

ENGINEERING INVENTIONS.

A novel means for raising water from a well, cistern, or other receptacle, and conveying it to a distance and there discharging it, has been patented by Mr. James C. Richardson, of Boscobel, Wis. A wire track, inclining upwardly, is extended from the curb of the well, etc., to the place of discharge, and on this track a carriage, controlled by a rope and windlass, is arranged to run. Connected with this carriage by spring bolts is a bucket carrier, which, on reaching the well, is automatically released, to allow for the descent and filling of the bucket, after which the bucket carrier is raised by the rope and made to automatically engage with the carriage, that is drawn up the track till the bucket meets with a tilting stop, which causes the water to be discharged.

A firing and tamping device for torpedoes, more particularly intended for use in oil wells, but also applicable to wells and drills of various kinds, has been patented by Mr. James E. Gallagher, of Olean, N. Y. The invention consists of a weight designed to be dropped upon the head of the torpedo in the well or drill. This weight consists of a shell of fragile and insoluble material, filled with sand and provided with a solid point, which, striking the head of the torpedo, explodes the latter and causes the sand, that by the explosion and destruction of the shell of the weight is liberated, to be retained in a compact mass above the exploding torpedo, thus tamping the charge and causing it to act laterally.

Mr. James Hays Hagan, of Greenfield, Tenn., has patented an improvement in direct acting engines, in which three pistons are made to reciprocate in a single open-ended cylinder, and are connected with opposite cranks of a double crank shaft.

NEW TOOLS.

Among patents recently issued we find a few tools possessing some points of novelty. The pipe tongs, shown in Fig. 1, are the invention of Mr. N. Purdy, of Fall Brook, Pa. The improvement consists in linking the jaws of the tongs together at their outer ends, and linking one of the jaws permanently to the end of the handle or lever, the other jaw being adapted to be connected to the lever so as to grasp upon the pipe by means of a loop or similar device hinged or pivoted upon the end of the lever, and adapted to be placed over the end of the jaw.

The wrench shown in Fig. 2 has been patented by Mr. W. E. Wild, of Lead City, Dakota Territory. In this wrench the socket is provided with an interior adjustable section for adapting the socket to nuts of different sizes. The movable portion is provided with a rack which is engaged by a worm pivoted at the end of the handle.

An improved expanding mandrel that will hold the work firmly and truly, even under great pressure of the tool, is shown in Fig. 3. The invention consists of a longitudinally ribbed and split sleeve, which is driven into the work and on to a tapered mandrel. This improvement has been patented by Mr. J. A. Wilde, of Hudson, N. Y.

The improved lace cutter, shown in Fig. 4, is the invention of Mr. H. L. Chapman, of Marcellus, Mich. The invention consists in a slotted or split handle having the cutter fastened to its outer end in such a manner that the cutting edge crosses the slot diagonally. Through the slot an adjustable gauge for regulating the width of the lace passes, and can be locked in any desired position by means of the binding screw.

Fig. 5 represents an instrument for opening oysters, clams, and other shell-fish. It consists essentially in a sliding bar actuated by a lever handle and carrying an opening point or knife. An adjustable slotted standard is placed opposite the knife for supporting the oyster or clam. This invention has been patented by Mr. A. Ward, of Brooklyn, N. Y.

Fine Drilling.

Professor Edward C. Pickering, of Harvard College, says that in undertaking to measure the intensity of the light of the satellites of Mars he had occasion to need an extremely small hole. Among the artisans who essayed to furnish what was required was one who had succeeded in making a hole edge-wise through an old-fashioned three cent piece, and another who had pierced a needle through from end to end. A hole about the twenty-five-hundredth part of an inch in diameter was finally secured.

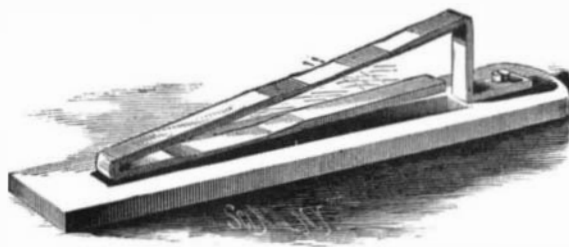
New Use for Buffalo Skins.

An inventor proposes to make machine gear wheels of raw buffalo hide by cementing and pressing together as many layers as are required for the breadth of the wheel. The blanks thus prepared are cut to form the teeth in the usual manner with suitable tools. The advantages claimed are, smooth and noiseless action at very high speeds and greater durability without lubrication.

NEW ORGAN REED.

The engraving shows a double-tongued reed for producing tones in unison or at an interval of an octave or more. The reed block has the usual slot.

The two tongues of this reed are formed of a single strip of metal bent double. One tongue is attached at one end to the reed block, and is raised above the block to give space for vibration of the other tongue beneath. The auxiliary tongue may be a separate piece of metal attached by a rivet.



DOWLING'S IMPROVED ORGAN REED.

The two tongues can be tuned to unison, or the upper reed may be tuned one or two octaves lower than the lower one. The combined tone is much more powerful than a single reed, and of superior quality.

This is the invention of Mr. John H. Dowling, of New Philadelphia, Ohio.

RECENT INVENTIONS.

An improved folding wardrobe bed has been patented by Mr. Ernest N. Doring, of New York city. This bed is so constructed that it will require less weight than heretofore to balance and keep in place. The invention consists in the combination, with the head boards and side boards,

pending the bell detachably, a push rod having its lower end bent to one side, a bell clapper supported from a suspended frame and having a ball and a concaved disk at its upper end and a loose head at its lower end, and a standard having a base and having the horizontal upper end slotted to receive the bell handle.

A very compact and efficient hot water generator has been patented by Mr. William W. Goodwin, of Philadelphia, Pa., the same forming a portable heater for use in heating water for bath tubs, basins, etc., as required, or for use in connection with a boiler, for maintaining a supply of hot water, either as a separate apparatus or in connection with gas cooking stoves and ranges. The invention consists in a closely wound water coil inclosed within a double cylindrical casing arranged so that the heated air passes lengthwise of the coil in both directions, and through the outer casing to the escape flue, whereby the heat is utilized to the greatest extent and the water in the coil is rapidly heated. It also consists in a combination with such heater of a hot water reservoir, with which the coil of the generator is connected.

A very useful and complete machine for cleaning, polishing, and assorting nuts, such as pecan nuts, walnuts, etc., has been patented by Mr. Rudolph C. Koerber, of Austin, Texas. In this machine the nuts to be treated are first fed into a cylinder in which is deposited a quantity of gravel, broken stones, or pulverized glass, etc., and the cylinder rotated. By this operation the shells or particles of shells are broken from the nuts, which are thus cleaned. The nuts are then passed into a series of rotating reticulated cylinders, by which they are polished and separated from the gravel, etc., used in cleaning them, and are subsequently delivered down an inclined sieve to a box, from which they are raised by an elevator on to a vibrating sieve, which separates the larger from the smaller nuts. Any number of sieves, both stationary and vibrating, chutes, and receivers, are used to effect a thorough cleansing and extended assortment, according to size, of the nuts.

An improved balance scale has been patented by Mr. Arthur V. Abbott, of Brooklyn, N. Y. In this balance a beam is sustained by one or more flexible metallic strips rigidly attached to the beam and their support.

An improved steam pressure regulator has been patented by Mr. Howell A. Cummins, of Conneaut, Ohio. The invention consists, in combination with a valved steam pipe leading from a boiler, of a lever connected with the valve stem, and weighted at one end with a ball and at the other end with an empty tank or box nearly balanced by the ball. A box or tank containing mercury is connected with the steam pipe outlet and with the lever tank or box by tubular connections, so that when there is an excess of steam pressure in the steam pipe outlet, steam therefrom will enter the mercury tank and force a portion of its contents into the lever tank, thereby drawing down the long end of the lever and closing or partly closing the valve and correspondingly cutting off the steam.

Mr. Ernest W. Noyes, of Bay City, Mich., has patented a spring attachment or boot to be attached to the knees of horses for giving style to the action and gait of the animal, and for increasing his speed, and which at the same time tends to assist the horse in lifting his feet from the ground.

An improved currycomb, patented by Mr. Carey A. Manker, of Red Oak, Iowa, consists in a novel construction of the comb and its handle and the frame and handle of the brush, and a novel mode of connecting the comb and brush, whereby they may be used either alternately or simultaneously, or may be disconnected so as to be used separately.

Mr. Eleazer Ainsworth, of Wilmington, Del., has patented an improved boiler and pipe covering, formed of a layer composed of a mixture of morocco shavings and clay, and two layers composed of a mixture of paper-mill refuse or wood-pulp mill refuse and clay and lime, the layers being held by the wire wrapping.

Mr. Edward B. Ives, of West Point, N. Y., has patented an improved photographic plate holder. The invention consists in a novel mode of constructing the holder by attaching together a number of layers of material.

A hand sawing machine, for cutting trees into logs or lengths, has been patented by Mr. Martin Kurtzman, of Shelby, Ohio. In this machine the saw is operated by a vertically vibrating hand lever, which is connected with the one arm of a bent lever, the other arm of which is provided with a toothed segment. This segment, which works on a lower fulcrum in the frame, gears with a pinion above, the shaft of which operates a crank arm or lever that is pivoted at its lower end to a saw arm or handle. The forward end of this saw arm is slotted to receive the rear end of the saw blade, which is pivoted to the saw arm. The hand lever works up and down between adjustable rubber blocks, which relieve the lever of jar and start it on its return movement.

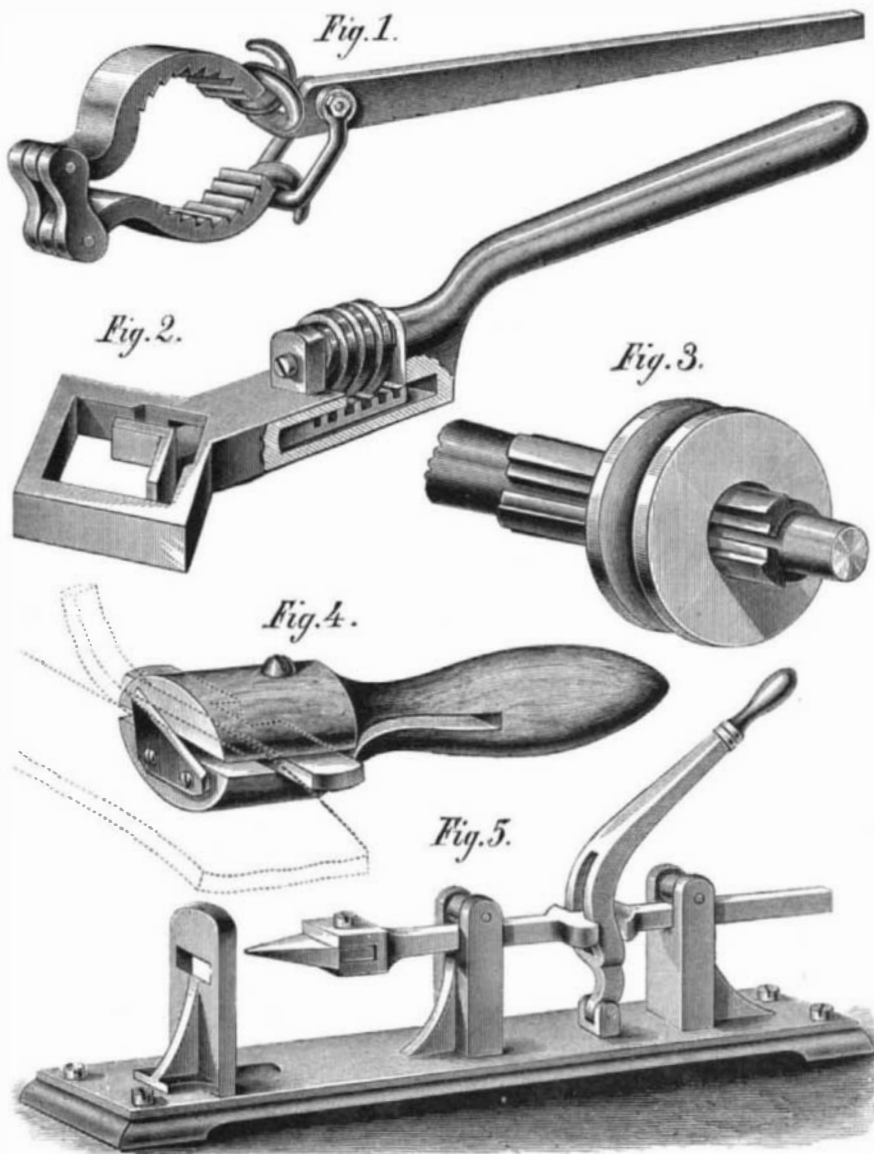


Fig. 1. Purdy's Pipe Tongs.—Fig. 2. Wild's Socket Wrench.—Fig. 3. Wilde's Expanding Mandrel.—Fig. 4. Chapman's Lace Cutter.—Fig. 5. Ward's Oyster Opener.

RECENTLY PATENTED TOOLS.

of curved friction bars pivoted at their lower ends and having their upper ends pressed forward by springs, whereby the pressure of the springs and curved bars against the ends of the sideboards will assist to keep the sideboards in any desired position.

Mr. George Derby, of New York city, has patented an improved mill burr which is in construction durable, and can be easily sharpened.

Mr. Thomas Aitken, of Pittston, Pa., has patented an improved coal drilling machine which is light, compact, and easily transportable, easy of adjustment, and will hold more securely in position for work.

An improvement in gong bells has been patented by Mr. Asa G. Golding, of New York city. The invention consists in constructing a gong bell with a handle attached to the bell, and having a neck, a shoulder, and a flange for sus-