

C. A. BINGAMAN.
POWER HAT PRESS.
APPLICATION FILED MAR. 15, 1910.

985,773.

Patented Mar. 7, 1911.

3 SHEETS—SHEET 1.

FIG. 2.

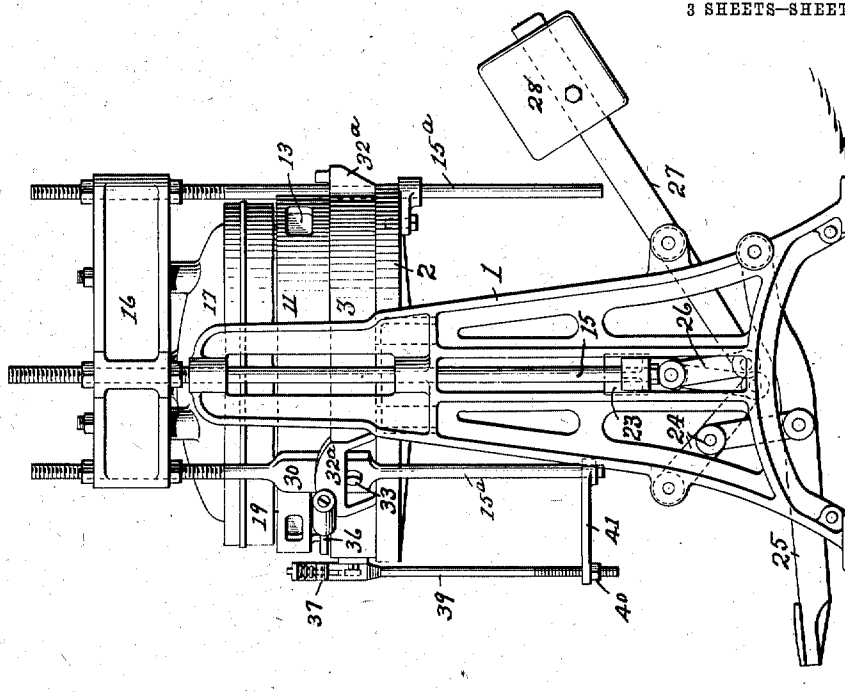
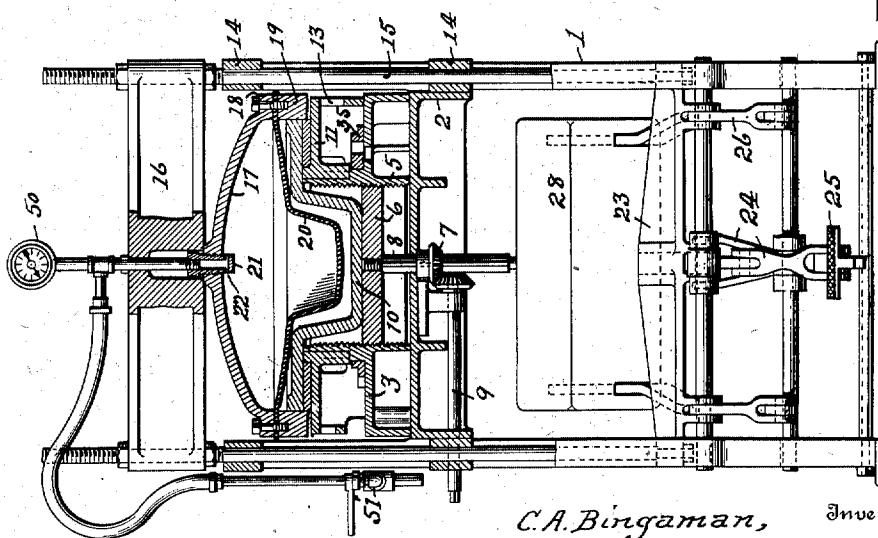


FIG. 1.



C. A. Bingaman, Inventor

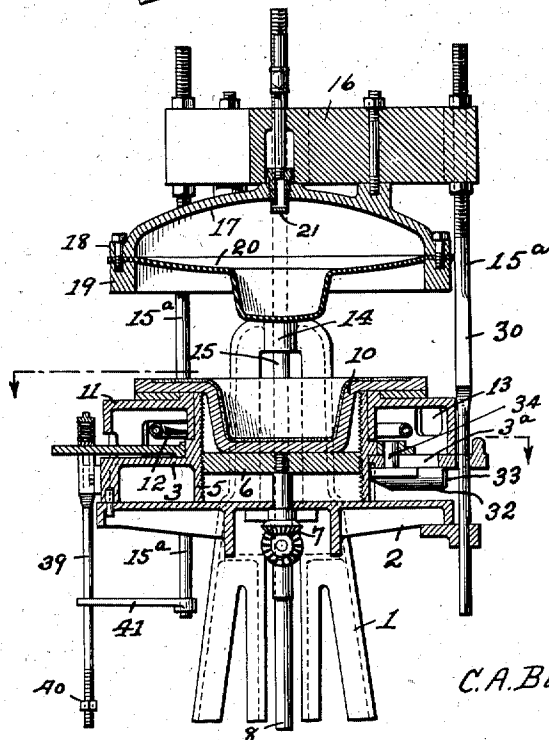
Witnesses
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3 SHEETS—SHEET 2.

FIG 4.



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3 SHEETS-SHEET 3.

FIG. 5.

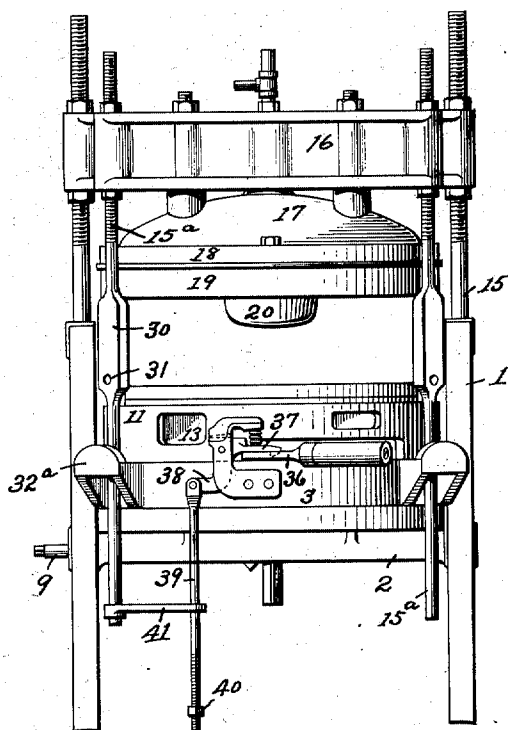
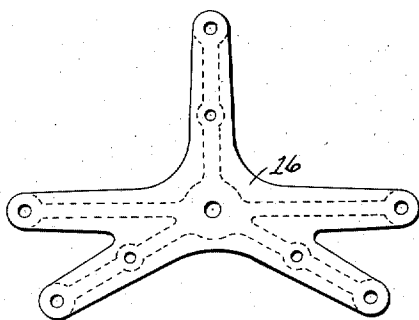


FIG. 6.



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UNITED STATES PATENT OFFICE.

CHARLES A. BINGAMAN, OF READING, PENNSYLVANIA.

POWER HAT-PRESS.

985,773.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed March 15, 1910. Serial No. 549,419.

To all whom it may concern:

Be it known that I, CHARLES A. BINGAMAN, citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Power Hat-Presses, of which the following is a specification.

This invention relates to improvements in hat presses and my object is to provide a machine in which the finishing pressure or gloss is applied to a hat.

The device is constructed to operate with compressed air as the pressure medium though it is evident that water may be used with equal facility.

The machine includes means for raising the pressure chamber from the die which consists of an automatically operated weighted lever and its connections; a foot lever for closing these parts, means for automatically locking the parts in closed position and a hand lever for opening said locking means thus permitting said weighted lever to again operate to open the parts for the next operation.

The invention is more fully described in the following specification and clearly illustrated in the accompanying drawing, in which:—

Figure 1 is a front elevation, partly in section, showing the machine just ready to press a hat. Fig. 2 is a side elevation of the machine in the same closed position shown in Fig. 1. Fig. 3 is a sectional view taken on lines indicated in Fig. 4 showing a portion of the upper surface of the die and also a section through the burner chamber. Fig. 4 is a central vertical section on lines indicated in Fig. 3 showing the pressure chamber raised and a pressed hat in position in the die, ready to be removed. Fig. 5 is a front elevation of the upper portion of the machine, open. And Fig. 6 is a detail of the spider.

The numeral 1 designates the machine frame which comprises two like uprights provided with a connecting table 2 on which rests the bed plate 3. On the top of this plate I locate a latching cam 35 adapted to

move thereon in a horizontal plane. The bed plate 3 is formed with a central hub or tubular portion 5, screw-threaded internally and around which the latching cam turns. A screw-threaded disk 6 is located in this hub and is moved up and down therein by means of a bevel gear 7 attached to the shaft 8 on which the disk is mounted and which is operated from the outside of the machine by a hand crank engaging the end of the shaft 9. This disk forms a support for the removable die 10 and is vertically adjustable so that it may accommodate itself to different sizes of dies. This support is necessary for the reason that the dies are ordinarily made of soft metal and the pressure applied to the inside thereof has a tendency to change its shape if not properly supported.

Immediately above the bed plate 3 I form a combined die support and burner chamber 11 in which I locate an annular gas burner 12 (shown in Fig. 4) and this chamber is formed with suitable vent openings 13.

The flange of the removable die 10 rests on the top of this burner chamber while the body or crown portion depends into the tubular portion or hub 5 of the bed plate, so that it is evident that the heat will be uniformly presented to the die while a hat is being pressed.

In the frame uprights 1, are formed guide ways 14 and in these I place vertical rods 15 and to the top of these rods I secure a cross-head or spider 16 and to this spider I secure the pressure chamber 17, of dome shape, provided with a flange 18 and between this flange and an annular ring 19, of the same diameter. I place a rubber diaphragm 20. Through the center of the spider I admit air under pressure, to the dome like pressure chamber. The air is admitted at the top of the dome, in the center, through a distributor 21 which is provided with outlets 22 arranged at right angles to its axis. This is to prevent a direct jet of air against the diaphragm. With this construction, the air strikes the top of the chamber and is so deflected that the pressure is uniform over the entire surface of the diaphragm. The

lower ends of the bars 15 are secured to a cross-head 23 adapted to travel in guide ways in the frame 1, and this cross-head is connected by links 24 to a foot lever 25, by means of which the pressure chamber is lowered. The cross-head is also connected by links 26 to levers 27 which carry a weight 28 and by means of which the pressure chamber is raised. To the spider 16 I also secure three rods 15^a which pass through guides 32^a formed on the bed plate 3. These rods 15^a are flattened at a point 30 about midway of their length in which portions I form an opening 31. The latching device, located on the bed plate 3, comprises a movable cam member 35 and in the bed plate I form three approximately equidistant pockets, 32 and in each is located a radially movable latch 33, each of which carries an upwardly extending pin 34 which extends through a registering slot 3^a in the bed plate 3 and is adapted to engage and ride in one of the slots in the cam 35. This cam is formed with an operating handle 36 and is adapted to engage, when moved to the position shown in dotted lines in Fig. 3, a latch 37 is secured to the front of the machine. This latch is connected by a crank arm 38 to a depending rod 39 which carries an adjustable nut 40.

One of the vertical bars 15^a is provided with a horizontal arm 41, so that when the pressure chamber and arms 15^a are lowered, contact of the arm 41 with the nut 40 will open the latch 37 and release the handle 36 of the cam. The cam is provided with a spring 42 which is in tension when the cam is engaged in the latch 37 and when released as just described, the spring will return it to the position shown in full lines in Fig. 3 when the latches 33 enter into engagement with the vertical bars 15^a.

The operation of the machine is as follows:—Assuming that a hat is in the position shown in Fig. 1, the machine is ready to press it. The air is admitted to the pressure chamber through the distributor 21, pressing the diaphragm 20 against the hat which is interposed between it and the die 10 and when the pressure has been sufficiently applied, as indicated by any suitable instrument, 50, the air is released from the pressure chamber, by means of a suitable valve 51; the hand lever 36 of the cam is thrown to the position indicated in dotted lines in Fig. 3, when it engages the latch 37, which holds it until released, as will be described later. This movement of the cam 35 will withdraw the latch members 33 from engagement with the vertical rods 15^a and the weight 28 on the lever 27, will raise the bars 15 and with them the spider 16 and the pressure chamber 17 to the position

shown in Figs. 4 and 5; the hat is removed, another hat is placed in position in the die, the foot lever 25 is pressed down, drawing down the bars 15 and the pressure chamber and when the arm 41 on the end of one of the bars 15^a contacts with the nut 40 on the depending latch bar 39, the latch 37 will be opened and the hand lever 36 of the cam will be returned, through the tension of the spring 42, to the position shown in full lines in Fig. 3, when the latch members 33 will snap into engagement with the bars 15^a, at their flattened perforated portions, and thus lock the parts in the position shown in Fig. 1, ready to again apply the air pressure.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent is:—

1. In a hat press a frame, a pressure chamber, means for raising and lowering said chamber, a vertically adjustable die support, means for locking the chamber in closed position, said means comprising a cam and a series of radially movable latches, a latch for holding said cam in locked position, a trigger device for releasing said latch and means for automatically operating said trigger to lock the machine.

2. In a hat press: a frame, a vertically movable pressure chamber, a spider to which the chamber is secured, upright bars carried by said spider, means for lowering said bars and chamber, a cam provided with a hand lever and radially operating latches adapted to engage and hold said bars in lowered position, a latch to hold the cam locked in open position, a trigger device adapted to release said latch by the downward movement of the bars, a spring for returning the cam to locked closed position when said latch is released, a cross-head connecting said bars at their lower ends, a weighted lever secured to said cross-head and adapted to raise said bars and pressure chamber when the radially operated latches are withdrawn, all substantially as and for the purpose set forth.

3. In a hat press a frame, a bed plate, a burner chamber, a removable die, a vertically movable pressure chamber, a rubber diaphragm secured thereto, a spider to which the chamber is secured, an air inlet through said spider and into said chamber, upright bars carried by said spider, a foot lever for lowering said bars and chamber, a slotted cam provided with a hand lever and carrying radially operating latches adapted to engage and hold said bars in lowered position, a latch to hold the cam in locked open position when said radially moving latches are withdrawn, an automatically operating trigger device adapted to release said latch by the downward move-

ment of the bars, a spring for returning the
cam to position for engagement with the
bars when said cam is released by the trig-
ger device, a cross-head connecting said
5 bars at their lower ends, a weighted lever
secured to said cross-head and adapted by
its fall to raise said cross-head, bars and
pressure chamber when the radially moving

latches are withdrawn, all substantially as
and for the purpose set forth.

In testimony whereof I affix my signature, 10
in presence of two witnesses.

CHARLES A. BINGAMAN.

Witnesses:

ED. A. KELLY,
J. O'R. KELLY.