for sharpening or gumming saws, circular or upright, sharpening molding bits, or other articles for which emery or grinding wheels are used The invention consists more particularly in hanging the emery wheel in a jointed frame, which, by virtue of its several joints, is under full and absolute control of the operator, who can therefore set and apply the grinding wheel at any suitable angle to the article to be sharpened.

Improved Reflecting Lamp Chimney.

Adam Kunkle, Birmingham, Pa.—This invention has for its object to furnish an improved lamp chimney which shall be so constructed as to throw a stronger light and be less liable to break than the ordinary glass lamp chimneys, and which will not require a shade when the lamp is used for reading, sewing, and similar purposes, and which shall be easily cleaned. The chimney is a cylinder of suitable material, with its axis horizontal, in the open ends of which are placed lenses.

Improved Nut Lock.

Bernhard Fürst and Peter Oettinger, Lacon, Ill.—This invention relates to a new nut lock in which a springdog fits into a recess or chamber of the nut to bite against vertical grooves or creases in the screw.

Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

From January 1 to January 2, 1873, inclusive.

CRUSHING STONE, ETC.—A. H. Smith, Brooklyn, N. Y.

DIES.—C. F. Wilson, Northbridge, Mass.; S. H. Miller, J. E. Folk, Brooklyn, N. Y

HORSE BRUSHING MACHINE.—J. H. Small, Buffalo, N. Y.

PAPER RULING MACHINE.—E. D. Averell, New York city.

PREPARING COTTON.—T. C. Craven, Hudson, N. Y.

SADDLE CHAIN.—W. B. McClure, J. C. Graham, H. O. Claughton, Alexandria, Va

SPINNING MACHINERY.—O. Pearl, J. B. Battles, Lawrence, Mass.

NEW BOOKS AND PUBLICATIONS.

THE NATIONAL BUILDER, a complete work on Constructive Carpentry—for the use of Architects, Carpenters, Builders, and Stair Builders. By James H. Monckton. New York: Orange Judd & Co., 245 Broadway. Illustrated. Price, $12.

A finely printed quarto volume, forming an exhaustive treatise on the subject to which it is devoted. The simplest methods of finding all joints and geometrical forms are given, including splayed work, groined ceilings framing, roofing domes, niches, raking and level moldings, etc. The topics of stair building and hand railing are treated in an entirely original and excellent manner. The work contains ninety-two handsomely executed plates, with one thousand figures printed in colors, presenting designs for stair cases, newels, balusters, and other carpentry. The trades and professions for which this book is written will find in it a great amount of valuable information condensed into the smallest compass.

THE OWENS COLLEGE JUNIOR COURSE OF PRACTICAL CHEMISTRY. By Francis Jones, Clinical Master in the Grammar School, Manchester, England. With a Preface by Professor Roscoe, F. R. S. Price $1.25. New York: Macmillan & Co.

This is an admirable text book, written with the careful attention to detail necessary in an elementary work. Although intended, as its title page indicates, for the use of beginners, it may be read with profit by all students of physical science. Any one who becomes thoroughly acquainted with the contents of this little book will have a well grounded knowledge of the principles of the chemical world. In tuition, the catechism at the end of the work will be found exceedingly valuable.

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A substantial publication, illustrated with numerous engravings, among which we observe Mr. James Short's loom, the illustration and description of which are extracted from our pages. The magazine is well rinted, and like most English industrial publications, has its advertising pages well filled.