

(No Model.)

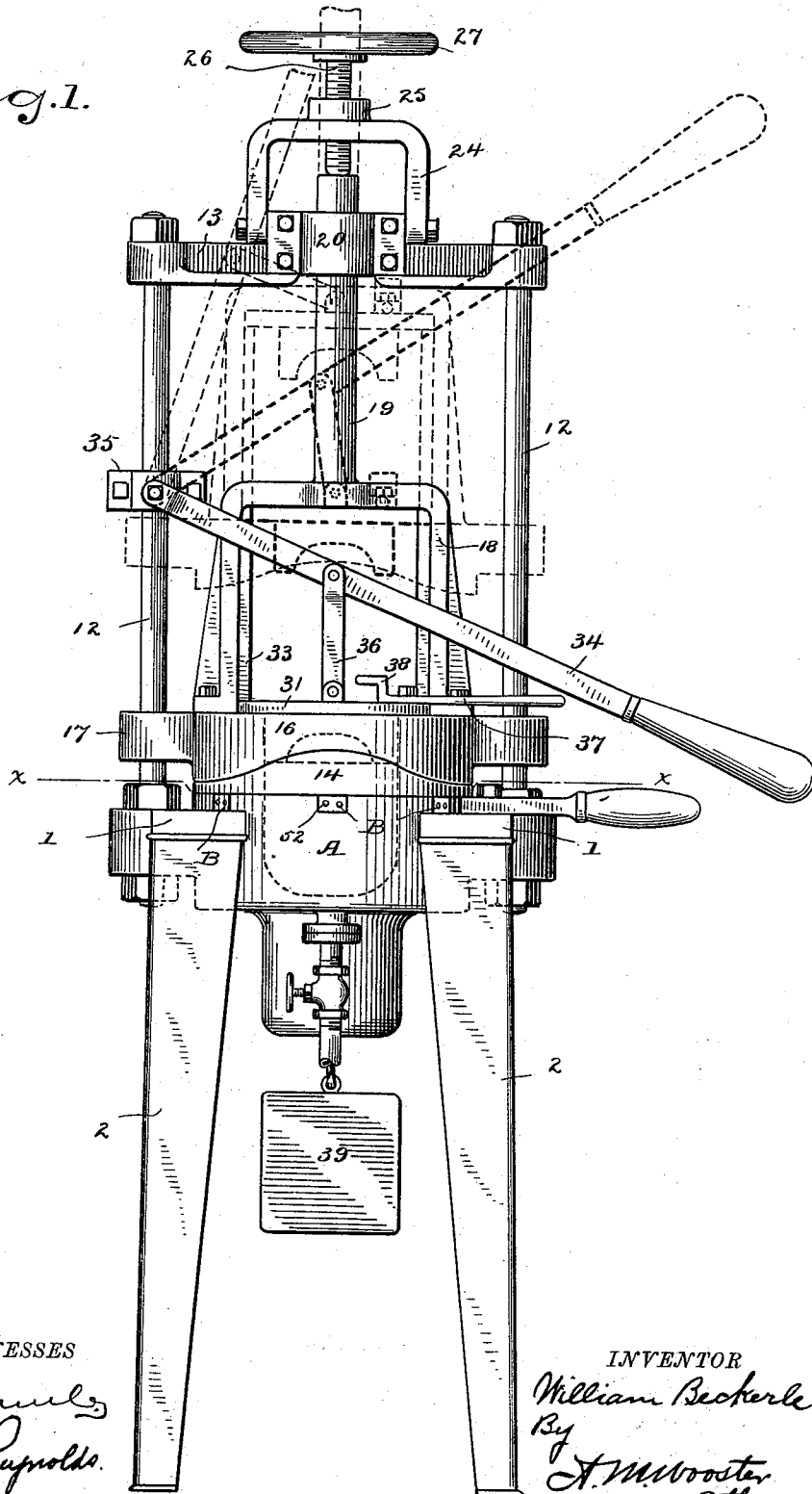
4 Sheets—Sheet 1.

W. BECKERLE.
MACHINE FOR BLOCKING HATS.

No. 509,284.

Patented Nov. 21, 1893.

Fig. 1.



WITNESSES

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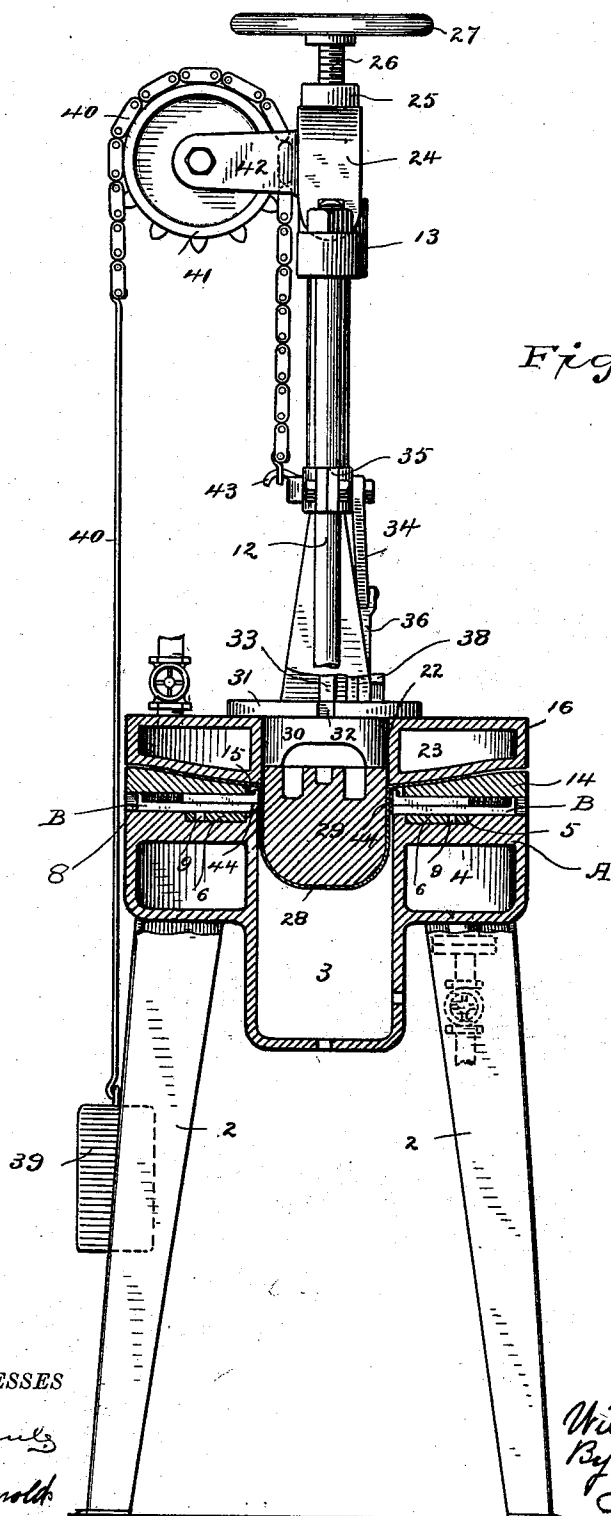
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Fig. 3.

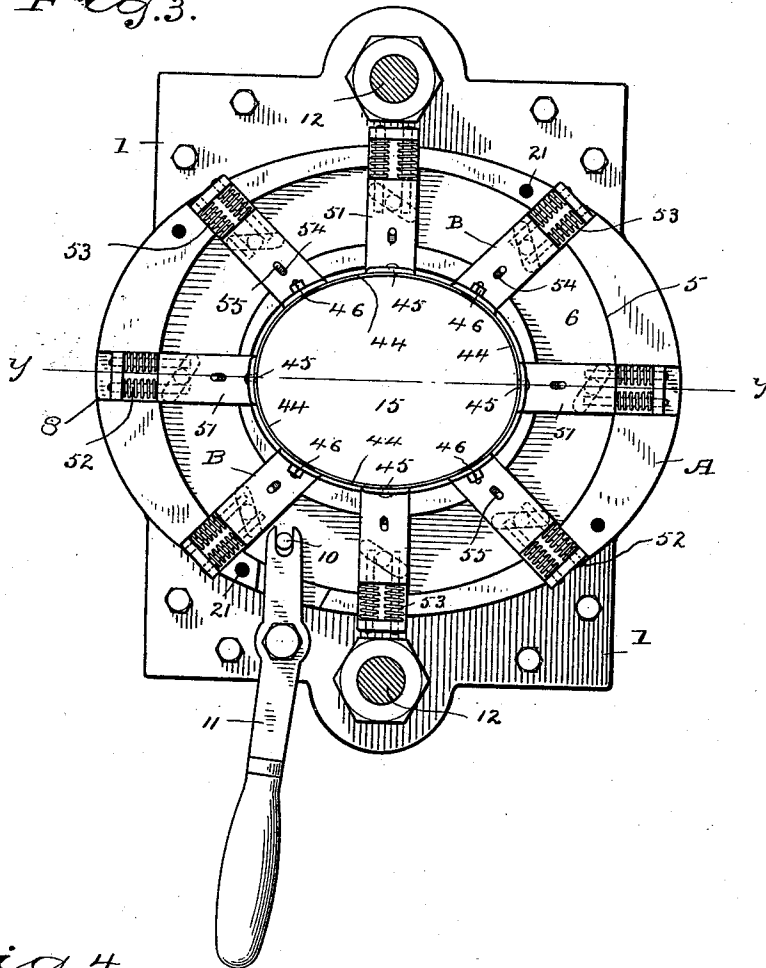
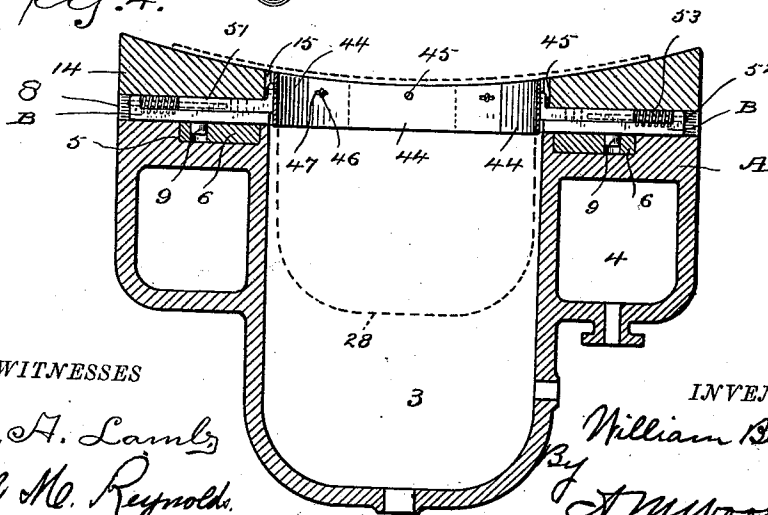


Fig. 4.



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Fig. 5.

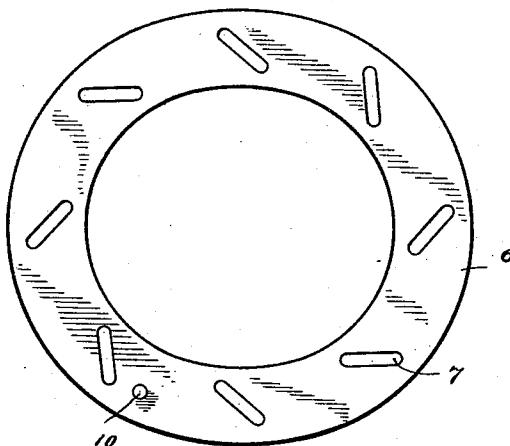


Fig. 6.

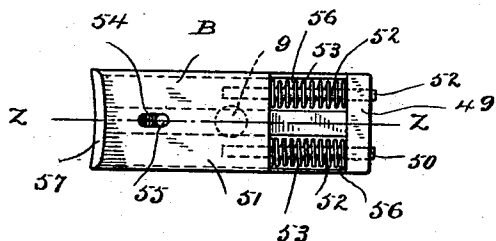


Fig. 7.

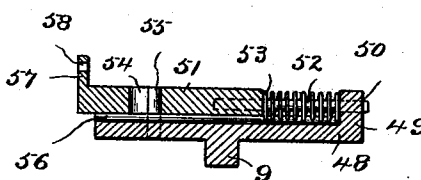
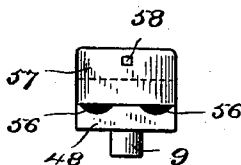


Fig. 8.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR BLOCKING HATS.

SPECIFICATION forming part of Letters Patent No. 509,284, dated November 21, 1893.

Application filed November 11, 1892. Serial No. 451,702. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BECKERLE, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Blocking Hats, Pressing the Brims, and Cutting the Bands Simultaneously; and I do hereby 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.

My invention has for its objects to produce a machine which will block the crowns of hats, press the brims and cut the bands simultaneously. With these ends in view I have devised the novel construction which I will now describe referring by letters and numbers to the accompanying drawings forming part of this specification, in which—

Figure 1 is a front elevation of the machine complete, the raised position of the yoke and block presser being shown in dotted lines; Fig. 2 an end elevation with the operative parts in section; Fig. 3 a section on the line *xx* in Fig. 1; Fig. 4 a section on the line *yy* in Fig. 3; Fig. 5 a plan view of the clamping ring detached, and Figs. 6, 7 and 8 are respectively a plan view, a longitudinal section on the line *zz*, and a front elevation of one of the yielding band cutter holders detached.

1 denotes the bed of the machine which is supported by legs 2.

A denotes a casting which is preferably made integral with the bed and is provided with a chamber 3 into which steam is admitted to steam the crown of the hat, and with a circular steam chamber 4 into which steam is admitted to heat the brim of the hat. Casting A is provided on its upper surface with a circular groove 5 which receives a ring 6 provided with oblique slots 7, said ring lying flush with the surface of the groove, and above the plane of the groove with radial grooves 8 in which lie the yielding band cutter holders which I have denoted by B. These band cutter holders are provided on their under sides with lugs 9 which engage the oblique slots in the ring, and the ring is provided on its upper surface with a pin 10 which is engaged by a lever 11, whereby the ring is oscillated and the yielding band cutter holders moved

in or out as may be required, all of which will presently be more fully explained.

12 denotes rods rigidly secured to the bed and extending upward therefrom which are provided at their upper ends with a cross piece 13.

14 denotes the lower brim plate which rests upon casting A, to which it is secured by screws, not shown, engaging holes 21, see Fig. 3, and is provided with a central opening 15 through which the crown of the hat and the block are passed.

16 denotes the upper brim plate which is provided with a central opening 22, and with a steam chamber 23. The upper surface of the lower brim plate and the lower surface of the upper brim plate are correspondingly curved so as to give the required curvature to the hat brim in pressing. The upper brim plate is provided with lugs 17 having openings through which rods 12 pass freely so as to permit said lugs to slide on the rod when the upper brim plate is raised or lowered.

18 denotes a yoke rigidly bolted to the upper brim plate and having extending upward therefrom a rod 19 which passes through a hub 20 in the cross piece.

24 denotes a swinging yoke pivoted to the cross piece and provided with a hub 25 through which a screw 26 passes, the point of said screw engaging the top of rod 19 when the yoke is in the raised position and being provided with a hand wheel 27 for convenience in operation.

In Fig. 2, 28 denotes a hat body and 29 an ordinary block within the hat.

30 denotes a block presser which is adapted to pass through opening 22 in upper brim plate 16 and acts to set the block down firmly in the crown of the hat, or as it is termed in the art block the hat, the body having been thoroughly softened by steam in chamber 3. The block presser is carried by a plate which is provided on opposite sides with notches 32 which engage ribs 33 on the inner sides of yoke 18. The block presser is raised and lowered by means of a lever 34 the inner end of which is pivoted to a block 35 rigidly secured to one of the rods 12.

36 is a rigid link one end of which is pivoted to the lever and the other to plate 31.

37 is a latch pivoted to the plate and pro-

vided with a shoulder 38 which is adapted to engage the top of yoke 18 when the plate and block presser are in the raised position thereby locking said parts to the yoke as indicated by dotted lines in Fig. 1.

39 is a weight to which a suitable connection as a chain and rod 40 is attached, said chain passing over a sprocket wheel 41 pivoted to a bracket 42 extending backward over the cross piece, the lower end of said chain being connected to a hook 43 on yoke 18. The weight is in practice made sufficiently heavy so that it will lift yoke 18 and all the parts carried thereby when they are released.

44 denotes the band cutters which are in practice strips of spring steel and are carried by yielding band cutter holders B lying in radial grooves 8 in casting A, the band cutters themselves lying in opening 15 in the lower brim plate. The ends of the band cutters, which are preferably four in number, lap past each other as clearly shown in Fig. 3. The center of each band cutter is rigidly secured to one of the yielding band cutter holders at either one end or one side of the opening by a bolt 45. At the quarters, that is intermediate the cutter holders at the sides and ends of the hat are other cutter holders to which the ends of the cutters are attached by means of bolts 46 which pass through slots 47 in the ends of the band cutters and engage the cutter holders, see Fig. 4.

The construction of the yielding band cutter holders, which forms an important feature of my invention, is clearly illustrated in Figs. 6, 7 and 8 in connection with which see Figs. 3 and 4. As already stated B denotes the yielding cutter holders as a whole, each cutter holder being provided with a lug 9 engaging one of the oblique slots in the ring. For convenience in description I will term the base of each cutter holder, that is the portion having lug 9, as 48. At the rear end of the base is a wall 49 having holes 50 through it. Above the base is a slide 51 provided with rearwardly extending rods 52 which pass through holes 50 in wall 49. Surrounding these rods are strong coil springs 53 the action of which is to force the slide forward. The slide is provided with a slot 54 which is engaged by a pin 55 which extends upward from the base, this pin serving in connection with the rods to retain the slide in position at all times and to limit the movement thereof by engagement with the ends of the slot. 56 denotes grooves in the base which are provided to receive the springs. At the forward end of the slide is a flange 57 provided with an angular hole 58 through which either a bolt 45 or a bolt 46 passes to secure a band cutter to the slide. This operation which is termed in the art of hat making, band cutting, is necessary to clearly define the angle at the intersection of the brim and crown of the body so that when a hat band is placed thereon in the operation of trimming, the edge of the band will set down closely to the brim and without be-

ing turned outward by a rounded angle at the intersection of the brim and crown. It will be seen in Fig. 4 that the upper edges of the band cutters are curved to correspond with the curvature of the lower brim plate. By providing yielding band cutter holders I am enabled to make a single machine work equally well on all sizes and styles of hats. It is of course well understood that the ovals of hats vary greatly, some being made relatively long, some more nearly round and others more nearly ovoidal in shape. In practice, with my improved machine, when lever 11 is oscillated to move the holders and band cutters inward the movement is continued until each holder is forced inward as far as possible the springs permitting certain of the slides which carry the band cutters to yield so that the oval described by the inner faces of the overlapping band cutters conforms exactly to the shape of the hat block.

The operation is as follows: Suppose that the operation of blocking a hat has just been completed and that the parts are in the position shown in Figs. 1 and 2, the operator first oscillates lever 11 to move the band cutter holders and the cutters themselves backward out of engagement with the hat body. He then raises the block presser by means of lever 34, and when it is at its raised position, that is the lower position shown in dotted lines in Fig. 1, turns latch 37 and causes the shoulder to engage the top of yoke 18 thereby locking the block presser in the raised position, it being understood of course that when the lever is lifted plate 31 slides freely upward on ribs 33. The operator then loosens screw 26 by means of the hand wheel and turns swinging yoke 24 over forward. This releases yoke 18 and all the parts carried thereby and permits the weight to raise said parts to the upper position shown in dotted lines in Fig. 1 the upper brim plate sliding freely on rods 12. The operator then removes the blocked hat and places another hat with a block therein in position to be operated upon the crown of the hat passing through the opening in the lower brim plate and passing into chamber 3 in casting A. The operator then presses yoke 18 and the parts carried thereby down to the position shown in full lines in Fig. 1, against the power of the weight, turns the swinging yoke upward to the position shown in Fig. 1 placing the point of screw 26 over the end of rod 19 and then turns the hand wheel and forces the rod, yoke and upper brim plate down upon the brim of the hat, it being of course understood that the upper brim plate is provided with a steam chamber by which it is heated, and that the lower brim plate rests upon steam chamber 4 and is thoroughly heated thereby, the crown of the hat being softened by the direct contact of steam therewith in chamber 3. The operator next releases the latch and sets the block down firmly in the crown of the hat by means of pressure applied to lever 34, said pressure being trans-

mitted to the block presser through rigid link 36. The operator next oscillates lever 11 and forces the yielding band cutter holders and the band cutters against the hat body at the intersection of the crown and the brim thereby as it is termed cutting the band. The parts are allowed to remain in this position as long as may be required to thoroughly block the hat, press the rim and cut the band, after which the cutter holders are moved backward, the block presser raised and locked in the raised position and then the yoke and the upper brim plate and with it the block presser are raised by the weight as already described, these operations being continuously repeated. It will of course be understood that the steam connection with chamber 23 in the upper brim plate must be either flexible or jointed so as to permit the brim plate to be raised or lowered without disengaging the parts.

Having thus described my invention, I claim—

1. The combination with bed 1 and casting A constructed as described, the lower brim plate resting thereon said brim plate being provided with a central opening 15 and curved on its upper surface to give the required curvature to the brim, and the upper brim plate curved on its lower surface to correspond with the curvature of the lower brim plate and provided with lugs 17, a central opening 22 and a yoke 18 extending upward therefrom said yoke having an upwardly extending rod 19, rods 12 extending upward from the bed on which the lugs slide freely, a cross piece connecting the upper ends of the rods and having a hub 20 through which rod 19 passes, a block presser adapted to pass through the upper brim plate, a lever and link for raising the block presser, a latch for locking the block presser to the top of the yoke, a swinging yoke having a screw adapted to engage the top of rod 19 to force said rod and the yoke downward, and a weight and connection adapted to raise the yoke and parts carried thereby when the swinging yoke and screw are turned out of the way.

2. The combination with the bed, the lower brim plate rods 12, cross piece 13 having hub 20, and the upper brim plate having lugs 17 engaging the rods, a central opening and a yoke 18 having ribs 33, and rod 19 engaging hub 20, of the block presser having a plate 31 provided with notches 32 engaging the ribs, lever 34 pivoted to one of the rods 12, a link 36 connecting said lever and plate 31, a latch on said plate adapted to engage the top of the yoke to hold the plate and presser in the raised position, a swinging yoke having a screw engaging the top of rod 19 to press said rod and the parts carried thereby downward, and a weight and connections for raising said parts when the swinging yoke and screw are turned out of the way.

3. In combination, the support having the central opening to receive the hat crown, the

band cutters the radially movable band cutter holders comprising main slides adapted to move in ways in the support, the supplemental slides movable on the main slides the springs interposed between the main and supplemental slides, the said supplemental slides being attached to the band cutters, and the means for moving the slides substantially as described.

4. In combination, the support having a central opening, the band cutters arranged about said opening, the radially movable holders comprising the main slides with the supplemental slides movable thereon and the springs interposed between the main and supplemental slides and the means for moving the slides consisting of the ring 6 having inclined slots, the said main slides having pins entering said slots and the supplemental slides being attached to the band cutters, substantially as described.

5. In a hat blocking machine, the lower support cast with a depending chamber 3, and also with the circular chamber 4 and having a central opening and radial and annular grooves formed in its upper surface, in combination with the band cutter slides arranged in the radial grooves, the ring lying in the annular groove for operating the band cutter slides and the independent brim plate secured to the top of the casting over the band cutter slides to cover the same, substantially as described.

6. In combination, the lower casting formed with a central opening and having a circular steam chamber 4, the upper brim plate having a steam chamber and a central opening, an independent lower brim plate secured to the top of the lower casting A, and the radially movable band cutter holders arranged between the lower brim plate and the top of the lower casting, said independent lower brim plate being removable and acting as a cover for the sliding holders to retain and guide their movements, substantially as described.

7. The combination with the band cutters, of yielding cutter holders by which they are carried said holders consisting of a base having a wall 49 with holes 50 through it and having also a pin 55 extending upward therefrom, a slide having a slot engaged by said pin, and rearwardly extending rods passing through holes 50 coil springs surrounding said rods and bearing against the wall and the slide, and a flange at the forward end of the slide to which the band cutter is attached.

8. The combination with casting A and the lower brim plate resting thereon and having a central opening 15, of band cutters 44 lying in said opening, a series of independently yielding cutter holders by which the band cutters are carried, and suitable means for moving said series of cutter holders in or outward radially.

9. The combination with brim plate 14 the upper surface of which is curved to give the

required curvature to the hat brim and which is provided with a central opening, of a series of radially movable and independently yielding band cutter holders, and a series of band cutters secured to said holders lying in said opening the upper edges of said cutters being curved to correspond with the curvature of the brim plate.

10 In combination, the lower brim plate having a central opening a series of band cutters having their meeting vertical edges overlapping each other a series of yielding cutter holders each cutter being connected at its center with one holder and having slotted connections at its ends with two other cutter holders, substantially as described.

15 11. In a hat blocking machine, the casting A, the lower brim plate, the upper brim plate, the series of radially movable and independently yielding band cutters and the block

presser with means for operating the same, substantially as described.

12. The combination with casting A having steam chamber 3 to receive the hat crown, the lower brim plate having central opening 15 through which the hat crown is passed, and the upper brim plate having an opening 22, of a block presser by which the block is seated in the hat crown, band cutters 44 and radially movable yielding cutter holders by which the band cutters are carried, said parts being arranged as described so that a hat may be blocked, the brim pressed and the band cut simultaneously.

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

WILLIAM BECKERLE.

Witnesses:

A. M. WOOSTER,

E. M. BULKLEY.