

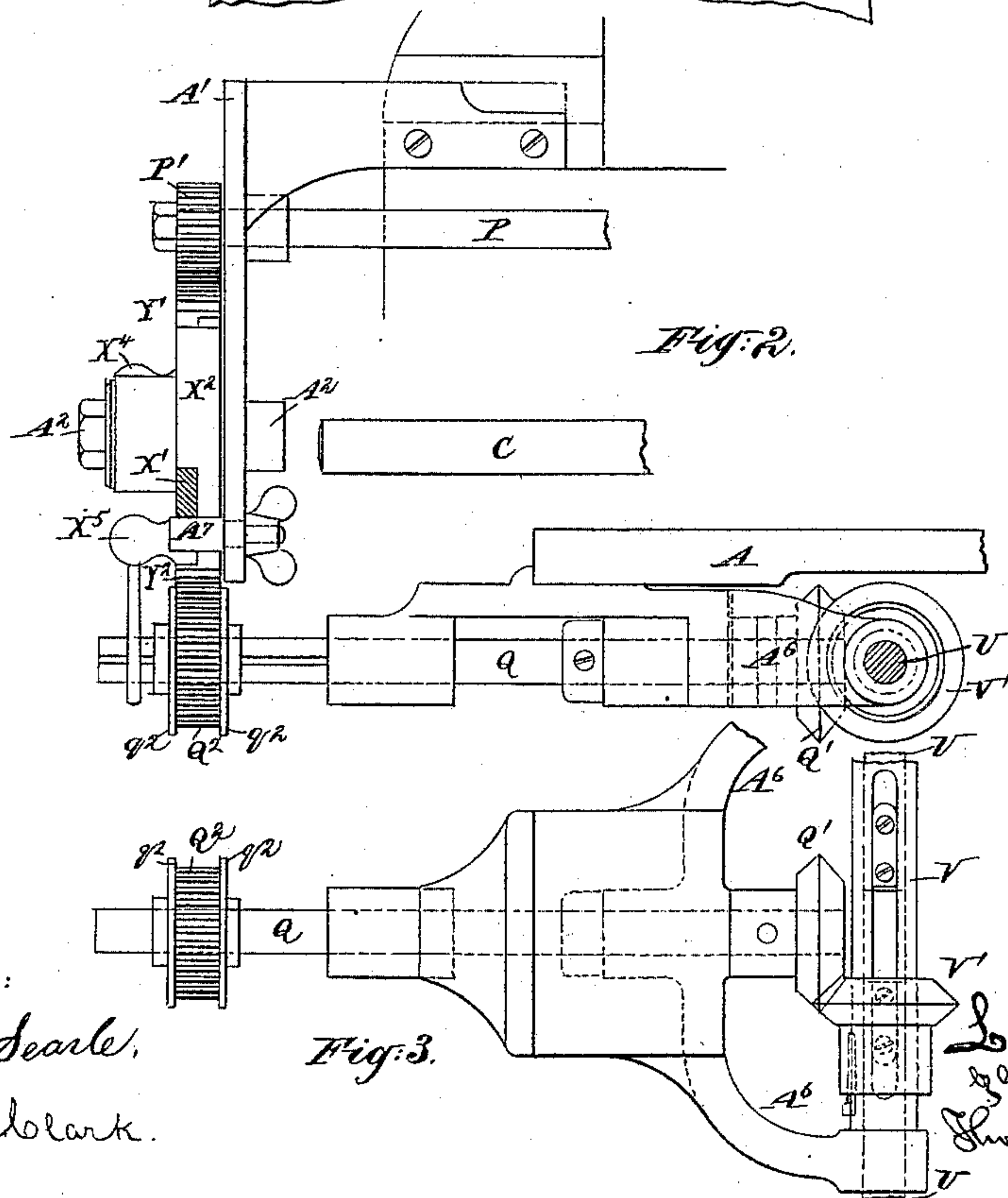
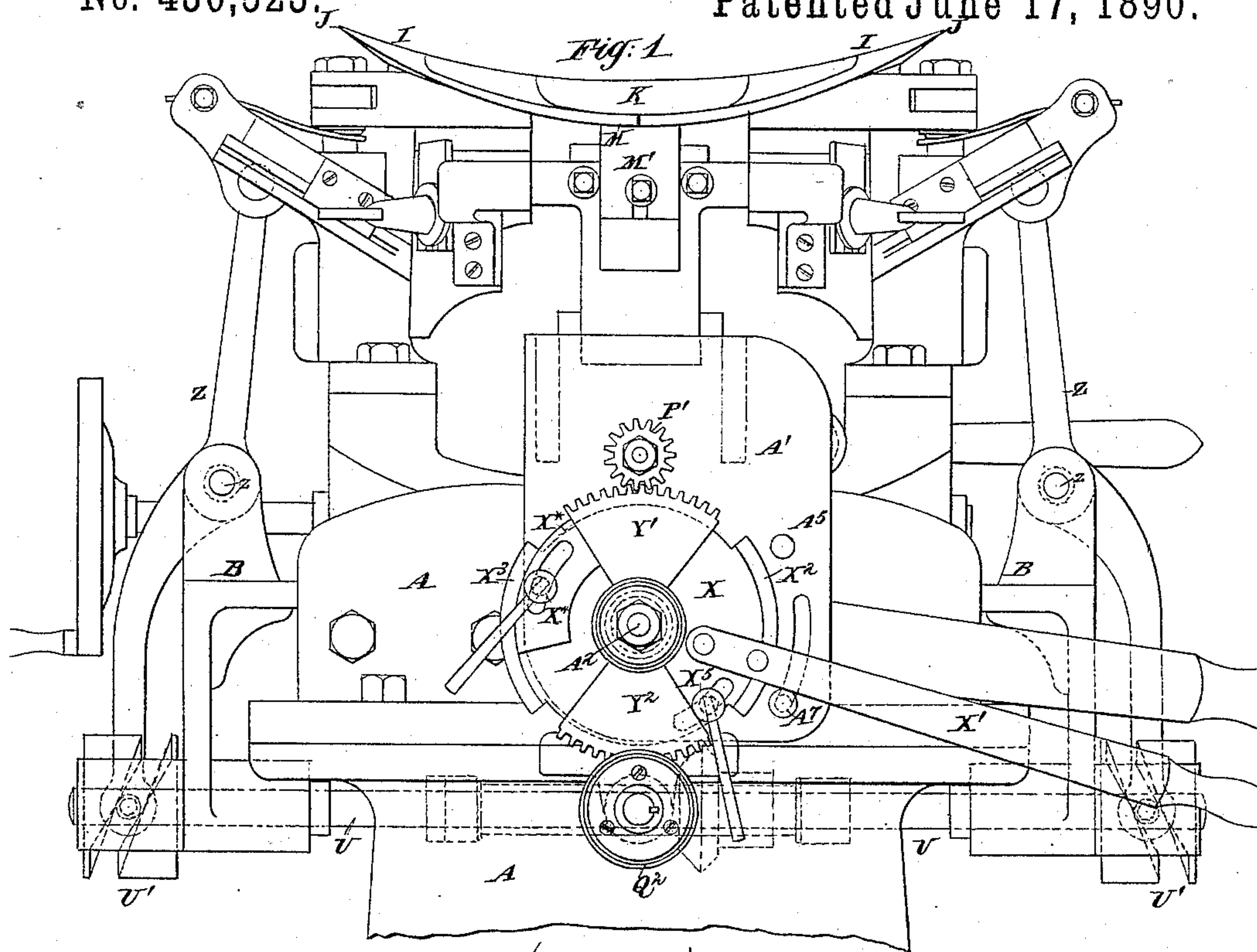
(No Model.)

L. H. HOYT.

MACHINE FOR SHAPING HAT BRIMS.

No. 430,523.

Patented June 17, 1890.



Witnesses:

Charles R. Searle.

Thomas A. Clark.

Inventor:

→ 288000

To his attorney
Thoma, West Station

UNITED STATES PATENT OFFICE.

LUCIUS H. HOYT, OF DANBURY, CONNECTICUT, ASSIGNOR TO THE HOYT
BRIM SHAPING COMPANY, OF SAME PLACE.

MACHINE FOR SHAPING HAT-BRIMS.

SPECIFICATION forming part of Letters Patent No. 430,523, dated June 17, 1890.

Application filed November 22, 1889. Serial No. 331,158. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS H. HOYT, of Danbury, in the county of Fairfield and State of Connecticut, have invented a certain new and useful Improvement in Machines for Shaping Hat-Brims, of which the following is a specification.

At a proper stage in the hat manufacture the hat-brims, being previously softened on a steam-table, are ready to assume any shape, and a brief subjection to the pressure of a yielding and cold sand-bag causes the brims to assume and keep the exact form of the mold on which they may be so pressed. There are many sizes and styles of hats. I have in Letters Patent to me, dated August 28, 1888, No. 388,492, set forth an elaborate construction of machine which avoids the necessity which would otherwise exist for providing an immense number of molds for the varying sizes and forms required.

My machine has overlapping pieces which slide upon each other to a slight extent to allow of change of form to enable the same machine to treat different sizes and styles of hats. The machine has, in addition to the mere negative function of assuming and maintaining rigidly a certain fixed shape, the capacity to be changed in form between each operation, and the next to better allow for the easy removal of the hat and the introduction of another. These changes are in brief a narrowing of the brim-shaping mold between the operations and the restoration of the shape by increasing the width of the mold after a fresh hat is applied and before the sand-bag is lowered upon it. This action, which I term the "expansion" of the mold, contributes greatly to the usefulness of my machine.

In my machine, as heretofore described, two separate and independent operations were performed by the attendant to effect the expansion, one to expand the sides and another to expand the front and rear. I have now devised and reduced to practice mechanism by which a single movement of a lever operated by the attendant gives the required expansion of the mold on the two sides and at the front and rear, as well as at all the intermediate points, and is provided with adjustments by which the relations of these mo-

tions may be varied to all the extents required in practice. I provide with little labor for readily adapting the machine to all the changes likely to be introduced by varying fashions. I provide stops which limit the extent of the motion of the operating-lever and of the entire train of connections.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a general side elevation showing the entire upper portion of the machine. Fig. 2 is an end elevation of certain parts, and Fig. 3 is a plan view of certain parts.

Similar letters of reference indicate like parts in all the figures where they occur.

A is the stationary frame-work.

I J K M are the mobile parts, which serve as a form on which the hat-brim is applied in its soft condition to be pressed down by the lowering thereon of a sand-bag. (Not shown.)

C is a shaft corresponding to the shaft similarly marked in the patent to me above referred to, and performing the same functions of expanding and contracting the "band-line," the parts which mold the entire interior edge of the brim.

P is a shaft parallel to C, made in two lengths, united by a feathered sleeve (not shown) to allow of lengthening and shortening, and provided with spirally-grooved cams, (not shown,) which operate levers for expanding and contracting the sides of the brim-mold, all as in my previous patent referred to; but instead of being turned independently by a lever operated directly by the attendant, as in that patent, this shaft is now provided with a pinion P', engaged by a toothed segment Y', from which it receives motion, turning it in one direction or the other, as will be presently described.

Z Z are levers operating the front and back shaping portions of the brim. These levers Z Z turn on pivots z, supported in adjustable carriages B B, and are operated by cams U' U', fixed on a horizontal shaft U U, extending longitudinally of the machine, mounted in fixed bearings and made in two distinct lengths, moved by a feathered sleeve V, to allow of lengthening and shortening. This sleeve V is guarded against end movement by a suit-

able fork A^6 of the framing. On this sleeve is fixed a beveled gear-wheel V' , which engages with a corresponding beveled gear-wheel Q' on a transverse shaft Q , which is mounted in fixed bearings and has feathered on its outer end a spur gear-wheel Q^2 . This gear-wheel remains directly below the gear-wheel P' , being provided with collars q^2 , which apply each side of its operating-segment.

A' is a portion of the framing which supports a stud-bolt A^2 , which forms a center for a loosely-mounted wheel X , which may be oscillated by the attendant by operating the lever X' , fixed thereon. This wheel X is equipped with two partial flanges $X^2 X^3$. On the same center bolt A^2 , or, more exactly, on the exterior of the hub of the wheel X , which is centered on such bolt, are two loose segments Y' and Y^2 , which engage the segment Y' with the wheel P' and the segment Y^2 with the wheel Q^2 .

X^* is a stop, slotted, as shown, and mounted on the front face of the wheel X , being held firmly in the desired position thereon by a clamp-screw X^4 , which latter may be turned by a short lever. (Shown attached.)

When the operator presses downward on the lever X' and correspondingly turns the wheel X he brings the stop X^* into contact with the adjacent edge of the segment Y' , and a further downward motion of the lever X' gives motion to this segment, and through the gearing P' and its connections operates the levers M' and extends or increases the breadth of the molding-surface formed by the parts $K M$, which shape the brim at the sides. The same partial revolution of the wheel X brings the stop X^5 into contact with the adjacent edge of the segment Y^2 and commences to move the latter, giving a partial rotation to the connected gear-wheel Q^2 and shaft Q , and through the beveled gears $Q' V'$ partially rotates the shaft U , and through the cams U' turns the levers Z , giving the proper action to the mechanism for expanding the mold at the front and rear of the hat. Thus the operations of expanding the mold for the brim at the front and rear and of expanding the mold for the brim at the right side and left side are effected by a single downward movement of the lever X . On raising this lever all the parts are thrown back into their original positions, this being effected by the engagement of the flanged parts $X^2 X^3$ of the

wheel X with the segments Y' and Y^2 , respectively, and rotating the wheels $P' Q^2$ and their connections back to their original positions.

The stops $X^* X^5$ may be separately adjusted to change the periods at which they will strike their respective segments and commence to perform their several works. By these adjustments the extent to which the brim-shaping mold may be expanded at the front and rear, as compared with the extent to which it is expanded at the sides, may be varied within wide limits to accommodate all conditions.

A^7 is a stud, which may be adjusted upward and downward in a curved slot in the frame-work. It serves as an adjustable stop to limit the extent to which the lever X' may be moved downward, and thus to determine the extent to which the brim-shaping mold may be expanded.

A^5 is a stop to limit the upward movement of the lever X and prevent straining the machine. This need not be adjustable, but is simply a screw-stud set in the fixed frame.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. The form of the stops X^* and X^5 may be varied. They may be alike, following the construction of either.

I claim as my invention—

1. In a hat-brim shaper, the levers M' and their operating mechanism for expanding the sides of the mold and the levers Z and their operating mechanism for expanding the front and rear of the mold, connected together so that the movement of one part actuates both, substantially as herein specified.

2. In a hat-brim shaper, the adjusting means $X^* X^5$, carried on the wheel X , oscillated by the attendant, in combination with the segments $Y' Y^2$ and their connected gear-wheels $P' Q^2$ and their connections, arranged to allow the levers M to expand the sides and the levers Z to expand the front and rear, to be operated to varying extents, as herein specified.

In testimony whereof I have hereunto set my hand, at New York city, this 21st day of November, 1889, in the presence of two subscribing witnesses.

LUCIUS H. HOYT.

Witnesses:

H. A. JOHNSTONE,
CHARLES R. SEARLE.