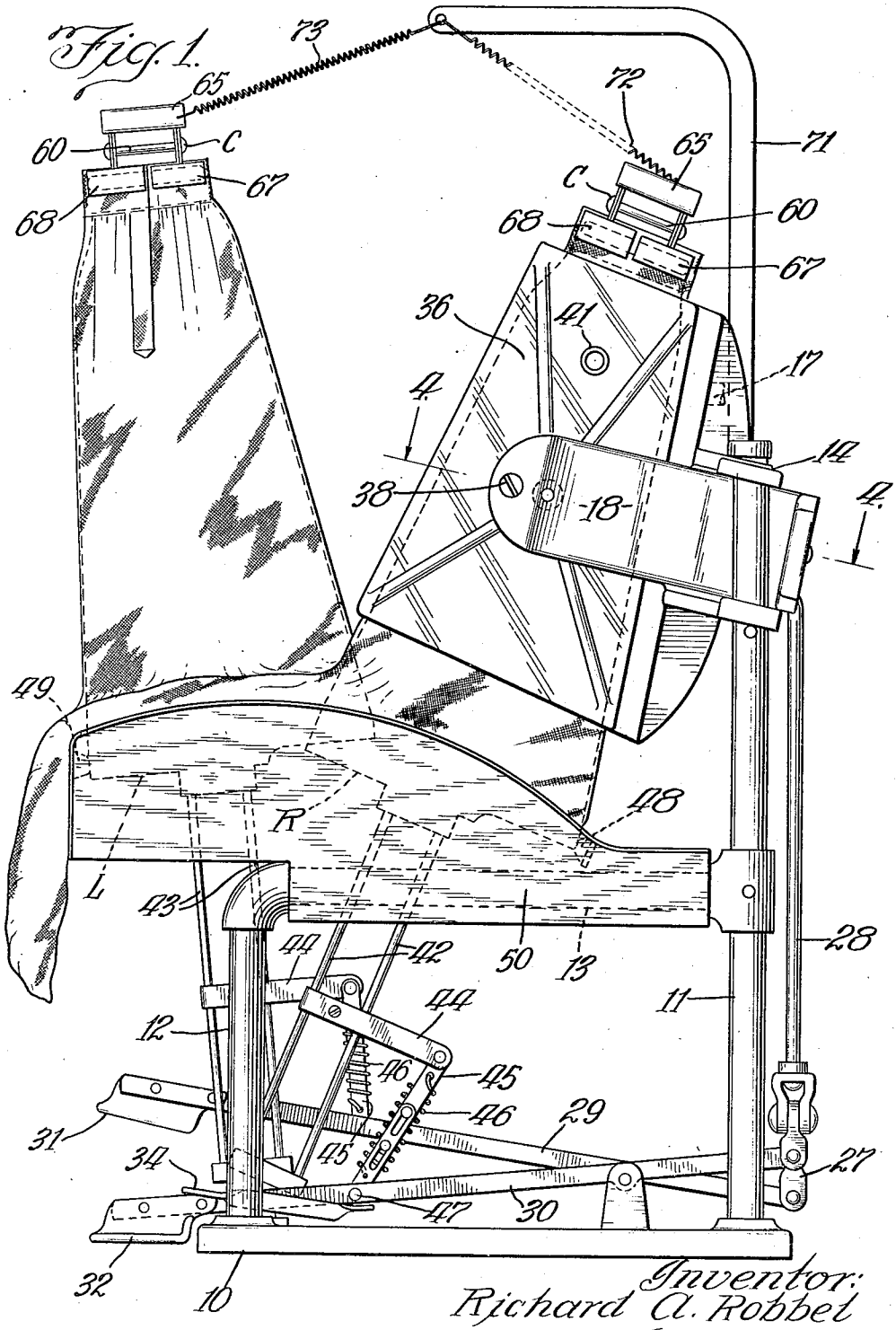
May 15, 1945. R. A. ROBBEL 2,375,947

SLEEVE IRONER

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Fig. 1.



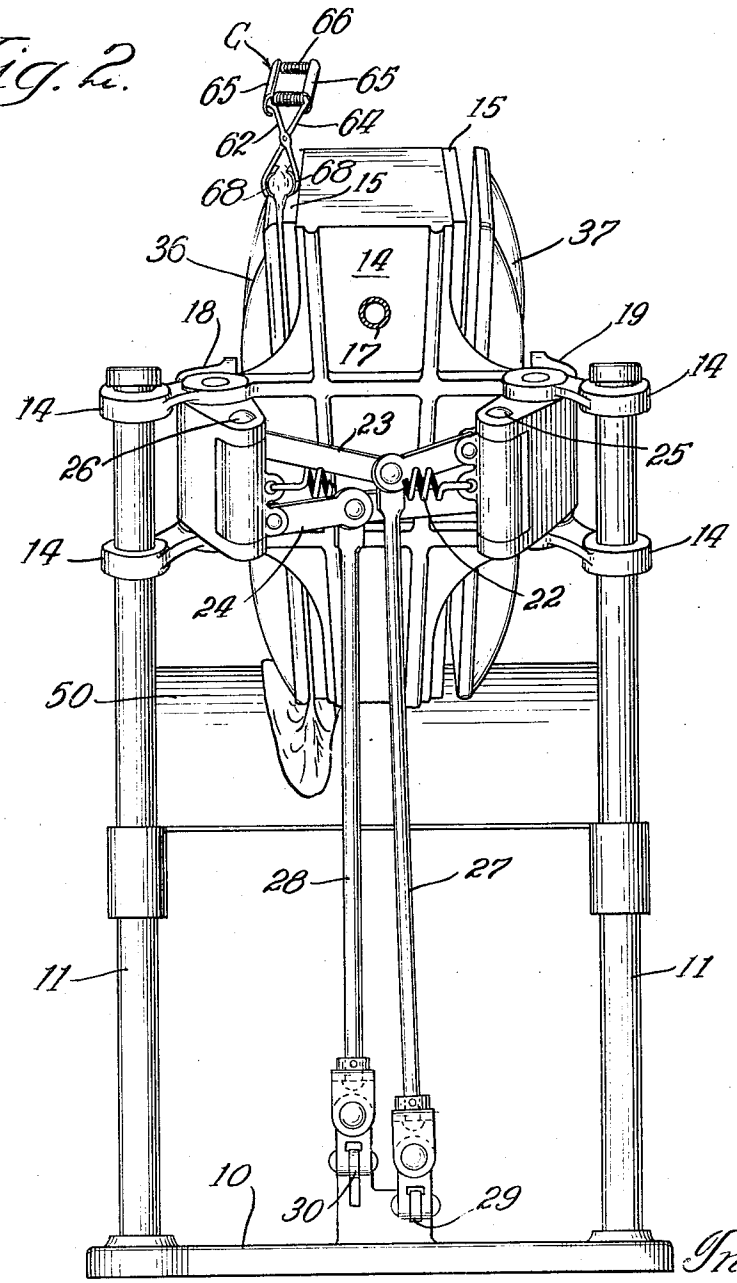
Inventor:
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SLEEVE IRONER

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Fig. 2.



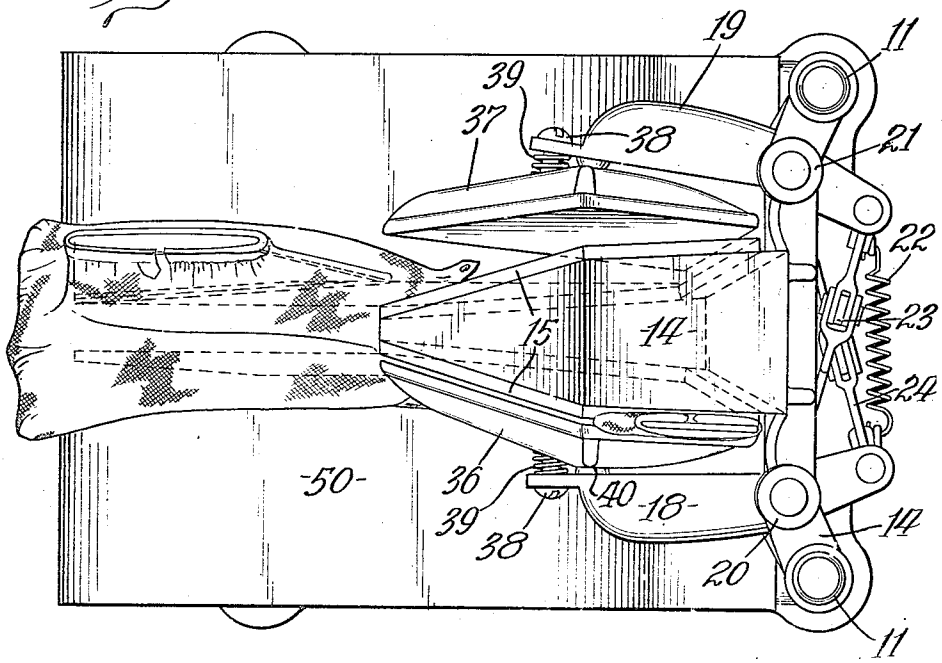
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Fig. 3.



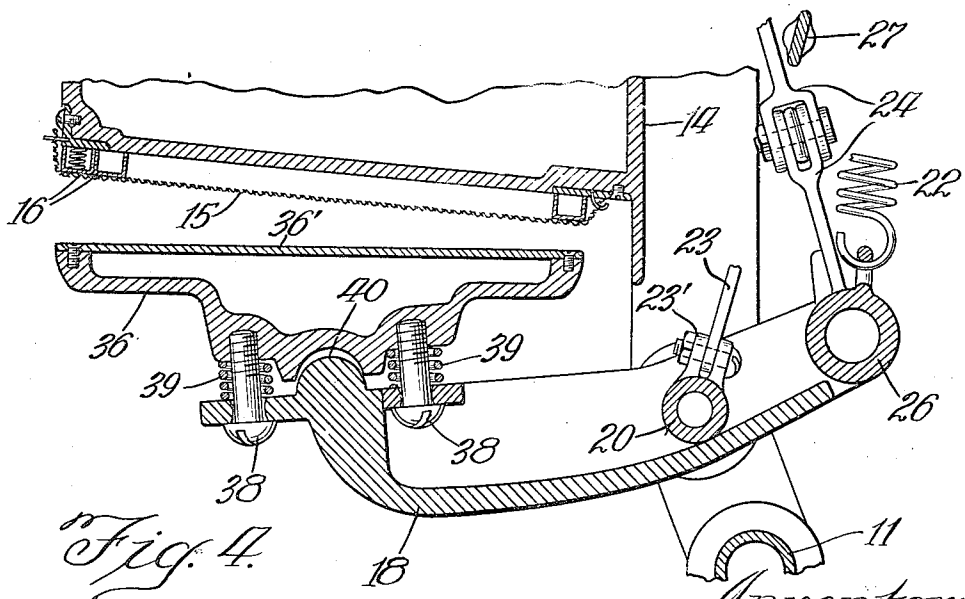


Fig. 4.

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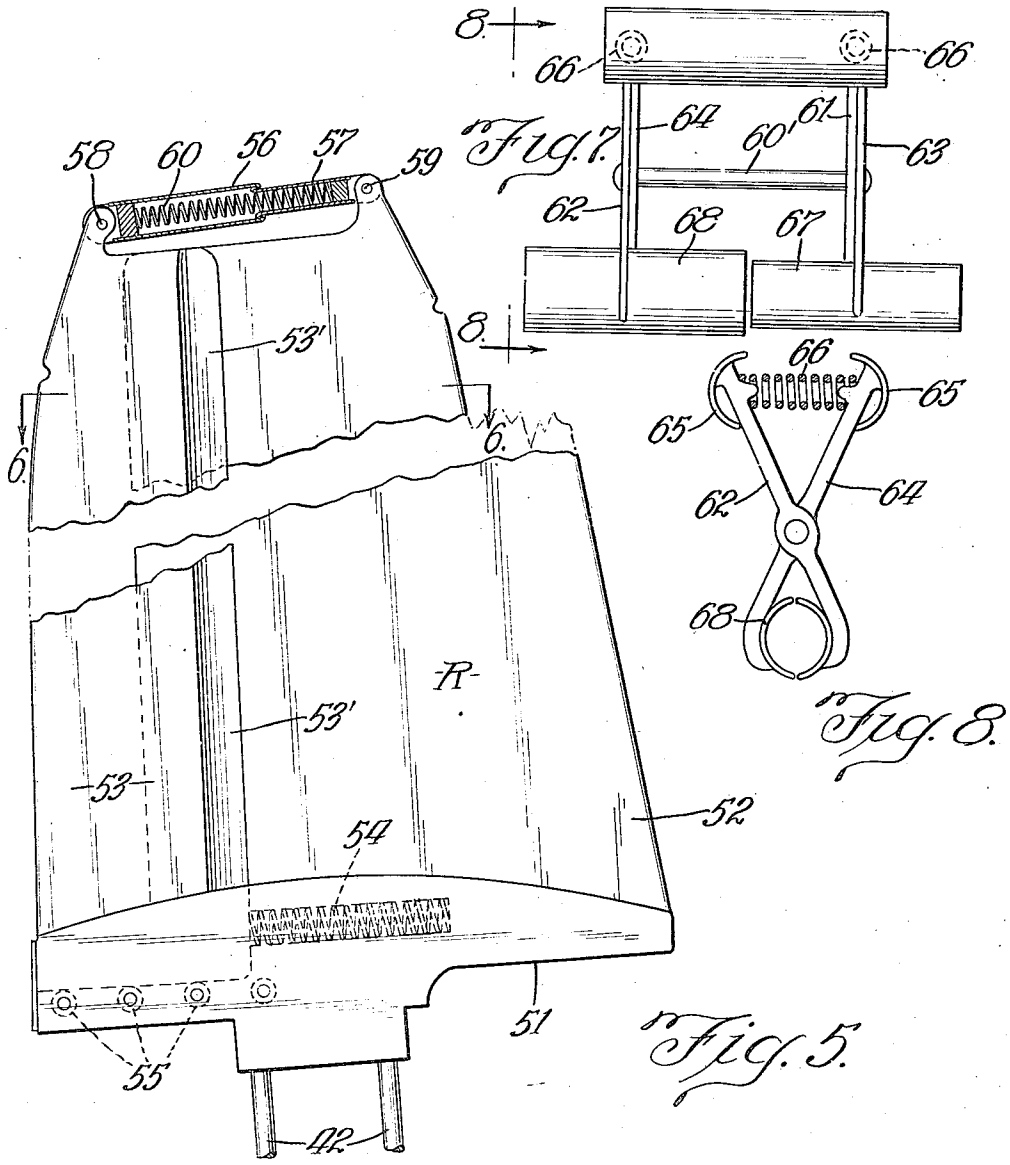


Fig. 5.

Fig. 7.

Fig. 8.

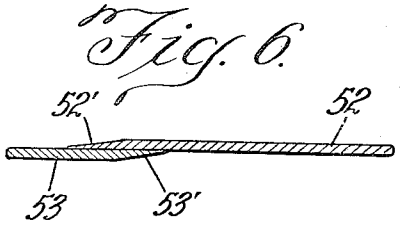


Fig. 6.

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Patented May 15, 1945 2,375,947

UNITED STATES PATENT OFFICE

2,375,947

SLEEVE IRONER

Richard Albert Robbel, Chicago, Ill.

Application February 3, 1940, Serial No. 317,050

8 Claims. (Cl. 223—57)

This invention relates to ironing machines and particularly to a shirt sleeve ironer as adapted for use in commercial laundries.

The ironing of shirt sleeves has always been a rather troublesome operation in laundries. The wide variations in size and sleeve structure present problems that heretofore have escaped satisfactory solution. It will be appreciated that whereas garment manufacturers can provide equipment to fit various particular types and sizes of garments, because of the many garments in standardized sizes and structure, the commercial laundry must have very flexible equipment to handle a wide variety of such garments from various garment manufacturers.

The present conventional method of ironing the sleeves of shirts involves merely drawing the sleeves over a tapered heated boot which dries the sleeves but does not leave them smoothly ironed. The reason for this is that the nap-like fibres of the cloth are not pressed flat but are extended outwardly by the radiation of steam as the sleeves are dried. This point is readily discerned by fastidious customers who object both to the appearance of the sleeves and the fact that such sleeves with upstanding nap more readily pick up dirt and become soiled. This method is also hard on shirt sleeves and many torn sleeves result from pulling sleeves too snugly over tapered boots, resulting in splits and tears when shirts shrink when being dried. Further, this method requires extra hand operations on the gussets, pleats and tucks near the cuff.

A newer method involves sliding the shirt sleeves over a padded tapered buck and applying a heated shoe. However, this usually requires three operations or lays and is almost as expensive in labor as the older hand ironing method.

The particular object of this invention is to provide a sleeve ironer which will readily fit a wide variety of shirts and rapidly and effectively iron the shirt sleeves inside and out.

Another object is to provide in such a sleeve ironer means whereby the sleeves may be ironed with the least damage to the shirt and with the greatest economy of labor.

And a still further object is to provide structure for a sleeve ironer that is simple, sturdy and small in size so that the sleeve ironing operation may be performed at any convenient spot adjacent other shirt ironing machines.

Other objects and benefits will be disclosed in the following descriptions and drawings in which:

Fig. 1 is a side elevational view showing my sleeve ironer with one sleeve being ironed between the shoe and buck and the other sleeve applied to the form ready for insertion between a dual shoe and buck;

Fig. 2 is a rear elevational view of my sleeve ironer as shown in Fig. 1;

Fig. 3 is a top plan view;

Fig. 4 is an enlarged broken cross sectional view showing the shoe and buck as it would appear on the section lines 4—4 of Fig. 1;

Fig. 5 is a broken side elevational view of the adjustable form or boot over which the sleeves are ironed;

Fig. 6 is a transverse cross sectional view of the sleeve form as it would appear on the section lines 6—6 of Fig. 5;

Fig. 7 is an enlarged elevation view of the cuff clamp which I employ in ironing sleeves, as will later be explained; and

Fig. 8 is a side elevation view of the cuff clamp shown in Fig. 7.

Now referring to the drawings and at the outset particularly to Figs. 1, 2, and 3, I provide a base plate 10 from which rises dual vertical tubular support members 11 and 12 connected by a pair of horizontal tubular members 13. Mounted on the rear tubular members 11, as clearly shown in Fig. 2, is a buck bracket 14. This member 14 includes a tapered hollow shell to which steam is introduced through a pipe, not shown, at 17. Mounted on each side of the buck are resilient pads, including a very fine meshed wire cover 15 supported outward by conventional spring padding means 16. It will be appreciated that by this structure I have provided a resilient heated buck pad with a very fine smooth surface, as provided by the fine wire cover 15 which, although functioning as a resilient buck, at the same time effectively irons fabric when held in pressure relationship with it.

Now referring to Figs. 2, 3, and 4, it will be observed that I mount hinged arms 18 and 19 through suitable openings in the buck bracket 14 and hinged on pins 20 and 21. These hinged arms are normally held outward by the tension spring 22 but may be actuated inward by more or less conventional foot lever means through toggle levers 23 and 24. As best shown in Fig. 4, one end of the toggle lever 23 is affixed to a hinged casting 23' supported by the pin 20, while the other end is pivotally attached to the arm 19 by the pin 25, as clearly shown in Fig. 2. Similarly, the toggle lever 24 is attached to the hinged arm 18 by the pin 26.

The arms 18 and 19 are actuated independent-

ly through conventional lever and link mechanism 28 and 30 and 27 and 29. These foot levers are actuated by the operator stepping on either the foot pads 31 and 32 and either will be locked in downward pressure position by conventional toe release mechanism 34. This type of mechanism is well known in the art, and it is believed that with the above brief explanation my foot lever mechanism to actuate the hinged arms 18 and 19 will be well understood.

Now referring to Fig. 4, it will be observed that I mount a conventional shoe 36 faced with a plate 36' to provide a hollow shoe member to be heated by steam through an opening 41 as is well understood in the art. This shoe is mounted on the arm 18 by a flexible mounting provided by the cap screws 38, the springs 39 and the ball joint 40.

The shoe 37 is mounted in a similar manner on the arm 19.

It will be observed that I provide a tapered opening between the central buck 14 and shoes 36 and 37. The purpose of this is to prevent any disarrangement of the shirt sleeve as it enters the opening and also to provide a structure which permits the movement of the shirt sleeves through the same foot lever that actuates the shoes, as will later be explained.

Now referring to Fig. 1, I mount the sleeve forms R and L pivotally from the base 10 through dual spring rods 42 and 43. The purpose of the dual spring rods is to provide a flexible mounting which will permit the sleeve to engage the buck and shoe without straining the sleeve form mounting mechanism.

Attached to each of the dual spring rods 42 and 43 is a clamp bracket 44 which in turn is attached to the foot lever 29 or 30 by the slidable link 45, the compression spring 46, and the pin 47. In the position as shown, the foot lever 30 has been locked downward by the toe latch 34 holding the sleeve on the form R between the buck and the shoe in press ironing relationship. To explain the operation of this link mechanism, when the operator steps on the foot pad 32, the sleeve form R is immediately actuated forward to the position shown by means of the tension spring 46 and the sleeve form R will be quickly brought to a stop against the rubber stop 48 attached to the shirt support table 50. At the same time the lever 30 through the link 28 and the toggle mechanism 24 is closing the opening between the shoe 36 and the buck pad 15. However, because of the tapered opening between the shoe and buck, as previously explained, the sleeve on the form R readily enters the opening and arrives in proper position before the buck and shoe close together in press ironing relationship. On reverse movement of the foot lever by the tension of the spring 22, when the operator removes his foot from the foot pad thereof, the sleeve form is returned to the forward position against the rubber stop 49 and held in fixed forward position by the closed relationship of the slidable link 45. It will be appreciated that slotted openings are provided in the shirt support shelf 50 to permit the above described movement of the sleeve forms. It will further be observed that the shirt support shelf 50 is arcuately formed from the pivot center of the form arms to permit the shirt to readily slide over the support with a minimum of disturbance.

Now referring to Figs. 5 and 6, I show the sleeve form R wherein a base casting 51 is supported on the spring rods 42. Fixed to the base 51 is one section of the form 52 and slidably mounted in the base 51 on rollers 55 is the adjustable form member 53. The member 53 is normally held outward by the compression spring 54 in the base 51 and a tubular spring member at the top consisting of the tube 56, the telescoping tube 57, and the compression spring 60, the assembly as a whole being pivotally mounted between the forms 52 and 53 by pins 58 and 59. By referring to Fig. 6 it will be observed that I taper the inner edges of the forms as shown at 52' and 53'. This is to provide as flat as possible contact with the shirt sleeve, as will later be explained in further detail. By this form structure it will be appreciated that when a shirt sleeve is inserted over the form the adjustable member 53 will be urged outward by the spring means, as explained, and the shirt sleeve properly smoothed and tensioned on the forms 52 and 53. This tensioning will naturally not be effective at the cuff section of the shirt from the opening of the placket. Inasmuch as it is my purpose to iron the sleeve complete up to the cuff, I must now provide means to properly tension this section of the shirt sleeve in position. This I do by manually drawing the sleeve in proper tension relationship and holding it in position by my hand clamp C over the tubular sections 57 and 60. The hand clamp C is composed of dual tong members 62—64, and 61—63 pivoted on a central member 60'. I provide two sizes of arcuate clamp jaws 67 and 68 to properly clamp the cuff over the two tubular members 56 and 57. Proper bite for this clamp is provided by compression springs 66 between the handles 65.

It will be appreciated that when I have clamped the cuff securely in position, the shirt sleeve may be drawn downward to lay the cloth in perfect position to be ironed while being tensioned flatly in that position by the adjustment member 53. By observing the shape at the top of the form as shown in Fig. 5, I provide a tapered top with notches to provide the operator with a gauge so that the sleeve will be placed in perfect position to be ironed completely up to the cuff line, as clearly shown in Fig. 1. The clamps C are conveniently supported on the support arm 71 by means of springs 72 and 73.

Having thus disclosed the construction of my sleeve ironer, I will now explain its operation. The operator first applies the right hand sleeve of the shirt to the right hand form, drawing the sleeve down to the gauge mark on the form to register the edge of the cuff to the top of the shoe. The lower section of the sleeve is now smooth and taut as tensioned by the springs 54 and 60. The operator now takes the upper section of the sleeve and draws it around the form to lay the pleats and tucks smoothly. When this is accomplished she applies the clamp C over the tubes 56 and 57 to securely hold the cuff in proper position. It will be appreciated that the arcuate clamp over the cuff and tube effectively secures the sleeve in proper position. It may be necessary to adjust the cuff after the clamp is first applied, but this may readily be done as will be well understood. The shirt is now lying on the support shelf with the right sleeve applied to the form. The operator now depresses the right hand foot lever, locking the sleeve between the right hand buck and shoe, where it will be ironed as she applies the other sleeve in a similar manner. It will thus be observed that one sleeve is being

ironed as the other is applied. By the time the second sleeve is applied to the form and inserted between the buck and shoe, the first sleeve is ready to be removed and thus the operator is almost continuously engaged in applying sleeves while the ironing is being done.

I have already explained that the sleeve is applied to the form as gauged by the top of the shoe to iron the sleeve completely up to the cuff line. I have also explained that the buck is covered with a fine wire cover heated by the buck, and, therefore, the sleeve is being ironed on both sides as well as effectively ironed in the inside by the smooth metallic form which quickly picks up heat from both sides.

From the foregoing description it will readily be appreciated that I have provided a simple, compact sleeve ironer which effectively irons the sleeve up to the cuff line both inside and out.

Having thus described my invention, I claim:

1. In a sleeve ironer, a base frame, dual buck and shoe structure supported rearwardly on said frame, dual sleeve forms pivotally supported on said frame for movement from forward loading to rearward ironing position, each of said sleeve forms coacting with one of the shoes in ironing position, lever mechanism connecting each of the sleeve forms with the coacting shoe, said lever mechanism for each coacting shoe and sleeve form being operable as a unit by a single actuating member to first move the form from forward loading position to rearward ironing position between the shoe and buck and then to actuate the shoe into pressure relationship with the form.

2. In a sleeve ironer, a base frame, dual buck and shoe structure supported rearwardly on said frame, dual sleeve forms pivotally supported on said frame for movement from forward loading to rearward ironing position, each of said sleeve forms coacting with one of the shoes in ironing position, said sleeve forms being positioned and arranged in relation to the shoes to iron the sleeve to the cuff line, lever mechanism connecting each of the sleeve forms with the coacting shoe, said lever mechanism being operable as a unit by a single actuating member to first move the form from forward loading position to rearward ironing position between the shoe and buck and then to actuate the shoe into pressure relationship with the form.

3. In a sleeve ironer, a base frame, dual buck and shoe structure supported rearwardly on said frame, dual sleeve forms pivotally supported on said frame for movement from forward loading to rearward ironing position, lever mechanism connecting said dual shoes and forms, said lever mechanism being operable to move the forms from forward loading position to rearward ironing position between the shoes and buck and then to actuate the shoes into pressure relationship with the forms, and spring means associated with said lever mechanism to effect reverse movement of the shoes and forms.

4. In a sleeve ironer, a base frame, dual buck and shoe structure supported rearwardly on said frame, dual sleeve forms pivotally supported on said frame for movement from forward loading to rearward ironing position, each of said sleeve forms coacting with one of the shoes in ironing position, lever mechanism connecting each of said sleeve forms with the coacting shoe, said lever mechanism for each coacting shoe and sleeve form being operable as a unit by a single actuating member to move the form from forward loading position to rearward ironing position between the shoe and buck and then to actuate the shoe into pressure relationship with the form, and by a reverse movement to return the form to its forward position, each said mechanism including shoe, buck and form being arranged and formed to provide clearance for the form between the buck and shoe when the form is moved.

5. A sleeve form comprising a plurality of relatively flat overlapping form members arranged for relative transverse sliding movement, and means connecting the members together at one end including telescoped tubular sections each pivoted to one of said members, and a spring housed within said sections in position to move the sections apart.

6. A sleeve form comprising a plurality of relatively flat overlapping form members arranged for relative transverse sliding movement, and means connecting the members together at one end including telescoped tubular sections each pivoted to one of said members, a spring housed within said sections in position to move the sections apart, said tubular sections being adapted to receive a sleeve portion thereover, and a clamp embracing the tubular sections to hold said sleeve portion thereon.

7. A sleeve form comprising a plurality of relatively flat overlapping form members arranged for relative transverse sliding movement, said members having an elongated end portion adapted to receive a sleeve cuff thereon, a pair of tong members pivoted together and having handles on one end thereof and clamping jaws on the opposite end of said pair of tong members arranged for embracing said form end portion to secure the cuff in place thereon and resilient means connected with the tong members tending to press the jaws in clamping relation.

8. An expansible sleeve form comprising a plurality of relatively flat overlapping form members arranged for spring urged relative transverse sliding movement, the spring urged means consisting of a connecting member at the outer end of the form including telescoped tubular sections each pivoted to one of said members, a spring housed within said sections to move the sections apart and another spring member positioned at the inner end of the form to urge the form members apart, said tubular sections being adapted to receive a sleeve portion thereover, and a clamp embracing the tubular sections to hold said sleeve portion thereon.

RICHARD A. ROBBEL.