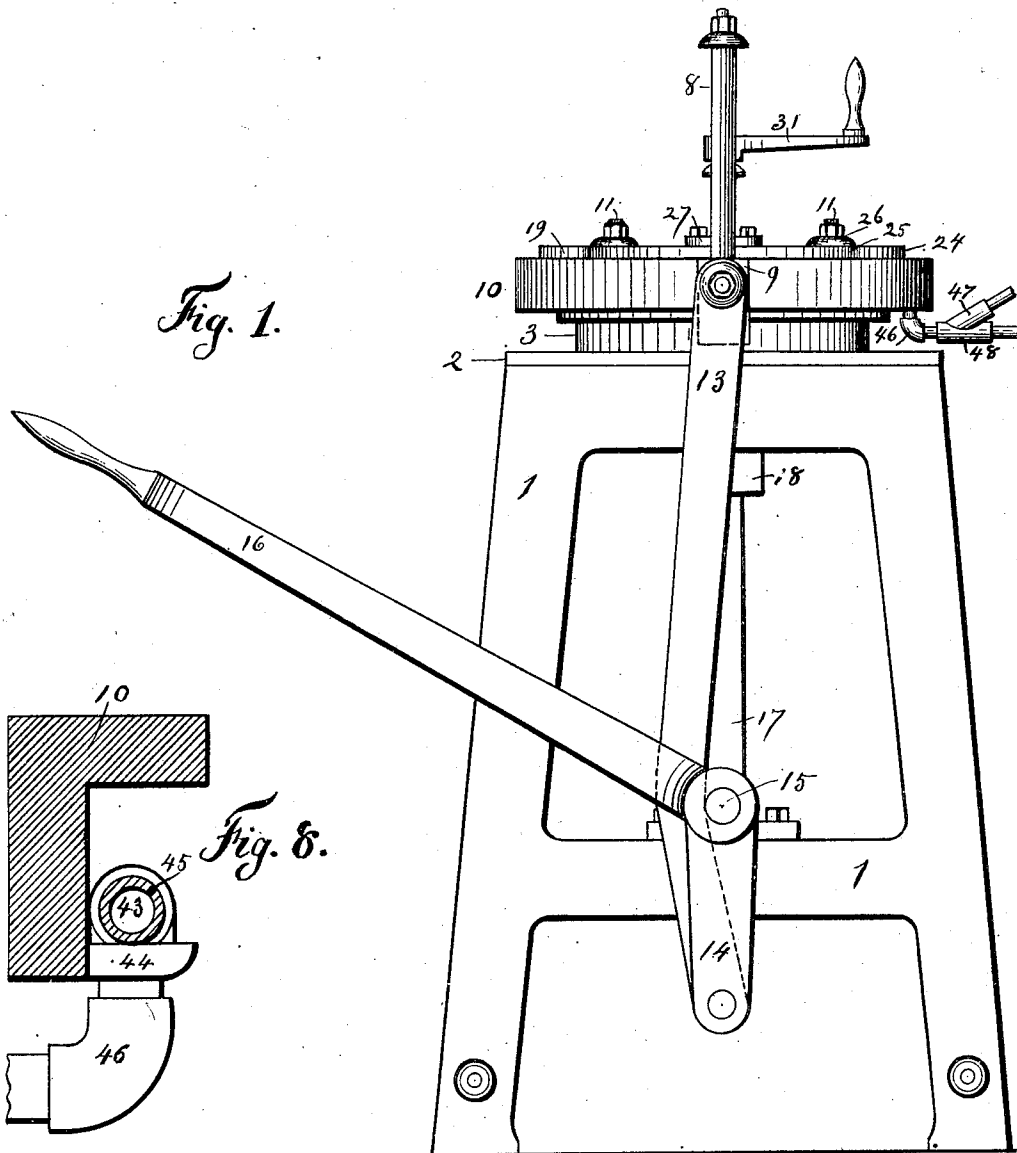


C. E. SACKETT.
HAT BRIM PRESS TO FORM WELT EDGES.
APPLICATION FILED JULY 9, 1908.

914,519.

Patented Mar. 9, 1909.

5 SHEETS—SHEET 1.



WITNESSES:

James F. Wilson
Perry Wilson

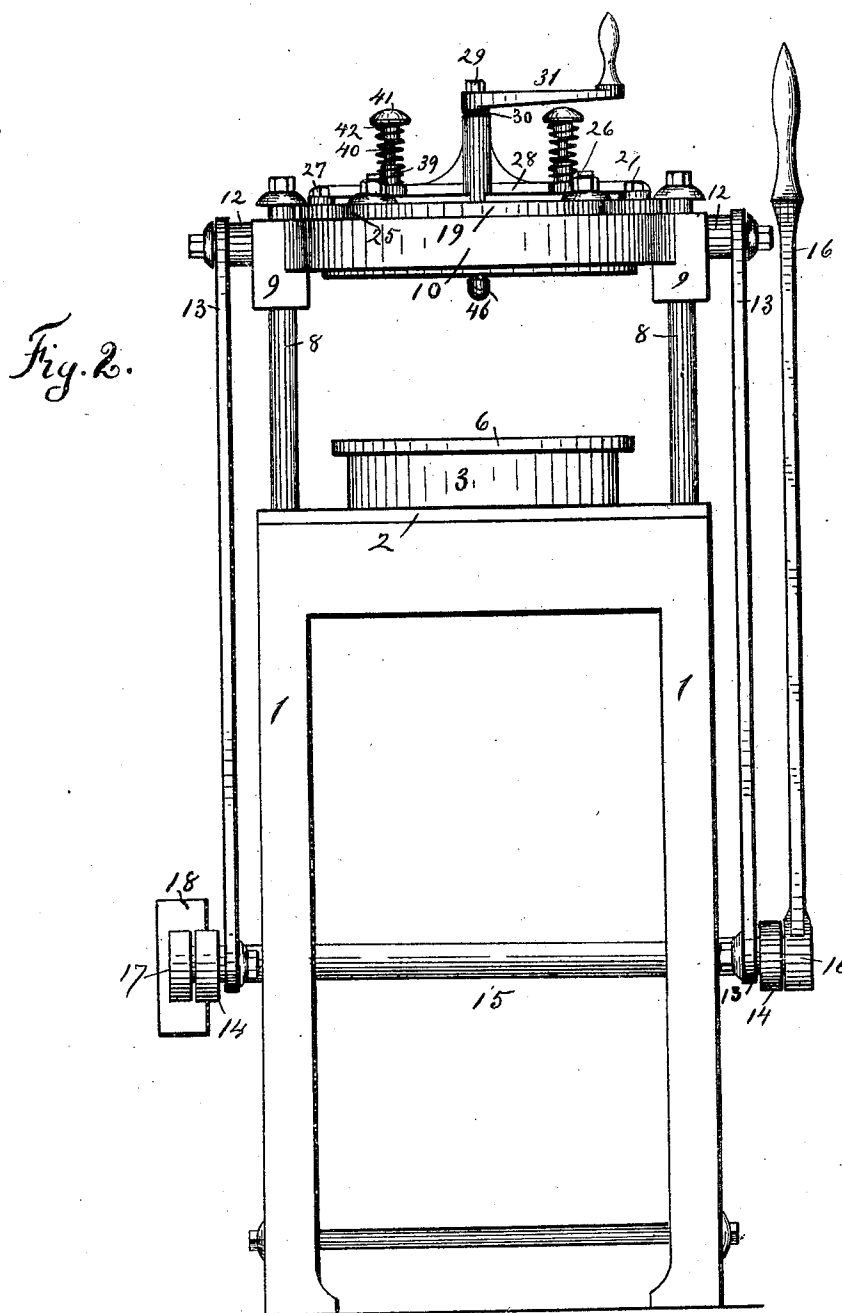
INVENTOR.

Chas. E. Sackett

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5 SHEETS—SHEET 2.



WITNESSES:

James T. Wilson
Perry Wilson

INVENTOR.

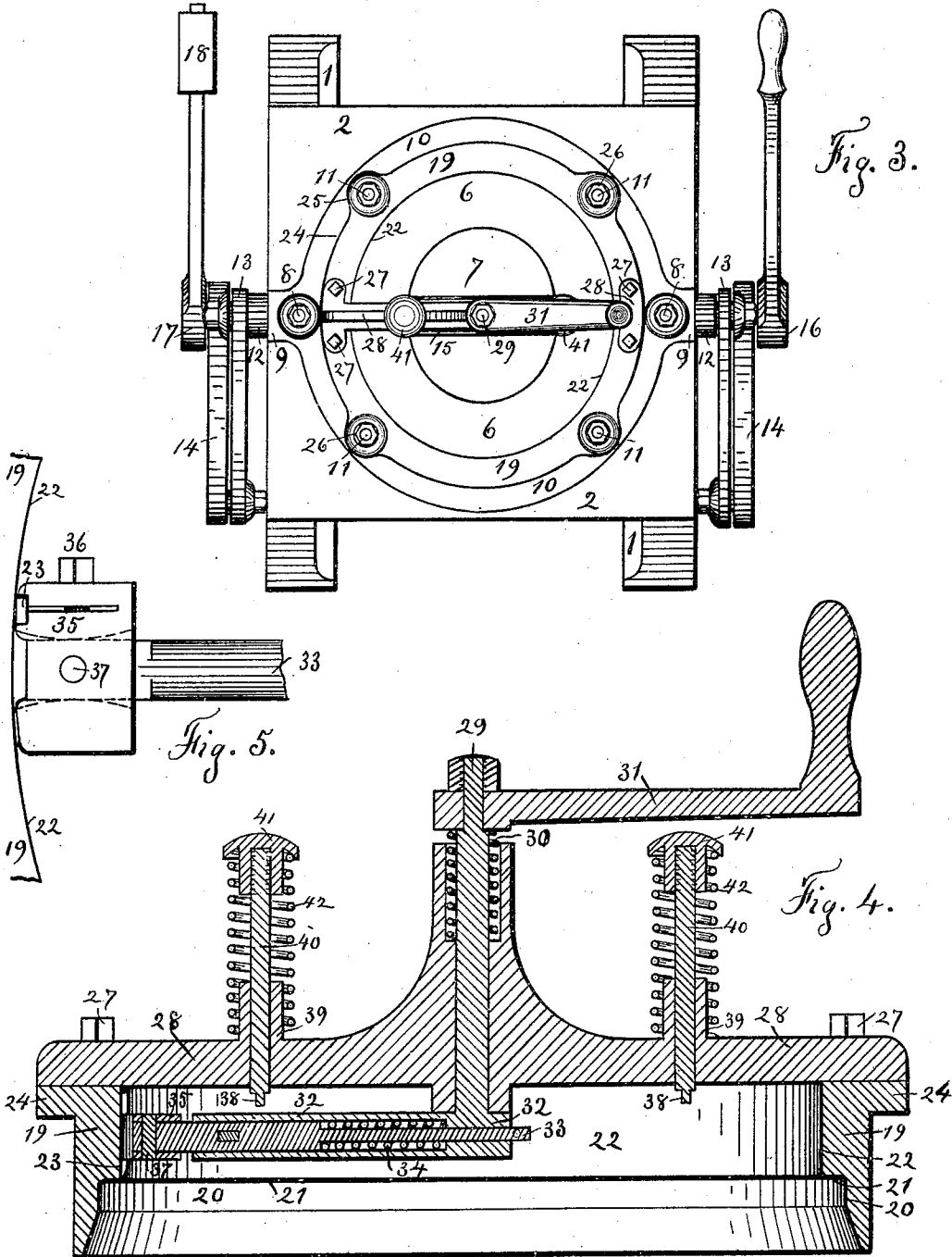
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6 SHEETS—SHEET 3.



WITNESSES:

James P. Wilson
Perry Wilson

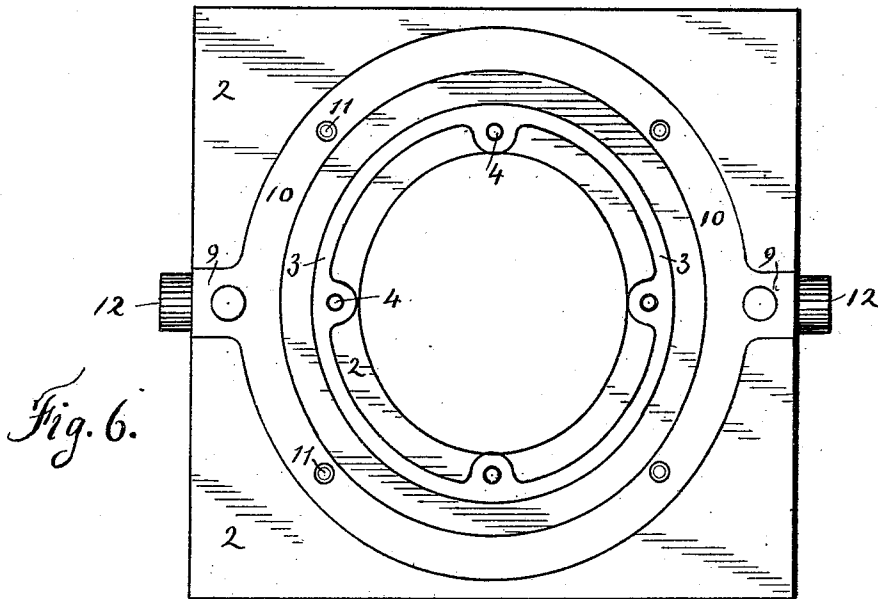
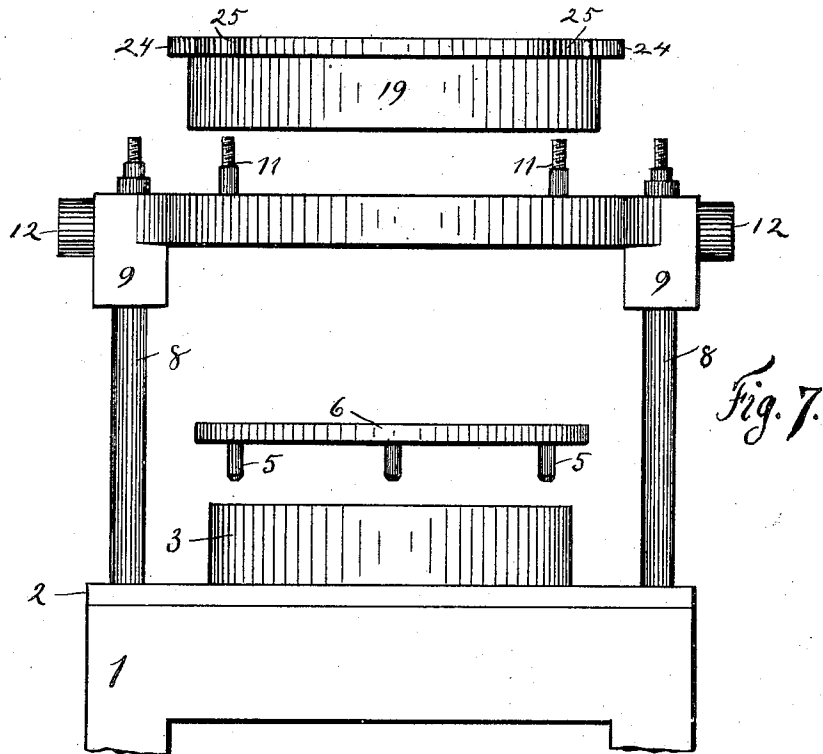
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5 SHEETS—SHEET 4.



WITNESSES:

James L. Wilson
Perry Wilson

INVENTOR.

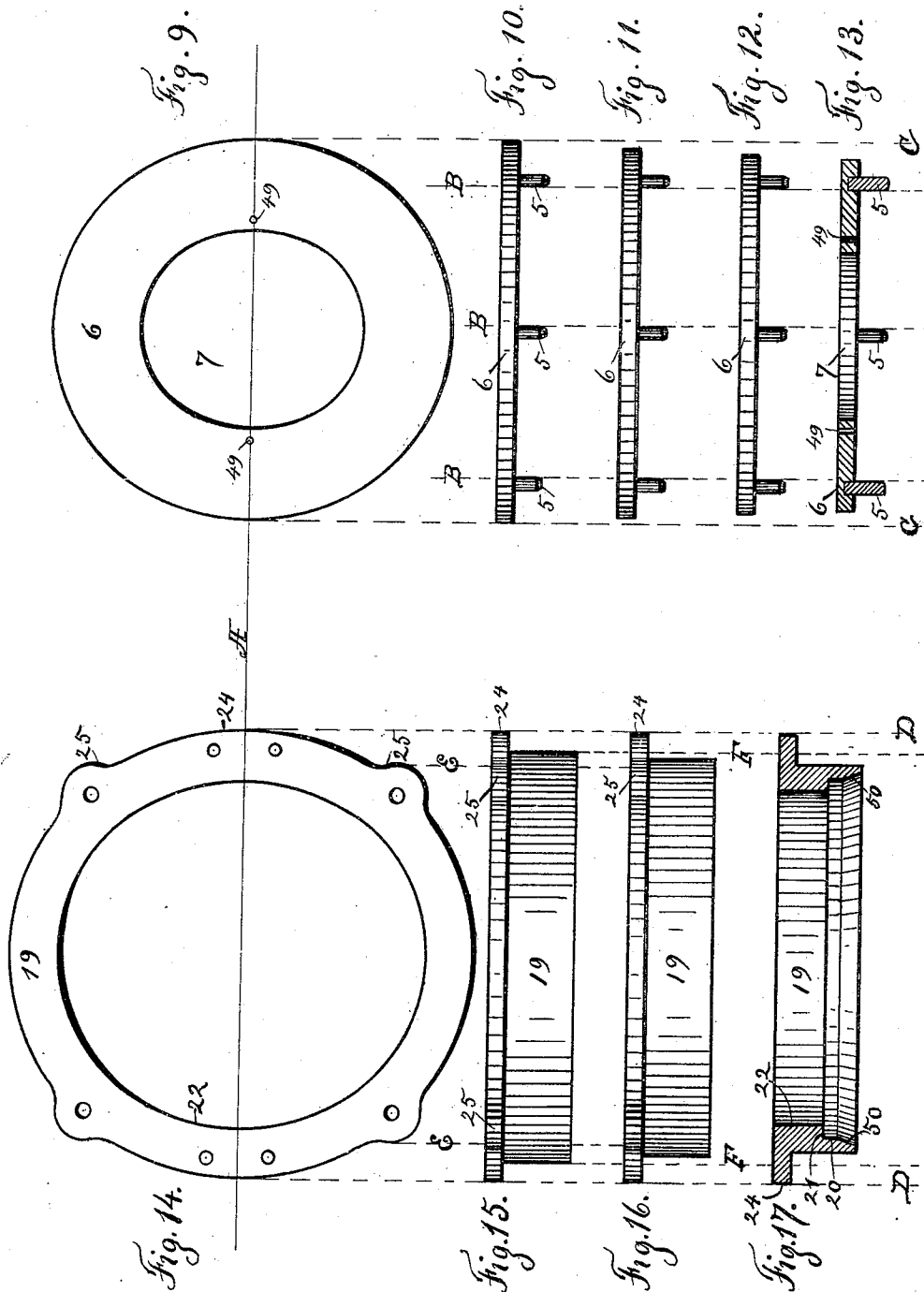
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5 SHEETS—SHEET 5.



WITNESSES:

James T. Wilson
Lyne Switzer

INVENTOR.

Chas. C. Sackett

UNITED STATES PATENT OFFICE.

CHARLES E. SACKETT, OF DANBURY, CONNECTICUT.

HAT-BRIM PRESS TO FORM WELT EDGES.

No. 914,519.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed July 9, 1908. Serial No. 442,789.

To all whom it may concern:

Be it known that I, CHARLES E. SACKETT, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Hat-Brim Presses to Form Welt Edges, of which the following is a specification.

This invention relates to a mechanism for reinforcing the edge of a hat brim by doubling the felt back upon itself to form a welt.

On the 27th day of April, 1908, I filed Serial Application No. 429,425 for an invention having the same title and purpose. That invention related to a machine adapted to form the welt edge on only one size of hat and was operated by hand. On the 6th day of June, 1908, I filed Serial Application No. 427,201, for an invention having the same title and purpose. That invention related to a machine adapted to form the welt edge on various sizes of hats by grouping various sizes of hat brim presses in one frame and in operating them serially and automatically by power. It also provided for removing the surplus felt rounding after the welt was formed by means of an internal rounding jack instead of a direct circular cutter.

The object of this invention is to still further improve upon the two preceding inventions by constructing a machine to occupy less floor space, cost less to construct and heat, and yet be adapted to manufacture welt edges on all sizes of hats; also to improve the internal rounding jack, and eyelet punches. I accomplish this purpose by using a single frame of the construction shown in Serial Application No. 429,425, and by supplying a plurality of interchangeable press parts, each adapted to a single size of hat, and which are made capable of substitution, upon the frame together with an improved rounding jack and adjustable eyelet punches. In Serial Application No. 429,425, the press parts were not interchangeable, but were an integral part of the machine, a different machine being required for every size of hat.

In the accompanying five sheets of drawings, I show both the old construction and the new.

Figure 1. is a side elevation, the press closed. Fig. 2. is a front elevation, the press open. Fig. 3. is a plan view of Fig. 2. Fig. 4. is a

sectional view on an enlarged scale of the improved rounding jack and eyelet punches mounted upon an interchangeable press head, the whole construction being capable of substitution, as shown in Fig. 3. Fig. 5. is a detail view of the pivoted knife head of the rounding jack. Fig. 6. is a plan view on an enlarged scale of the permanent frame above the table top, the interchangeable press head and floor being removed. Fig. 7. shows a side elevation of the same, an interchangeable press head and press floor being ready to drop into position on the frame. Fig. 8, on Sheet 1. is a detail sectional view of the permanent ring, and permanent heating pipe. Fig. 9. is a plan view of the upper side of an interchangeable substitute press floor. Figs. 10, 11, and 12, show interchangeable substitute press floors of varying sizes, in elevation. Fig. 13, one in section on line A, the internal dotted lines B, show the mutual position and alinement of the dowel pins, the external dotted lines C, show the difference in diameters. Fig. 14. is a plan view of the upper side of an interchangeable substitute press head. Figs. 15 and 16, show interchangeable substitute press heads of varying sizes, in elevation. Fig. 17, one, in section on line A, the external dotted lines D, show the mutual diameter and alinement of the projecting flanges, the dotted line E, the alinement of the bolt holes, the dotted line F, the varying diameters of the press head proper.

In Figs. 1, 2, 3, and 4, the rounding and punching mechanism is shown as mounted upon and secured to one of the interchangeable substitute press heads, in all the other figures it is temporarily removed for convenience in illustration.

In all the drawings like numerals relate to like parts.

1. is a suitable machine frame, supporting a table top 2; from the table rises an elliptical vertical section 3, which may be cast with the table or bolted to it (see Figs. 6 and 7). It is perforated at suitable points by holes 4, adapted to receive the dowel pins 5, arranged at corresponding points below the interchangeable press floor 6. This press floor is of an elliptical plan, its periphery being of the same shape as some one of the various sizes of hat brims. It has an

elliptical opening 7, in its center, which corresponds to the crown of a hat of similar size (see Fig. 3). The peripheries and crown openings of the various interchangeable
 5 press floors all vary by one eighth of an inch increased diameter, from hat size $6\frac{1}{4}$, to $7\frac{3}{4}$, requiring twelve interchangeable floors to cover the ordinary range of hat sizes; although the floors vary in their elliptical
 10 diameters, the dowel pins 5, all have their centers in the same ellipse which corresponds to the holes in the permanent raised table section upon which the floors are supported, thus any of the press floors may be dropped
 15 temporarily upon the table top and become a component part of a complete machine.

Rising above the table top and supported by the frame are guide posts 8, which pass through boxes 9, (see Figs. 6 and 7). These
 20 boxes form part of or are securely attached to a substantial ring 10, having a smooth upper face in which are bedded at suitable positions the upright bolts 11, outside of the boxes, and forming part of them are journal
 25 arms 12; to these are journaled the depending side bars 13, (see Figs. 1, 2, 3), having their lower ends journaled to the extremities of crank arms 14, which project from and are secured to the shaft 15, having at one
 30 end an operating lever 16, and at the other end a lever 17, carrying a balancing weight 18, the connecting side bars 13, are curved, so that the center of their end bearings will come in a vertical line with the fulcrum centers of the cranks and lever, when the cranks are at
 35 the end of their vertical throw. It is evident the movement of the lever will cause the ring 10, to rise and fall, and that the weighted lever will balance the moving parts and sustain the ring when it is raised, or any weight it may carry. This ring supports the inter-
 40 changeable press heads 19, (see Figs. 3, 4 and 7), which consists of a substantial elliptical flanged ring having a sectional shape as shown in sectional Fig. 4. They have a
 45 vertical inner elliptical face 20, joined to a horizontal face 21, which form the edge and surface pressing faces of the welt, the face 21 being of the same width as the desired welt
 50 edge; rising vertically from this face is the inner elliptical vertical face 22, against which revolves the cutting knife 23 for removing the surplus felt rounding; the vertical face 20 is continued downward in a conical out-
 55 ward slope 50, to afford easy entrance of a press floor within the corresponding press head; the upper surface of the press head has a projecting flange 24 (see Figs. 5 and 7) which is continued out to form a seat upon
 60 the movable ring 10. At suitable points 25, the flange is swelled and perforated by bolt holes, which drop over the bolts 11, bedded in the ring 10, and to which the interchangeable press heads are secured by nuts and

washers, as shown at 26 in Fig. 3. All the
 65 interchangeable substitute press heads have their bolt holes situated at the same points, in an ellipse common to all of them, thus any of the substitute press heads may be bolted temporarily to the movable ring, and
 70 become a component part of a complete machine.

Crossing the upper face of the interchangeable press heads, and bolted to them as shown at 27, is the bridge casting 28 (see
 75 Fig. 3 and sectional Fig. 4), constructed with a central upright section which is drilled to receive the upright shaft 29 and recessed to receive the spring 30, surrounding the shaft; at the upper end of the shaft is secured the
 80 handle arm 31, against which the spring bears to support it; at the lower end of the shaft is secured or made part of it, the revolving arm 32 which carries at its extremity the knife 23, bearing against the inner vertical
 85 face of the press head; this revolving arm is drilled to receive the horizontal shaft 33, and recessed to receive the spring 34, surrounding the shaft, both spring and shaft are adapted to hold the knife always pressed
 90 against the vertical face of the press head by the construction shown in sectional Fig. 4. It has been found that in traveling around the inner face of an ellipse a knife rigidly
 95 attached to a revolving flexible arm will not always bear true against the face of the ellipse. To obviate this deviation, I show in Fig. 5 an enlarged view of the knife head
 100 used; the head 35, in which the knife 23 is clamped by the clamp bolt 36, is made separately, and is pivoted to the end of the horizontally flexible arm by the pivot 37; it is recessed as shown by the dotted lines to allow of a slight pivotal movement which is balanced by the opposite extremity of the knife
 105 head; with this movement the knife follows the elliptical inner face of the press head accurately. The spring 30, supports the knife point clear of the felt until it is desired to cut the rounding, when pressure upon, and revolution of, the handle performs the work.
 110 Some hats, notably the U. S. Army hat, require their brims punched with eyelet holes. To meet this requirement the press floors are provided with punch sockets 49, arranged at
 115 each side of the crown opening to receive the points of eyelet punches 38, arranged above them; see Figs. 9 and 13, though indicated, these sockets are not visible in any of the other figures. In order to allow a free
 120 movement for the revolving arm below the supporting bridge the eyelet punches 38, must be suspended clear of it, this is done by constructing columns 39, as part of the bridge casting and drilling them to receive
 125 the punch shafts 40, which terminate at their upper end in punch heads 41. Beneath these heads are springs 42, surrounding the

columns, which, when the punches are pressed down by the hand, raise the punch points 38, again clear of the revolving arm.

It is to be noted that the bridge casting 28, carrying the revolving knife mechanism, and also the eyelet punches, is secured to the interchangeable press heads as shown in Figs. 3 and 4, consequently each substitute press head carries its own knife rounding mechanism and punches, and is a complete and independent structure in itself; the press heads and press floors are arranged in pairs, consequently when a substitution of one hat size for another is desired on the machine, simply changing a head and floor carries with it all the mechanism necessary to finish the hat brim, and a change from one size to another is quickly effected.

For the purpose of heating the permanent ring 10, which is a flanged casting as shown in Fig. 8, a pipe 43, is carried around the ring supported on brackets 44, projecting from it. The pipe and brackets being beneath the flange, and behind the ring, do not show in any of the other figures. The pipe is perforated at suitable distances with burner openings 45, and is fed with gas and air by means of pipe elbow 46, and connections 47, and 48, supplying gas and air by means of flexible tubes connected to convenient supply pipes; the flexible tubes allow the permanent ring to rise and fall as stated, while the heat is always ready to heat any of the interchangeable press heads when placed in position within the permanent ring which supports them.

Various changes in detail might be made in the method of constructing or securing the interchangeable press heads or floors to the permanent frame, without departing from the principles of my invention.

I do not limit myself as to the details, and

Having fully described the invention, what I claim and desire to secure by Letters Patent is:

1. In a hat brim press to form welt edges, the combination of a machine frame, a platform supported thereon, a section centrally arranged rising vertically therefrom, a series of substitute press floors adapted to be seated interchangeably upon said section; a ring frame made movable upon said machine frame, centrally arranged above said vertical section, a series of substitute press heads adapted to be seated interchangeably upon said ring frame, with means to give said ring frame and a press head seated thereon, a vertical reciprocatory movement toward said vertical section and a corresponding press floor seated thereon.

2. In a hat brim press to form welt edges, the combination of a machine frame, a platform supported thereon, an elliptical section centrally arranged rising vertically from said

platform and having a flat top surface, a series of interchangeable press floors adapted to be seated upon and secured to the flat top surface of said raised vertical elliptical section, means of alinement between said press floors and the top surface of said raised vertical section, said press floors having each a vertical exterior periphery corresponding to the periphery of a single size of hat brim, and adapted to be substituted one for the other on said machine frame.

3. In a hat brim press to form welt edges, the combination of a machine frame, a platform supported thereon, a section centrally arranged rising vertically therefrom, perforations in the surface of said section, a series of interchangeable substitute press floors having dowel pins registering with said perforations, and adapted to be seated on said section; an opening centrally arranged in each of said substitute press floors adapted to receive the crown of a single size of hat, and punch sockets arranged at each side of said opening in each of said press floors adapted to receive the points of punches registering therewith, and located above said press floors.

4. In a hat brim press to form welt edges, the combination of a machine frame, a platform supported thereon, a section centrally arranged rising vertically therefrom adapted to sustain a series of interchangeable substitute press floors, a movable ring frame centrally arranged on said machine frame above said press floors, said ring frame having boxes arranged upon opposite sides, said boxes having a vertical movement upon stationary guide rods bedded in and rising from said platform, journal bearings arranged upon the outer side of said boxes, depending side bars journaled on said bearings, and means to give to said movable ring frame, a vertical reciprocatory movement to and from a press floor seated upon said section.

5. In a hat brim press to form welt edges, the combination of a machine frame, a platform supported thereon, a vertical section centrally arranged rising therefrom adapted to sustain a series of substitute press floors, a movable ring frame centrally arranged above said press floors having a vertical reciprocatory movement to and from them, said ring frame having a flat top surface, and a series of upright bolts rising from said surface, adapted to secure a series of interchangeable substitute press heads, each having bolt holes registering with said bolts, and a flange adapted to seat said press heads upon the top of said ring frame.

6. In a hat brim press to form welt edges, the combination of a machine frame, a platform supported thereon, a vertical section centrally arranged rising therefrom, adapted

to interchangeably secure a series of substitute press floors, a ring frame movably arranged above said press floors having a vertical reciprocatory movement to and from them, and a series of substitute press heads each having a flange adapted to be interchangeably secured to said ring frame, said press heads each having an interior opening adapted to encircle a corresponding press floor, and a depending section having an interior elliptical annular recess composed of two faces in conjunction, one face being vertical of exactly the same conformation as the vertical periphery of a corresponding press floor, and adapted to restrain the spread of a curled hat brim when under pressure within the periphery of said press floor, the other face extending horizontally at right angles from said vertical face, and adapted to press upon the curl of a hat brim, and flatten it upon said press floor, with means to give said ring frame and attached press head movement and pressure.

7. In a hat brim press to form welt edges, the combination of a machine frame, a supported platform, a section rising vertically therefrom adapted to seat a series of interchangeable substitute press floors, a movable ring frame arranged above it, having a vertical movement to and from it, said ring frame being composed of an elliptical vertical ring joined at top to a horizontal elliptical flange projecting inwardly, and forming a recess below it, brackets projecting inwardly from the bottom of said ring, and an annular heating pipe supported within said recess by said brackets, said heating pipe being flexibly connected with stationary pipes adapted to supply the means of heat thereto, with means to give said ring frame and said pipe a vertical reciprocatory movement to and from a press floor seated upon said section.

8. In a hat brim press to form welt edges, the combination of a machine frame, a supported platform, a section rising vertically therefrom adapted to seat a series of interchangeable substitute press floors, each having a vertical periphery corresponding to the periphery of a single size of hat brim, a movable ring frame arranged above said section having a vertical movement to and from it, and a series of interchangeable substitute press heads adapted to be secured to said ring frame, said substitute press heads having each an interior annular recess composed of a vertical and a horizontal face in right angular conjunction, said vertical face terminating in a conical elliptical face, adapted to push any overlap of a hat brim within the periphery of a corresponding press floor, and to guide said vertical face into true alignment with the vertical face of said press floor as it encircles it.

9. In a hat brim press to form welt edges,

the combination with a machine frame upon which they are adapted to be seated and secured, of a series of interchangeable substitute press heads, each press head having an interior annular recess composed of a vertical and a horizontal face in right angular conjunction, said horizontal face being of the same width as the width of a predetermined welt to be formed upon the edge of a hat brim, and an interior elliptical vertical face to said press head rising from the inner edge of said horizontal face.

10. In a hat brim press to form welt edges, the combination with a machine frame, of a series of interchangeable substitute press heads, adapted to be seated and secured upon said frame, each press head having an interior annular recess composed of a vertical and a horizontal face in right angular conjunction, and an interior elliptical vertical face rising from the inner edge of said horizontal face, said vertical face forming the sides of a central elliptical opening in said press head, said sides terminating at top in a horizontal flange adapted to be seated on said machine frame, a bridge member centrally crossing said opening, and secured to said flange, and a rounding mechanism centrally pivoted in said bridge member supporting a knife adapted to bear yieldingly against the interior vertical elliptical sides of the opening in said press head.

11. In a hat brim press to form welt edges, the combination with a machine frame of a series of interchangeable substitute press heads, adapted to be seated upon said frame, each press head having an interior elliptical opening with vertical sides, corresponding to the inner circumferential edge of a predetermined welt to be shaped by said press head upon a hat brim, said vertical sides forming the templet guide for a knife by which said welt edge is trimmed, said knife being actuated by a mechanism rotatively mounted upon said press head, and centrally pivoted therein.

12. In a hat brim press to form welt edges, the combination with a machine frame, of a series of interchangeable substitute press heads, adapted to be seated upon said frame, each press head having an internal elliptical opening with vertical sides corresponding to the inner edge of a hat brim welt, said sides forming the templet guide by which said welt edge is trimmed, and a bridge member centrally crossing said opening and secured to said press head, said bridge member supporting a rounding mechanism consisting of a shaft vertically pivoted in a column rising centrally from said bridge member, a handle secured to said shaft above said column, a horizontal arm secured to the lower end of said shaft adapted to be rotated below said bridge member, a horizontal shaft surround-

ed by a spring operating resiliently in a recess within said arm; a knife head flexibly secured upon the end of said shaft; a knife clamped in said knife head with cutting edges adapted to bear yieldingly against the vertical sides of said press head opening, and a spring recessed in the column supporting said cutting mechanism, said spring bearing resiliently below said handle to support said cutting mechanism when not depressed rotatively to trim a welt edge.

13. In a hat brim press to form welt edges, the combination with a machine frame, of a series of interchangeable substitute press heads adapted to be seated upon said frame, and having a vertical reciprocatory movement toward a series of corresponding substitute press floors, also seated upon said frame, said press floors having a central opening with punch sockets arranged at each side of said opening, a bridge member crossing an opening in said press heads, centrally parallel with said punch sockets, columns rising from said bridge member, punch shafts vertically recessed in said columns, having punch points registering with the sockets in corresponding press floors, said punch shafts being supplied with heads and springs for operating them resiliently in the direction of said punch sockets in said press floors.

14. In a hat brim press to form welt edges, the combination of a machine frame, a platform supported thereon, a section rising vertically therefrom centrally arranged and adapted to support a series of interchangeable substitute press floors, a ring frame having boxes and outer journal bearings made movable on vertical guide rods, centrally arranged above said section, a series of interchangeable substitute press heads adapted to be seated and secured to said ring frame, a shaft journaled in boxes attached to said machine frame below said platform parallel with the bearings of said ring frame, cranks made fast to said shaft on each side of said machine frame, said cranks being horizontally parallel with said ring frame at the upper extremity of its movement, and perpendicular to it at the lower extremity of its movement, side bars journaled to the extremities of said cranks, and to the outer bearings of said ring frame, a lever made fast to one end of said shaft giving movement to said cranks, and an arm attached to said shaft carrying a weight, by which the movement of said ring frame and an attached press head is balanced when reciprocally actuated by said lever to or from a corresponding press floor.

15. In a hat brim press to form welt edges, the combination of a machine frame, a platform supported thereon, a section centrally arranged rising vertically therefrom adapted to support a series of interchangeable substitute press floors, a ring frame having boxes

and outer journal bearings made movable on vertical guide rods, centrally arranged above said section, a series of interchangeable substitute press heads adapted to be seated and secured to said ring frame, side bars journaled on and depending from the outer bearings of said ring frame, the lower ends of said side bars being journaled to the extremities of cranks having their fulcrum ends supported by a shaft to which a lever is attached; said side bars being curved in order that the movement of said shaft by said lever shall bring the fulcrum center of said cranks and lever, in a vertical line between the end bearings of said side bars; thereby obtaining the pressure of the toggle joint, and communicating such pressure to said ring frame and attached press head at the extremity of its downward movement toward a corresponding press floor.

16. In a hat brim press to form welt edges, the combination of a machine frame, a platform supported thereon, a centrally arranged section rising vertically therefrom, a series of interchangeable substitute press floors adapted to be seated thereon, a ring frame centrally arranged above said section having a vertical reciprocatory movement to and from it, a series of interchangeable substitute press heads adapted to be seated upon said ring frame, said press heads and press floors being arranged in pairs, each pair corresponding to a single size of hat, each press floor being provided with a crown opening and punch sockets; each press head being provided with a welt trimming mechanism and punch points registering with said sockets, with means to give any one of said press heads a vertical reciprocatory movement toward a corresponding press floor, and to exert pressure upon it.

17. In a hat brim press to form welt edges, in combination, a machine frame supporting a platform, a vertical section rising therefrom, means to substitute a series of interchangeable press floors thereon, a movable ring frame arranged above said section, means to substitute a series of interchangeable press heads thereon, said press heads being each adapted to shape a welt upon the edge of a hat brim when laid upon a corresponding press floor, means for heating said press heads flexibly arranged, means for cutting the surplus rounding from said welt edge coincident with each press head, means to automatically punch eyelet holes in a hat brim coincident with each press head and corresponding press floor, means for automatically securing a corresponding press head and floor in conjunction while communicating heat and pressure, means for automatically retaining said press heads in position when raised, and a controlling lever whereby a hat brim is welted and eyeleted

in one movement, and held in position between the said press heads and press floors while the projecting edge of said hat brim is being trimmed by the rounding mechanism,
5 substantially as described and shown.

In testimony whereof, I have signed my name to this specification in the presence of

two subscribing witnesses, this 3d day of July 1908.

CHARLES E. SACKETT.

Witnesses:

JAMES L. WILSON,
PERRY WILSON.