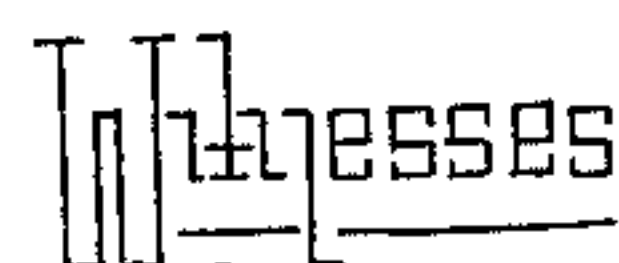
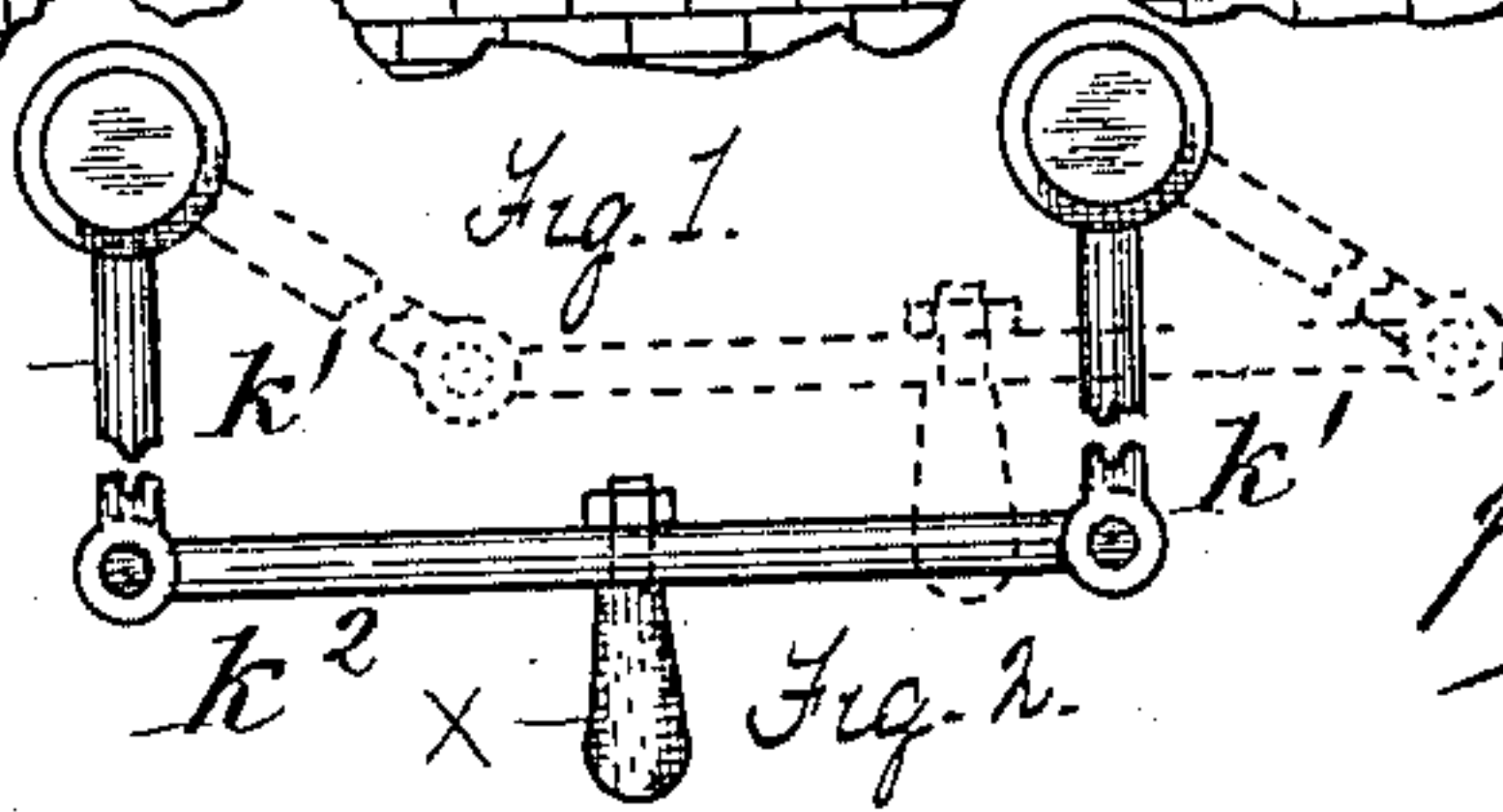


W. A. SHAW.
LEAD PRESS.

Patented Sept. 2, 1884.



Eugene C. Harris
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Newton

W. A. Shaw
per O. E. Duff
Att'y.

UNITED STATES PATENT OFFICE.

WILLIAM ANTHONY SHAW, OF PITTSBURG, PENNSYLVANIA.

LEAD-PRESS.

SPECIFICATION forming part of Letters Patent No. 304,571, dated September 2, 1884.

Application filed November 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, WM. ANTHONY SHAW, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Lead-Presses; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The object of this invention is to simplify and cheapen the construction and to facilitate the adjustment and operation of machines for applying incasing materials to wires under pressure; and it consists in certain novel constructions and combinations of devices, which will be hereinafter particularly described with reference to the accompanying drawings, in which—

Figure 1 represents a vertical central section of a machine constructed according to my invention, and Fig. 2 is a detail view of the screw-jack-operating devices, which will be presently described.

The letter A denotes the cylinder of a hydraulic press, opening downward and supported by pillars B B, the lower ends of which are secured to a bed-block, C.

D is the ram of the press, arranged to have a downward movement, and to be operated by the means usually employed in hydraulic presses of this class. The bed-block C has a vertical central passage, P, and upon the top of said block the die-holder Q is mounted, a reduced lower portion of said holder being seated in a countersink around the upper end of the passage P. The die-holder Q is recessed in its upper side to receive the die M and its surrounding ring N, within which the die fits snugly. The recess in the die-holder has a greater diameter than the ring N, in order to permit a lateral adjustment of the same and the die, this adjustment being effected by means of adjusting-screws O O, which pass through the wall of the countersunk portion of the die-holder and have their tips bearing against opposite sides of the ring N. Upon

the top of the die-holder is mounted the cylinder I, for holding the lead or other material which is to be forced through the die. This cylinder is recessed around its chamber to receive the die-holder, between which and a portion of the lower end of the cylinder plays the ring N in its lateral adjustment. The cylinder I is provided at its lower end with a flange, R, by means of which and bolt-rods it is secured firmly to the bed-block C.

Depending from the ram D is a plunger, E, slotted vertically, as shown at e, and provided with a head, F, arranged to work in the cylinder I. This head F is bored centrally for the passage of a core-bar, G, the upper end of which is adjustably secured through an aperture in a bridge, H, arranged through the slot e in the plunger E, and having its opposite ends resting upon the top of the cylinder I. The said core-bar is tubular and extends into the cylinder I, its lower end or tip, L, being tapered and terminating at or within the die M.

Upon the top of the bridge H is fixed an arm, J, upon which is mounted a guide-pulley, j, for directing a wire, w, through the core-bar.

Through the upper end of the plunger E and the lower end of the ram D is formed a passage, T, in which is mounted a guide-pulley, j, also for guiding a wire to the core-bar. The lateral portion of the passage T may be formed wholly in either the ram or plunger, but is most conveniently formed as shown. The wires w pass to these pulleys from reels suitably located, as at S, and said wires may pass over intermediate guide-pulleys, arranged as desired. Any number of the guide-pulleys may be arranged for guiding wires directly into the core-bar, as will be readily understood.

To the plate a, which forms the lower head of the hydraulic cylinder A, are secured the upper ends of the screw-jacks K, and to the lower ends of these jacks is secured the bridge-piece H, to which the core-bar is attached. The screws of the jacks are provided with ratchets k k, which are turned, for operating the screws, by means of pawl-arms k' k', (see Fig. 2,) the outer ends of these arms being connected by a pivoted link, k², provided with a handle, k³. By thus connecting the link

and handle to the arms *k' k'* they may be operated to work the jacks simultaneously, so that the strain will always be equal upon the parts subject to the action of said jacks. By means of these jacks the bridge is held firmly in place with relation to the cylinder I, and may be raised and lowered, as desired, to adjust the position of the tip of the core-bar with reference to the die. The object of this adjustment of the core-bar and tip is to regulate the volume of material passing between the tip and the die, as described, also, in a separate application filed by me simultaneously with this. The screw-jacks will support the bridge and core-bar when the cylinder and removable parts below are removed, and then force the bridge evenly down to place upon the cylinder.

In using the machine, as now described, the parts having been properly adjusted, the wires are first drawn from the reels and passed over the guide-pulleys, and thence passed through the core-bar and projected a short distance through the die N. The plunger E being raised, the cylinder I is charged with lead or other suitable material, in the usual manner, and the hydraulic press started into operation, when the plunger will be driven into the cylinder, and force the incasing material out through the die and around the tip of the core-bar, seizing the wires, incasing them in a common mass and carrying them downward, the

finished product passing down through the die-holder and passage P, from whence it may be led to a suitable reel.

What I claim is—

1. In a lead-press, a lead-cylinder, in combination with a hydraulic cylinder arranged above the lead-cylinder and having a slotted plunger, a bridge arranged in the slot in said plunger and adjustably suspended from the hydraulic cylinder, and a core-bar secured to the bridge and passing through an aperture in the head of the plunger, substantially as set forth.

2. In a lead-press, the bridge carrying the core-bar, in combination with the hydraulic cylinder, and the screw-jacks having their ends secured to the bridge and cylinder, respectively, substantially as set forth.

3. In a lead-press, the core-bar G, in combination with the adjustable bridge H, carrying the core-bar, the screw-jacks K, and connected mechanisms for operating said screw-jacks simultaneously, substantially as set forth.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

WM. ANTHONY SHAW.

Witnesses:

B. F. MORSELL,

O. E. DUFFY.