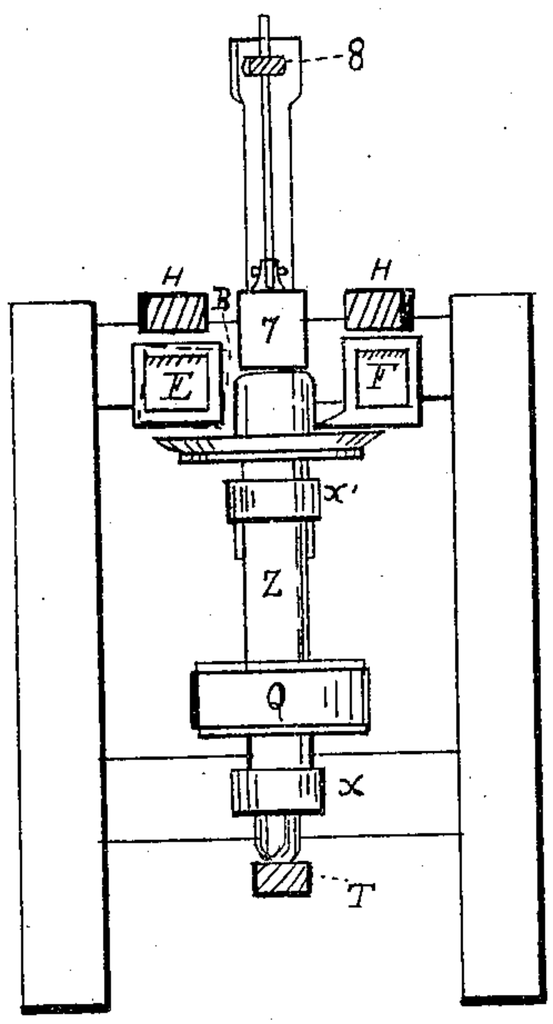
Kinsman & Field,
Ironing Hats.

No. 14401. Patented Mar. 11. 1856.



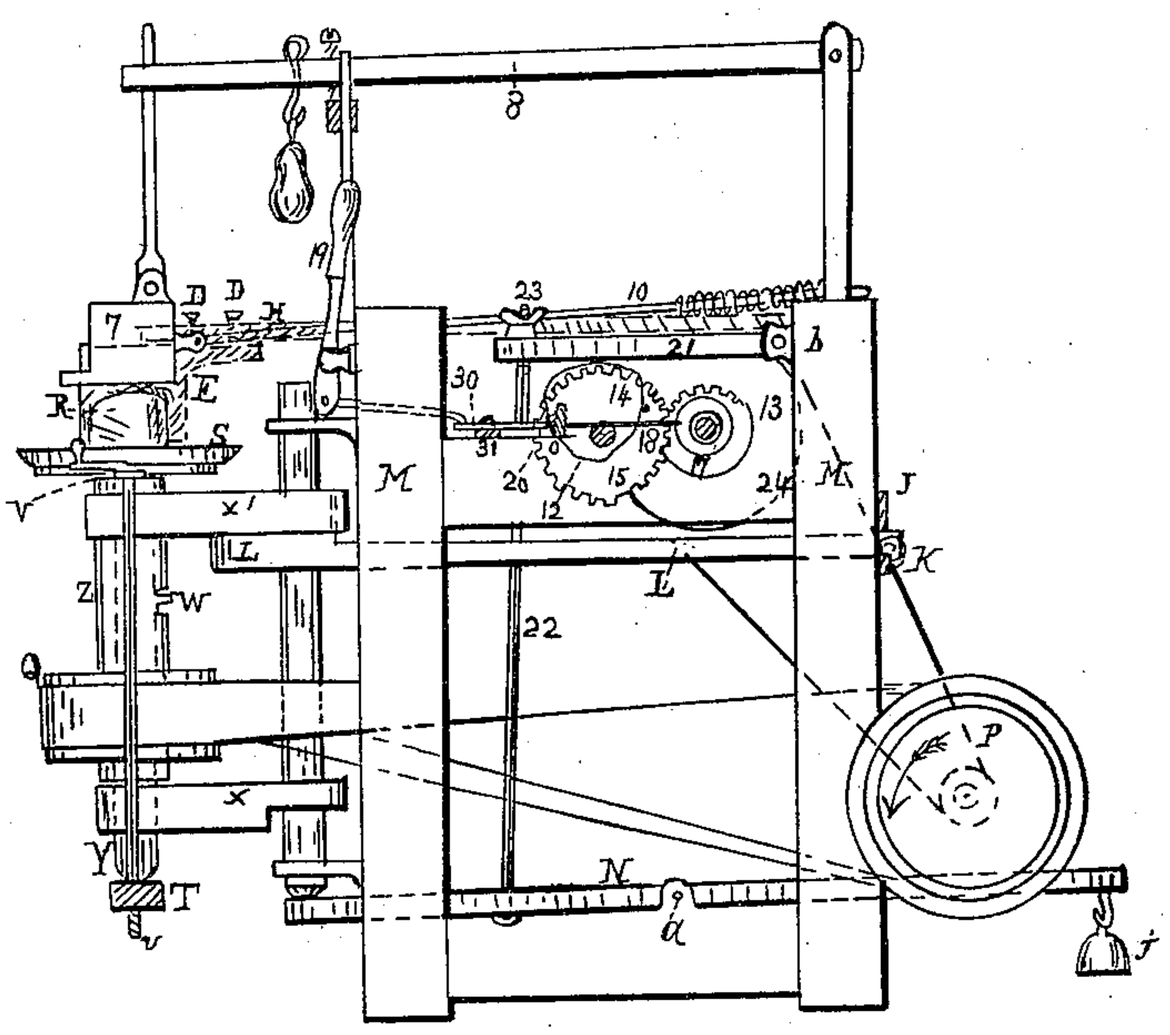
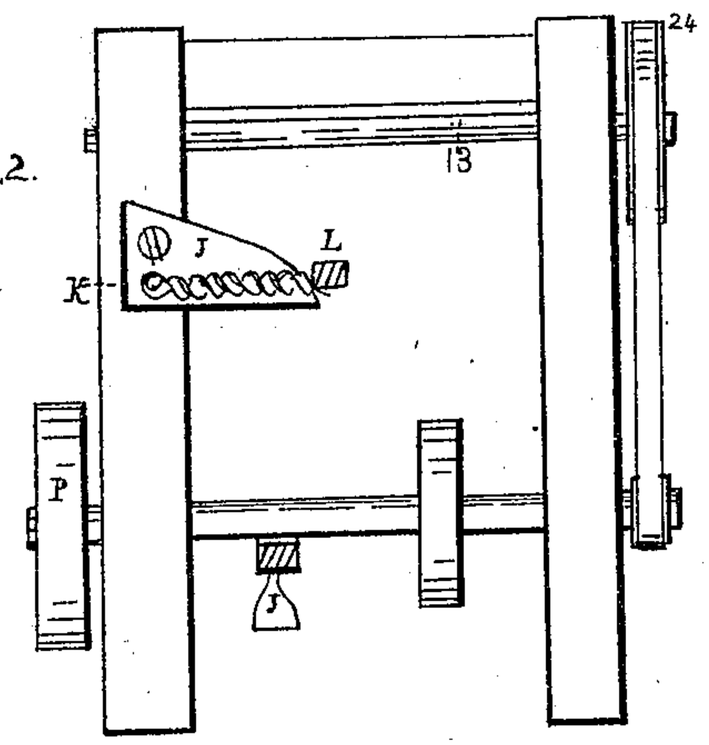
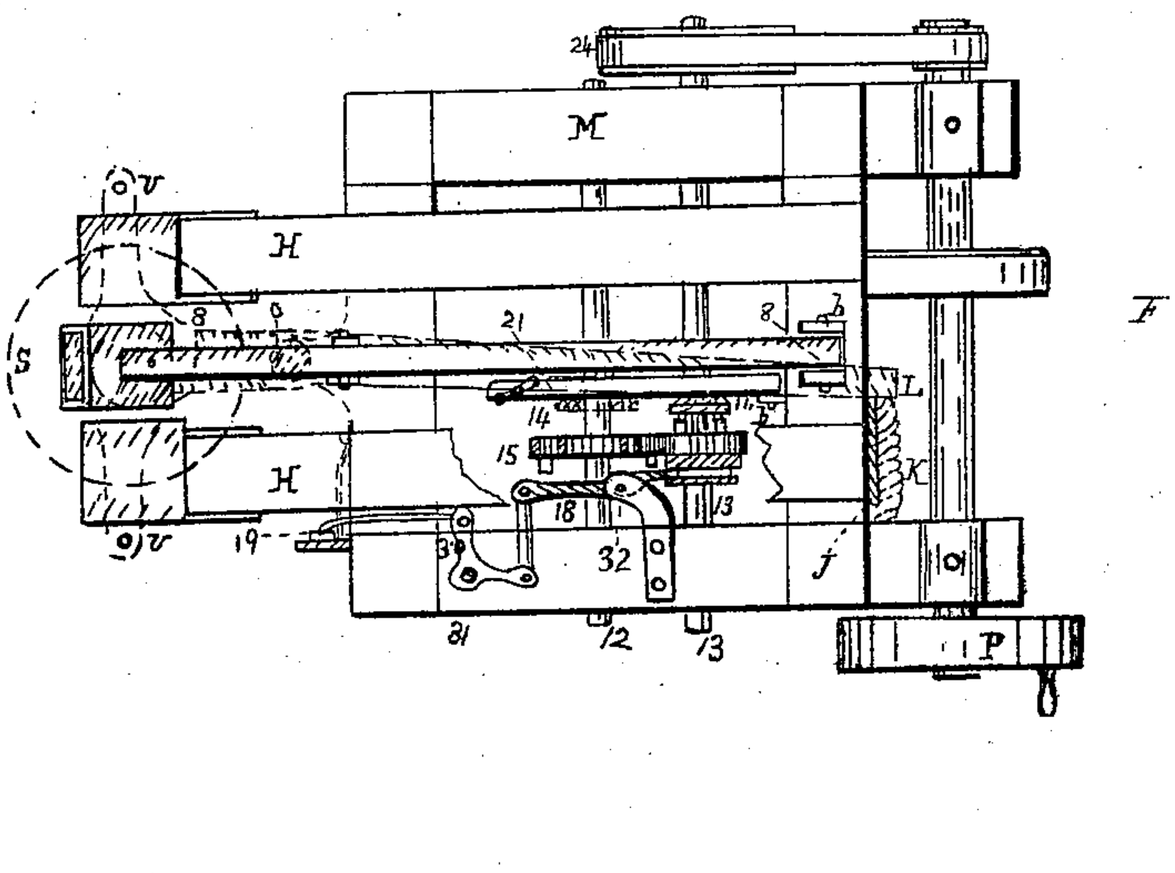


Fig. 2.





UNITED STATES PATENT OFFICE.

S. A. KINSMAN AND S. FIELD, OF BARRE, MASSACHUSETTS.

MACHINERY FOR PRESSING HATS.

Specification of Letters Patent No. 14,401, dated March 11, 1856.

To all whom it may concern:

Be it known that we, SAML. A. KINSMAN and SAMUEL FIELD, of Barre, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Hat-Pressing Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification.

To enable others skilled in the art to construct a machine with our improvements, it may be described as follows: We make a carriage or block supporter, see Figure 3, consisting of a vertical shaft Z, through which as in a sleeve passes a shaft Y. They are caused to revolve together by a pin W which projecting from the inner shaft, enters a slot in the exterior one.

X, is a lower and X′ an upper projecting arm, through which the aforesaid shafts pass, and freely turn in suitable boxes or bearings. Those arms are supported by an upright shaft O, on which they have a lateral movement, which will be more fully described hereafter. To the upper arm X′ is attached a yoke V provided with rods *u u* for supporting a cross piece T, in which the bottom of the shaft Y is stepped. Those rods are provided with suitable screws and nuts by which the relative heights of shafts Y and Z may be adjusted. On the top of Z is secured the brim block S and it contains a cavity for receiving the crown block R, which is fastened on the top of Y. The object of this separate arrangement of crown and brim is to allow of their adjustment to different heights in the hat crowns, and thus dispense with the multiplication of blocks consequent to the use of those formed of a single block; on shaft Y is secured a pulley Q, around which passes a driving band from pulley P, the prime mover of the machine.

The shaft O, on which the arms *x x′* turn as on a hinge, is secured to the main frame M of the machine by plates through which it has a free movement vertically, thus allowing of a vertical change in the hat blocks combined with a horizontal or lateral movement thereof. The foot of shaft O, is supported on the end of lever N whose fulcrum is at *a;* above this lever is a second one 21, hinged to the main frame at *b;* a rod 22 connects the two levers and by means of a screw nut 23, pressure may be regulated: To the rear end of lever N a counterpoise weight *j*, may be swung.

On the upper side rails of the frame M, are placed two shafts 12 and 13. Side by side, on 12 is secured wheel 15 and also a cam 14 whose office is to raise the lever 21, when operated as hereafter described. On shaft 13 is placed (but not secured) a sliding wheel 17, furnished on its inner face with projecting pins, by the sliding of this wheel these projecting pins are moved in and out of contact with the pins or projections of the clutch 11 secured on shaft 13; when the pins of the clutch are in contact with those of the wheel 17, it then causes the wheel to turn with the shaft and produce a movement of wheel 15 and cam 14. The locking and liberation of the wheel and clutch is effected by a hand lever 19 and lever 18 connected by elbow lever 30. See Fig. 4. The pivot of lever 30 is at 31, that of 18 being at 32; a drop latch 20 is secured to a rising stud from the top rail of M, whose office is to keep the lever 18 in place, and the lock of the clutch, until the latch is lifted by one of the studs on wheel 15, then by a stop spring drawing on lever 19, elbow lever 30 and lever 18, the cam movement is arrested by the disengagement of the pins of the clutch with the pins of wheel 17, and its consequent arrest of motion, and effect the disengagement aforesaid when the cam arrives at its highest and at its lowest point or throw.

The side movement of the carriage, block &c. is effected as follows: L is a lever which may be considered an extension of the upper arm *x′* beyond the shaft O, the rear end of it passing to the back of the machine. It is there in contact with the edge of an angular guide J, being kept in contact by a spring K said spring producing the necessary pressure of the block against the flat; in the downward movement of the carriage the lever L throws the hat block thereof from the flat finishing the side of the hat, while the same lever L gives the pressure to the hat when the carriage is raised, by passing over the guide J.

H H are two timbers bolted on the upper cross rails of the machine; they project over the framing and carry on their under side the flat F on one; and the case E fitted with a heater B on the other. Those flats are so suspended or secured as to admit of adjustment by set screws D D, to correspond with

the taper of the crown block R. The crown flat 7 is suspended by a hinge rod, from the end of a beam 8, said beam being provided with a weight to give the desired pressure on the crown; to one side of the face of this flat 7 a corner piece or lip is attached.

10 is a rod connected at one end with flat 7 while the other end passes through a helical spring; by said spring a suitable degree of pressure is given the lip in pressing the corner of the hat.

Shaft 13 carries on its end a large pulley 24 on which is a belt from a small pulley fastened on the main driving shaft carrying pulley P.

The operation of the machine is as follows, and being simple one attendant will serve for several machines. The flats all being heated and in place, the height of the crown block adjusted to the brim block, and the carriage down the hat is put on the block R and S; motion is given pulley P, then the attendant pulls lever 19 and brings the wheel 17 in contact with the clutch 11 in play with wheel 15 which causes the cam 14 to raise the carriage and hat blocks, bringing the hat thereon against the flats. At this period one of the studs or pins on the face of wheel 15, lifts the latch 20, liberates the lever 18 and clutch and throws the wheel and cam out of motion, but as the revolving of the hat block does not cease the hat is revolved against the flats sufficient to give it the desired finish; then the lever 19, is again pulled by hand, the wheel again brought in play and the cam revolves lowering the carriage. When the cam reaches its lowest point the second pin throws the latch 20 and its motion is arrested. The finished hat can now be removed and another placed on the block, and the operation repeated.

There are several advantages our machine possesses over others. First by our mode of arranging the mechanism operating the carriage it allows of the use of an oval (as well as a circular block) being pressed against stationary flats; this is far superior to the use of a carriage that does not admit of a lateral movement in which the accommodation to the oval form is made by attaching the flat to a flexible spring as in that case the flat could not as conveniently be heated by steam as in the case of the fixed flat. Our plan also admits of greater simplicity in the flats, and is productive of superior results. Secondly, by using a stationary or fixed case E in connection with flat B therein, it admits not only of adjustment to the taper of the hat, but the flat is heated so as to give the greatest heat to the face in contact with the side of the hat while that portion in contact with the brim may be at a lower temperature, as it is used only as an assistant to the opposite flat in pressing the brim; therefore if the lower face was equally hot with the side face, injury to the brim might result. Thirdly, by raising and lowering the carriage, &c., with a cam and levers operating therewith, in connection with a lever giving the lateral movement of the carriage and the automatic arrangement of mechanism for arresting its motion, the attendant is enabled to perform the work in a more expeditious and skilful manner than heretofore effected by machinery.

We do not claim any peculiar form of hat holder, nor any spring movement to a side flat, nor a fan to regulate the downward movement of the hat block, nor any arrangement of toggles to operate the crown flat, for all of these we are aware are embraced in a patent granted to Dexter Dennis on the fourth of July 1854; but

What we do claim and desire to secure by Letters Patent is—

Arranging the cam 14, so that when operated by the gear 15 and 17, substantially in the manner described it will control the vertical movement of the hat block through levers 21 and N, in combination with the lever L, arranged substantially as described to control the lateral movement of the hat block and thus secure the adequate pressure on all parts of the hat at one time.

In witness whereof we have hereunto set our hands in presence of two witnesses.

SAML. A. KINSMAN.
SAMUEL FIELD.

Witnesses:
SETH CALDWELL,
C. H. DAVIS.