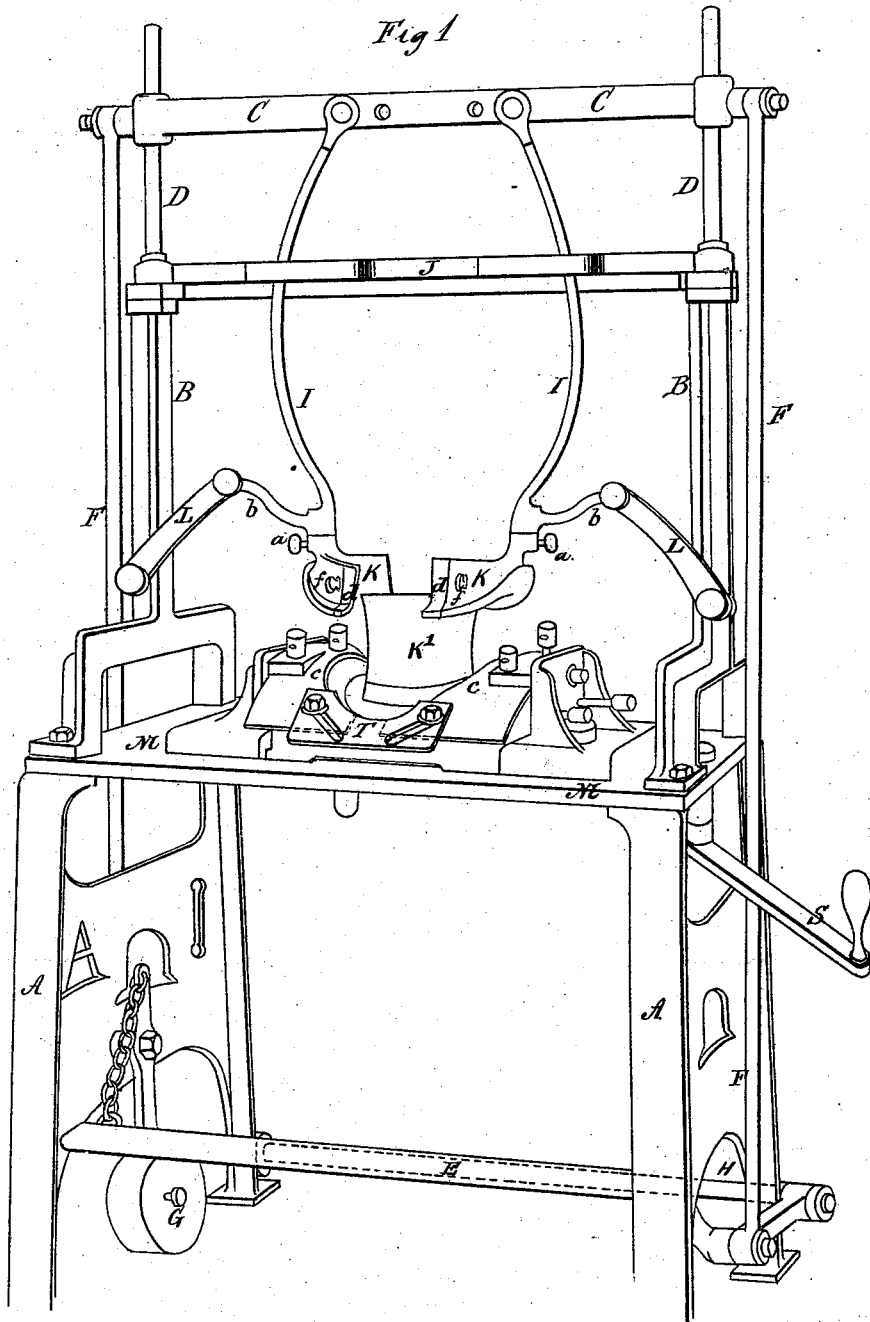


J. R. KELSEY.
HAT SHAPING MACHINE.

No. 260,298.

Patented June 27, 1882.



Witnesses,

J. A. Rutherford
Robert Everett,

Inventor,

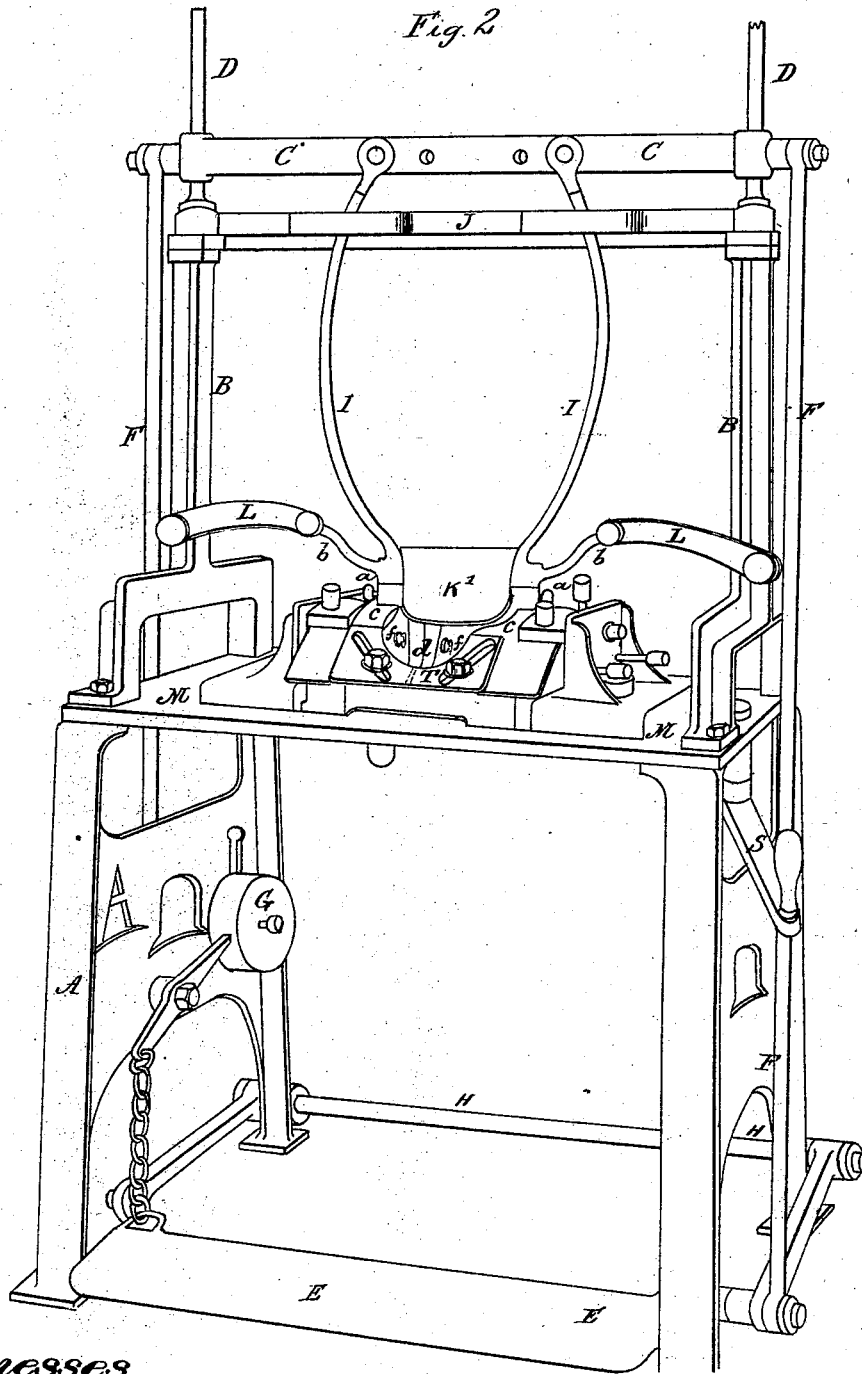
John R. Kelsey.

By *James L. Norris,*
Atty

J. R. KELSEY.
HAT SHAPING MACHINE.

No. 260,298.

Patented June 27, 1882.



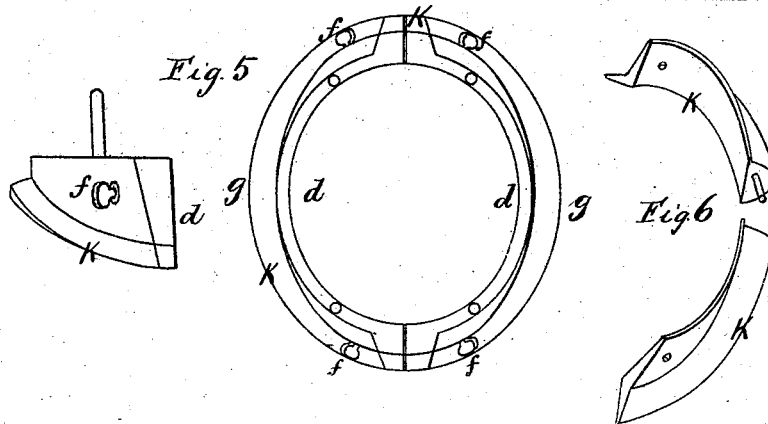
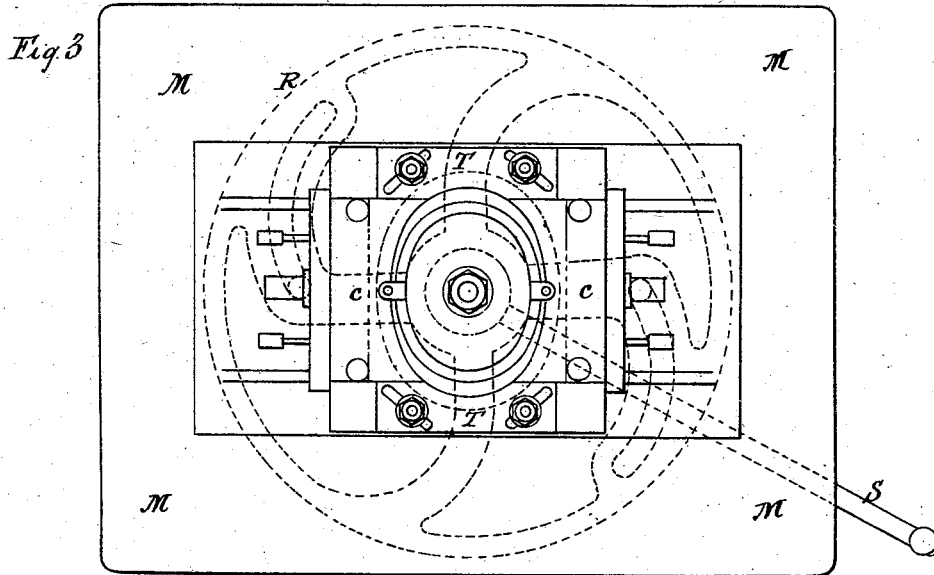
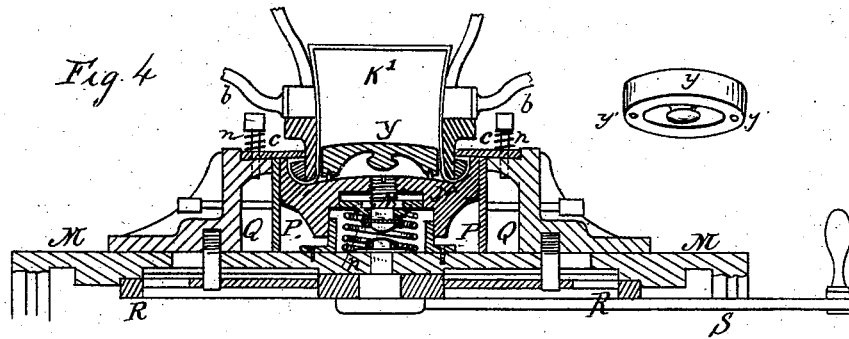
Witnesses,
J. A. Rutherford
Robert Couett

Inventor:
John R. Kelsey
 By *James L. Norris*
Norris

J. R. KELSEY.
HAT SHAPING MACHINE.

No. 260,298.

Patented June 27, 1882.



Witnesses

J. A. Rutherford
Robert Everett

Inventor:

John R. Kelsey.

By James L. Norris,
Atty.

UNITED STATES PATENT OFFICE.

JOHN R. KELSEY, OF BRISTOL, ENGLAND.

HAT-SHAPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 260,298, dated June 27, 1882.

Application filed May 10, 1882. (No model.) Patented in England July 7, 1881, No. 2,991, and in France March 8, 1882, No. 117,773.

To all whom it may concern:

Be it known that I, JOHN ROBINSON KELSEY, a subject of the Queen of Great Britain, and residing at Bristol, England, have invented a new and Improved Hat-Shaping Machine, (for which I have obtained a patent in Great Britain, No. 2,991, bearing date July 7, 1881; also, a patent in France, No. 147,773, bearing date March 8, 1882,) of which the following is a specification.

The object of this invention is a new or improved hat-shaping machine; and it consists in mounting upon a suitable frame a couple of uprights whose upper ends form guides for the movement of a cross-head actuated by a treadle and returned by a spring or weight. The frame supports a table, and has a block which can be removed at pleasure and another one substituted for a different-shaped hat-body. The table also supports sliding boxes, in which gas-jets may be arranged for heating them. Between the space occupied by the hat-body when in position and the movable boxes I arrange pressers, (formers,) said pressers being under control of rods attached to the cross-head and the treadle before mentioned. The presser-rods are connected to levers, whose opposite ends are pinned to the uprights, so that the pressers, in their up or down motions, move in segments of circles. The boxes are arranged, under the action of a lever, to move to and from the hat-body, and front and back clamps act, in conjunction with the pressers and the boxes, to give the necessary shape and set to the hat-brim, the curl being a permanent one by the action of the heat and pressure on one side and the coldness of the block on the other, the brim being set and the curl made at one operation.

The two features of novelty in my invention are the two pressers brought into position by means of levers acted upon by a treadle, and the back and front clamps acting in conjunction with the side boxes.

My invention will be clearly understood by the annexed drawings, in which Figures 1 and 2 are perspective views of the complete machine, one view having the pressers or curl-formers lifted out of contact with the hat shown upon the block. Fig. 3 is a plan of the table portion; Fig. 4, a section through the same; Fig. 5, a plan and front view of the presser or side curl-formers detached.

A is the frame of the machine; B B, the up-rights thereon.

C is the cross-head guided on posts D D when moved down by the treadle E, as in Fig. 2, through the rods F F, or up, as in Fig. 1, by the counterpoise G, the treadle being hung from the pivot-bar H at the back of frame A. The cross-head C has suspended two rods, I I, passing through the top stay, J, as a guide. The pressers or side-formers K K are connected by screw-pins *a a* to the rods I I, to enable them to be removed and others substituted at pleasure. The short legs *b b* of the rods I I are pinned to knuckle-levers L L, from which they describe a peculiar curvilinear motion to enable the formers to be placed against the hat-body K' and down upon the brim. After the curling operation the pins *f f* are removed and the parts *d d*, which are part of the rods I I, lift by the return of the treadle under the action of the weight G, the parts K K being then removable by hand, to be again affixed to the parts *d d*, ready for acting upon another brim.

The table M supports the block or mold N, (see Fig. 4,) and also two guide-irons, P P, which rest against the sides of it, with top edges corresponding in height and shape to the top of the mold.

Q Q are side boxes or side curlers, with flanges *c c*, in practice made capable of adjustment in their relation to the presser or templet K K, to pass over the top edges of the guide-irons P P, and of the mold N, to force the projecting portions of the hat-brim over upon the pressers K K. The boxes move in guides in the table M, under the action of a cam, R, (see Fig. 3,) by a hand-lever, S, which action also moves the front and back clamps, T T, to press up the front and back portions of the brim, which pressure acts simultaneously or instantaneously after the side curling, whereby a mechanical curling of the entire brim is made without producing a wrinkle in it where the edges or parts of the two side curlers and the front and back clamps meet.

The front and back clamps, T T, may be moved by the same cam R, or in other suitable manner. I prefer, however, to form diagonal slots in them, so that they slide to and from upon pins in the side-box flanges simultaneously when the boxes are moved by the cam and lever.

The formers or pressers K K, Fig. 5, are

each in two parts, so that the inner portions, *d d*, may be part of the rods *I I*, the outer or "shaped" parts, *g g*, which regulate the shape of the curl, being secured by screw-pins *f f*. The formers *K K*, each consisting of the parts *d* and *g*, impart the actual shape and set to the whole of the brim.

By means of a "baker" or brim-warmer, which is independent of the molder, and not herein particularly claimed, I heat the brim of the hat sufficiently to become softened and pliable. Care must be taken with silk hats that the plate of the baker is not too hot, as then it would cause the substance of the brim to separate or cockle. Having the brim sufficiently soft, remove it from the baker by taking hold of its edge on each side, by which means the brim will be slightly eased up at the sides and fall nicely to the shape of the disk or mold *N*. Then with the foot on the treadle *E* press gently (not suddenly or violently) down until the formers *K K* are in position, and the disk or mold *n* is pressed down as far as the springs *n* beneath it will allow. Then draw the lever *S*, by which the parts *c c* and *T T* are brought into position, and the brim of the hat is shaped, while the parts of the mold, being cold, permanently set the brim thus shaped. I find a square of merino or Italian cloth placed upon the disk or mold and beneath the hat of great use, especially in shaping hats already bound, as it protects the binding from the friction of the clamps or flanges *c c*. After the hat is shaped the lever *S* is thrown back and the foot is removed from the treadle and the pins *f f* drawn out, the pressure on the treadle is gradually eased, when the inner ring, *d d*, immediately rises, and the actual curl-mold *K* is left and is then easily removed by hand. The formers *K K* are then removed from the finished or shaped hat and again pinned to the rim *d d* for future use. When the curl is very large and the space between its inner edge and the side of the hat is too small to liberate *K* without disturbing the shape of the curl I form each half-curl mold *K* of two pieces. (See Fig. 6.) A pin unites them while being used, and then they can be easily withdrawn by pulling one to the right and the other to the left.

In the annexed drawings I have shown a silk hat in position upon the block and the appliances arranged to form the "Anglesea" curl; but other shapes or curls can be produced by fitting the requisite-shaped parts *d d* and *g g* to the pressers *K K*.

The invention is applicable to all kinds of hard brimmed hats, whether in felt or other material.

The shape, construction, and arrangement of the frame can be varied to suit tastes or desires, and also the positions, arrangement, and actions of the working parts. For instance, the side flanges, *c c*, can be made in two parts—one, the larger, to be permanent, the other, and front, detachable, so that various sets or

arches may be used without the expense of entirely new clamps.

The plate *T T* can be made in two parts, so that fronts with a larger or smaller sweep may be used. The balance might have a solid connection with the treadle instead of a chain. The springs *n* are placed under the mold *N*, to regulate its upward pressure, and on the flanges *c c*, so that in passing over the material they will not cut it, as they would be likely to do if rigid.

I therefore wish it to be understood that I make no claim to novelty in the machine shown in the drawings, except in so far that it enables my invention to be understood.

I claim—

1. In a machine for shaping and setting hat-brims, two suspended pressers, when brought into action mechanically by being depressed, and during such depression being acted upon by levers swinging on a stationary center, substantially as shown and described.

2. In a machine for shaping and setting hat-brims, the combination of the presser *K*, rod *I*, lever *L*, post *B*, cross-head *C*, guide *D*, rod *F*, and treadle *E*, or their equivalent, substantially as shown and described.

3. In an organized machine for shaping and setting hat-brims, the combination of the pressers *K K* with a disk or mold *N*, substantially as shown and described.

4. A former or presser consisting of a divided ring, *d d*, having the shaper *g g* attached thereto, substantially as described.

5. The semicircular former *K K*, having its shaped parts *g g* divided in two or more parts for convenience of removal, substantially as described.

6. In an organized machine, the combination of back and front clamps, acting in conjunction with side flanges, a divided former, and a mold for producing mechanically a curling over at the sides and a curling up at the back and front of the brim of a hat instantaneously and simultaneously, substantially as described.

7. In an organized machine, a disk or mold, a vertically-acting dividing presser or former, and horizontally-acting front and back side curlers, when combined and operated for shaping and setting the brims of hats, substantially as described.

8. The process of curling and setting the brim of a hat by first heating and then by independent organized mechanism shaping and molding the same, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN ROBINSON KELSEY.

Witnesses:

FRANCIS GILMORE BARNETT,
13 John Street, Bristol, England, Solicitor.

FREDERICK NORMAN,
Bristol Chambers, Nicholas Street, Bristol, England, Solicitor.