

(No Model.)

2 Sheets—Sheet 1.

E. TWEEDY.
HAT CURLING MACHINE.

No. 283,726.

Patented Aug. 21, 1883.

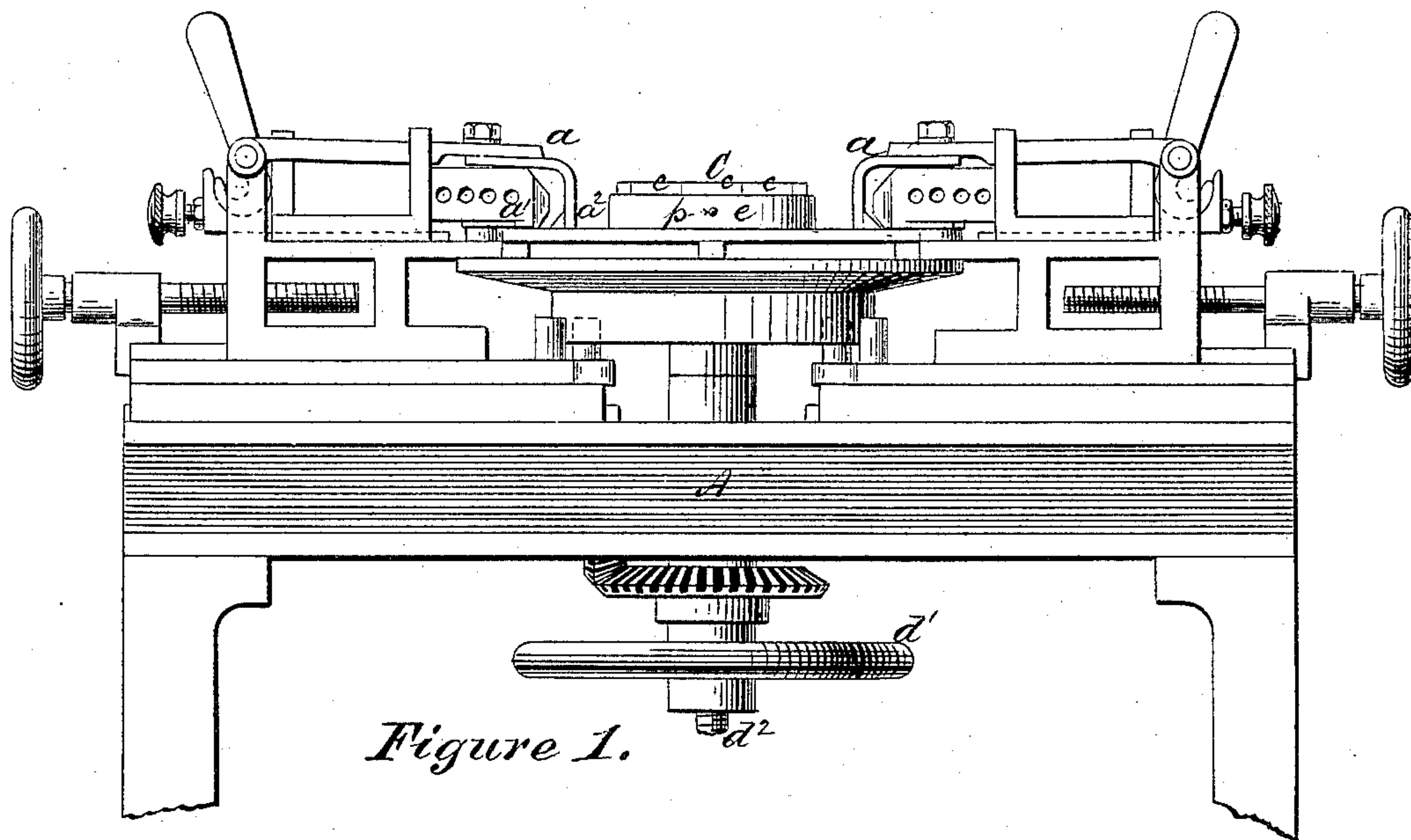


Figure 1.

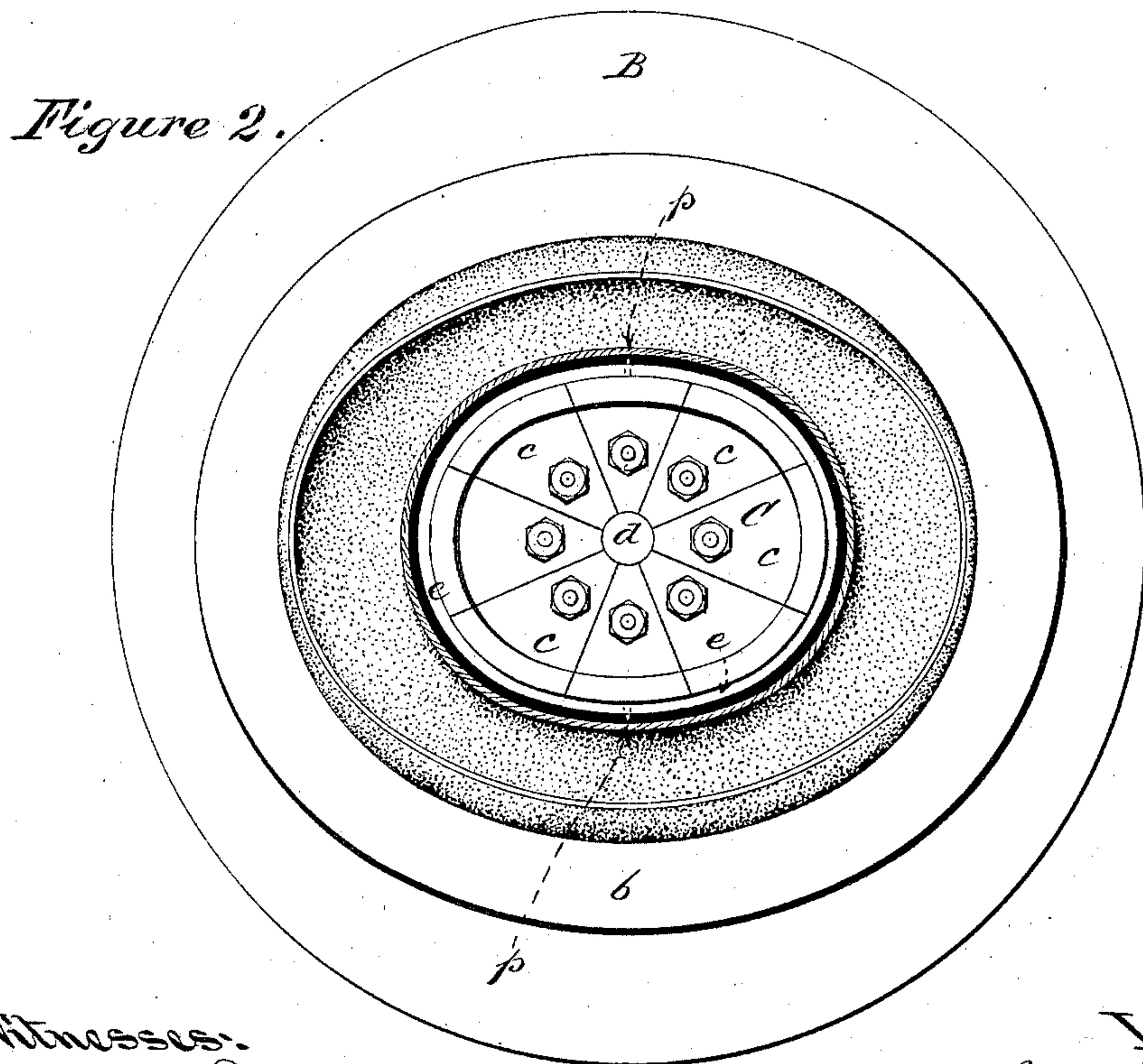


Figure 2.

Witnesses:
Joseph L. Levy
B. S. Vetterlein.

Inventor:
Edmund Tweedy,
By his Attorney,
Henry L. Brewster

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Figure 3.

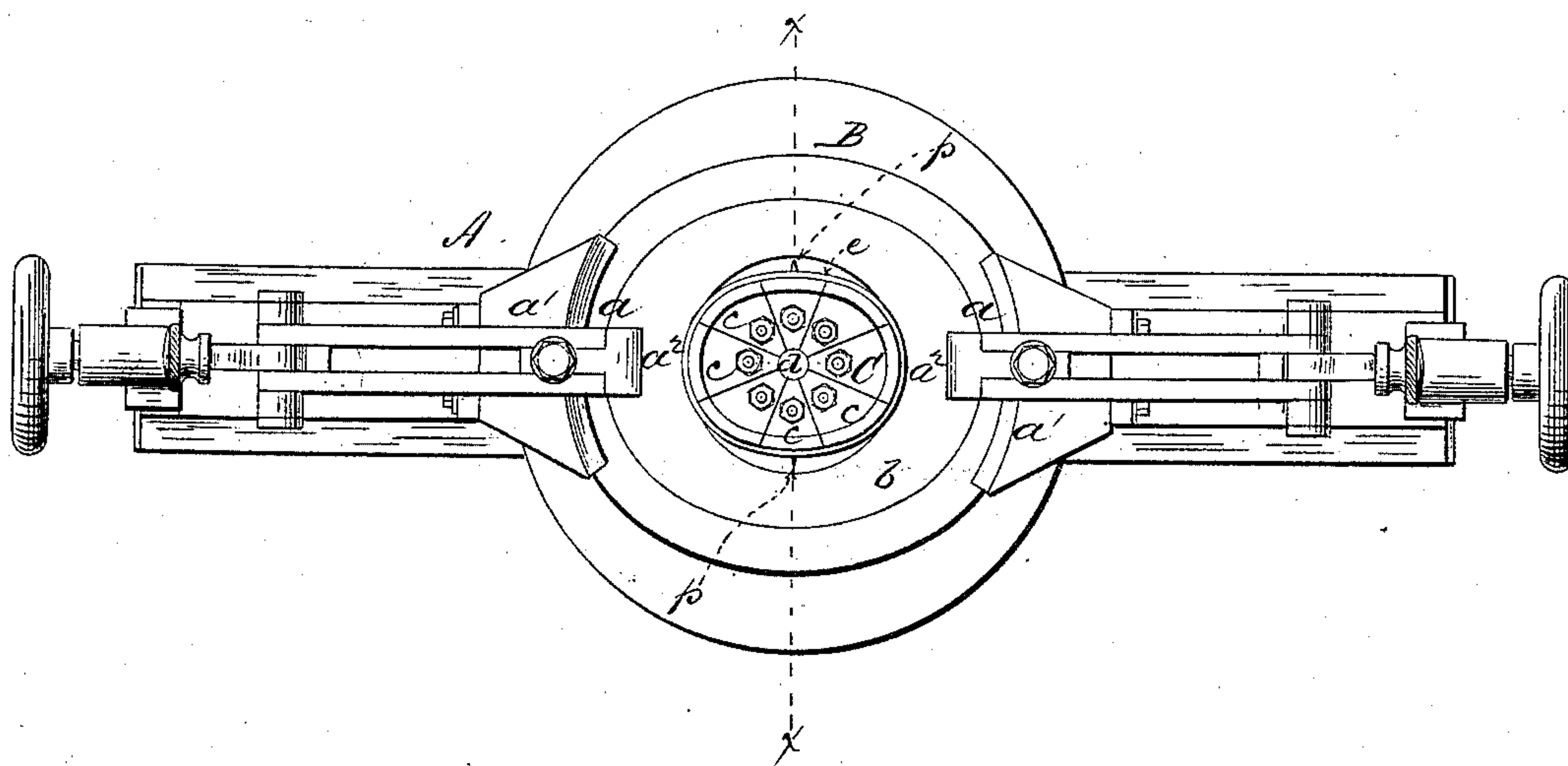
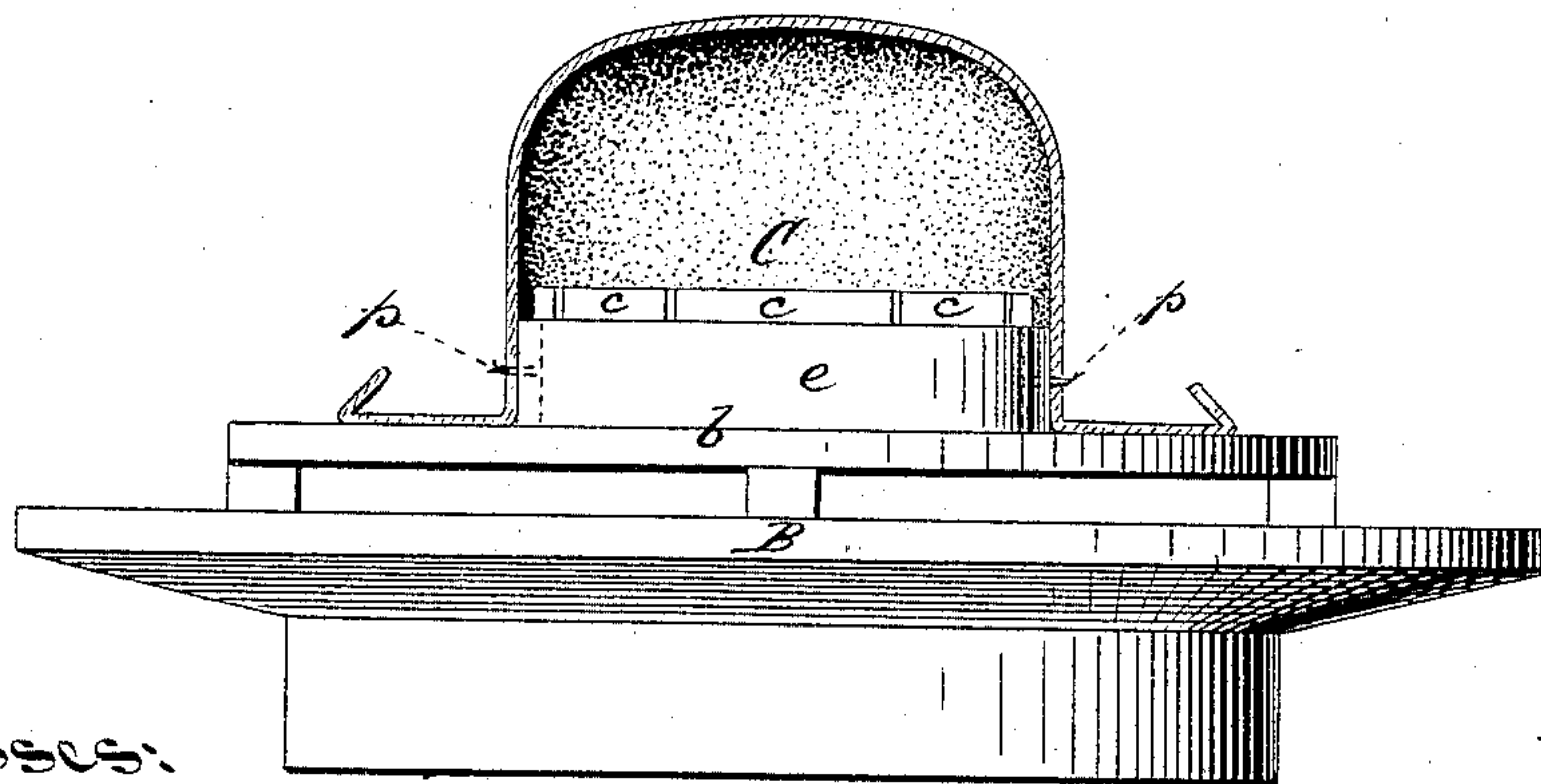


Figure 4.



Witnesses:
Joseph R. Levy.
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Inventor:
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By his attorney,
Henry L. Brewster.

UNITED STATES PATENT OFFICE.

EDMUND TWEEDY, OF DANBURY, CONNECTICUT.

HAT-CURLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 283,726, dated August 21, 1883.

Application filed May 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDMUND TWEEDY, a citizen of the United States, and a resident of Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Hat-Curling Machines, of which the following is a specification.

My invention relates to that class of apparatus for automatically curling the brims of felt hats in which the hat-body is secured in position by an expansible "brow-block" or similar internal securing device, which is intended to hold and support it against the resistance afforded by the curling mechanism in operation, the said expansible brow-block being in some machines of this class rotated so as to present the rim of the hat to curling mechanism occupying prescribed positions with relation thereto, while in other machines the hat is held stationary and the curling mechanism traverses around it while curling its brim, the operation and the effect upon the hat, when considered with relation to the object of the present invention, being substantially the same in either case. Formerly it was designed to hold and sustain the hat-body in position upon the curling table or plate by passing it over a non-expansible brow-block and confining it thereon by means of a correspondingly-shaped encircling-band, which was slipped over the exterior of the hat; but owing to the constant tendency of the curling mechanism, when operating upon the hat-brim, to turn or twist the hat bodily upon the brow-block, this method was found unreliable. With the object of counteracting this tendency of the curling mechanism to derange the hat-body upon the brow-block, various forms of expansible brow-blocks have been designed, arranged in such manner that they may be contracted in order to allow the hat-body to be passed over them, and then expanded to press against the inner side crown of the hat, the design being invariably to support the latter against the retarding or twisting action of the curling mechanism by increasing the resistance opposed to the said curling mechanism; but even these later devices are not absolutely reliable, owing to the comparatively great degree of friction and lateral strain created by the curling mechanism while pressing upon

and curling the rim of the hat. There is also the constant danger of the operators neglecting to adjust the device, so as to secure an adequate degree of pressure upon the inside of the hat. In practice the slightest deviation from the accurate alignment of the hat upon the brow-block and table during the operation of curling its brim is sufficient to distort its shape and destroy its marketable value, since the longitudinal axis or greatest diameter of the brim will not then occupy the same plane as that of the crown, and the distortion and irregularity will be readily perceived. It will thus be obvious that a device that will positively and invariably secure and insure the proper position and alignment of the hat upon and with relation to the curling table or plate under all circumstances is a desideratum. This I accomplish by my invention, which consists, essentially, in an expansible brow-block formed with one or more radially-projecting pins, which, when the hat has been placed in position upon the curling-table or base-plate and over the brow-block, engage with and penetrate the side crown of the hat as the brow-block is expanded, and thereby effectually prevent any movement whatsoever of the hat upon the curling-table or brow-block until the latter is again retracted and the pin or pins thereby withdrawn.

For the purpose of illustration only, in the accompanying drawings I show my invention as applied to a hat-curling machine of ordinary construction, in which the brow-block is made to revolve during the operation of curling the hat-brim, and thereby present the said brim continuously to curling mechanism arranged in prescribed positions in the machine; but my invention may be employed with equal facility and advantage in machines in which the brow-block or other hat clamping and supporting device remains stationary, while suitable curling mechanism is caused to traverse in the proper course around it, the lateral strain upon the hat created by the curling mechanism being substantially the same in either form of apparatus.

In the drawings, Figure 1 is a side elevation of the main parts of a hat-curling machine to which my invention has been applied; Fig. 2, a plan of the revolving hat-plate and expansible brow-block, showing the latter retracted,

and a horizontal section of the hat-body in position upon the revolving table and ready to be secured thereto by the expansion of the brow-block; Fig. 3, a plan of the parts of the machine shown in Fig. 1; and Fig. 4, an elevation of the revolving hat-plate and brow-block with a hat-body in position, and shown in section on plane of line $x x$, Fig. 3.

In the hat-curling machine A (shown in the drawings) the curling mechanism $a a$ is mounted upon suitable slides and reciprocated by central cam-surfaces in the usual manner. The curling mechanism $a a$ may be of any suitable or well-known construction, that shown consisting of the smoothing-irons $a' a'$ and the heels or openers $a^2 a^2$, both said parts acting in conjunction to fold and compress the edge of the hat-brim, and impart to it the required curl.

The revolving plate or curling-table B is formed with the oval hat-rest b , and with an expansible brow-block, C. This expansible brow-block C may be of any desired or well-known construction, that shown in the drawings consisting of segmental pieces $c c c$, sliding in suitable radial ways or grooves, and having their inner ends held against a central vertically-adjustable cone, d , by an elastic band, e , so that they may be simultaneously advanced or retracted by the elevation or depression of the cone d , which is accomplished through the medium of a hand-nut, d' , engaging with the vertical screw-standard d^2 , upon the upper end of which the cone d is mounted. Preferably two opposed segments of the expansible brow-block C are formed with radially-projecting pins $p p$, which extend outward a sufficient distance to penetrate the thickness of the side crown of a hat, as indicated in Fig. 4. In the form of expansible brow-block shown the elastic band e performs the double function of a retractile spring and of a bearing or contact surface for the inner side crown of the hat. In such case the pins $p p$ are preferably secured to the proper segments $c c$, and project through the body of the elastic band, which is made of india-rubber, extending beyond its outer surface the requisite distance to enable them to engage with and penetrate the side crown of the hat. In fact, it is immaterial what form of expansible brow-block is used, since the essential feature of my invention consists in an expansible brow-block formed with one or more rigid pins or points, which project radially, and are adapted to engage with and enter the side crown of a hat when the latter is placed in position and the brow-block is expanded.

The operation is as follows: The brow-block C is contracted in the usual manner, (in the machine shown in the drawings by lowering the conical wedge d by means of the hand-nut d'), and the hat to be operated upon is passed over it in such position that the brim rests upon the upper surface of the rest b . The proper alignment of the hat is then accurately attained by bringing the mark

upon its brim corresponding to its greatest diameter, and which it has acquired in a previous stage of its manufacture, into coincidence with a register mark or indicator upon the surface of the revolving curling-table, or other portion of the machine corresponding to the longitudinal diameter of the brow-block. The latter is then expanded by the usual means, (as by elevating the conical wedge d by means of the hand-nut d'), causing the fixed pins p to advance to and penetrate the side crown of the hat. Thus positively secured to the brow-block, the hat-body cannot be moved or twisted in any direction, and the constant tendency of the curling mechanism to twist and derange the hat during the operation of curling its brim is effectually and invariably counteracted. The perforations in the hat-body made by the pins p , being comparatively small and occurring near the junction of the side crown with the brim, are covered and concealed by the hat-band when the hat is trimmed.

I am aware of the United States Letters Patent granted to Charles H. Reid, No. 237,128, and I do not claim anything shown therein. Said patent shows an expansible brow-block for holding hat-bodies, while the edges of the brims are being trimmed; and I am also aware that said patent shows a pin upon the expansible brow-block, which pin penetrates the material of the hat-body, serving as a marker, or, as the Reid patent says, a "gage-point;" and I am also well aware that such pin upon such devices incidentally assists in holding the hat upon the expansible block; but the operation of trimming the brim of a hat-body is one that is accompanied by such a slight torsional strain that the mere expansion of the brow-block would be sufficient to hold the hat against the torsional strain without the use of any pin whatsoever. I however have discovered that a pin such as is shown in the Reid patent, or preferably two pins, can be used in a hat-curling machine in connection with an expansible brow-block, and that the said pin or pins in this combination will serve to make certain that which the mere expansion of the block could not do, and that is to hold the hat firmly during the strain incident to the curling of the brim. My invention is limited to the combination of the curling mechanism or mechanisms, which give an equivalent amount of torsional strain on the hat when the said mechanism is used in connection with an expansible hat-block provided with a pin or pins to penetrate the hat-body, and I do not claim as of my invention an expansible hat-block provided with a pin or pins when the same is used with brim-trimming mechanism or the like, which brings but a slight torsional strain upon the hat. It was not known before the date of my invention that pins upon expansible hat-blocks could be used in machines where such a heavy strain was exerted upon the hat as is the case with brim-curling devices without tearing a

slit in the hat, it having been supposed that it was necessary always in hat-curling mechanisms to hold the hat at all parts circumferentially. Consequently the addition of a pin or
5 pins to a curling-machine consisted of something more than the mere transference of the Reid pin to a curling mechanism, for no one could tell without trial and experiment whether the pin would operate in a curling-machine
10 beneficially, the conditions in the two cases being so different.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a hat-curling machine, the combination, with suitable hat-brim-curling mechanism, of 15 an expansible brow-block formed with one or more radial pins or projections adapted to engage with and penetrate the side crown of a hat-body when the said block is expanded, for the purpose described.

EDMUND TWEEDY.

Witnesses:

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JOSEPH L. LEVY.