

No. 739,003.

PATENTED SEPT. 15, 1903.

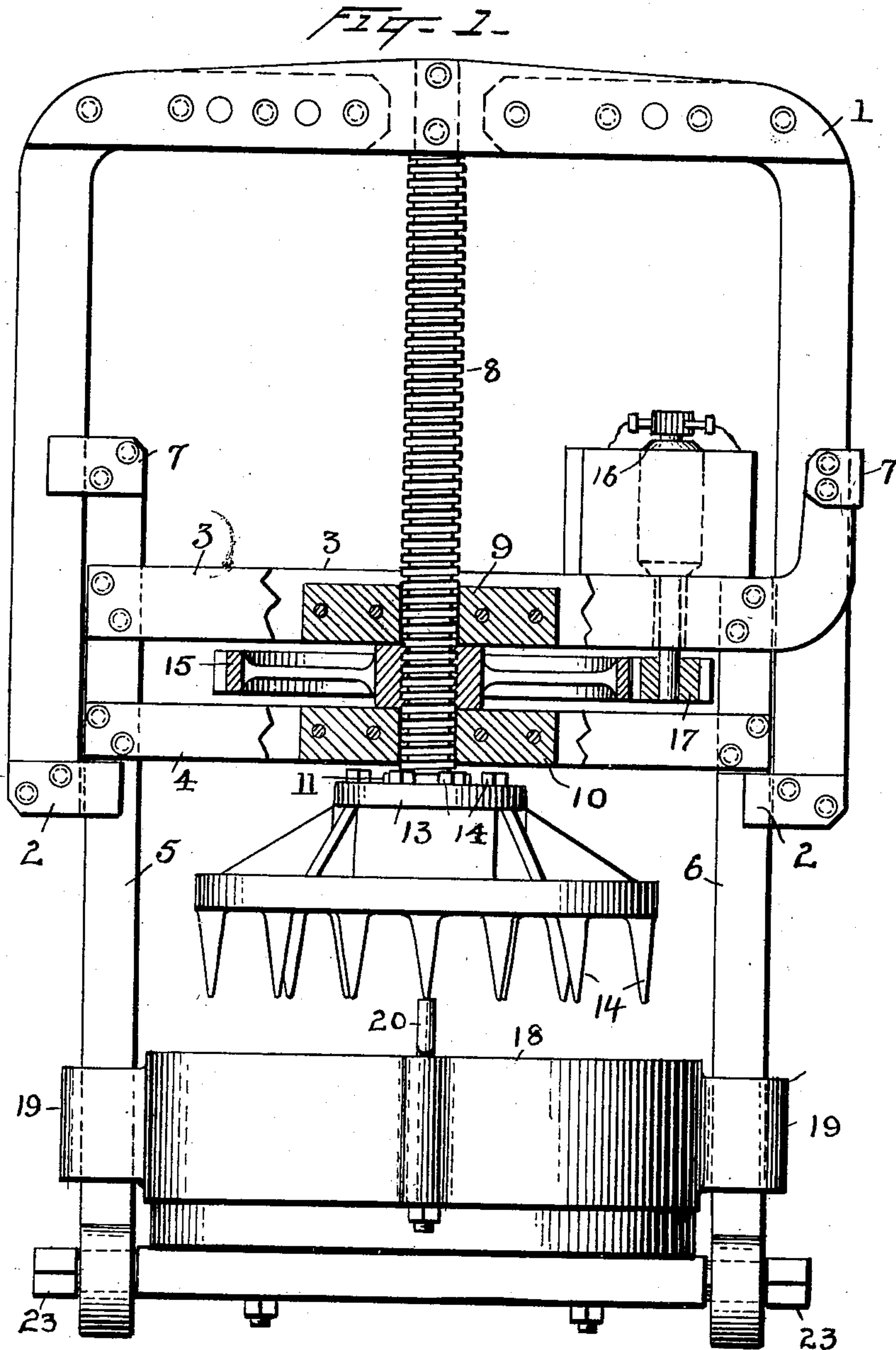
W. H. HOWARD.

PRESS FOR SQUEEZING MUSHY, ZINKY, OR COPPERY LEAD DROSSES.

APPLICATION FILED JUNE 20, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses

Horrie A. Clark.

M. H. Hatterie.

Inventor

William Henry Howard

By Geo. P. Whittier

Attorney.

No. 739,003.

PATENTED SEPT. 15, 1903.

W. H. HOWARD.

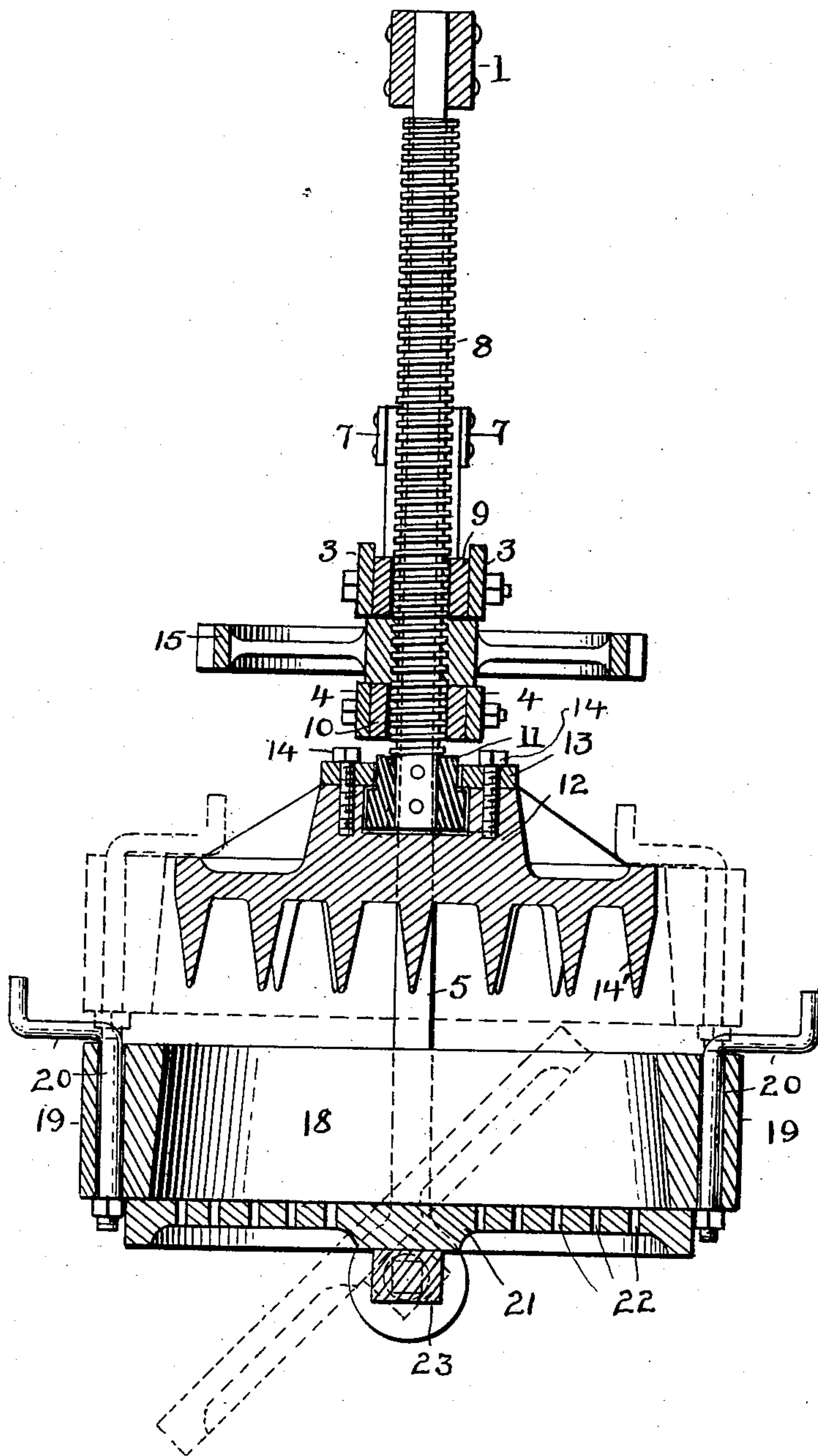
W. H. HOWARD.  
PRESS FOR SQUEEZING MUSHY, ZINKY, OR COPPERY LEAD DROSSES.

APPLICATION FILED JUNE 20, 1902.

NO MODEL.

2 SHEETS—SHEET 2..

117 = 2.



Witnesses

Norman A. Clark.

M. H. Watkins.

Inventor

Inventor  
William Henry Howard

By *Geo. P. Whittelsey*  
Attorney.

~~Attorney~~



## UNITED STATES PATENT OFFICE.

WILLIAM HENRY HOWARD, OF PUEBLO, COLORADO.

PRESS FOR SQUEEZING MUSHY, ZINKY, OR COPPERY LEAD DROSSES.

SPECIFICATION forming part of Letters Patent No. 739,003, dated September 15, 1903.

Application filed June 20, 1902. Serial No. 112,548. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY HOWARD, a citizen of the United States, residing at Pueblo, in the county of Pueblo and State of Colorado, have invented certain new and useful Improvements in Presses for Squeezing Mushy, Zinky, or Coppery Lead Drosses; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to presses for squeezing mushy, zinky, or coppery lead drosses.

One object of the present invention is a provision of an improved and novel press for squeezing mushy, zinky, or coppery lead drosses wherein provision will be made for easy and convenient dumping of the cake or residue after the squeezing operation has been completed.

Another object is to provide a press for the purposes set forth having a novel plunger whereby the dross may be repeatedly pressed or acted on at different portions thereof and rendered more easily breakable, as well as insuring a more perfect compressing or squeezing action.

Further objects of the invention will more fully appear from the following detailed description, wherein the invention is set forth in detail, while the novel features are recited in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of the complete press, certain parts being in section; and Fig. 2, a vertical section taken at right angles to Fig. 1.

The suspending-frame 1 is of inverted-U shape and provided at its extremities with the guides 2. There is a movable frame consisting of cross beams or bars 3 and 4 and vertically-arranged beams or bars 5 and 6, secured thereto. The bars 5 and 6 travel in the guides 2, while guides 7 are provided on beam 5 and cross-bar 3, respectively, which travel on the depending portions of the frame 1.

A screw 8, secured to and depending from

the frame 1, is threaded through blocks 9 and 10, secured in the beams 3 and 4, and on its lower end is secured a head 11, loosely received in a socket in the top of a plunger 12, where said head 11 is held by a ring 13, secured by bolts 14 to the plunger, thus providing a loose joint permitting easy turning of the plunger on the head. The plunger is preferably of circular shape and provided on its lower face with a plurality of teeth 14'. A gear 15 is located between the blocks 9 and 10, and the screw 8 is threaded through said gear. Carried by the bar 3 is an air, steam, or electric motor 16, on whose shaft or plunger is a pinion 17, meshing with the gear 15, whereby the gear is driven.

A cylinder 18 is provided which has its interior walls expanded downwardly, as shown in Fig. 2, and it is provided with guides 19, which receive and are adapted to slide on the bars or beams 5 and 6, and this cylinder has hooks 20 on opposite sides which are adapted to be turned by hand to rest on the plunger, as shown by dotted lines in Fig. 2. A bottom 21 is provided for the cylinder, on which the latter rests, said bottom having the perforations 22 and being secured to a shaft 23, journaled in the lower end of the beams 5 and 6, so that when the cylinder is sufficiently raised above the bottom the latter can be inclined, as shown in dotted lines in Fig. 2, to dump the cake or residue. The cylinder is of such size that the plunger is adapted to easily fit therein.

In using the press the cylinder is first filled with dross. The motor is then started, and the turning of the gear 15 on the screw 8 causes a bodily raising of the cross bars or beams 3 and 4, the motor and the cylinder and its bottom, the guides 7 sliding on the frame 1, which causes the dross to be brought up against the teeth of the plunger, and the teeth sink into the dross, and so facilitate escape of the liquid lead. The motor is then reversed, whereupon the parts will be fed downward and the cylinder and compressed dross will leave the plunger. The plate 13 and bolts 14 permit turning of the plunger on the head 11 of the screw, and the plunger is next turned slightly and the motor again started, which results in another compression



of the press by the raising of the cylinder containing the dross and the teeth on the plunger make a new series of holes or punctures in the dross. A repetition of these compressions a few times gives a very dry residue, and it will be understood that the liquid lead pressed from the dross escapes through the perforations 21 during the compressing operations. When the compression is complete, the hooks 20 are engaged with the plunger, as shown in dotted lines in Fig. 2, and the motor reversed, which causes the dumping-bottom to feed downwardly, leaving the cylinder suspended, as shown by dotted lines in Fig. 2. The weight of the compressed cake of dross and the shape of the interior of the cylinder causes the cake to slide out of the cylinder as the bottom is fed downward, and the bottom can then be turned, as indicated in dotted lines in Fig. 2, to allow the cake to slide off directly into a buggy.

Among the advantages of the present invention are that the numerous puncturings of the dross renders it adaptable for easy breaking up into small pieces, which is desirable, and facilitates escape of the inclosed liquid lead, while the provision of the dumping-bottom makes it possible to easily slide off the compressed cake therefrom into the bottom of the buggy, and thus obviate direct dumping, which is very injurious to the buggy on account of the great weight of the dross.

I am aware that corrugations instead of teeth could be employed on the plunger and that various changes of construction could be resorted to in carrying out the invention without materially altering its construction or mode of operation. I do not, therefore, limit myself to the precise construction heretofore described, but consider that I am entitled to all modifications falling within the spirit and scope of my invention.

Having described my invention, what I claim is—

1. In a press, the combination with a support, of a fixed upright screw secured therein, a plunger loosely swiveled on the lower end of said screw, a plurality of teeth projecting from the under side of said plunger and adapted to indent the material being treated, a frame supporting said material, and a nut meshing with said screw for feeding said frame up toward and down away from said plunger without relative turning thereof, whereby after said material has been withdrawn from said plunger the latter can be

freely turned to cause said teeth to make a new series of holes in said material.

2. In a press, the combination of a holder for the material to be treated, of a dumping-bottom for the holder, said holder and bottom being relatively movable, a plunger adapted to act on the material in the holder, and means for securing the holder to the plunger.

3. In a press, the combination of a holder, of a dumping-bottom unattached to said holder and a plunger adapted to act on the material in the holder.

4. In a press, the combination with a holder, of a dumping-bottom for said holder, said holder and bottom being relatively movable toward and away from each other, and a plunger adapted to act on the material in the holder.

5. In a press, the combination of a holder having a downwardly flared or expanded interior, of a dumping-bottom for said holder, said holder and bottom being relatively movable toward and away from each other, and a plunger for operating in the holder.

6. In a press, the combination with a relatively stationary suspended plunger, of a holder and independent bottom therefor, means for raising and lowering the holder and bottom as a unit upwardly and downwardly toward and away from the plunger, and means for locking the holder to the plunger thereby insuring its separation from the bottom.

7. In a press, the combination with a suspending-frame, of a movable frame, a screw depending from the suspending-frame and passing through the movable frame, a plunger connected to the screw, a wheel carried by the movable frame and threaded on the screw, a motor carried by the movable frame for turning said wheel whereby the movable frame is moved, and a holder for the material which is carried by the movable frame.

8. In a press, the combination with a stationary frame, of a screw journaled therein, a movable frame carrying a rotatable nut meshing with said screw, a plunger on the lower end of said screw, a holder carried by the movable frame and movable therein, and a bottom for said holder secured to said movable frame.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM HENRY HOWARD.

Witnesses:

CHARLES C. STEIN,  
JOSEPH R. WILSON.