March 17, 1925. 1,530,001

I. KIWAD

HAT DIE

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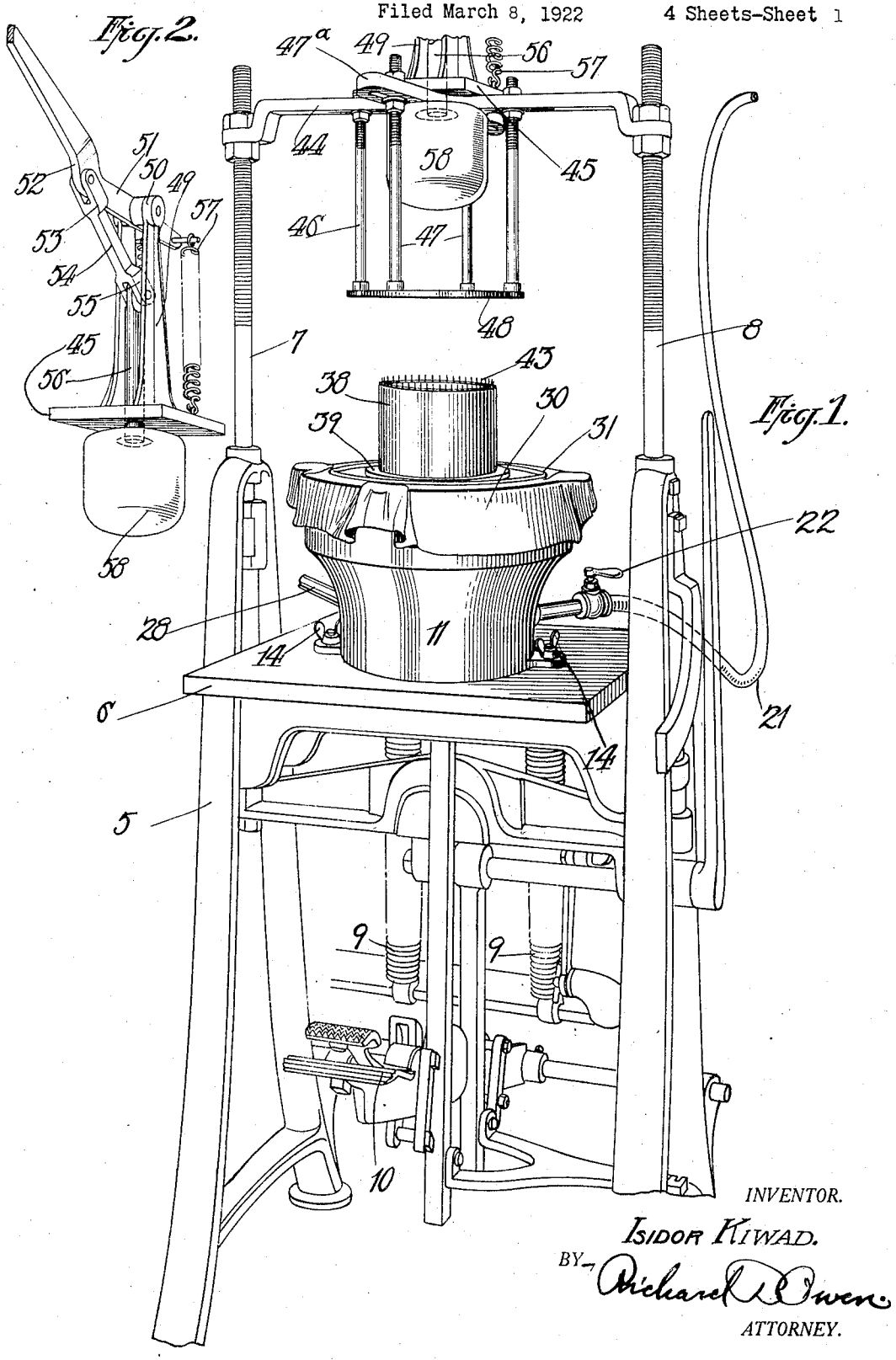


Fig. 2.

Fig. 1.

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ISIDOR KIWAD.

BY Richard L. Owen

ATTORNEY.

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I. KIWAD

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Fig. 3.

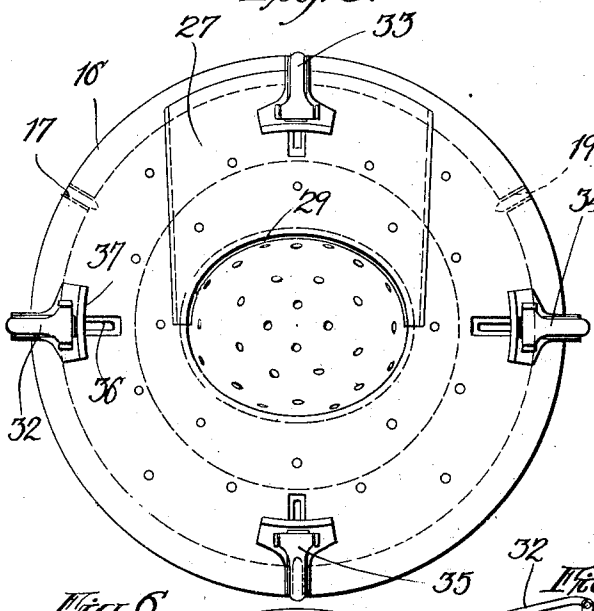


Fig. 4.

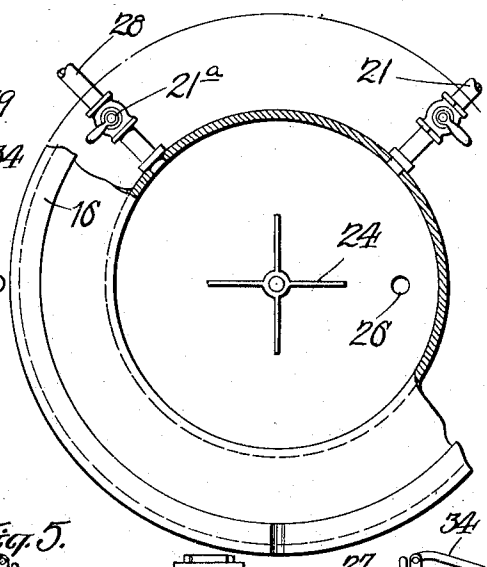


Fig. 6.

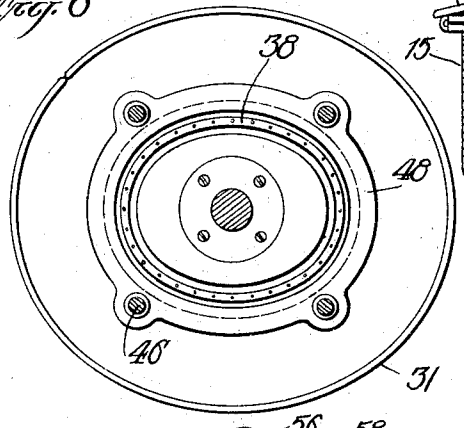


Fig. 5.

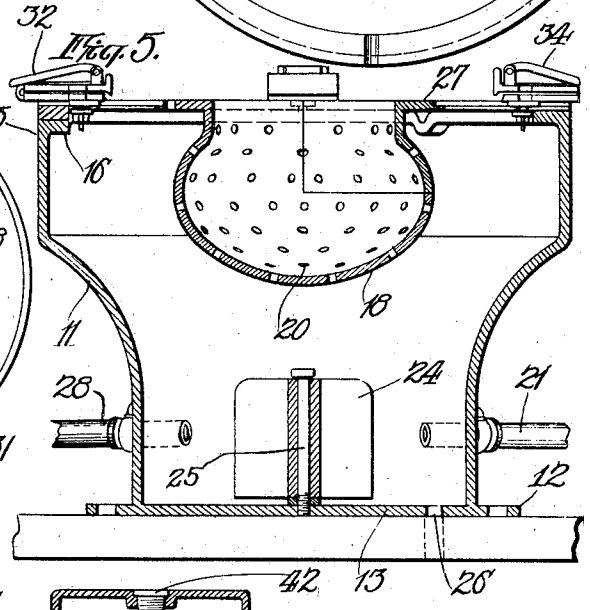


Fig. 7.

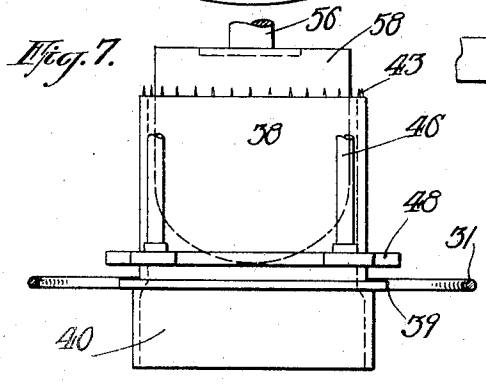
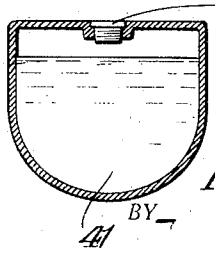


Fig. 8.



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Fig. 9.

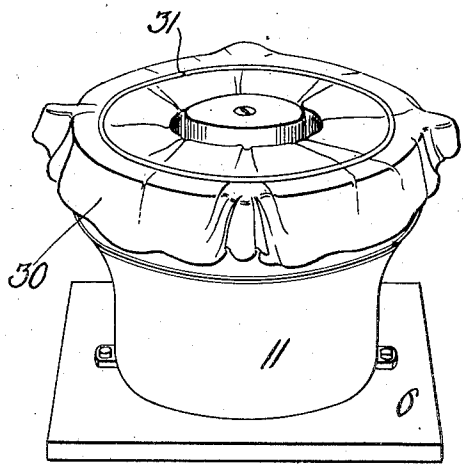


Fig. 10.

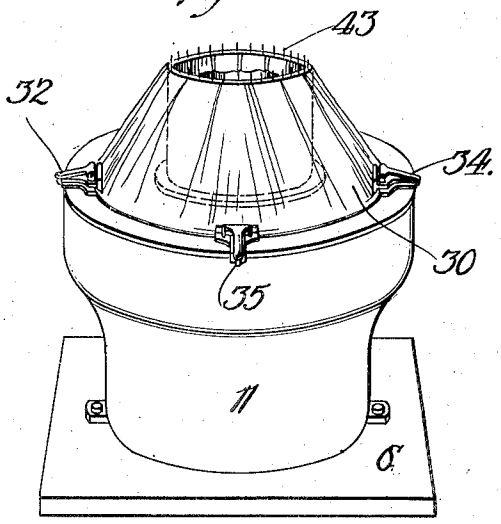


Fig. 11.

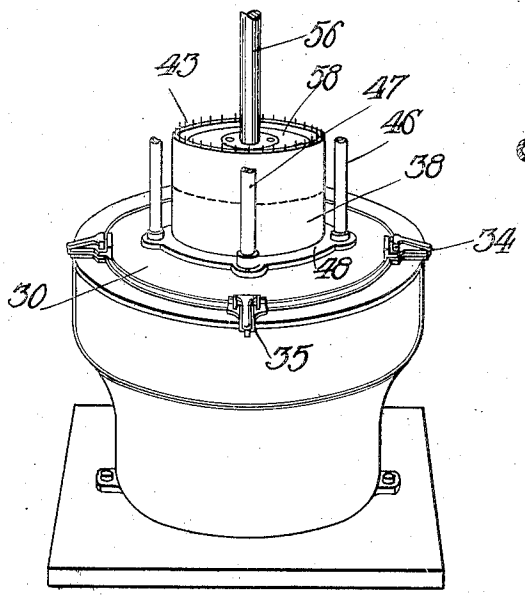
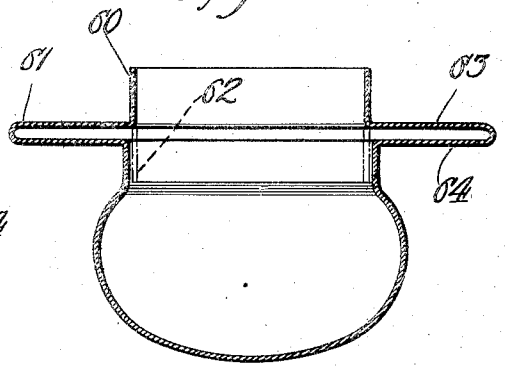


Fig. 12.



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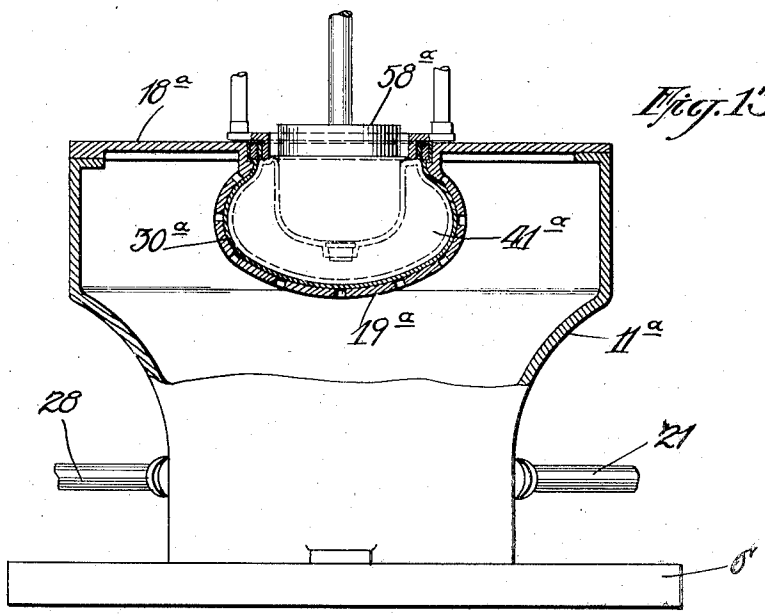


Fig. 13.

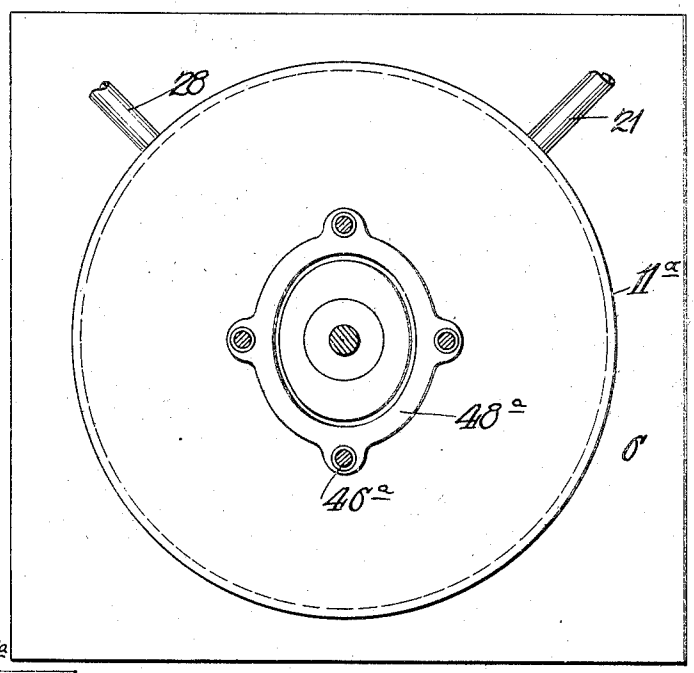


Fig. 14.

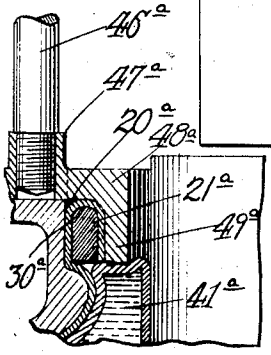


Fig. 15.

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Patented Mar. 17, 1925. 1,530,001

UNITED STATES PATENT OFFICE.

ISIDOR KIWAD, OF NEW YORK, N. Y.

HAT DIE.

Application filed March 8, 1922. Serial No. 542,020.

To all whom it may concern:

Be it known that I, ISIDOR KIWAD, citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Hat Dies, of which the following is a specification.

This invention relates to hat making and forming machines and more particularly to a novel and improved method of shaping the material to produce what is known in the art as a bell crown, cushion brim hat.

The primary object of the invention resides in the construction of a hat shaping and forming machine designed to steam the material during the forming or shaping process, including provision for making uniform, various sized and shaped hats with rapidity and skill and with the minimum amount of hand labor.

One of the objects of my invention is the provision of a hat making and forming machine wherein the steam pot is designed to accommodate various sized and shaped dies, including means for forming a cushion brim hat of any desired width on different shaped dies.

Another and still very important object of the invention is the provision of a hat forming and shaping device wherein the steam pot is designed to accommodate different dies so as to produce a hat presenting a natural edge, as is termed by those skilled in the art, which may take various shapes as the same is formed during the process.

With these and other objects in view the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the subject matter being claimed, it being understood that various changes in the form, proportion, size and minor details of construction may be resorted to without departing from the spirit and scope of the invention.

In the drawings: Figure 1 is a front elevation showing the steam pot and size former thereon and the plunger head in its raised position.

Figure 2 is a detailed view of the plunger block and plunger.

Figure 3 is a plan view of the steam pot and the die, showing the removable insert.

Figure 4 is a plan view partly broken away, of the steam pot.

Figure 5 is a vertical cross section of the steam pot and the die.

Figure 6 is a plan view showing the assembly of the outer gripping ring or wire loop, plunger head, ring and size former.

Figure 7 is a side elevation of the Figure 5.

Figure 8 is a sectional view of the rubber sack utilized during the shaping of the material.

Figure 9 is a view showing the steam pot and the material placed therein before the size former is positioned.

Figure 10 is a similar view to Figure 9 showing the material when clamped on the ring and fastened over the size former.

Figure 11 is a view showing the steam pot and size former in position and the head and ring lowered.

Figure 12 is a view of the hat when formed and removed from the steam pot.

Figure 13 is a modified form of the steam pot when used to produce what is known as a turban shaped hat with a natural edge.

Figure 14 is a plan view of the modified form and

Figure 15 is an enlarged sectional view of a detail of the modified form of the invention.

Referring now to the drawings wherein like reference characters designate corresponding parts throughout the several views, 5 designates in its entirety the rigid frame or support of a conventional type of hat forming and hat making machine having a table 6 on which the steam pot and former is conveniently placed for the convenience of the operator. The support 5 carries a pair of rods 7, 8 which are normally maintained in raised position by heavy resilient springs 9 and are adapted to be depressed by the foot lever 10 whereby a plunger carrying block may be moved over the material to be formed. The above construction is well known in the hat making art and the invention primarily resides in utilizing this type of machine in the manner now to be set forth in detail.

Centrally disposed on the table 6 I have positioned a steam pot 11 provided with apertured lugs 12 on the bottom 13 thereof

whereby thumb screws 14 or other suitable fastening elements may securely maintain the same in position. The steam pot may be variously made and in the form shown is provided with an annular head 15 having an inwardly extending flange 16 thereon, the side of the steam pot being curved inwardly from the head to the bottom 13 so that the bottom is somewhat smaller in diameter than the head as clearly shown. The flange 16 is provided with a series of radial notches 17 whereby a die or shape may be placed on the flange 16 and within the steam pot as clearly disclosed by Figures 3 and 5. The die 18 is provided with lugs or extensions 19 on its outer periphery to engage within the recesses 17 to securely position the said die within the steam pot. The depending portion of the die which shapes the material is of course open at the top and has formed therein a plurality of small apertures 20 to permit the steam to enter therein and steam the material before the same is formed into a hat. Within the lower portion of the steam pot the conduit 21 and control valve 22 is arranged so that as the steam enters the pot the steam paddle 24 rotatable on the pin 25, secured to the bottom 13, will drive the moisture to the inner side walls of the steam pot and when the moisture condenses, it may flow through an aperture 26 in the bottom thereof. An air line 28 also in the bottom of the steam pot permits of air to enter and cool the material.

Referring in particular to Figures 3 and 5 it will be observed that the die is provided with what I term an insert or removable section 27, the outer periphery thereof being in the form of a segment and sitting in a recess formed in the flange 16 of the head of the steam pot. The inner edge 29 of the insert or movable section extends substantially to the diameter of the oval or elliptical die and of course conforms to the shape thereof wherein the insert is secured in its proper position. It will thus be readily understood by those skilled in the art that since the bottom of the die is considerably larger than the open top thereof and the material is placed in the die and formed, in order to remove the same, the insert or removable section must be raised and removed from the die proper so that the formed hat may be taken out without bending or creasing. When the material 30 is placed in the die the edges will extend over the top of the steam pot as shown by Figures 1 and 9 for instance. At this stage of the process in the formation of the hat a wire loop or split ring 31 is positioned over the material so that the same may be gripped therewith by a plurality of adjustable clamps 32, 33, 34, and 35.

Each clamp is inwardly and outwardly adjustable in a slot 36 in the top of the die and as shown the insert 27 above referred to is also provided with a similar clamp and slot therein to properly engage and grip the ring when the material is turned over the same in the manner subsequently to be referred to. The adjustment of the respective clamps necessarily permits of forming the brim of the hat in different widths, the inner edge of each clamping member being necessarily rounded or slightly curved as shown at 37 to properly engage the split ring 31.

Reference being had to Figures 7, 10 and 11 of the drawing, after the ring is positioned on the material, the size former or hollow cylindrical member 38 having a flange 39 thereon and a slightly offset enlarged bottom 40 is constructed so as to be placed into the die 18, the flange thus supporting the size former in position, it of course being understood that the open bottom of the size former permits of the insertion of a rubber sack 41 which may be partly filled with water by removing the top plug 42 therefrom. If so desired the sack may be inserted before the size former is placed over the die previous to operating the plunger hereinafter to be referred to. Referring to the various figures of the drawing it will be noted that the top edge of the size former is provided with a plurality of pins 43 so that as the material is drawn over the same and secured in the manner shown more in detail by Figure 10 the stretching or forming operation on the material may then take place since it will be observed that the various clamps also maintain and secure the material with the split ring.

After the material is so positioned and drawn over the pins of the size former the operator is then ready to depress the foot lever so as to actuate and bring the rods 7 and 8 downwardly. Secured to the respective rods 7 and 8 above referred to, there is provided a cross bar 44 which supports a substantially rectangular block 45. The cross bar 44 is slotted to receive the upper ends of the ring supporting rods 46 and attached to the cross bar 44 and preferably at right angles thereto a cross piece 47^a is also provided and slotted at each end to receive the upper ends of a second pair of ring supporting rods 47, the lower ends of the respective supporting rods 46 and 47 carry the wide ring 48 and by reason of the slotted portions of the respective rod 44 and cross piece 47^a, the radial adjustment of the ring 48 is provided for. The block 45 carries a standard 49, the bearing 50 at the upper end of said standard pivotally supporting the lever 51 which lever is provided with an offset portion 52 and secured to the bifurcated end 53 of a lifting rod 54. The opposite bifurcated end 55 of the lifting rod is attached to the plunger rod 56 passing through an aperture centrally of the block 45, the lower end of the rod 56 carrying the plunger

58 as clearly shown by Figure 2 of the drawing. The outer end of the lever 51 is connected by a coil spring 57 attached to the block 45 and normally maintains the lever in the raised position.

It will of course, be readily understood that when the foot lever 10 is depressed the cross bar 44 carrying the ring 48 and the plunger operating mechanism above referred to lowers the same over the material held between the clamps and the pins on the top of the size former and as the operator holds the ring 48 on the material and actuates the lever 51 the plunger may descend through the size former and engage the rubber sack placed within the die 18 consequently stretching and expanding the material to conform to the shape of the die in which it is placed.

The offset portion 40 of the size former being slightly larger in diameter than the upper end thereof forms the shape so that the top edge 60 of the cushion brim 61 may be folded over as at 62 to the dotted line position. If so desired before the folding operation takes place an annular strip of rubber of any desired thickness may be placed over the size former and beneath the material so that the cushion brim when formed can be of different thickness if so desired. The split rubber ring may be subsequently removed from between the top and bottom 63, 64 of the brim as is well understood. After the plunging operation takes place and the material has been formed into the shape as shown by Figure 12 the top edge of the material is of course cut away below the pins along the dotted line as shown by Figure 11 so that when the portion 60 is bent inwardly the same will be substantially of the same width as the sweat band of the formed hat.

The width of the cushion brim as shown in the form, see Figure 12 may be made in various widths as desired and by simply adjusting the clamps inwardly or outwardly on the die as well as the clamp 33 on the insert. Moreover the oval shaped die former must necessarily be of the desired size and shape. Attention is directed to the fact that when the foot lever is depressed and the ring 48 lowered over the material stretching the same to form the cushion brim that this operation takes place simultaneously within the die proper thus distending and pressing the same outwardly to the curved inner portion of the die. It will be then readily understood that since the partly filled sack 41 is placed in the material, as the plunger 58 descends through the size former and into the die, the pressure exerted on the sack will force the material outwardly and thus conform to the shape of the die 18. Before the material is shaped the operator opens the valve 22 and thoroughly steams the material thus permitting of its stretching and thus lends itself to the proper shaping as is well known in this art. The steam paddle, of course, tends to throw the moisture to the inner side of the steam pot and the operator may also open the valve 21^a in the air line 28 to cool the form before the same is to be removed from the die and the operation repeated on the next hat.

In the modified form of the invention illustrated by Figures 13, 14 and 15 wherein I desire to form and shape the cloth to produce what is known as a turban shape with a natural edge, the same general arrangement is provided wherein the steam pot 11^a receives a different shaped die 18^a, but, as shown the insert may be dispensed with. The depending portion 19^a in this form of die is practically the same as that heretofore described and the upper edge terminates in a seat 20^a for receiving an edge forming ring 21^a, the width of said ring being substantially of the same width and height of the seat as clearly shown by Figure 15 of the drawing. It will be observed that the ring 21^a is bevelled at its respective corners so as to give and produce a natural edge to the rim of the hat when the same is formed. In this form of the invention the supporting rods 46^a are threaded in the bushings 47^a formed with the ring 48^a, the latter being substantially L-shaped in cross section so that the depending portion 49^a may depress and force the ring inwardly to engage within the seat above referred to. In this form of the invention after the material is placed within the crown of the die 18^a the ring 21^a is inserted in the seat and the material 30^a is drawn over the bevelled edges of the ring and folded over and inwardly thereon. The sack 41^a of course is placed in the material before the plunger 58^a is actuated so that the sack when distorted will force the material to the inner wall of the die as is shown by Figure 13 of the drawing. It will thus be seen that the ring 48^a will produce a natural rounded edge instead of a flat brim and since the ring 21^a may be subsequently removed, the same leaves an evenly formed rolled natural edge finish to the hat as desired.

While I have illustrated and described my invention with some degree of particularity, I realize that in practice various alterations therein may be made. I therefore reserve the right and privilege of changing the form of the details of construction or otherwise altering the arrangement of the correlated parts without departing from the spirit of the invention or the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. A hat forming machine of the class

described comprising a support having a removable steam pot, a moisture separating paddle within the pot, a die having an insert seated on the top of the said steam pot, a split ring and adjustable ring clamping elements on the die and the insert to grip the material folded over said ring, a removable hat size former adapted to be placed on the die, said former having a slightly enlarged depending portion extending within the die, pins on the top edge of the former for securing the material folded over the ring clamping elements, radially adjustable lever operated means movable over the size former for stretching the secured material and spring controlled plunger operating means movable through the size former into the body of the die to expand the material to conform to the shape of the die.

2. A hat forming machine of the class described comprising a support having a removable steam pot, a moisture separating element within the said pot, a die for said steam pot, a removable insert for said die, a split ring and ring clamping elements on the die and the insert to grip the material folded over said ring, a hat size former partly depending in the die, a flange on said former for maintaining the same on the die, vertically movable means operable over the size former for stretching the material to form the hat brim and plunger operating means carried by the last mentioned means for stretching the material placed within the die.

3. A hat forming machine of the class described comprising a support having a removable steam pot, a moisture separating element within the pot, a removable die and a removable insert for the die, a split ring and adjustable ring clamping elements on the die and the insert to grip the material folded over said ring, a hat size former adapted to be placed on the die and to extend partly within the same, means for securing the material to be formed on the top of the size former, lever operated means for stretching and expanding the material secured by the clamps and the size former, and plunger operating means movable through the size former into the body of the die to stretch the material to conform to the shape of the die.

In testimony whereof I affix my signature in presence of two witnesses.

ISIDOR KIWAD. [L. S.]

Witnesses:
HARRY LITOFF,
ABRAHAM SILBERFELD.