

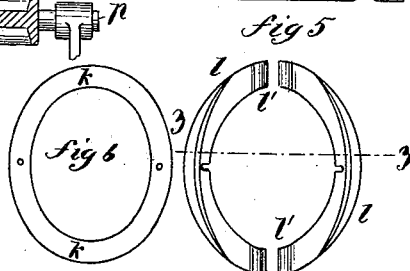
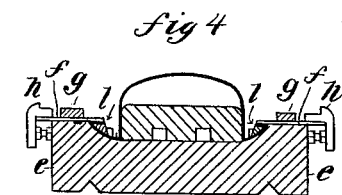
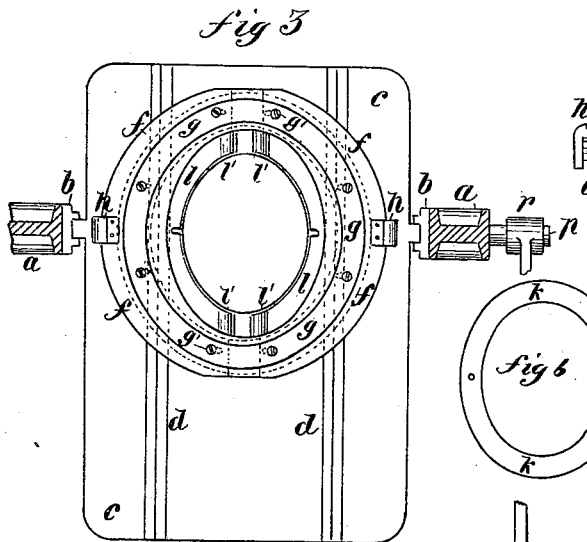
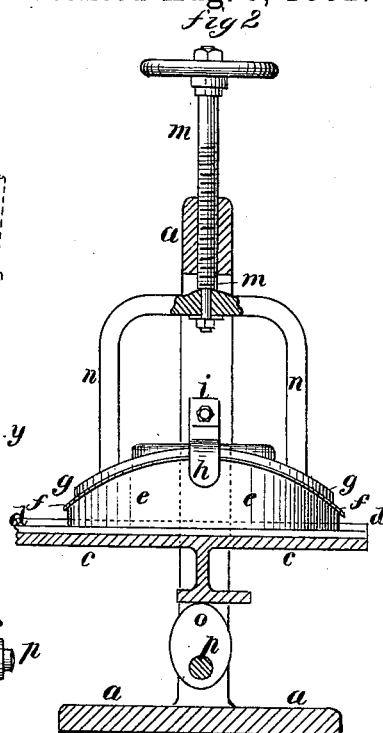
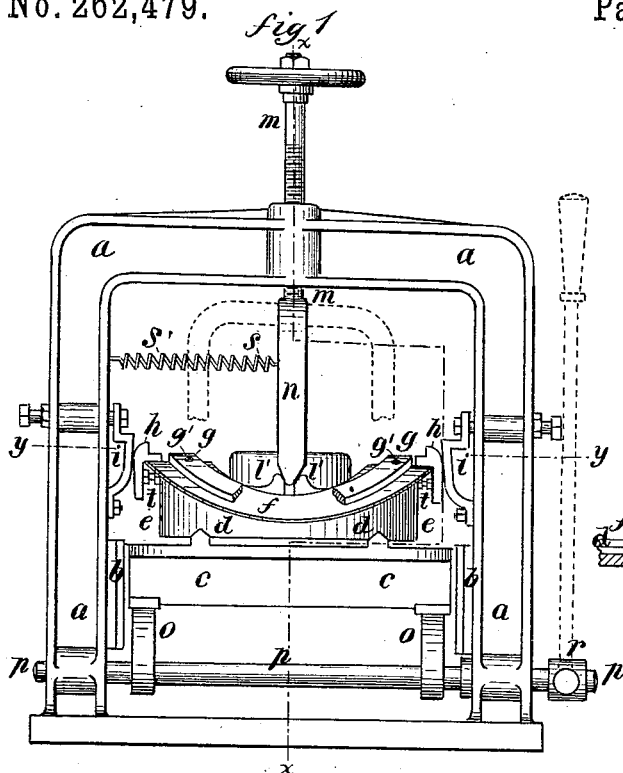
(No Model.)

T. ROWBOTHAM.

APPARATUS FOR SHAPING AND CURLING HAT BRIMS.

No. 262,479.

Patented Aug. 8, 1882.



WITNESSES:

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THOMAS ROWBOTHAM, OF HAZEL GROVE, COUNTY OF CHESTER, ENGLAND.

APPARATUS FOR SHAPING AND CURLING HAT-BRIMS.

SPECIFICATION forming part of Letters Patent No. 262,479, dated August 8, 1882.

Application filed May 23, 1882. (No model.) Patented in England January 1, 1881, No. 4.

To all whom it may concern:

Be it known that I, THOMAS ROWBOTHAM, of Hazel Grove, in the county of Chester, England, have invented certain new and useful
5 Improvements in Apparatus for Shaping and Curling Hat-Brims, of which the following is a full, clear, and exact description.

My invention relates more particularly to the manufacture of felt hats, and has for its object
10 to facilitate the shaping of the brims of such hats. The said brims are bent or curved to impart the required "set," and are also curled and turned up or over at the side edges, as is well understood. I effect this shaping and
15 curling by one operation. I employ a press which is fitted with side molding plates, blocks, or parts, which advance toward the hat-brims and act in conjunction with an expanding "former," which acts laterally upon the edges
20 of the brim in conjunction with the said molding-plates, to impart the required curl, and also acts vertically in conjunction with the block which supports the hat to impart the required set or curvature to the brim. I prefer to so
25 form the parts as that while the pressure upon the hat is sustained the knife may be passed along or around the hat-brim in such a manner as to remove the superfluous felt from the edge of the brim.

30 Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation, partly in section, of the complete apparatus. Fig. 2 is a sectional elevation taken on the line *xx* of Fig. 1. Fig. 3 is a sectional plan view taken on the line *yy* of Fig. 1. Fig. 4 is a sectional elevation of the molding-block. Fig. 5 is a plan
40 view of the expanding former. Fig. 6 is a plan view of the presser-ring upon which the parts of the expanding former slide; and Fig. 7 is a sectional elevation of the ends of the expanding former, taken on the line *zz* of Fig. 5.

45 In the said figures, *a* is the framing which carries the parts of the apparatus, and is adapted to be secured to a work-bench, as is usual. On the uprights of the framing are formed or fixed guides *b*, which are planed to receive
50 planed ribs, which are formed on a table, *c*, whereby the parallelism of the said table is

maintained during its upward and downward movements. On the face of the said table are formed V-shaped slides *d d*, upon which the molding-block *e* is fitted to slide. The upper
55 surface of this molding-block is curved, hollowed out, and shaped to suit the intended form which has to be imparted to the under surface of the hat-brim, as shown in Fig. 4. Upon the molding-block side plates, *f f*, are
60 fitted to slide. These plates are curved to suit the form of the block, and slide between the face of the block and the under side of an oval ring, *g*, which is secured to the block by means of screws *g'*, which pass through slots in the
65 plates *f*. The inner edges of the said plates are curved to the form which it is intended to impart to the cut edge of the curl, and the meeting ends or edges of the plates are or may be beveled and shaped to overlap. To the outer
70 edges of the said plates are fixed pieces *h h*, upon which act inclines *i i*, which are secured to the uprights of the framing. When the table is raised the said inclines push inward the plates *f*.
75

When the hat is placed in position upon the block a thin oval ring, *k*, (represented by Fig. 6,) is placed upon the brim, which ring is suitably shaped to suit the curvature of the brim. Upon this plate are placed two curved pieces, *l l*, which together act as an expanding former. Upon each end of each piece *l* is formed an upward projection, *l'*, upon which is formed an inclined face. The upper bar of the framing is prepared to receive a screw, *m*, and upon
85 the lower end of this screw is mounted a fork, *n*, and the lower end of each member of this fork is formed with two inclined faces to act as a wedge. When the table is forced upward the two wedges or the fork enter between the
90 inclines *l'* on the parts of the expanding former and force the said parts outward in opposite directions. In the example the table is acted upon by means of two cams, *o o*, which are fixed upon a shaft, *p*, which can be rotated to
95 the required extent by means of a hand-lever, *r*. The hat to be operated upon is placed upon the block when the table is in its lower position, and in order that the placing of the hat and the expanding former may be conveniently
100 effected the molding-block is drawn forward upon the sides *d*. To permit this movement

of the block the fork *n* has to be moved into the position indicated by the dotted lines in Fig. 1, and in the example this is effected by means of a spiral spring, *s*.

5 The operation of the apparatus may be described as follows: The hat-body having been placed upon the block, the ring *k* is placed upon the hat-brim, and the parts *l l* of the expanding former are placed upon the said ring.
 10 The block is then pushed forward upon the slides, and the fork *n* is brought round into the full position indicated by the full lines in Fig. 1. The hand-lever is then drawn down or acted upon, whereby the cams *o* are caused
 15 to force upward the table. The pieces *h h*, by sliding upon the inclines *i*, are forced inward, whereby the plates *f*, by sliding inward, turn down the side edges of the brim over the upper edges of the expanding former, as indicated in Fig. 4. The same upward movement
 20 of the table and block brings the inclined faces on the ends of the parts *l l* into forcible contact with the wedge-shaped ends of the fork *n*, whereby the parts *l l* are forced outward in
 25 opposite directions, thereby forcing the brim into the corners formed by the block and the plates *f*, and at the same time the said parts *l l* are forced downward, whereby the brim is pressed between the block and the ring *k*. Adjustable screw-stops *t t* determine the extent
 30 to which the plates *f* are forced inward, and the pressure upon the expanding former is regulated by turning the screw *m* so as to raise or lower the fork. While the hat-brim is under
 35 pressure a knife is passed around the curled brim so as to remove the superfluous material, the curved edges of the plates *f* acting as guides for the knife. When the hat has been sufficiently pressed the hand-lever is acted upon
 40 to lower the table, when the spring moves the fork out of the way, and the block can be drawn forward and the hat be removed.

It will be seen that the hat-brim is molded or set, curled, and trimmed during the one operation with the apparatus.

45 The arrangements for forcing inward the plates *f* and for expanding the former may be varied—as, for example, the inclines *i* and the fork *n* or a frame carrying inclines and wedges
 50 might be forced downward instead of the table and blocks being forced upward.

The ring *k* might be dispensed with, its principal uses being to constitute a presser which shall be continuous around the hat, and to present a surface upon which the parts of the expanding former can slide. 55

The molding-block may be so arranged upon springs that when the hat is fixed upon it the block will sink to allow the formers to pass over the expanding portion of the machine, which forms the curl on the hat so as not to injure the felt. On pushing forward the sliding portion of the machine the block rises to its proper level. 60

Instead of making the formers in two parts, as shown and described, I may make them in three, four, or more parts, if found necessary. 65

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent— 70

1. In a hat shaping and curling machine, the combination, with the bail or fork *n*, having tapering ends, of the curved plates *l*, provided with the vertical end projections, *l'*, having inclined faces, substantially as and for the purpose set forth. 75

2. In a hat shaping and curling machine, the hat-block mounted upon a table adapted to be forced upward, in combination with inclines *h* and *i*, plates *f f*, expanding former *l l*, and the forks *n n*, substantially as and for the purposes set forth. 80

3. In an apparatus for curling hat-brims, the rising table *c*, forks *n n*, the hat-block placed upon the table-plates *f f*, expanding former *l l*, inclines *h* and *i*, and the spring *s*, substantially as and for the purposes set forth. 85

4. In a hat shaping and curling machine, the adjustable gage-stops *t*, combined with hat-block *c* and plate *f*, substantially as and for the purpose set forth. 90

The above specification of my improvement in machine for shaping and curling hat-brims signed by me.

THOMAS ROWBOTHAM.

Witnesses:

WM. HULING,

JOSEPH LYTTLE,

Clerks to Messrs. Ormerod & Allen, Solicitors, Manchester.