

S. J. MILLER.
CURLING MACHINE FOR SOFT HATS.
APPLICATION FILED DEC. 27, 1912.

1,060,275.

Patented Apr. 29, 1913.

3 SHEETS-SHEET 1.

Fig. 1.

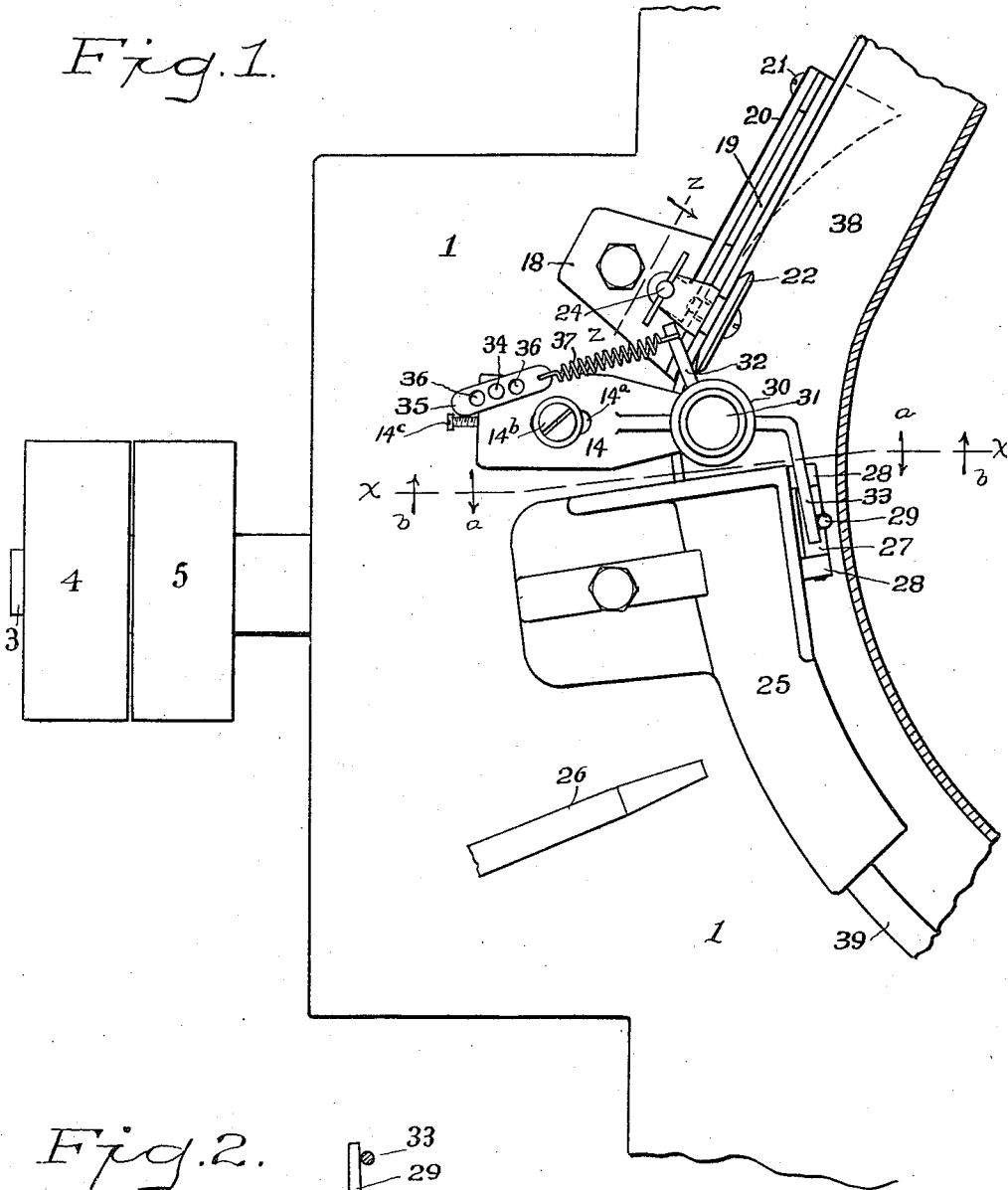
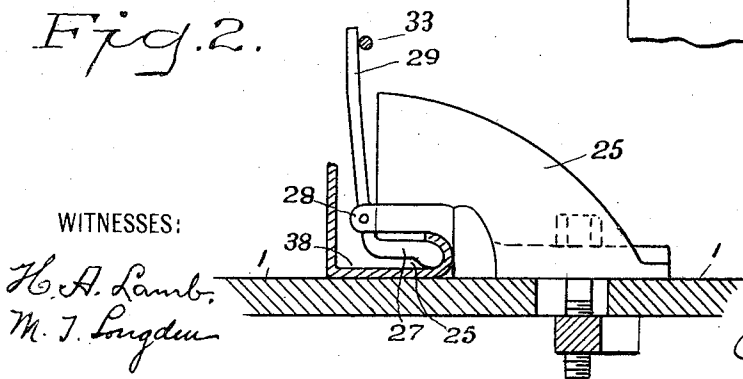


Fig. 2.



WITNESSES:

H. A. Lamb.
M. J. Longden

INVENTOR
S. J. Miller.

BY *[Signature]*
ATTORNEY

S. J. MILLER.
CURLING MACHINE FOR SOFT HATS.
APPLICATION FILED DEC. 27, 1912.

1,060,275.

Patented Apr. 29, 1913.

3 SHEETS—SHEET 2.

Fig. 3.

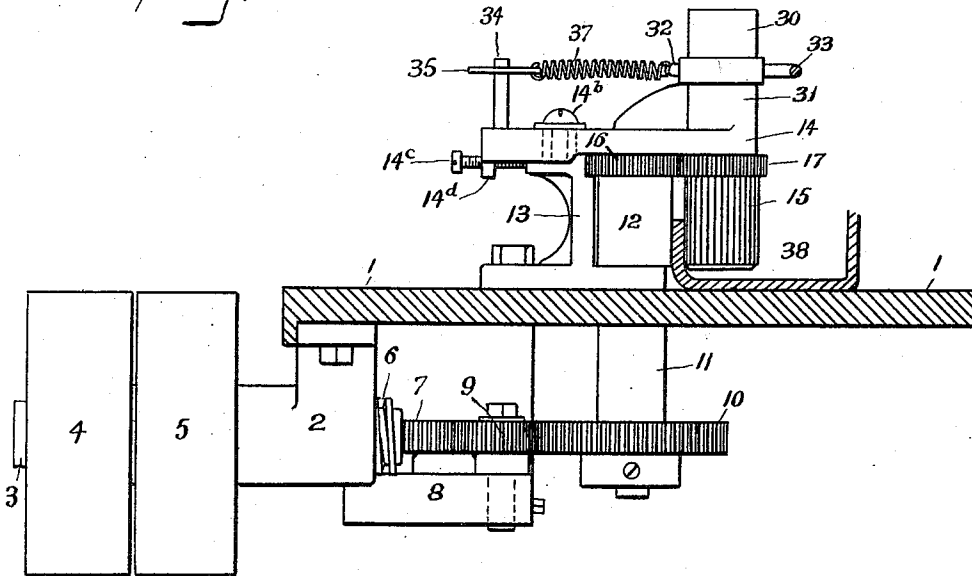


Fig. 4.

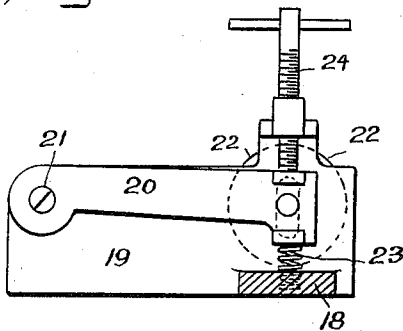
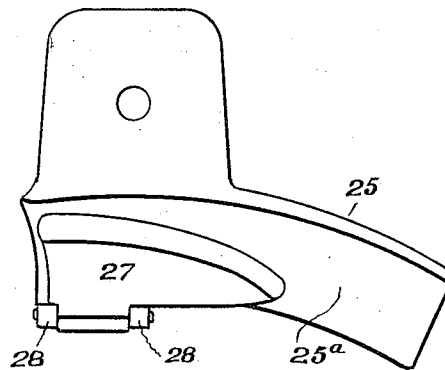


Fig. 5.



WITNESSES:

H. A. Lamb.
M. J. Longden

INVENTOR
S. J. Miller.

BY *[Signature]*
ATTORNEY

1,060,275.

3 SHEETS—SHEET 3.

Fenton S. Belt
M. J. Longden

INVENTOR
Stephen J. Miller

BY
W. H. Smith
ATTORNEY

UNITED STATES PATENT OFFICE.

STEPHEN J. MILLER, OF DANBURY, CONNECTICUT.

CURLING-MACHINE FOR SOFT HATS.

1,060,275.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed December 27, 1912. Serial No. 738,878.

To all whom it may concern:

Be it known that I, STEPHEN J. MILLER, a citizen of the United States, residing in the city of Danbury, county of Fairfield, State of Connecticut, have invented certain new and useful Improvements in Curling-Machines for Soft Hats; and I do 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 relates to certain new and useful improvements in machines for curling the brims of soft hats, and has for its object to provide an exceedingly simple and efficient machine of this description, and with this end in view my invention consists in the details of construction and combination of parts hereinafter fully set forth and then particularly pointed out in the claims which conclude this description.

In the accompanying drawing Figure 1 is a broken plan view of my improvement. Fig. 2 a section at the line *x, x*, of Fig. 1, looking in the direction of the arrows *a*. Fig. 3 a section at the line *x, x*, of Fig. 1, looking in the direction of the arrows *b*. Fig. 4 a detail section at the line *z, z*, of Fig. 1, and Fig. 5 is a detail bottom view of the curling devices. Fig. 6 is a perspective view of the machine, parts thereof being broken away. Fig. 7 is a detail plan view of the power gearing.

Similar numerals of reference denote like parts in the several figures of the drawing.

1 is the bed or table of the machine to the bottom surface of which is secured a hanger 2 within which is journaled the power shaft 3 which carries a loose pulley 4 and a tight pulley 5.

On the inner end of the shaft 3 is a worm 6 which meshes with a worm wheel 7 that is journaled upon a bracket 8 depending from the bed 1, which wheel meshes with an idle spur gear 9 supported by said bracket, said spur gear meshing with a large gear 10 that is carried by a vertically disposed rotary short shaft 11 which latter is journaled within suitable bearings in the bed 1 and extends upwardly beyond said bed and carries an active feed roll 12. It will therefore be readily understood that as the power shaft revolves the roll 12 will be revolved through the medium of the worm 6, worm wheel 7 and gears 9 and 10.

A bracket 13 is carried by the bed or

table 1 and the roll 12 is journaled therein. A slide plate 14 is carried by the bracket 13 and has a pendant guide roll 15 journaled therein that is arranged complementary to the roll 12. Said rolls 12 and 15 carry intermeshing gears 16 and 17 to cause them to revolve together and thereby facilitate the passage of a hat brim therebetween. The slide 14 is adjustable on the bracket 13 to vary the space between the two rolls 12 and 15, the preferred manner of adjustably mounting the said slide being by providing a slot 14^a therein that is engaged by a bolt or screw 14^b that engages the bracket 13. The slot and bolt connection between the slide and bracket, obviously permits a limited adjustment of the slide relative to the bracket. The adjustments of the slide may be in any convenient manner, one simple expedient being suggested by the use of an adjusting screw 14^c extending through a lug 14^d that is provided with a threaded passage for said screw, the screw engaging the bracket 13.

18 is a bracket secured to the bed 1 and provided with a lateral extension 19, and 20 is a lever pivoted at 21 to the end of this extension.

22 is a disk journaled within the free end of the lever 20 and capable of free rotation. The lever is normally elevated by means of the spring 23 which has a bearing against the underside of the lever, and a thumb screw 24 driven through the top of the bracket against the upper edge of the lever is utilized to force the latter downwardly against the resiliency of the spring 23, while the reverse movement of the thumb screw will allow this spring to force the lever upwardly this movement of the lever being necessary in order to adjust the normal position of the disk 22 for the purpose hereinafter to be described.

25 is the curling shackle adapted to be heated in any suitable manner, as, for instance, by a gas flame, directed by the pipe 26 against the shackle which latter is adjustably secured to the bed 1 in the usual manner.

The shackle 25 is hollowed out to provide a channel 25^a for the hat brim, and curved to correspond with the curvature of said brim, and within said channel an elongated curling rat 27 is disposed, the rat being preferably tapered longitudinally, and curved complementary to the channel of the

shackle. Lugs 28 project laterally from the outer side of the shackle, and to said lugs the rat is pivoted. A rat operating pin 29 extends vertically from the heel of the rat 27, said pin projecting well above the shackle 25.

A collar 30 is loosely mounted on a post 31 that rises from slide 14, said collar being provided with radiating pins 32 and 33. A pin 34 is carried by the slide 14 and a connecting plate 35 is provided with a longitudinal row of openings 36 adapted for selective engagement with said pin 34. A spring 37 connects plate 35 with pin 32 of collar 30, the tension of the spring being obviously adjustable by means of the described manner of connecting the plate 35 to the pin 34 of slide 14. The pin 33 has an angular free end portion that engages pin 29, and the pressure exerted by spring 37 causes said pin 33 to press pin 29 outwardly so that the rat is yieldably forced toward the inner wall of the channel of the shackle 25. Such pressure exerted to force the rat toward the inner wall of the channel is sufficient to hold the hat brim against said inner wall, but obviously the pressure exerted will yield sufficiently to accommodate hat brims of different thicknesses.

In the drawing 38 denotes the hat brim which is first introduced between the guide disk 22 and the extension 19 so that the brim may be properly guided to the feed rolls 12, 15. If the size of the curl is to be comparatively great the guide disk is adjusted to a horizontal plane considerably above that of the bed of the machine, but if the size of the curl is to be comparatively small, this guide disk is adjusted nearer the bed of the machine.

As the edge of the hat brim passes from the feed rolls it will be delivered directly to the curling devices between the shackle and the rat and as the hat brim passes through the shackle it will be compressed resiliently between the latter and the rat and will gradually leave the rat and pass out beyond the shackle in curled condition, this curl in the drawing being denoted by the numeral 39. The fact that this curl is effected by means of a resiliently acting rat is of the greatest importance, since the thickness of soft hats varies and if the brim were to be passed between surfaces that exerted a dead pressure it would be very apt to become scorched and ruined.

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

1. A hat brim curler comprising a shackle provided with a hat brim channel, means for heating the shackle, means for conducting hat brims to the channel, a curling rat in the channel and pivotally connected to the shackle, yieldable means for holding the

rat in engagement with the hat brim, and means for adjusting the pressure of the yieldable means.

2. A hat brim curler comprising a shackle provided with a brim channel, a rat pivotally connected to the shackle and lying within the channel, means for heating the shackle, a pin carried by the rat for operating the same, an adjustable slide, and means having a yieldable connection with the slide for engaging the pin to oppose pivotal movement of the rat away from the channel.

3. A hat brim curler comprising a support, a shackle carried thereby, a curling rat pivotally connected with the shackle and cooperating therewith to curl a hat brim, means for heating the shackle, a pin carried by the rat, a post carried by the support and provided with a loose collar, means carried by the collar for engaging the pin to normally hold the rat against a hat brim in the shackle, and yieldable means for opposing movement of the collar.

4. A hat brim curler comprising a support, a heated shackle carried thereby, a curling rat pivotally connected to the shackle and cooperating therewith to curl the outer edge of a hat brim, a post carried by the support, a collar rotatably mounted on the post, means carried by the collar for holding the rat in engagement with a hat brim, a slide carried by the support, and yieldable means connecting the slide and collar and opposing rotary movement of said collar.

5. A hat brim curler comprising a support, a heated shackle carried thereby and provided with a hat brim channel, a curling rat pivotally connected to the shackle and lying within the channel, a post carried by the support, a loose collar on the post, means carried by the collar for holding the rat in engagement with a hat brim in said channel, and yieldable means opposing movement of said collar in a direction to release the pressure on the rat.

6. A hat brim curler comprising a support, a heated shackle carried thereby, said shackle being provided with a hat brim channel, a rat pivotally connected to the shackle and lying within the channel, said rat tapering longitudinally and corresponding in contour with the channel, and yieldable means for causing said rat to engage a hat brim within the channel.

7. A hat brim curler comprising a support, a cooperating shackle and curling rat carried thereby, an active feed roller, a slide carried by the support, means for adjustably connecting the slide to the support, a feed roller carried by the slide and cooperating with the active feed roller, and yieldable means connected to the slide for normally holding the rat in position to act upon a hat brim.

8. A hat brim curler comprising a support, a heated shackle carried thereby, said shackle being provided with a hat brim channel, a curling rat pivotally connected to the shackle and lying within the channel, a post carried by the support and provided with rotatable means for normally preventing pivotal movement of the rat away from the channel, a slide carried by the support, and adjustable yieldable means connecting the slide to the said rotatable means.

9. A hat brim curler comprising a support, a heated shackle carried thereby, a rat pivotally connected to the shackle and coöperating therewith to impart a curl to the outer edge of a hat brim, a post carried by the support, a collar loose thereon, pins radiating from said collar, a pin projecting from the rat and engaged by one of the collar pins to normally hold the rat in engagement with a hat brim, and yieldable means engaging the other pin of the collar and opposing rotary movement of said collar.

10. A hat brim curler comprising a support, a heated shackle carried thereby, a curling rat pivotally connected to the shackle and coöperating therewith to curl a hat brim, a pin carried by the rat, a post carried by the support and having a collar loose thereon, means carried by the collar for engaging the pin to hold the rat in engagement with a hat brim, a slide adjust-

ably connected to the support, and yieldable means adjustably connected to the slide for opposing movement of the collar in direction to release the pin.

11. In a hat brim curler the combination with a support provided with a shackle and a coöperating brim curling rat, an active feed roller carried by the support, a slide adjustably connected to the support, a feed roller carried by the slide and disposed adjacent the active roller, means for rotating said rollers to conduct hat brims to the shackle and rat, and means for guiding a hat brim to the feed rollers.

12. In a hat brim curler the combination with a support provided with a shackle and a coöperating brim curling tool, feeding means for conducting hat brims to the shackle and tool, a bracket carried by the support, a lever pivotally connected to the bracket, a guide disk carried by the free end of the lever for guiding hat brims to the feed rollers, a spring opposing downward movement of the lever, and means for adjusting the lever downward against the tension of the spring.

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

STEPHEN J. MILLER.

Witnesses:

LEON LEWIS HADDEN,
CHRISTIAN QUIEN.