

J. P. ROCHFORD.  
MACHINE FOR CURLING HAT BRIMS.  
APPLICATION FILED MAY 16, 1908.

911,615.

Patented Feb. 9, 1909.

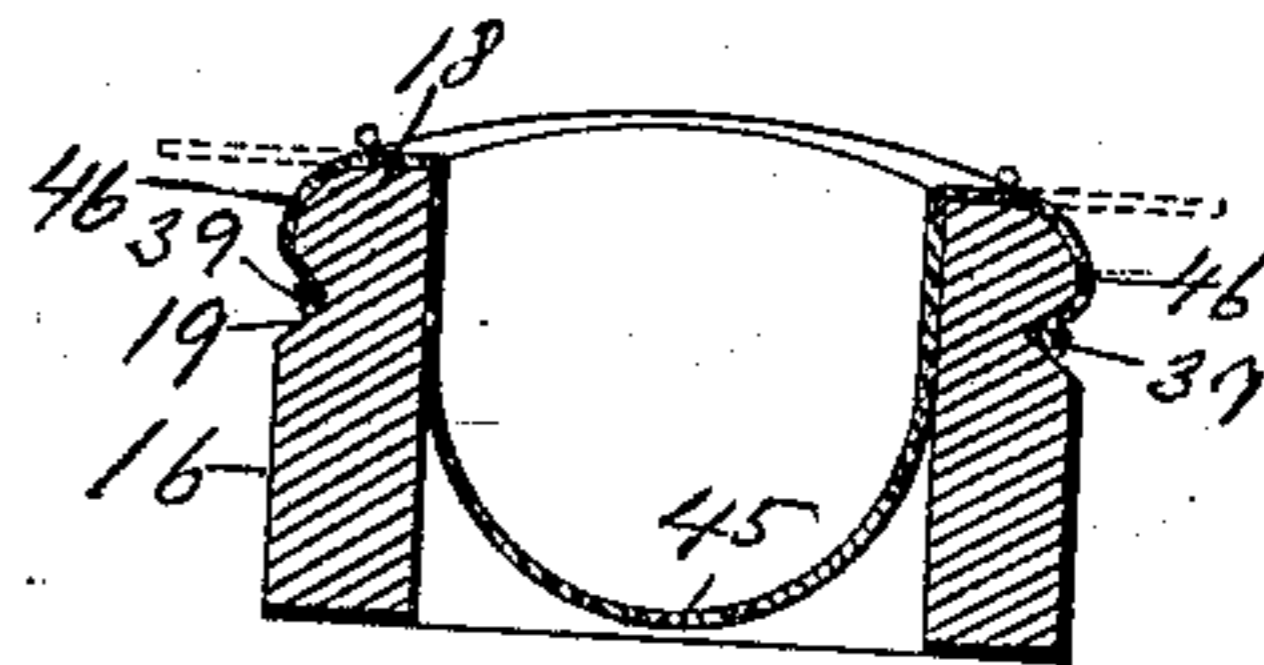
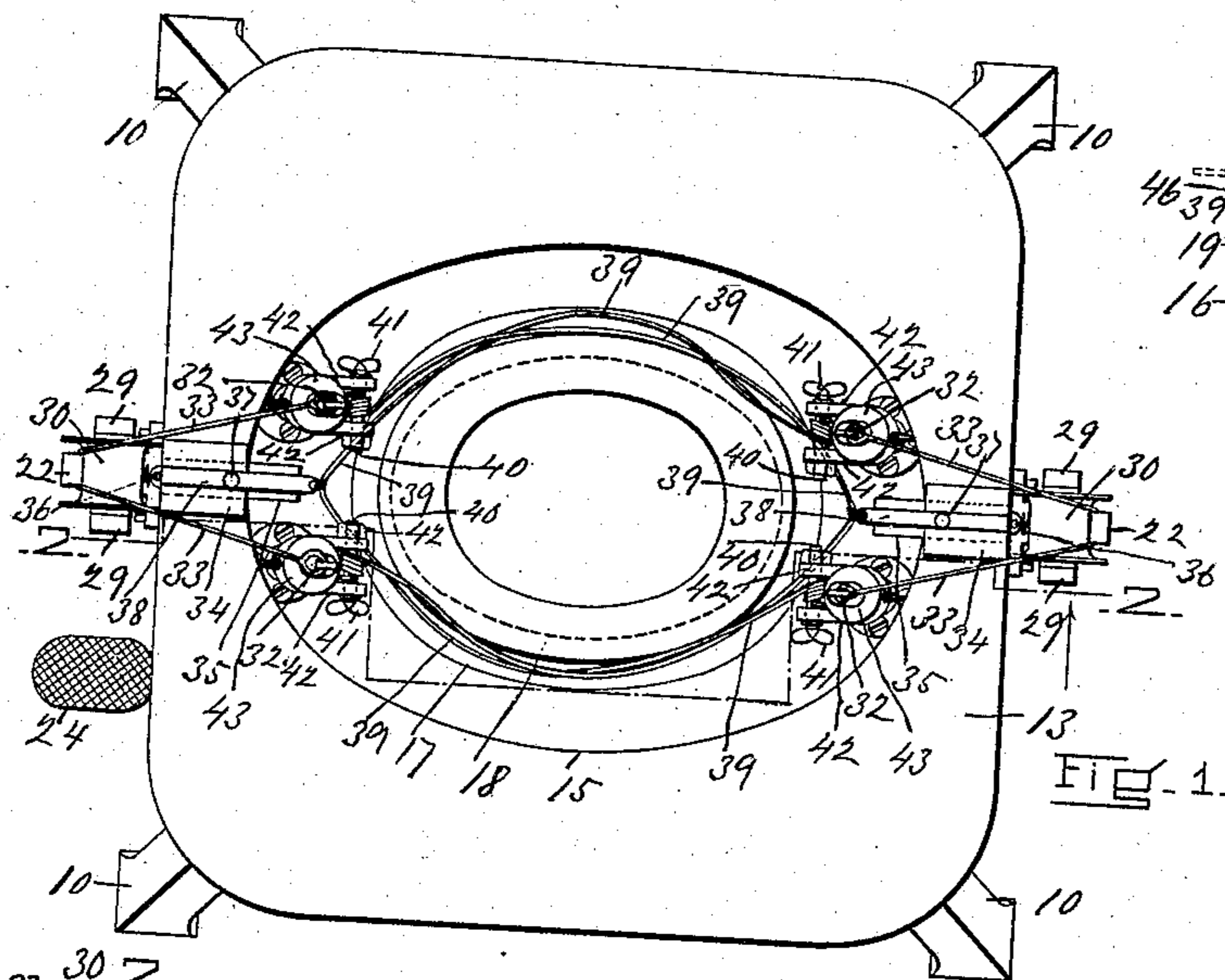


FIG. 4.

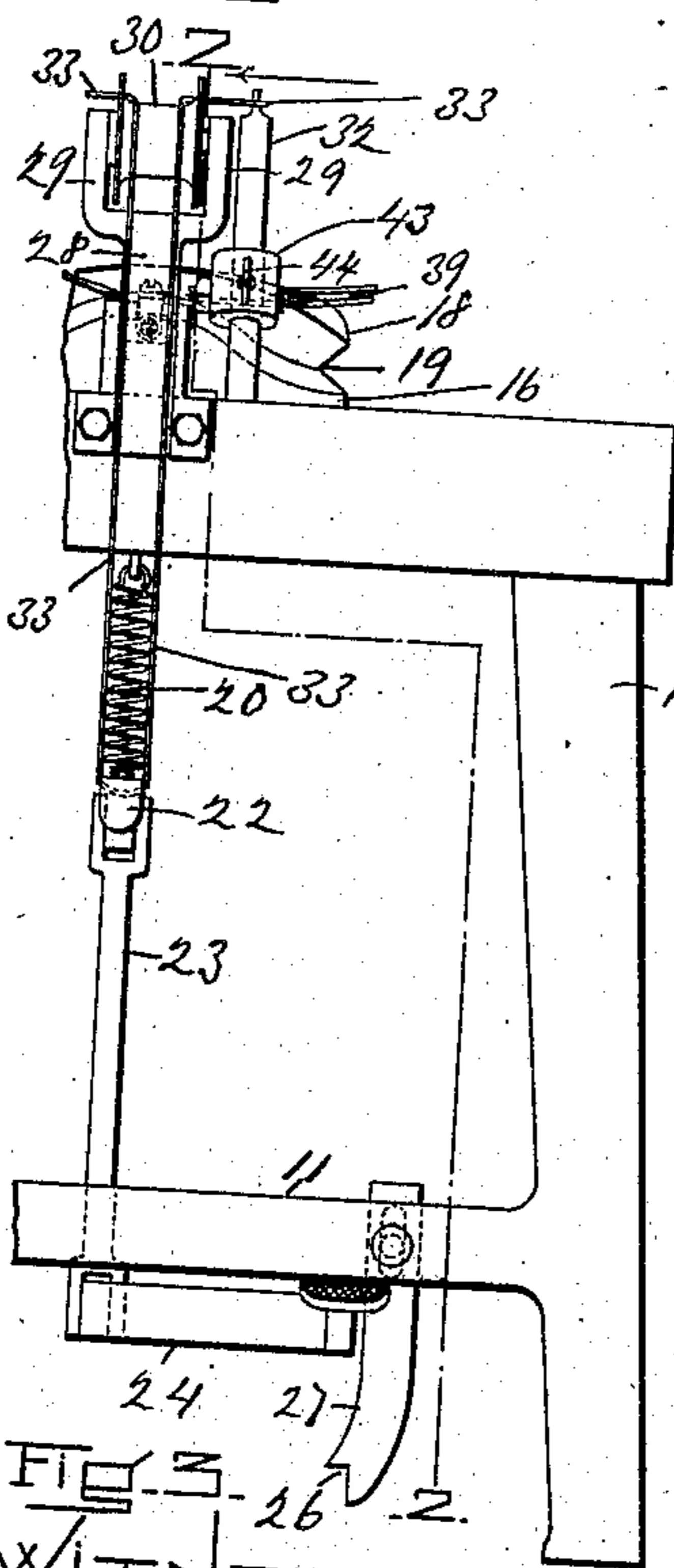


FIG. 3.

WITNESSES  
M. A. Atwood.  
Frank G. Parker.

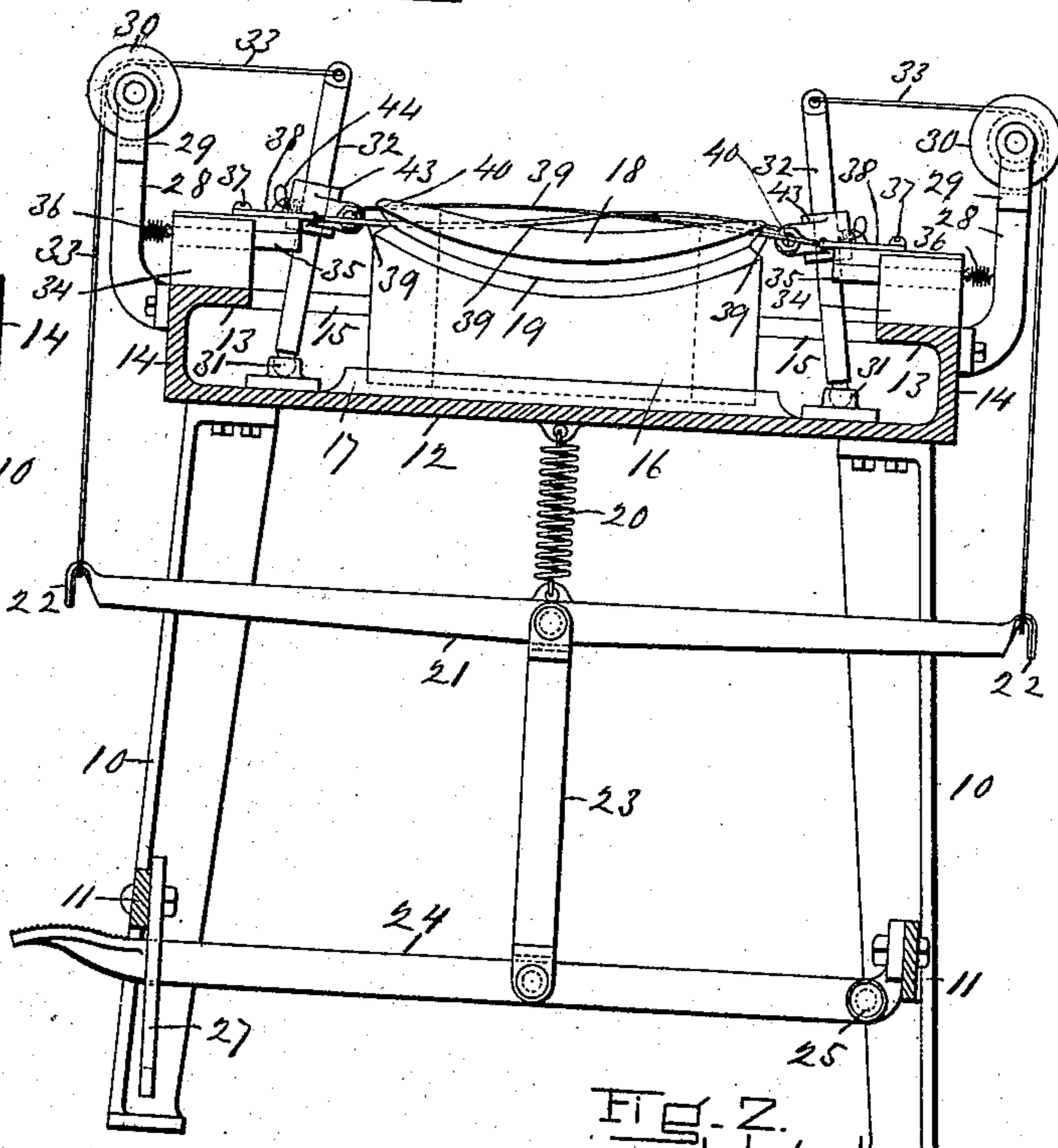


FIG. 2.

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# UNITED STATES PATENT OFFICE.

JOSEPH P. ROCHFORD, OF PAWTUCKET, RHODE ISLAND.

MACHINE FOR CURLING HAT-BRIMS.

No. 911,615.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed May 16, 1908. Serial No. 433,218.

*To all whom it may concern:*

Be it known that I, JOSEPH P. ROCHFORD, a citizen of the United States, residing in Pawtucket, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Machines for Shaping Hat-Brims, of which the following is a specification.

This machine has for its object to shape the brim of a hat, more particularly that style of hat commonly termed a "derby", while said brim is warm and in a sufficiently soft condition, into the desired form, more especially as regards the "curl", such form or shape of the curl being regulated by the prevailing mode or the fancy of the maker.

The invention consists in the construction and arrangement of parts fully described below, reference being had to the accompanying drawings, whereby the forming or shaping process is accomplished quickly, economically, and to hats of different sizes.

In the drawings, Figure 1 is a plan view of my improved machine, the former or "flange" being in position. Fig. 2 is a section taken on lines 2—2, Figs. 1 and 3, looking in the direction of the arrows. Fig. 3 is a side elevation of a portion of the machine. Fig. 4 is a cross section of the former removed with the hat-crown and formed brim in position.

Similar numerals of reference indicate corresponding parts.

The frame of the machine comprises legs 10, cross-bars 11, a shelf 12 supported by the legs, and a top or bed 13 supported by and rigid with the shelf to which it is connected by the rigid or integral supports 14, said top or bed being centrally provided with a hole 15, substantially elliptical in shape and adapted to accommodate formers or "flanges" 16 (not new in this invention) of suitable sizes, said formers or flanges resting on and being held in central position by a suitably recessed support 17. The upper edge 18 of the former is shaped downward and its outer surface is provided with a groove 19 of suitable shape to receive the outer edge of the brim as it is formed into shape and the desired curl produced conforming to the prevailing fashion or style, the inner surface of the former being of shape to receive the reversed crown of the hat whose brim rests on the edge 18.

Secured centrally to the under side of the shelf 12 is the spring 20 whose lower end is

secured centrally to and supports a bar 21 formed into downwardly extending hooks 22 at its ends, said bar being connected pivotally to a downwardly extending bar or link 23 the lower end of which is pivotally connected to a pedal 24 hinged at 25 to one of the cross-bars 11, and adapted when pressed down to be caught in a notch 26 in the locking-arm 27 adjustably secured to the other cross-bar.

Rigidly secured at their lower ends to the part 14 of the frame on opposite ends of the machine, are upwardly extending supporting-arms or standards 28 whose spreading upper ends 29 sustain horizontal spools 30. Pivotaly secured at their lower ends, preferably by means of ball and socket joints 31, to the bed 12 between the standards 28 and the former, and extending up through the hole 15, are swinging arms 32, there being two swinging arms between each standard and the adjacent side of the former. These two swinging arms at each end of the machine are exactly alike, but the arms of each pair are at a little distance apart, as illustrated in Fig. 1, and the arms of each pair have secured to their upper ends the opposite ends of a wire or its equivalent 33, said opposite ends converging from the pair of arms to the spool 30 on that side and the wire extending down and being caught or looped under the hook 22 on that side. Thus the bar 21 when lowered pulls outward the upper ends of the swinging bars 32. Slideways 34 are mounted on the bed 13 between the standards 28 and the opposite edges of the hole 15, and slides 35 are adapted to be moved horizontally in said slideways toward and from said hole, springs 36 connecting the slides with the standards 33 and holding them normally toward said standards, as shown in the drawings. Secured at 37 to these slides are bars 38 which extend horizontally toward the former and over the hole 15, and secured to the inner end of each bar 38 is the central portion of a wire 39, said wire extending on opposite sides of the former, and its ends being secured to and wound around spindles or screws 40 adapted to be rotated by thumb-pieces 41, said spindles extending through ears 42 on slides 43 vertically adjustable on the bars 32 by means of set-screws 44. The opposite ends of the spindles or screws 40 are provided with nuts 45, and the ends of the wires are secured to and coiled around and held adjustably

upon said spindles in any well known manner.

When the machine is in its normal position, as illustrated, the slides 35 and bars 38 are held outward as far as possible by the springs 36, and the wires 39 are loose on opposite sides of the former, the central portions of the wires being at opposite ends of the former and the wires extending from the bars 38 at said ends on opposite sides of the former to the spindle at the opposite ends of the machine. The wires are sufficiently loose to allow the flange 16 which is taken from a baker while the hat is upon it to be pressed in the position shown in Figs. 1, 2 and 3 between the spreading wires. The crown 45 of the hat extends down into the former, as indicated in Fig. 4, and the brim, which is in the position illustrated in dotted lines in Fig. 4, is pressed down over the sides of the former opposite the grooves 19 between said former and the wires, and the pedal 24 is pushed down, with the effect of drawing down the bar 21 by means of the connection 23 against the power of the spring 20, pulling down the wires 33 and pulling outward the upper ends of the swinging bars 32. This pulls outward the slides 43 with their ears 42, and, of course, pulls outward the ends of the two wires 39, forcing said wires against the portion of the hat-brim 46 which is in the groove, and pressing said hat-brim against and into said groove, the ends of the wires pulling the central portions thereof which are secured to the bars 38 against the power of the springs 36, and thus causing the shape of the groove 19 to produce the desired form or curl on the brim. While the machine is in this position, the wires, being pulled in opposite directions, are held taut against the hat-brim in the groove. The pedal may be locked in the notch 26 in the locking-arm 27, and the pressure of the wires will hold the hat-brim within the notch against the former until the pedal is released. Upon the release of the pedal, the spring 20 contracts and lifts the bar 21, and releases the pull by the wires 33 on the upper ends of the swinging bars 32, with the effect that the two wires 39 which extend in opposite directions from the bars 38 to the spindles 40 on the opposite sides of the machine, are loosened, and the hat may be removed from the former or both removed together from the machine, and the brim finished in any desired manner. The removal of the hat from the former does not occur however until the hat has cooled and become sufficiently rigid. Of course there may be as many notches as desired in the locking-arm 27.

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

65 1. In a machine of the character and for

the purpose described, a table or bed provided with an opening and supported by a frame, a grooved former or flange, means for supporting the former or flange in said opening, horizontal slides supported by the table or bed at opposite ends of the machine and adapted to slide toward the former when it is in position, pairs of swinging bars or levers pivotally connected at their lower ends to the machine one pair being located at each end of the machine on opposite sides of the slide at that end, a pair of wires one of which has its ends connected with the swinging bars or levers at one end of the machine and with its central portion connected to the slide at the opposite end and the other of which connects the other slide with the other pair of bars or levers, and mechanism for pulling outward the upper ends of the swinging bars and thereby forcing the wires against the hat-brim in the groove on opposite sides of the former.

2. In a machine of the character and for the purpose described, a table or bed provided with an opening and supported by a frame, a grooved former or flange, means for supporting the former or flange in said opening, horizontal slides supported by the table or bed at opposite ends of the machine and adapted to slide toward the former when it is in position, pairs of swinging bars or levers pivotally connected at their lower ends to the machine one pair being located at each end of the machine on opposite sides of the slide at that end, a pair of wires one of which has its ends connected with the swinging bars or levers at one end of the machine and with its central portion connected to the slide at the opposite end and the other of which connects the other slide with the other pair of bars or levers, mechanism for pulling outward the upper ends of the swinging bars and thereby forcing the wires against the hat-brim in the groove on opposite sides of the former, and mechanism for releasing the tension on the wires and thereby enabling the hat or the hat and former to be removed from the machine.

3. In a machine of the character and for the purpose described, a table or bed provided with an opening and supported by a frame, a grooved former or flange, means for supporting the former or flange in said opening, horizontal slides supported by the table or bed at opposite ends of the machine and adapted to slide toward the former when it is in position, pairs of swinging bars or levers pivotally connected at their lower ends to the machine one pair being located at each end of the machine on opposite sides of the slide at that end, a pair of wires one of which has its ends connected with the swinging bars or levers at one end of the machine and with its central portion connected to the slide at the opposite end and

the other of which connects the other slide  
with the other pair of bars or levers, a sub-  
stantially horizontal bar supported below  
the bed by a yielding mechanism connected  
5 with the machine, spools supported by  
standards at the opposite ends of the ma-  
chine above the opposite ends of the said  
horizontal bar, a wire at each end of the ma-  
chine extending from the horizontal bar  
10 over the spool at the corresponding end and  
with its ends connecting with swinging  
levers at that end of the machine, and mech-

anism for lowering said bar and thereby  
forcing the wires which connect the slides  
and swinging bars against the hat-brim in 15  
the groove on opposite sides of the former.

In testimony whereof I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

JOSEPH P. ROCHFORD.

Witnesses:

HENRY W. WILLIAMS,  
M. A. ATWOOD.