

IMPROVED ENVELOPE OPENERS.

John La Blanc and Xavier St. Pierre, Ophir City, Utah Ter.—The device, which is attached to the end of a pencil, consists of a blade enclosed between guides of india rubber. The latter serves as an eraser, and, when acting as a guide for the blade, adapts itself to envelopes of different thicknesses.

IMPROVED METHOD OF CONCENTRATING TAILINGS FROM QUARTZ MILLS.

Francis E. Mills, Virginia City, Nev.—This invention consists in first causing the mingled sands, sulphurets, quicksilver, and water to flow through a wide and shallow sluice with small transverse slits, called riffles, cut through its bottom. Each riffle opens into a tank filled with standing water. In passing over these water riffles, the coarser and heavier sulphurets and globular quicksilver sink through the water spaces into the tank and are saved, while most of the sand and some of the exceedingly fine and light sulphurets and minute particles of floured quicksilver are carried on through the sluice by the current, which then flows into another sluice of reverse form. Here the sands gradually arrange themselves into different horizontal strata, according to the coarseness of the grains, the fine sulphurets, minute particles of quicksilver, etc., finding their way to the bottom of the sluice among the moving grains of the coarsest sand. Near the bottom of this deep narrow sluice, at the lower end, is inserted a very thin sheet of metal, which divides the running current horizontally, cutting off the lowest stratum of coarse sand, containing the fine sulphurets, etc., from the main body of the flowing sands above it without disturbing the current, so as to discharge the former into a separate vessel. The very fine sulphurets, etc., are separated by passing them through a fine screen.

IMPROVED MUSIC RACK FOR UPRIGHT PIANOFORTES.

Stephan Brambach, New York city.—This is a swinging desk or stand, arranged at the front of an upright pianoforte case, provided with a hinged base strip and extension legs for supporting jointly the music book and holding desk in inclined position.

IMPROVED PAPER BOX

David K. Osbourn, Baltimore, Md.—This is a neatly shaped box, formed of a single piece of paper and provided with a rear extension, which serves as a cover and as a means of suspension. It also has suitable stiffening pieces within.

IMPROVED SLEEVE ADJUSTER.

Alfred Perigo, New York city.—In order to hold the cuffs of a shirt away from the hands, while the latter are engaged, this inventor proposes a button-holed tab on the sleeve and a button on the shoulder of the garment. The cuff can thus be fastened up without first removing the coat.

IMPROVED DUMPING DEVICE FOR FILLING GRAVES.

John W. Var nice, Crawfordville, Ind.—This is a device for receiving the soil thrown up in digging graves and dumping it all at once into the grave to fill the same. It consists of a box provided with suitable doors, which stands beside the grave and is filled with earth as the same is excavated. When it is desired to replace the soil the box is tilted, when arms strike against latches which hold the doors, open the latter, and thus allow the earth to be discharged.

IMPROVED SIGN AND ORDER SLATE

Joseph S. Gold, Washington C. H., Ohio.—This invention is designed for the convenience of professional men, but may be used by all who may find it a convenience; and it consists of a sign having on its back side a sliding slate, which slate is raised by means of a cord, and is covered, when down, by a self-acting lid.

IMPROVED TOBACCO DRYER.

Henry R. Farmer, Ringgold, Va.—This inventor proposes a heating apparatus for buildings, in which tobacco is stored in order to cure the tobacco by artificial heat radiated directly from pipes made to conduct the warmth about the lower part of the room from a furnace outside provided with regulating valves or gates. A valve or register, located directly over the hot air pipes, so tempers the heat at the entrance into the barn that the building is protected from burning.

IMPROVED WIRE FENCE STAPLE.

Homer S. Smythe, Aurora, Ill.—This inventor relates to certain improvements in staples for wire fences, and it consists in a staple having a short prong and a long prong, the latter of which terminate at one end in a chisel point, and at the other in a beveled head, and is provided with barbed notches to hold it more securely in place.

IMPROVED CARTRIDGE BELT.

Major David Taylor, Paymaster U. S. A., Leavenworth, Kan.—This invention consists in arranging button holes on a soldier's cartridge belt between sections thereof, making slots near the ends, using clips of the same length as the cartridge or as the width of the belt, and in making the clip with a point and so constructed as to hold the cartridge with muzzle downwards. The first improvement allows a pistol holder or other attachment to be readily applied or detached, the second allows the buckles and clips to be fastened by reversing the end of the holding strap, the third gives a more stable and efficient support to the cartridge, and the fourth allows the clip to extend above and below the cartridge to give the former a greater bearing on the latter.

IMPROVED CARTRIDGE.

George Smith, Brookly, N. Y.—This is a strong paper or straw-board tube or shell, in which the charge is confined by a metallic wad at each end. The wad at the outermost end retains the charge without necessitating the folding-in of the outer end of the shell, and, by the explosion, its edges are expanded to such extent that it forces the shell out of the gun. The wad at the inner end is forced out of the shell and left in the gun, to be dropped out after firing.

IMPROVED RAILWAY TELEGRAPH.

Baylus Cade, Scott Depot, W. Va.—The object of this invention is to reduce the risks incident to life and property upon railway lines resulting from an ignorance on the part of the train men of the condition of the road and the position of other trains thereupon. The invention has in view the placing and keeping of all of the trains upon the route in a single telegraphic circuit which is continuous from one end of the line to the other, and is never broken, whereby each moving train is in itself a station which is in communication with all the other trains as well as the terminal and intermediate fixed stations, by means of which arrangement one train may telegraph to the train preceding or following it, or to any one of the fixed stations, and the messages sent from one point to another are reproduced in the usual way upon all of the intermediate trains and stations.

IMPROVED TAILOR'S MEASURE.

Friedrich H. Ullrich, New York city.—This is an improved tailor's measure, by which the different dimensions of the body can be taken quickly, conveniently, and accurately, to enable the tailor to produce a good fit, and furnish a basis for an improved system and apparatus for drafting the patterns. It consists of a graduated belt, with suitable back clasp and sliding hip clasps, to which a detachable measure is hung for taking the different measures required.

IMPROVED TEMPORARY BINDER.

Charles D. Lindsey, Cincinnati, O.—In this device, a notched spring plate is employed to secure or hold one or more fasteners in place upon a suitable block. The paper fasteners are so clamped as to be supported firmly in an erect position.

IMPROVED SAUSAGE STUFFER.

Hugh P. Rankin, Allegheny, Pa.—This invention relates to certain improvements in sausage stuffers, and it consists in a barrel or cylinder pivoted upon trunnions on a framework, and provided with an adjustable nozzle. In said barrel moves a piston, which is rigidly attached to a screw-threaded rod, which said rod is actuated longitudinally in the barrel by means of a bevel gear which operates through a revolving sleeve and an adjustable screw-threaded segment. The latter, by engaging the threads of the piston rod, converts the rotary motion of the sleeve into a longitudinal rectilinear motion of the piston, and a stud upon the framework engages a longitudinal groove of the piston rod to keep the latter from turning.

IMPROVEMENT IN WEATHER VANES.

William H. Pickering, Boston, Mass.—In looking at a weather vane standing "end on," it is difficult to tell whether it is pointing toward or from the observer. To show this, the present inventor suggests attaching to the vane pivot two arms inclined downward, one of which carries a ball, and the other a piece of glass set in a frame. It is then easy to tell, by the position of the ball to the right or left of the vane, in which direction the latter is pointing.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

IMPROVED TYPE WRITING MACHINE.

Philander Deming, of Albany, N. Y.—This invention consists, first, in printing each word with an initial letter different from the others composing it, such initial standing in lieu of a space to distinguish the beginnings of words; and secondly, in the manner of grouping the different sets of letters to admit of the most rapid manipulation of the keys.

IMPROVED RAIL JOINT.

Hermann Weber, New York city.—In this device an auxiliary fish plate is placed upon the bolts, which are provided with wedge-shaped notches on their upper and lower sides, and when moved longitudinally the edges of said plate enter the notches in the bolts, and thus lock the said bolts in place. The plate is made narrower than the regular fish plates, and in its upper edge is formed a number of teeth to receive a pawl, which holds it from working back when it has been driven into place.

IMPROVED WATER WHEEL.

Isaac Mallery, Dryden, N. Y.—This is a turbine wheel having the chutes divided horizontally. The case and the chutes are so arranged that the mouths of the latter open at the top of the case instead of the sides. A horizontal gate is arranged on the top plate, which may be adjusted at any time to close tight without too much friction.

IMPROVED SMOKE STACK.

Darerrick Allard, St. Albans, Vt.—The invention consists mainly in the arrangement of a beveled ring, in connection with the vertically adjustable tube, whereby the blast is prevented passing into the space between said tube and the casing of the stack, and also whereby cinders or sparks are deflected into the main ascending current, when they fall into said space.

IMPROVED WATER WHEEL.

James J. Bourgeois, St. Cloud, Minn.—This invention relates to certain improvements in water wheels; and it consists principally in the peculiar construction of the gate or cut-off. Two horizontally moving slides are provided with rack bars with pinions between the same, so that the slides move in unison in opposite directions, to open or close above the center of the wheel.

IMPROVED ORE CONCENTRATOR.

James V. Pomeroy, Col. Ter.—This inventor now improves on the ore concentrator patented to him under date of May 11, 1875, so that the operation of the same is more effective, and the same can be worked with or without the concentrating pans. The supporting table is constructed with a step-shaped bottom, that forms a series of levels for the concentrating pans, the steps and head walls producing a wave action of the water in each level or pan. The center of gravity of the table may be changed, and a heavier or lighter shock be imparted to the same, according to the quality of the material. A level of greater length is arranged at the head of the table, and on the same is placed an endless belt, on which the pulp is fed through a hopper that is hinged at the head of the table, and seated watertight on the belt.

IMPROVED STEAM PLOW.

B. S. Benson, Baltimore, Md.—This invention contemplates the manufacture of a steam plow which shall work with revolving blades that cut the soil with fingers, separate the soil from the growth with pickers, and carry the pulverized earth to the rear. It is also provided with a sifter in the rear and a box to receive the grass, weeds, and roots; also rear caster wheel journaled in a pulley ring to govern the direction of travel; also an attachment to this wheel, consisting of a detachably clamped frame, so that it may be adjusted to suit the changing line of gravity on lands of different inclination; also with a device for holding up the plows in traveling from field to field, or to graduate the depth at which they shall work.

IMPROVED FURNACE FOR STEAM BOILERS

Charles E. Robinson, Brooklyn, N. Y.—This invention relates to improvements in furnaces for burning gases of petroleum or other liquid hydrocarbons. The attempts heretofore made to utilize petroleum as fuel for this purpose, more especially in locomotive boilers, have failed of the desired success chiefly because the combustion of gas or gases derived from said fuel has been attempted at too low a temperature; and secondly, for want of sufficiently free admission of air to the furnace chamber. The difficulties are overcome in this invention by dividing the furnace chamber into two parts, by means of a perforated diaphragm, the same thus forming the top of the chamber in which the combustion is begun, and the bottom of the chamber in which it is perfected. The bottom of the primary combustion chamber is formed by a series of inclined perforated plates, which are joined at their upper and lower edges, and by which the air is admitted in the requisite quantity and in a highly heated condition.

NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

IMPROVED SURFACE PLANER.

Wm. C. Margedant, Hamilton, Ohio.—This invention relates to certain improvements in that class of surface-planing machines which plane both above and below the cutter head; and it consists partly in making the cutter head and its upper adjustable table together adjustable above a lower stationary table. It consists more especially, however, in the construction of the cutter head, which is made with three straight cutting knives, arranged in such a manner as to produce a shear cut. To produce this result, one end of

the cutter head shaft is made larger than the other, and the end of the knives upon the small end of the shaft are correspondingly advanced to compensate for the first inclination, thus producing, by the double angle, a shear cut with a straight knife.

IMPROVED EXTENSION TABLE.

Ansel D. Jones and Samuel L. Jones, Kirksville, Ky.—These inventors propose to connect the legs of the table to a lazy tongs frame for extension purposes. They consider that the frame can be constructed cheaper than can the usual tongued and grooved sliding sections, while its adjustment is easier.

IMPROVED HINGE.

Frederich Toedt, New York city.—This is an improved butt hinge for doors of all kinds, by which the same are raised when being opened, and closed by their own weight, dispensing thereby with the threshold. The hinge has a wing plate with a spindle and fixed inclined washer, on which the correspondingly inclined sleeve end of the other wing plate slides, raising thereby the door. The advantage of the hinge is that it allows the laying of carpets from one room to another on an even surface.

IMPROVED SOFA BEDSTEAD.

John B. M. Fifield, Philadelphia, Pa.—This bed sofa is so constructed that it does not require to be moved away from the wall when it is to be arranged as a bed; it may be changed from one arrangement to the other with one movement, and it is so constructed that, when arranged as a bed, the cushions may be covered with ticking, and thus kept clean. The back is made in two parts, and so arranged that the lower part may be swung forward to enable the upper part to be turned down into line with the seat to form a part of the bed bottom. A piece of ticking is attached to the rear of the seat and to the back, so that, when the latter is turned down, the cloth becomes extended over the entire bottom.

IMPROVED BEDSTEAD AND MATTRESS.

John J. Bowen, Richmond, Va.—This invention relates to an improved construction of bedstead and mattress, each constructed so as to be specially adapted to the other, whereby the cost of the mattress may be considerably reduced. It consists in a bedstead having a raised head support in combination with a mattress shortened by the width of a bolster, and provided with a bolster attached to its upper head end, which rests upon the head support of the bedstead, by means of which all of the comforts of an ordinary bed are available, and the cost of the mattress lessened by dispensing with a transverse section equal to the width of the bolster.

NEW AGRICULTURAL INVENTIONS.

IMPROVED MILK COOLER.

Bruce C. Bort, Chateaugay, N. Y.—This invention relates to improvements in the milk coolers for which letters patent have been granted to B. C. Bort and T. Bryant, under date of June 18, 1872, and November 5, 1872. The invention consists of a water cooler or vat which has a hollow longitudinal partition, with entrance and exit apertures, and lateral perforated partitions, in connection with a detachable pan seated thereon. The milk pan is thus acted upon by the cold water at every part of its bottom, so that an effectual cooling of the milk is produced, while the detaching of the milk pan admits the thorough cleaning of the cooler.

IMPROVED COMBINED DRILL AND FERTILIZER.

Aladan S. Wishart, Lumberton, N. C.—The object of this invention is to provide a combined drill and fertilizer, or a drill which is convertible at will into a broadcast fertilizer. It consists in a shaft carrying feed wheels or stirrers, located parallel with the axle, and actuated through gear wheels by the driving wheels. An adjustable hopper is arranged upon the frame, so that, when it is disposed longitudinally, a single one of the feed wheels revolves in an adjustable orifice at the bottom to constitute a drill for planting cotton and other seed; and when the said hopper is arranged transversely, or parallel with the shaft, all the said feed wheels revolve in the said hopper and act as stirrers to sow broadcast the guano or other fertilizer.

IMPROVED DITCHING MACHINE.

John E. Landrum, Hebron, Ohio.—As the machine advances, the earth is excavated by an inclined shovel—upon which the loose soil passes—entering an upwardly inclined shoot. In the latter is an endless chain, driven by the wheels of the ditcher, through the medium of suitable gearing, and carrying hoes at intervals along its length. These hoes raise the earth to the top of the machine and deliver it to the discharge spout.

IMPROVED GRAIN BINDER.

John J. Atwater, Medford, Minn.—This is a remarkably ingenious machine, including eleven entirely novel devices. There is an apparatus for collecting the grain, forming it into a gavel, and dropping upon a table, along which twine, leading from a ball of the same, is extended. This done, the cord is carried over the gavel, and both ends brought under a clamp. A portion of the twine enters a slot in a needle, which is suitably manipulated to make a knot. Lastly, the cord is cut clear of the ball, and the gavel thrown out.

NEW HOUSEHOLD ARTICLES.

IMPROVED POTATO MASHER.

Robert Crane, Jr., Columbia, Pa.—This implement consists of a handle, and a wheel-shaped device fastened thereto. The latter is formed of a ring and radial blades, the latter being set spirally or inclined to the plane of the wheel, so as to mash as well as cut when pressed down through the potatoes.

IMPROVED WEATHER STRIP.

Jesse Chandler, Barry, Ill.—This invention consists in retaining a hinged weather strip upon the threshold of a door by an adjustable stop plate, having an inclined cam part at the door casing for retaining the strip securely on the sill.

IMPROVED LAMP PENDANT.

William M. Underhill, Oconto, Wis.—This is a lever attached to a link suspended from the ceiling, having a long arm which terminates in a hook, and a short weighted arm. Directly under the point of suspension of the lever there is a bend in the long arm, to which the lamp is attached, so that the lever remains horizontal while the lamp hangs vertical. When it is desired to lower the lamp, the same is simply slid out to the hook end of the lever, which descends by the weight of the fixture.

NEW TEXTILE MACHINERY.

IMPROVED SPINNING WHEEL.

John J. Kendall, Greensborough, N. C.—The bench consists of a crooked plank set edgewise on the legs, and having a curved standard at the front end. This arrangement allows the wheel standard to be bolted on the sides so as to be held securely, and at the same time be shifted to different positions readily. The general arrangement is such that the whole standard can be shifted up or down to accommodate the height of the wheel, or the head can be turned around its bolt to swing the spindle toward the wheel in suitable position to one standing or sitting at work.