Oct. 14, 1947. P. C. BOWEN 2,429,047

GARMENT FORMING MACHINE

Filed March 5, 1946 2 Sheets-Sheet 1

Fig. 1.

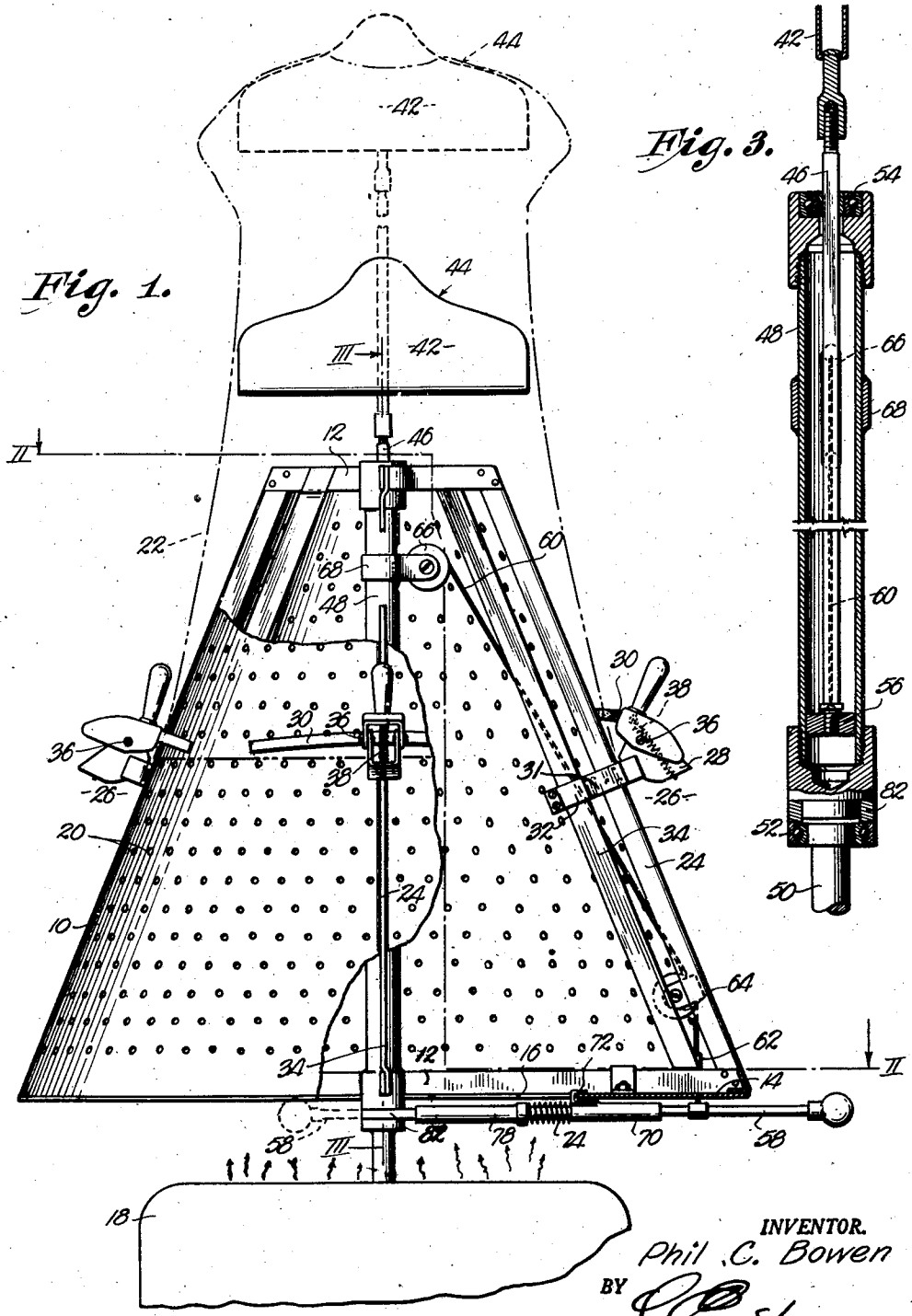


Fig. 3.

INVENTOR.
Phil C. Bowen
BY
ATTORNEY.

Oct. 14, 1947. P. C. BOWEN 2,429,047

GARMENT FORMING MACHINE

Filed March 5, 1946 2 Sheets-Sheet 2

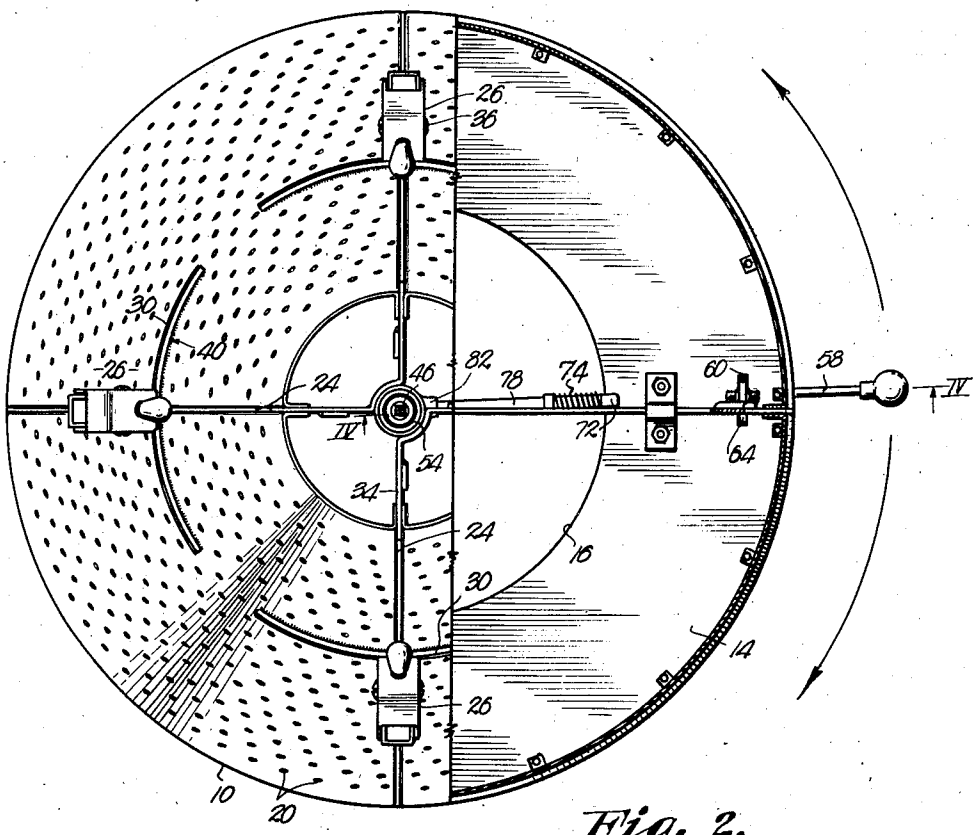


Fig. 2.

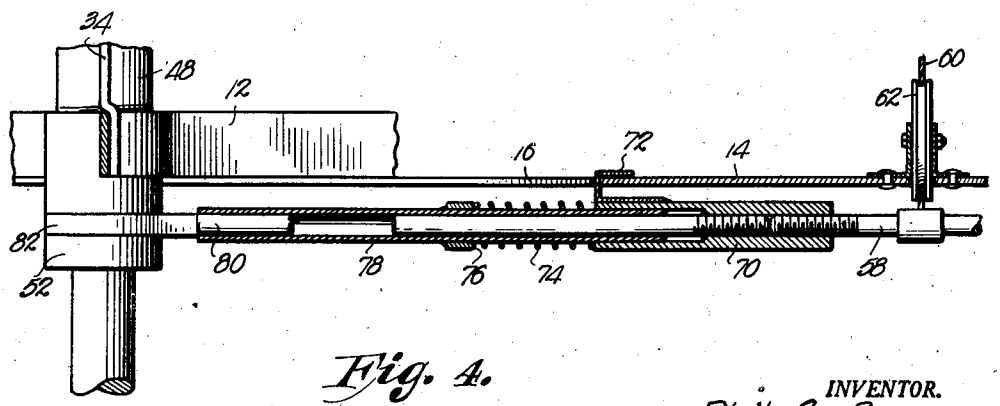


Fig. 4.

INVENTOR.
Phil C. Bowen
BY
ATTORNEY.

Patented Oct. 14, 1947

2,429,047

UNITED STATES PATENT OFFICE

2,429,047

GARMENT FORMING MACHINE

Phil C. Bowen, Merriam, Kans.

Application March 5, 1946, Serial No. 652,003

9 Claims. (Cl. 223—70)

1

This invention relates to garment forming machines customarily employed in dry cleaning establishments where substantially tubular shaped pieces of wearing apparent are treated to a smooth condition without the use of irons or pressing equipment.

The primary aim of this invention is the provision of a machine of the afore-mentioned character having as a part thereof unique and specially disposed adjustable clamps arranged on a body of foraminous material to secure one end of the garment in place, while the other end is suspended on a sectional standard and head assembly forming a part of the machine and so associated with the foraminous body as to maintain the garment in an extended condition while steam and/or air is injected longitudinally therethrough.

Other objects of this invention are to provide novel, unique and efficient mechanism for raising and lowering portions of a central standard to carry a garment to a fully extended condition while a portion thereof is in telescoped relation with the foraminous body and to permit the aforesaid adjustable clamps to engage one end of the garment to hold the same in place; to provide a foraminous frusto-conical body that is rotatably mounted upon one of the sections of an extensible standard for rotation about the longitudinal axis thereof; and to provide a number of clamping assemblies on the aforesaid body that have parts shiftable to and from the operative condition without interfering with the application of the garment to the machine.

Other aims of the invention are important and include specific structural details of the equipment and the manner of associating the several parts, all of which will appear during the course of the following specification referring to the accompanying drawings, wherein:

Fig. 1 is a side elevational view of a garment forming machine made in accordance with the present invention with portions thereof broken away to reveal details of structure.

Fig. 2 is an irregular transverse sectional view through the machine taken on line II—II of Fig. 1.

Fig. 3 is an enlarged detailed fragmentary sectional view taken on line III—III of Fig. 1; and

Fig. 4 is an enlarged fragmentary detailed sectional view taken on line IV—IV of Fig. 2.

The form of the invention chosen for illustration comprises a substantially frusto-conical hollow body 10 formed of foraminous sheets of material that are mounted upon a frame 12 which

2

includes an internal flange 14 at the base of body 10 to create an inlet port 16 for steam and hot air passing from housing 18 wherein means for generating the steam and establishing a current of air are located. These instrumentalities are conventional and well known. They form no part of this invention and, therefore, need not be further illustrated nor described. It is sufficint to say that the steam and air pass upwardly in the direction of the arrows shown in Fig. 1, through port 16 and into hollow body 10 whence they pass through holes 20 equally distributed throughout the area of body 10. Since some of these holes 20 are disposed within the garment 22 being formed, the desired result will be attained so far as applying steam and air in sufficient amounts to remove the wrinkles.

The garment is illustrated in dotted lines in Fig. 1 and may be a dress, coat or other substantially tubular piece of wearing apparel.

In actual practice, body 10 is composed of a number of segments of foraminous material mounted upon frame 12 and the edges of the proximal segments are spaced apart to form slots 24. In the instance illustrated, there are four longitudinal slots 24 extending longitudinally from lower to upper end of a body 10 to receive portions of clamps 26, each of which has a head 28, a movable jaw 30 and a stem 32. This stem projects through the slot 24 and a bearing on the inner end thereof slidably engages a bar 34 secured to frame 12 and extending in parallelism with each slot 24 respectively. Each bar 34 is spaced inwardly from its cooperating slot 24, as clearly illustrated in Fig. 1.

Jaw 30 is pivotally mounted as at 36 to head 28 and a spring 38 having one end secured to head 28 and the other end secured to jaw 30, shifts past the center of pivotal connection 36 as the jaw is moved to and from to a position where the jaw is in engagement with the outer face of body 10. Each jaw 30 has an arcuate member 40 thereon faced with carding cloth or other material that will serve to present a number of serrations throughout the length of the arcuate portion of the jaw 30 to insure that steam passing through holes 20 will have a means to escape after it passes through that area of the garment underlying the arcuate portion of each jaw 30. The teeth or serrations 40 on the arcuate portions of each jaw 30 serve to prevent accidental disengagement of the garment 22 from beneath the several jaws when they are in the position shown at the left in Fig. 1.

The end of the garment 22 opposite from that

clamped to body 10 is carried by a head 42 having its upper edge contoured as at 44 to more or less conform to the shape of the garment at the shoulders and to present a salient or projection entering the neck of the garment. This head 42 is substantially U-shaped in cross section as shown in Fig. 3 and therefore, when a garment having a hanger therein is moved over head 42, the garment will rest directly upon the upper edge or edges 44 of head 42 and the hanger will drop into the space provided between the legs of the U-shaped head to entirely disengage the hanger from the garment.

Head 42 is mounted directly upon a section 46 of a standard which includes another section 48 disposed vertically and axially of body 10. This last mentioned section 48 is hollow and rigidly secured to a pedestal 50, the latter of which bears the load of the entire forming machine and is rotatably mounted in suitable bearing supports not shown. A bearing 52 carried by pedestal 50 rotatably mounts the hereinafter described lever assembly 58 and a bearing 54 carried by the upper end of standard 48 rotatably journals section 46, the inner end whereof has a piston 56 thereon slidable within section 48 to maintain section 46 in alignment with bearing 54. Both sections 46 and 48 therefore, are rotatable with body 10 and with pedestal 50. Upper section 46 is relatively rotatable with respect to lower section 48 and when garment 22 is moved to position, the entire machine including pedestal 50 may be rotated to allow the operator to easily manipulate clamps 26.

A part of frame 12 extends radially outwardly from the lower portion of section 48 as illustrated in Fig. 4 to stabilize and support body 10 and a similar support is provided at the upper end of body 10, as clearly shown in Fig. 1. A garment 22 is fitted over body 10 to a degree governed by the circumference of the lower end of said garment and therefore, the said circumference and also the length of the garment has a direct bearing upon its position on the equipment. Head 42 must be elevated and lowered to suit the particular condition and after garment 22 is hung upon head 42, the lower edge of the garment is positioned on body 10 as required. This positioning is done by raising and lowering upper section 46 of the standard through manually manipulable means including a lever 58 to which is attached a cable 60 extending over pulleys 62, 64 and 66 respectively. The latter pulley 66 is mounted on a bracket 68 on section 48 and cable 60 extends into the hollow section 48 and downwardly therethrough to a point of anchor near piston 56. This manner of securing one end of cable 60 to section 46 is clearly illustrated in Fig. 3. Pulleys 62 and 64 serve as means for guiding the cable 60 as lever 58 is actuated. This lever moves about the axis of section 48 which not only supports body 10 but retains the inner end of lever 58 in place after bearing 52 has been positioned as shown in Fig. 3. In other words, the inner end of lever 58 is ring-shaped to circumscribe a portion of pedestal 50 and when lever 58 is moved from pulley 62, cable 60 will be pulled to elevate section 46 and head 42. Lever 58 is unique in character in that it has means for selectively locking the cable 60, section 46 and said head 42 in a set condition. Lever 58 carries a socketed member 70 provided with a combination guide and detent 72 yieldably held against the inner annular periphery of flange 14 by a spring 74. This spring 74 is positioned between a shoulder 76 on tube 78 and the inner end of member 70. One end of tube 78 is securely held by a stem 80 on ring 82 while the opposite end of this tube 78 slidably enters the socket in member 70. When inward pressure is exterted upon lever 58, spring 74 is compressed and the frictional engagement between flange 14 and detent 72 is relieved to such a degree that the entire lever assembly may be rotated with ring 82 about pedestal 50 to govern the length of cable 60 and therefore, the height of section 46.

As clamps 26 travel along their respective supporting bars 34, the arcuate portion of jaws 30, being flexible, will adjust their degree of curvature to the underlying form of the garment and body 10. A snug fit is thereby insured and since the length of arcuate portions of jaw 30 is substantially as shown in Fig. 2 with respect to the circumference of body 10, a firm grip is always afforded and the lower end of the garment will not slip from position as air under pressure and steam is forced upwardly through the hollow body and thence into the garment.

The equipment produced as above described and shown in the accompanying drawings is capable of fast and efficient operation and will accommodate a wide range of garment sizes, all resulting in a reduction of cost of finishing from the standpoint of time and labor required.

Such modifications and alterations as may fall within the scope of the appended claims may be built into the machine without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a garment forming machine, a substantially frusto-conical, hollow, foraminous body having longitudinal slots formed therein; a bar within the body adjacent to and coextensive with each slot respectively; and a clamp slidably mounted on each bar with a portion thereof projecting through the proximal slot, said clamps each having a jaw shiftable toward and from a position against the outer face of the body, and means for yieldably holding the jaw in such position.

2. In a garment forming machine, a substantially frusto-conical, hollow, foraminous body having longitudinal slots formed therein; a bar within the body adjacent to and coextensive with each slot respectively; and a clamp slidably mounted on each bar with a portion thereof projecting through the proximal slot, said clamps each having a jaw shiftable toward and from a position against the outer face of the body, and means for yieldably holding the jaw in such position, said jaws being arcuate and having a toothed face for engagement with the garment being formed when the same is telescoped over the body.

3. In a garment forming machine, a substantially frusto-conical, hollow, foraminous body having longitudinal slots formed therein; a bar within the body adjacent to and coextensive with each slot respectively; and a clamp slidably mounted on each bar with a portion thereof projecting through the proximal slot, said clamps each having a jaw shiftable toward and from a position against the outer face of the body, and spring loaded means for yieldably holding the jaw in such position whereby a yielding pressure is exerted on the garment being formed when the

same is telescoped over the body beneath the jaws of the clamps.

4. In a garment forming machine, a substantially frusto-conical, hollow, foraminous body having longitudinal slots formed therein; a bar within the body adjacent to and coextensive with each slot respectively; and a clamp slidably mounted on each bar with a portion thereof projecting through the proximal slot, said clamps each having a jaw shiftable toward and from a position against the outer face of the body, and means for yieldably holding the jaw in such position, said jaws being arcuate and flexible longitudinally to conform to the contour of the body at the zone of contact therewith, the said jaws having their points of connection to respective clamps at the centers thereof.

5. In a garment forming machine, a hollow, foraminous body, a series of clamps on the body for clamping one end of the garment against the body; and structure for elevating and supporting the opposite end of the garment above the body, comprising a vertical, sectional standard disposed substantially on the axis of the body; and means for imparting relative longitudinal movement to one of the sections of the standard comprising manually manipulable elements projecting beyond the confines of the hollow body, said elements being rotatable about the axis of said body and having releasable means to hold the same against rotation with respect to the body.

6. In a garment forming machine, a hollow, foraminous body, a series of clamps on the body for clamping one end of the garment against the body; and structure for elevating and supporting the opposite end of the garment above the body, comprising a vertical, sectional standard disposed substantially on the axis of the body, and means for increasing and decreasing the length of the standard, one of said sections being rotatable and serving as a support for the foraminous body.

7. In a garment forming machine, a hollow, foraminous body, a series of clamps on the body for clamping one end of the garment against the body; and structure for elevating and supporting the opposite end of the garment above

the body, comprising a vertical, sectional standard disposed substantially on the axis of the body; and means for imparting relative longitudinal movement to one of the sections of the standard comprising manually manipulable elements projecting beyond the confines of the hollow body at the base thereof, said one section being rotatably mounted and having a garment supporting head thereon.

8. In a garment forming machine, a hollow foraminous body; a series of clamps on the body for holding one end of the garment against the body and in circumscribing relation therewith; and structure for supporting the opposite end of the garment above the body comprising a vertical, sectional standard extending through the body and disposed substantially on the axis thereof and means for imparting relative longitudinal movement to one of the sections of the standard to project the section above the body, the sectional standard being the sole support for the body and being freely rotatable about the axis, said one section of the standard being rotatable about its axis independently of the remaining section and the body.

9. In a garment forming machine, a hollow, foraminous body, a series of clamps on the body for clamping one end of the garment against the body; and structure for elevating and supporting the opposite end of the garment above the body, comprising a vertical, sectional standard disposed substantially on the axis of the body, and means rotatable on the standard for increasing and decreasing the length of the standard, said standard rotatably supporting the body, said means being releasably joined to the body and rotatable therewith when unreleased.

PHIL C. BOWEN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,094,042	Lichterman	Sept. 28, 1937
2,378,565	Locke et al.	June 19, 1945