B. Potter. Jr.
Ironing Hats.

No. 7745. Patented. Oct. 29. 1850.

Fig. 3.

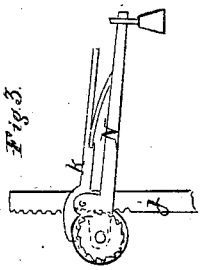


Fig. 2.

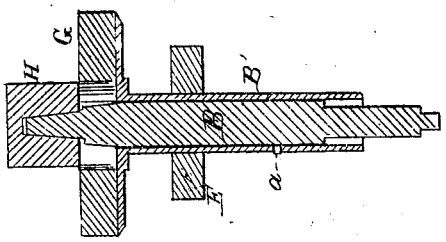
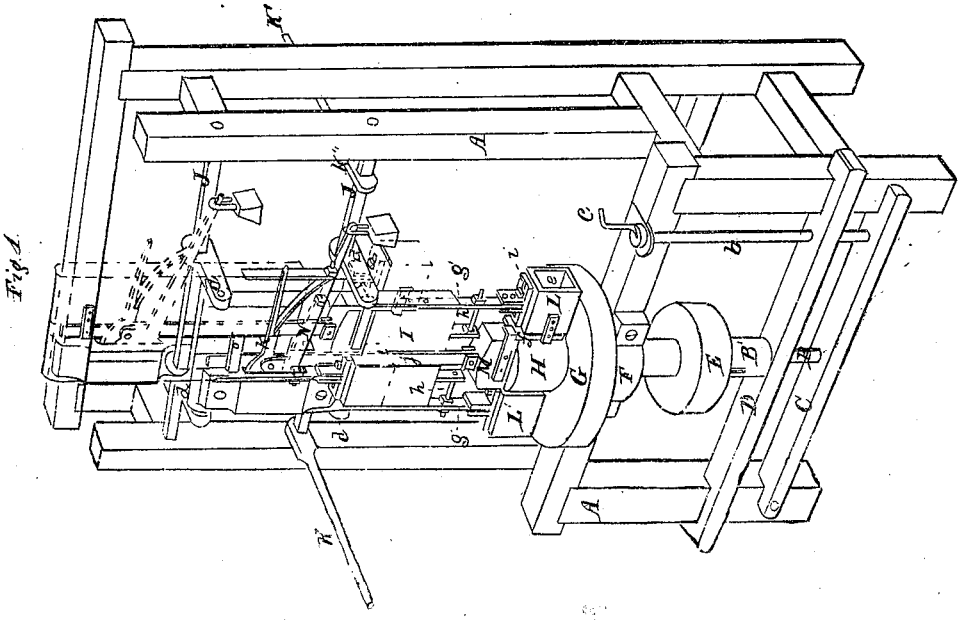


Fig. 1.



UNITED STATES PATENT OFFICE.

BENNETT POTTER, JR., OF TEMPLETON, MASSACHUSETTS.

MACHINERY FOR PRESSING HATS.

Specification of Letters Patent No. 7,745, dated October 29, 1850.

To all whom it may concern:

Be it known that I, BENNETT POTTER, Jr., of Templeton, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Machines for Pressing Palm-Leaf Hats, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification and in which—

Figure 1 represents a view in perspective of my machine complete; Fig. 2 is a vertical section through the center of the table shaft; and Fig. 3 is an elevation of the counterpoise apparatus of the crown flat or box.

The object of my improvement is to remedy certain defects which exist in all machines with which I am acquainted for pressing palm-leaf hats by means of smoothing irons; and my invention consists in so constructing and arranging the several parts of my machine that the smoothing irons can by a single movement, be all brought simultaneously into operation to press the top and sides of the crown and upper sides of the brim, and can, when the hat is sufficiently pressed, be all withdrawn from it, by another, single movement, to admit of its removal and of the substitution of an unpressed hat in its place.

My invention further consists in a self adjusting arrangement whereby the smoothing irons are caused to adapt themselves with accuracy to the surface of crown blocks of varying forms, and in the manner in which the several irons are arranged so as to admit of adjustment to hats of different sizes.

In my improved machine the hats to be pressed are placed one at a time upon an adjustable revolving table and block, and are subjected to the action of a set of three adjustable, self-adjusting, heated smoothing irons or boxes, which are connected with a movable frame by means of which they can all be raised, at once, to admit of the introduction or the withdrawal of a hat from the machine, while at the same time the amount of pressure to which the hats are subjected can be varied at will.

In the accompanying drawing, A A, is a strong frame to which the other portions of the machines are attached. An upright shaft is supported in bearings at the front of the frame. This shaft is in two parts; one of which, B, is solid and the other, B′, tubular. The two are connected with each other in such manner that when one is turned the other is forced to turn with it, but the inner one is free to rise or fall without affecting the other; the device used by me for effecting this result consists of a pin *a*, projected from the inner shaft through a vertical slot in the outer. The inner shaft is stepped on a bridge tree C which is hinged at one extremity to the main frame and is suspended at the other from an upper cross-bar of the main frame by a long bolt *b* whose head is fitted with a crank *c*, and whose lower screw cut extremity engages in a nut on the lower side of the bridge-tree, the whole arrangement being such, that by turning the bolt in one direction or the other by means of the crank *c*, the shaft, B, is raised or lowered within the tubular shaft B′. The tubular shaft B′ is supported at its lower end upon a stationary cross-bar D of the frame; it is fitted with a belt pulley E to which the motion of the prime mover is imparted by a belt; and its upper extremity is retained in position by a box F which is formed in, or secured to, the main frame. An annular table G is secured to the upper end of the tubular shaft, the opening at its center being sufficiently large to admit the largest crown block required. The crown block H is secured to the upper end of the inner shaft B.

A movable frame I is suspended above the table by four arms *d*, which are secured in pairs to two parallel horizontal shafts, J, J′, whose journals are supported by the posts of the main frame. One of these shafts is also fitted with two arms K, K′, the one (K) projecting forward and the other backward from the shaft; the hinder arm (K′) serves as a counterpoise lever to which the counterpoise weight of the movable frame is attached; the front arm (K) serves as a hand lever, by means of which the frame is raised or lowered when necessary.

The smoothing irons or boxes which act upon the hat are three in number, two L, L′, being fitted to the table G, and the third M to the crown block. In the machine represented in the accompanying drawing the boxes are heated by hot irons which are introduced within them through openings *e* in their sides. One of the table boxes is fitted with a self-adjusting face *f* which acts

upon the side of crown of the hat; this face is connected with the crown box M by a pair of hookended guides, which allow the crown box to rise or fall. The table boxes L, L′, are suspended by rods *g* from the movable frame I, so that they are caused to rise or fall with it, and are pressed upon the table with a force proportioned to the uncounterpoised weight of the frame. The rods *g*, *g* are adjusted by means of the screws *h*, *h*, by means of which the smoothing boxes L, L′, can be brought nearer together or can be moved apart; the boxes may also be further adjusted by moving, in the slots *i*, the screws which connect the boxes with their respective stocks.

In order that the faces of the boxes may conform more perfectly to the surfaces of the table and block, their stocks are pivoted to the rods *g*, *g*, by which they are respectively supported, in such manner as will admit of a free movement within certain limits. The crown box M, is suspended from the lower end of a bar *j*, which slides in guides in the movable frame I, so that it can adjust itself to the different positions of the crown block. One edge of this bar is furnished with rack-teeth (see Fig. 3) which engage with the teeth of a pinion whose shaft is pivoted to the movable frame I; the pinion shaft is fitted with a ratchet wheel, and a lever N, is pivoted to it. The lever is furnished with a spring pall *k* whose hooked end engages with the teeth of the ratchet wheel. The object of this arrangement is to enable the operator to adjust the position of the crown smoothing box M to any change in the position of the crown block (a circumstance that seldom occurs), that could not be compensated by the self-adjustment of the box; as the latter is raised the distance between the lower faces of the table boxes L L′ and the face of the crown box M is increased, and the sliding bar *j* must be adjusted to this variation by disengaging the pall and allowing the pinion to turn. The lever N is weighed as shown at Fig. 1 to force the crown box upon the crown block with the requisite pressure.

When this machine is to be used the boxes L, L′, M, are heated by introducing hot irons into them and the movable frame I is raised by means of the hand lever K, to the position in which it is represented in red lines in Fig. 1, thus affording ample space for the operator to fit the unpressed hat upon the crown block H; the latter is adjusted to the height of the crown of the hat by turning the adjusting screw *h*, of the bridge tree; the shaft B′ being now put in motion, the movable frame is depressed, thus bringing the smoothing boxes L, L′, M, down upon the hat with a pressure proportioned to the weight of the uncounterpoised portion of the movable frame I, and the force applied to depress the hand lever. The rotation of the shaft brings every portion of the hat under the action of the faces of the boxes by which the pressing is effected. When the hat has been sufficiently pressed the movable frame I is raised by means of the hand lever K, the finished hat is withdrawn, an unpressed one is substituted in its place, and the operation is repeated.

To press palm leaf hats with the requisite precision and speed it is desirable that the top and sides of the crown and the upper side of the brim should be acted upon simultaneously by heated smoothing irons; for this purpose at least four are usually employed, which are brought into action either singly or in sets, but in all cases by several distinct movements which consume more time and require more skill on the part of the attendant than if brought into operation by a single movement as in my machine. The smoothing-irons of all machines heretofore constructed for pressing hats, if not brought into action by independent mechanical devices require (one or more of them) to be adjusted every time a hat is pressed; whereas in my machine all the irons when once properly adjusted for a block or hat of a given size and shape will press any number of hats, varying in height and shape within certain limits, without any further adjustment than that which the machine itself effects by self acting devices. In machines heretofore constructed for pressing palm leaf hats the adjustment of one smoothing iron is apt to derange the action of some of the others, as in Gorham's machine for example, in which if care is not exercised by the attendant the crown smoothing irons may be protruded so far by the adjusting screw as to relieve the brim of most or even all the pressure, in such cases the crown will most likely be crushed by undue pressure while the brim will be left rough and unfinished from insufficient pressure. In my machine on the contrary the adjustment of either the crown or the brim irons to the size of the block or hat does not affect the degree of pressure with which the others act.

I am aware that the smoothing irons in machines for pressing palm-leaf hats have been mounted on a carriage by which they could be simultaneously brought over the press block into the proper position for the hat to be pressed against them by a second operative movement by which the block is raised or the irons depressed; I therefore do not claim merely so arranging the smoothing irons that they can all by a single movement be simultaneously brought over the block I only claim this when the irons are also at the same time and by the same movement brought into the requisite contact with the top and sides of the crown and

with the brim of the hat to smooth and compress the same substantially as herein specified.

I likewise claim the devices herein described or their equivalent for rendering the crown iron self-adjusting with respect to the brim irons so that the pressure of the crown iron will be co-etaneous with that of the brim irons without affecting the relative degree of pressure with which they respectively bear upon the surfaces to be smoothed by them substantially as herein set forth.

In testimony whereof I have hereunto subscribed my name.

BENNETT POTTER, JR.

Witnesses:

S. D. MORLEY,

ARTIMAS LEE.