

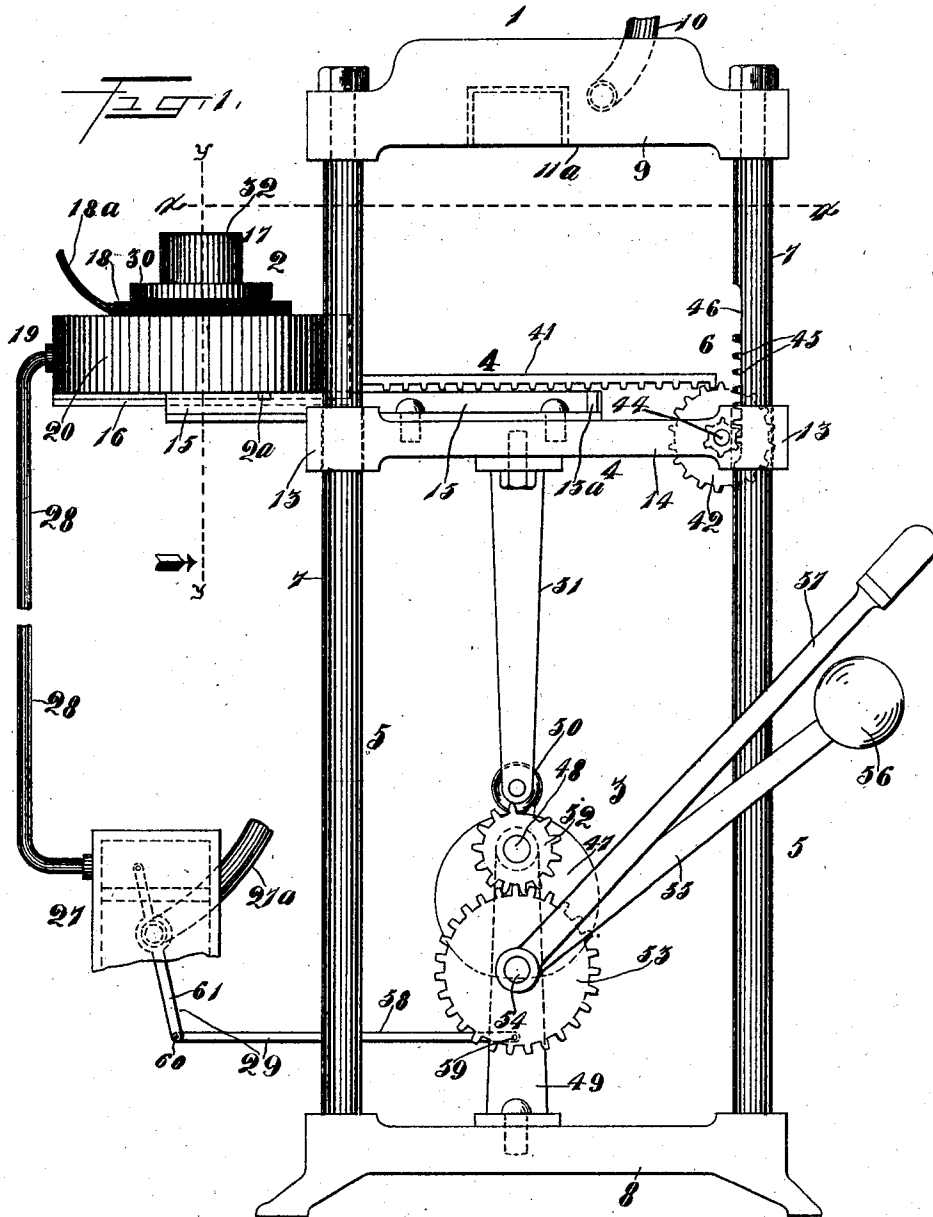
No. 720,565.

PATENTED FEB. 17, 1903.

A. E. COOPER.
MACHINE FOR PRESSING AND BLOCKING HATS.
APPLICATION FILED JAN. 24, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES

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Joseph E. Kallen

Alfred E. Cooper INVENTOR
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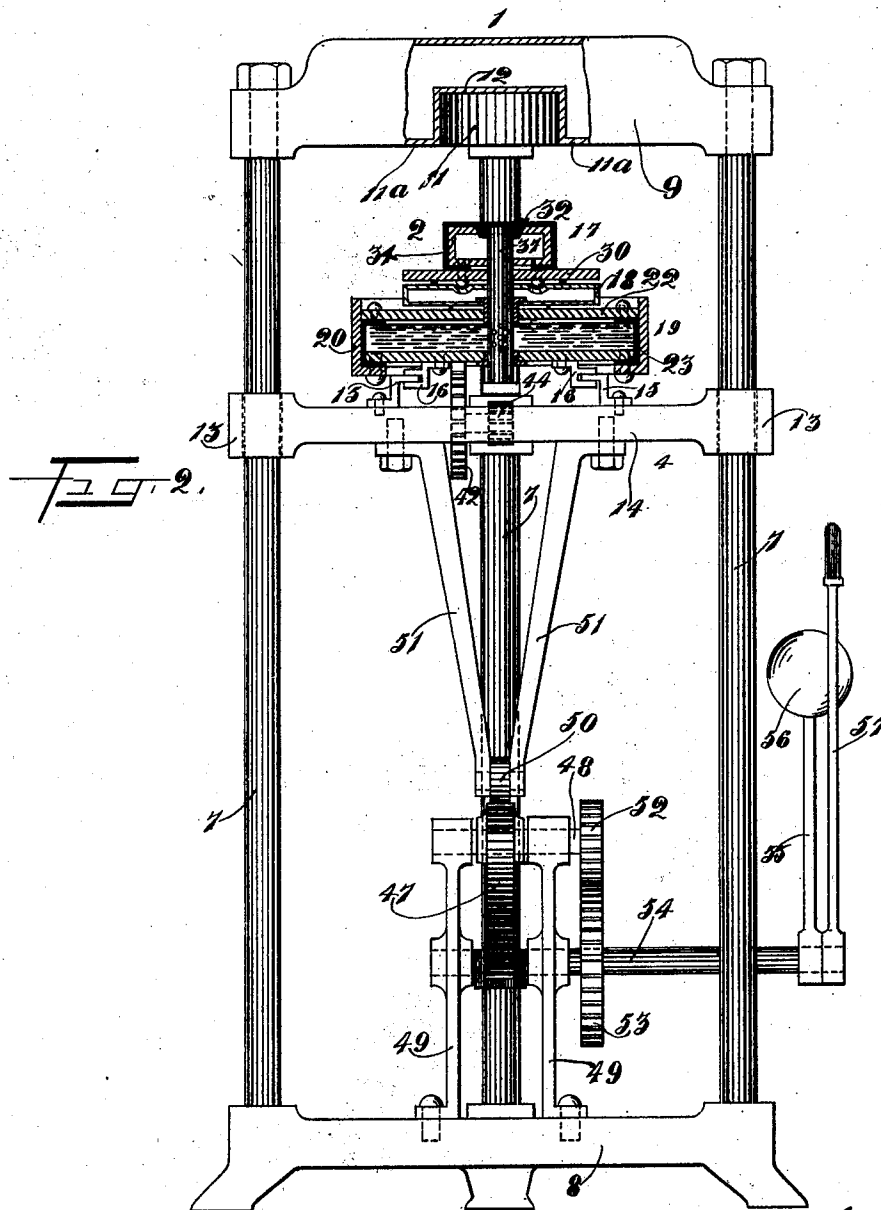
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3 SHEETS—SHEET 2.



WITNESSES

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No. 720,565.

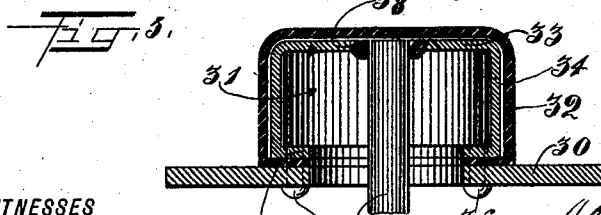
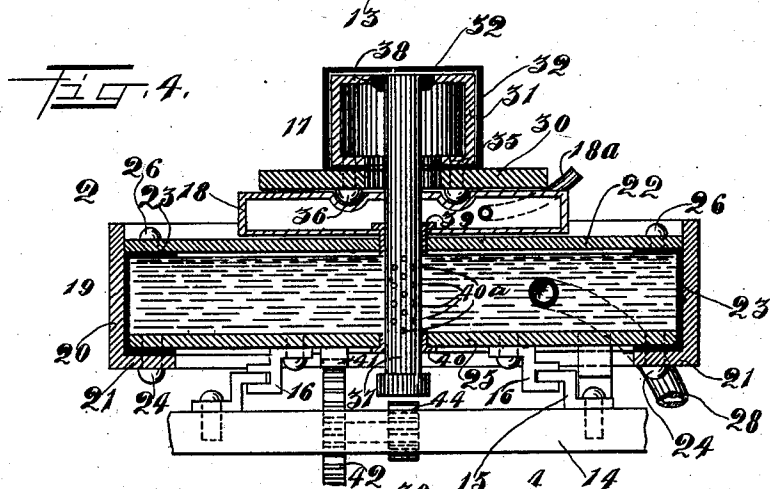
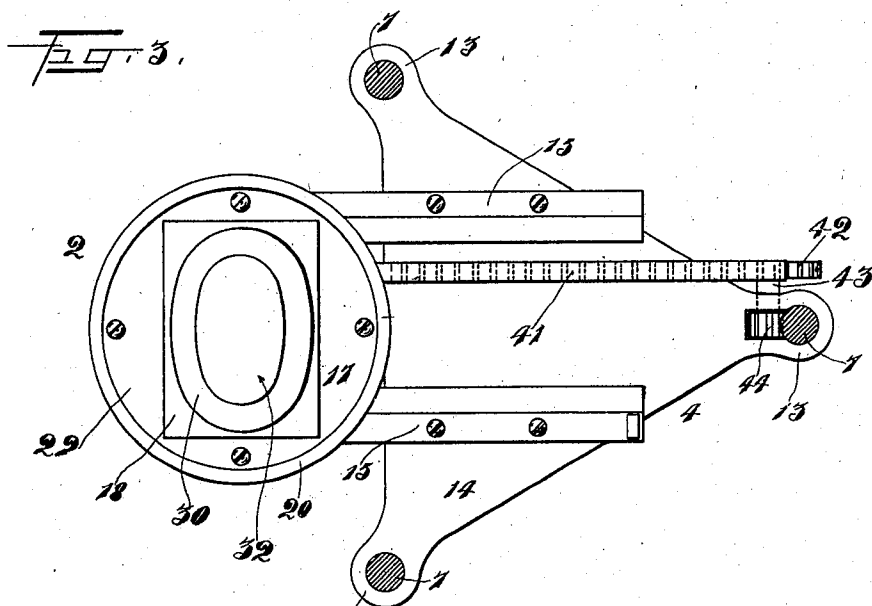
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3 SHEETS—SHEET 3.



WITNESSES
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UNITED STATES PATENT OFFICE.

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MACHINE FOR PRESSING AND BLOCKING HATS.

SPECIFICATION forming part of Letters Patent No. 720,565, dated February 17, 1903.

Application filed January 24, 1902. Serial No. 91,018. (No model.)

To all whom it may concern:

Be it known that I, ALFRED E. COOPER, a citizen of the United States, residing at Hackensack, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Machines for Pressing and Blocking Hats, of which the following is a specification.

This invention relates to hat blocking and pressing machines; and it has for its object to provide an improved machine of this class which will operate effectually to both block and press straw and other hat bodies and which will be relatively simple in construction and positive, rapid, and convenient in operation.

In the drawings, Figure 1 is a side elevation of an improved hat blocking and pressing machine constructed according to my invention. Fig. 2 is a detail vertical sectional view of the same, parts being shown in full lines. Fig. 3 is a transverse horizontal sectional view of the same, taken upon the line *x x*, Fig. 1. Fig. 4 is a detail vertical sectional view taken upon the line *y y*, Fig. 1, and looking in the direction of the appended arrow. Fig. 5 is a similar view of a particular element of the improved construction.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring with particularity to the drawings, my improved machine embodies a fixed presser member 1, a movable presser member 2, and operating means 3 for moving the member 2 into operative position with respect to the member 1. The member 2 is laterally slidably mounted upon a carriage 4, which is mounted in a vertical frame 5, within which it is capable of vertical movement to bring the presser member 2 into operative position. Means 6 are provided for causing the lateral movement of the presser member 2 in the initial upward movement of the carriage 4.

In the preferred form of construction the frame 5 consists of a plurality of upright posts or pillars 7, which are secured at their lower ends in a base 8 and support at their upper ends the fixed presser member 1, which consists of a steam-chest 9, provided with a supply-pipe 10, and the lower portion of which

is formed into a circular casing or shell 11, which is closed at the top, as at 12, and is open at the bottom to receive the hat or hat-body to be pressed or blocked by the joint operation of said shell 11 and the movable presser member 2. The shell 11 is maintained at the proper operative temperature by the steam in the chest 9.

The carriage 4 is slidably centered between the posts 7 by bearings or sleeves 13, through which the posts or pillars 7 pass, and said carriage consists of a table or plate 14, to the upper surface of which are secured angular-spaced horizontal cleats or guides 15, which are engaged by angular bearings 16 upon the movable presser member 2 in such relation as to permit of a free sliding movement of the latter. A stop 2^a upon the member 2 is arranged to engage with a stop 15^a upon the cleats 15 to limit the inward sliding movement of the member 2.

The movable presser member 2 consists of a presser proper, 17, a steam-chest 18 for maintaining the same at proper temperature, and a hydraulic support 19, through the medium of which the actual pressing operation takes place. The hydraulic support may consist of an annular casing 20, which is open at the top and provided with an inwardly-projecting base-flange 21. A piston 22 is fitted within the casing 20, and the upward movement of the same is limited by an elastic lining or packing 23, which extends continuously around the inner walls of the casing 20 and is turned inwardly at its lower edge and secured, as at 24, between the base-flange 21 and the edge portions of a plate 25, which constitutes the bottom of the casing 20. The upper edge of the lining or packing 23 is turned inwardly and secured, as at 26, to the lower surface of the piston 22. The casing 20 is connected with a suitable hydraulic pump or feed 27 by a feed-pipe 28, and the pump or feed 27 is provided with an operating member 29, which is operatively connected with the operating means 3 in such manner that the hydraulic pressure within the casing 20 is regulated as required at the different stages of operation of the machine.

The steam-chest 18 is supported upon the

piston 22 and in turn directly supports the presser proper, 17, which consists of a base-plate 30 and an annular shell 31, secured upon the upper surface of the same. The shell 31 is inclosed in an elastic envelop 32, which extends across the top plate 33 of the shell 31 and down around the side walls 34 of the same, being secured at its bottom edges between a continuous inwardly-extending base-flange 35, formed upon the shell 31, and the base-plate 30, preferably by securing devices 36, extending through the base-plate 30, the envelop 32, and the base-flange 35.

A pipe 37 is set into the top plate 33 of the shell 31, which top plate is provided with a suitably-packed opening 38 to receive the upper end of said pipe. The pipe 37 extends downwardly through registering openings in the base-plate 30 and the steam-chest 18 and extends vertically through the casing 20, passing through stuffing-boxes 39 and 40 in the piston 22 and the base-plate 25, respectively. The pipe 37 is open at its upper end and closed at its lower end and is plurally perforated, as at 40^a, within the casing 20.

The means 6 for causing the lateral movement of the movable presser member 2 in the initial upward movement of the carriage 4 consist of a rack-bar 41, secured to the base-plate 25 of the casing 20 and extending horizontally above the carriage 4 into position for engagement with a gear 42, carried at one end of a short shaft 43, journaled in the plate or table 14 and carrying at its other end a pinion 44, arranged to be rotated by a series of teeth 45, formed upon the inner surface of one of the posts 7, the said post being cut away for a short distance above the teeth 45, as at 46, for a purpose hereinafter recited.

The operating means 3 for moving the member 2 into operative position with respect to the member 1 may embody a circular cam 47, fixed to a shaft 48, journaled in standards 49, mounted upon the base 8, said cam operating upon a roller 50, journaled in depending arms 51, which are secured to the plate or table 14. The shaft 48 is provided at one end with a pinion 52, which meshes with a gear 53, fixed to a shaft 54, journaled in the standards 49 and carrying at one side of the frame 5 an arm 55, provided at its outer end with a counterbalance-weight 56. The shaft 54 also carries an operating-arm 57, which is also arranged at one side of the frame 5.

The operating member 29, whereby the hydraulic feed or pump 27 is operated to regulate the hydraulic pressure within the casing 20, may consist of a toggle-arm 58, connected pivotally at one end, as at 59, with the gear 53 and at the other end, as at 60, with the valve 61 of the feed or pump 27. The arm 58 is connected with the gear 53 at the proper point to cause the increase of hydraulic pressure within the casing 20 when the presser member 2 is in operative position with respect to the presser member 1 and to cause the decrease of said hydraulic pressure

previous to withdrawal of the presser member 2 from the presser member 1.

The steam-chest 18 is provided with a suitable supply-pipe 18^a and the hydraulic pump or feed 27 with a suitable supply-pipe 27^a. The hydraulic pump or feed 27 may be located at any suitable point, and the feed-pipe 28 is flexible to permit movement of the presser member 2 relative to the pump or feed 27.

The operation and advantages of my improved hat blocking and pressing machine will be readily understood by those skilled in the art to which it appertains. The hat or hat-body is placed over the presser proper, 17, with the crown fitting down around the elastic envelop 32 and the brim resting upon the base-plate 30. The operating-arm 57 is then depressed, and the cam 47 raises the carriage 4 and presser member 2, which latter is swung inwardly beneath the presser member 1 by the rack-bar 41 and gear 42, the latter of which is rotated by the engagement of the pinion 44 with the teeth 45 in the upward movement of the carriage. When the stop 2^a is thus brought into engagement with the stop 15^a and the presser proper, 17, is directly centered beneath the shell 11, the pinion 44 becomes disengaged from the teeth 45 and the lateral movement of the presser member 2 ceases, the pinion 44 riding through the cut-out space 46. The operation of the cam is, however, continued until the presser proper, 17, with the hat or hat-body thereon, is brought up into the shell 11 of the presser member 1. At this phase of the operation the valve 61 of the pump or feed 27 is operated by the toggle 58 and gear 53 to cause a strong hydraulic pressure within the casing 20 and through the tube 37 and within the elastic envelop 32. This elastic envelop expands and positively presses every portion of the hat-crown within the shell 11, effectually and evenly blocking the same. At the same time the piston 22 rises under the hydraulic pressure and effectually presses the brim between the base-plate 30 and the lower smooth surface 11^a of the steam-chest 11. The base-plate 30 thus operates as a brim-board or brim-presser. The movement of the operating-arm being continued, the hydraulic pressure will be decreased by operation of the valve 61, and the withdrawal of the presser proper, 17, from the shell 11 is readily effected, the carriage 4 being lowered by the cam 47 and the member 2 being moved laterally by the rack-bar 41 into convenient position for removal of the finished work and for supplying with fresh work. It will be noted that the crown and brim of the hat are both effectually pressed while heated by the steam-chests 9 and 18 and that a greater perfection of finish is obtainable by the use of the elastic envelop of the presser proper, 17, together with the hydraulic pressure, than is possible to obtain with two rigid and unyielding presser members.

The entire machine is simple, convenient, and efficient in operation and cannot readily become impaired in its working efficiency.

I do not desire to be understood as limiting myself to the precise details of construction and arrangement described and shown, but reserve the right to vary the same in adapting my improvements to varying conditions of use without departing from the spirit of my invention and the scope of the following claims.

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

1. In an improved machine of the class described, the combination of the cylinder 20, and the piston 22 inclosed within said cylinder and actuated by hydraulic pressure, the steam-chest 18 mounted upon said piston, and the brim-board 30 mounted upon said steam-chest, and shell or block 31, surrounded by elastic material 32, mounted over said brim-board 30, substantially as shown and described.

2. In an improved machine of the class described, a presser member comprising a casing, a piston movably mounted within the casing, a presser proper mounted upon the pis-

ton, means for operating the piston, and means for moving the casing.

3. In an improved machine of the class described, a fixed presser member, a movable presser member, and means for moving said movable presser member; said movable presser member comprising a casing, a piston movably mounted therein, a presser proper mounted upon said piston, and means for operating said piston.

4. In an improved machine of the class described, a fixed presser member, a movable presser member, and means for moving said movable presser member; said movable presser member comprising a casing, a piston movably mounted thereon, a presser proper consisting of a rigid shell mounted upon said piston, a flexible envelop inclosing said rigid shell, and means for introducing hydraulic pressure beneath said piston and within said flexible envelop.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

ALFRED E. COOPER.

Witnesses:

WM. MENKHOFF,
F. M. PERCIVAL.