Oct. 29, 1940. T. R. BUSH ET AL 2,219,679

IRONING APPARATUS

Filed May 14, 1936 3 Sheets-Sheet 1

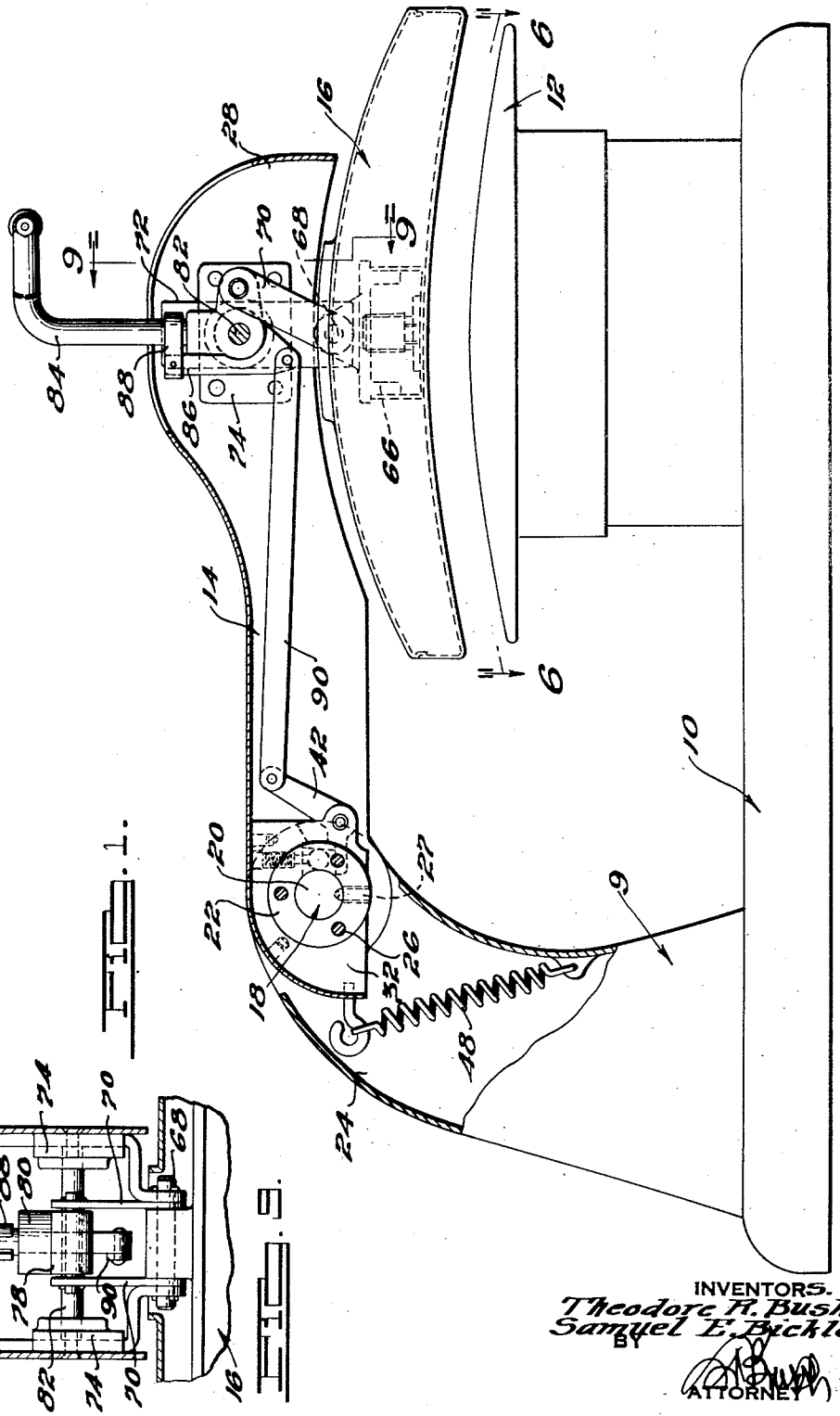


FIG. 1.

FIG. 5.

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Filed May 14, 1936 3 Sheets-Sheet 2

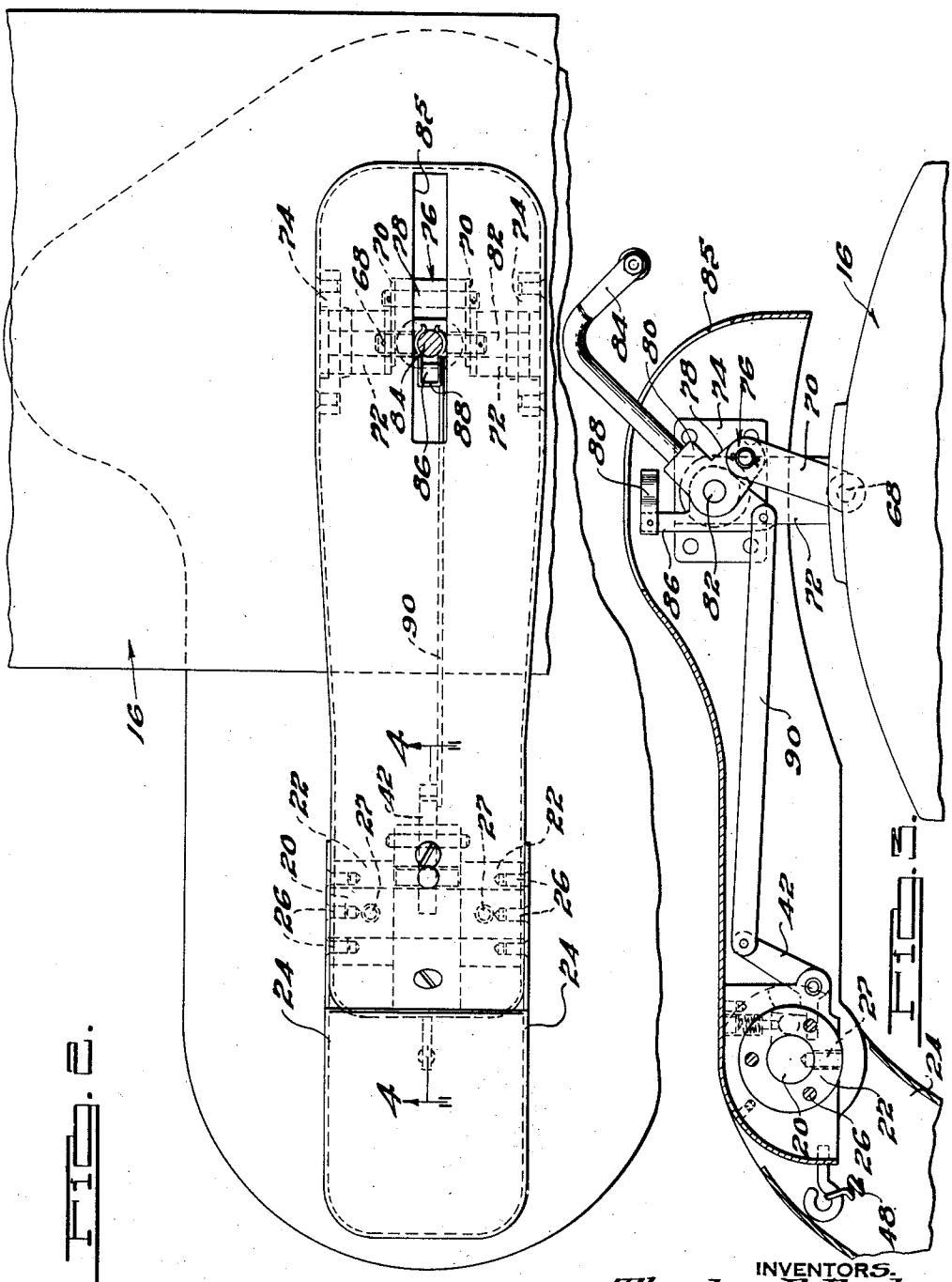


Fig. 2.

Fig. 3.

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FIG. 4.

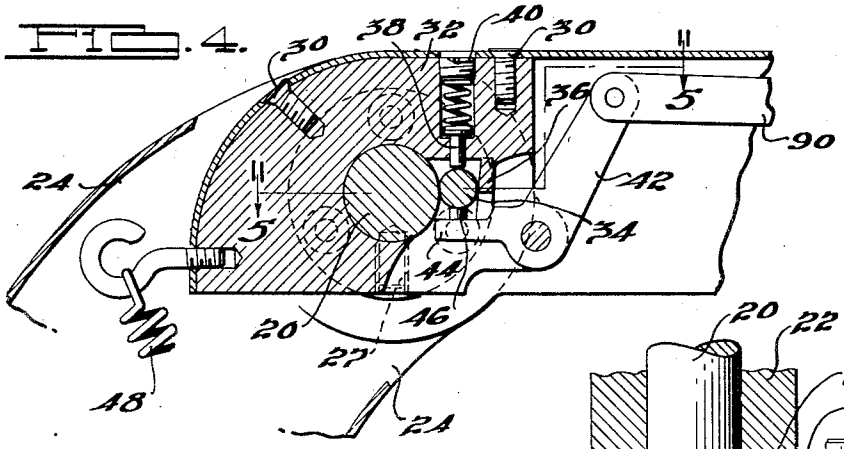


FIG. 5.

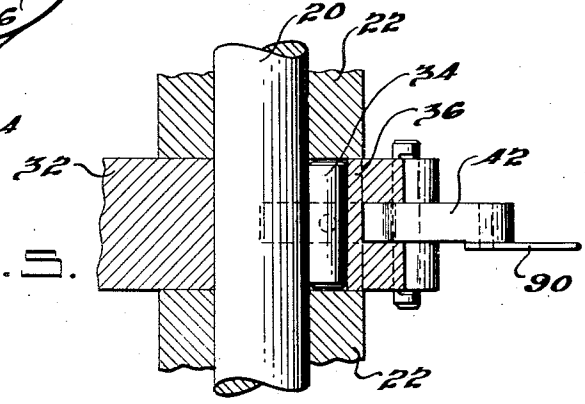


FIG. 6.

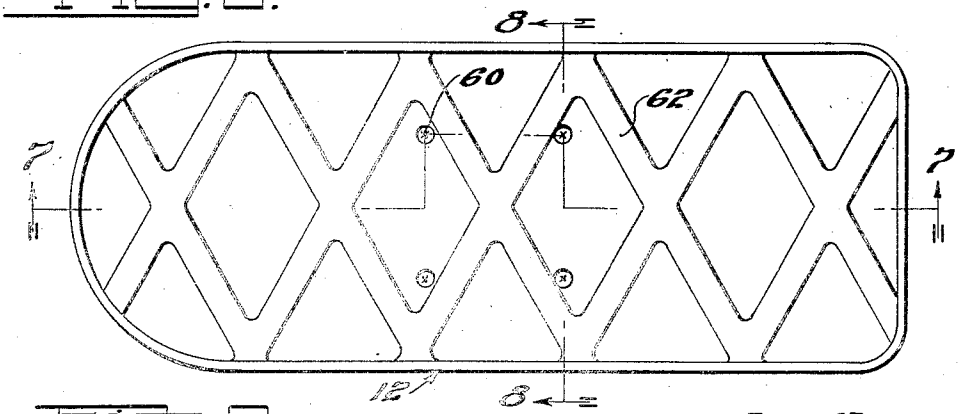


FIG. 7.

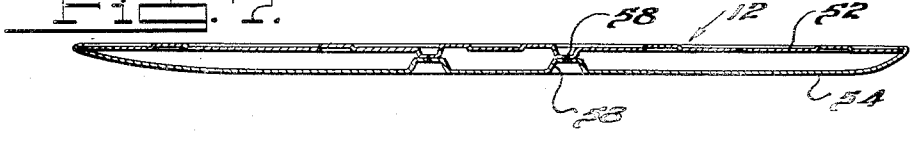
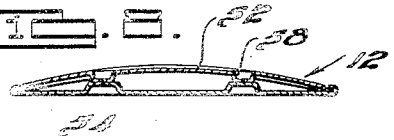


FIG. 8.



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UNITED STATES PATENT OFFICE

2,219,679

IRONING APPARATUS

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Application May 14, 1936, Serial No. 79,650

4 Claims. (Cl. 38—36)

This invention relates to ironing apparatus and has reference in particular to improvements in portable hand operated ironers of the press type.

Ironing apparatus of the type illustrated comprise, in general, a base or suitable supporting member, a buck supported thereby, an ironing shoe movable into and away from operative engagement with the buck for ironing or pressing whatever clothes may be disposed upon the buck, a pivoted arm connected to the base and to the shoe for movably supporting the shoe upon the base, and a means for applying pressure to the shoe after the same has been moved into operative position over the buck.

A principal object of the invention is to provide a novel means for supporting the arm and shoe upon the base, which means are operable for locking the arm in position so that pressure may be applied to the shoe using the arm as the point of reaction.

Another object of the invention is to provide a new and improved mechanism for applying pressure to the shoe and for releasing the locking means incidental to the release of pressure on the shoe.

Another object of the invention is to provide a new and improved form of buck construction.

Another object of the invention is to provide an ironing apparatus of the pressure type in which the parts are so designed and constructed that the apparatus is relatively light in weight so as to be portable.

Other objects and advantages of the invention will be apparent from an inspection of the following specification taken in conjunction with the accompanying drawings of which there are three sheets, and in which:

Fig. 1 is a side elevational view partially in section illustrating an ironer of the press type embodying our invention;

Fig. 2 is a plan view of a portion of the ironer illustrated in Fig. 1, certain of the parts being illustrated in section or broken away for more clearly illustrating the details of the mechanism;

Fig. 3 is a view similar to Fig. 1, but illustrating certain of the parts thereof in a different position than that in which the parts are illustrated in Fig. 1;

Fig. 4 is a sectional view taken in a plane along the line 4—4 of Fig. 2;

Fig. 5 is a sectional view taken along the staggered line 5—5 of Fig. 4;

Fig. 6 is a view taken along the line 6—6 of Fig. 1 and illustrating in plan the buck with the ironing pad thereof removed;

Fig. 7 is a longitudinal sectional view taken along the line 7—7 of Fig. 6 but omitting bolts 60.

Fig. 8 is a vertical sectional view of the buck taken along the line 8—8 of Fig. 6; and

Fig. 9 is a vertical sectional view of the pressure applying mechanism for the shoe 16 taken along the line 9—9 of Fig. 1.

The ironing apparatus, as illustrated, may comprise a suitable frame work 9 covered by an ornamental shroud 10 and upon which frame work a buck 12, an arm 14 and a shoe 16 are suitably supported, the arm 14 being pivoted at 18 on a shaft 20 supported by a pair of bearing members 22, which bearing members are secured to a pair of upstanding arms 24 on the frame by a plurality of screws 26. Pins 27 lock the shaft 20 against rotation to the bearing members 22.

The forward end 28 of the arm thus is adapted to swing vertically and has connected to it the shoe 16 so that the shoe 16 is mounted for movement toward and away from the buck 12.

The arm 14, it will be observed, is of channel shape and is adapted to form a housing for the locking mechanism associated with the shaft 20 and the mechanism associated with the forward end 28 of the arm which supports the shoe 16 and which is operable for applying pressure to the shoe and the buck.

The arm 14 has secured thereto, such as by a plurality of screws 30, a hub or bearing member 32 journaled on the shaft 20 for pivotally supporting the arm 14, and which member 32 constitutes a part of a clutch or locking mechanism adapted for locking the arm 14 in the position in which it is illustrated in Fig. 1 so that pressure may be applied to the shoe 16.

The clutch or locking mechanism, as illustrated, comprises a friction clutch of the roller type and comprises a fixed or stationary member provided by the surface of the shaft 20, a locking roller 34, and a wedge-shaped member 36, the locking roller 34 and member 36 being disposed within a slot formed transversely in the member 32 and adjacent the shaft 20. The locking roller 34 is backed up by a spring pressed plunger 38 which may be provided with an adjusting screw 40 whereby the tension of the spring pressed plunger may be adjusted, the adjusting screw 40 being exposed by means of a suitable opening formed in the arm 14. The locking roller is biased into the position in which it is illustrated in Fig. 4 so as to become wedged or locked between the oppositely disposed surfaces of the shaft 20 and the member 36, it being observed that the surface of the member 36 is ec-

centric with respect to the surface of the shaft 20 and forms a sort of an eccentric groove so that the roller 34 will wedge between the surfaces of the shaft 20 and the member 36.

When the arm is moved downwardly so as to bring the shoe 16 into operative engagement with the buck 12, the locking mechanism automatically locks the arm 14 in such position so that pressure may be applied to the shoe 16 and the buck 12 using the arm 14 as a reaction member or point of reaction for the pressure applied to the shoe 16.

A bell crank 42, pivotally carried by the hub member 32, is provided with an arm 44 extending through a slot in the member 32 and which arm 44 is provided with a pin 46, which pin 46 is adapted to engage the locking roller 34 and move the same out of operative position between the shaft 20 and the member 36 for releasing the locking mechanism so that the arm 14 may be pivoted about the shaft 20 for moving the shoe 16 upwardly and away from the buck 12. A spring 48, connected at one end to the rear of the arm 14 and at the other end to a portion of the base, is provided for constraining the forward end 28 of the arm upwardly so that upon release of the locking mechanism, the shoe 16 will be moved upwardly and away from the buck 12.

The buck 12 comprises a pair of stamped sheet metal plates 52 and 54 formed to provide a surface complementary to that of the shoe 16. The plates 52 and 54 are secured together in superposed relation and the edges of the lower plate 54 are curled over the edge of the upper plate 52 for securing the plate together and for providing a rigid buck 12. It will be observed that the lower plate 54 has a curved section longitudinally thereof while the upper plate 52 has a curved section transversely thereof.

The plates 52 and 54 preferably are provided with a series of apertures for permitting the escape of condensed moisture and each of the plates 52 and 54 may be provided with embossings 58 abutting each other for assisting in maintaining the plates 52 and 54 in spaced relation intermediate the edges thereof, certain of which embossings 58 may be provided with aligned openings through which securing bolts 60 may pass. Preferably the buck 12 is mounted upon the usual arrangement of springs or some other means (not shown) so as to have a resilient mounting. One or both of the plates 52 and 54 may be provided with a series of ribs 62 formed in the metal thereof for aiding in stiffening the buck 12.

The shoe 16 is carried by the end 28 of the arm 14 in such a manner as to be movable relative thereto, a toggle mechanism being provided between the end 28 of the arm 12 and the shoe 16 for spreading the same for applying pressure to the shoe. The shoe 16 is provided with a bracket 66 secured thereto and carrying a pin 68. The pin 68 extends through openings in a pair of links 70 and a pair of guide members 72, each of the guide members 72 being provided with a vertically extending portion which is adapted to slide within a guideway formed between an inside portion of the arm 14 and a guide member 74 suitably secured to the sides of the arm 14 at the inside thereof. The links 70 comprise a portion of a toggle mechanism 76 which includes an arm 78, formed as a part of a bell crank 80 mounted upon a shaft 82 carried by the guide members 74. A handle or operating arm 84 is connected to one arm of the bell crank 80 and extends through a slot 85 in the arm 14, the handle providing a means whereby the toggle 76 may be operated for spreading the shoe 16 and the arm 14 for the purpose of applying pressure to the shoe 16 when the same is in operative position over the buck 12.

A lever 86 provided with a spring clip 88 engageable with the shank of the handle 84 is mounted upon the shaft 82 and has connected to a portion thereof a link 90 which is also connected to one arm of the bell crank 42 so that the latter may be operated for releasing the locking mechanism associated with the shaft 20. The shank of the handle 84 is separable from the spring clip 88 when it is desired to move the handle from the position in which it is illustrated in Fig. 1 to the position in which it is illustrated in Fig. 3 for the purpose of applying pressure to the shoe.

Movement of the handle 84 in a counter-clockwise direction from the position in which it is illustrated in Fig. 1, is adapted to carry the lever 86 in such direction for operating the link 90 and bell crank 42 for releasing the locking mechanism associated with the shaft 20.

In operation, material to be ironed is placed upon the buck 12, the buck 12 preferably being provided with an ironing pad upon which the material to be ironed is laid and the shoe 16 is then moved so as to bring the same into contact with the material disposed upon the buck 12. As the arm 14 is pivoted at 20, movement of the end 28 of the arm by means of the handle 84 in a forward and downward direction will bring the shoe 16 into operative engagement with the material disposed upon the buck 12.

Further movement of the handle 84 in a forward and downward direction as from the position in which the handle is illustrated in Fig. 1 to the position in which the handle is illustrated in Fig. 3, will cause the shank of the handle 84 to separate from the spring clip 88 and will operate the toggle 76 for spreading the shoe 16 from the arm 14 thereby applying pressure through the shoe to the material disposed upon the buck 12. The shoe 16 is provided internally thereof with the usual arrangement heating means (not shown), such as an electrical heating element.

As the buck 12 is resiliently mounted in any well known manner (not shown), the arm 84 may be moved in a clockwise direction to a position where the shank thereof assumes a substantially horizontal position or engages with the end of the slot 85. Movement of the handle 84 in a counter-clockwise direction will release the pressure upon the shoe 16 when the handle 84 assumes a position in which it is illustrated in Fig. 1. At this time the shank of the handle 84 is engaged by the spring clip 88. Further movement of the handle 84 in a counter-clockwise direction will carry the lever 86 along with it for operating the link 90 and bell crank 42 for releasing the locking mechanism associated with the shaft so that the end 28 of the arm may be swung upwardly for moving the shoe away from operative position over the buck 12.

The spring 48 constrains the end 28 of the arm upwardly so that as soon as the locking mechanism is released, the arm 14 will swing upwardly carrying the shoe 16 with it.

One feature of the particular type of locking mechanism illustrated is that it will lock the arm 14 against upward movement to accommodate any thickness of cloth or material between the shoe 16 and the buck 12.

While the invention has been described with some detail, it is to be understood that the description is for the purpose of illustration only and is not definitive of the limits of the inventive idea. The right is reserved to make such changes in the details of construction and arrangement of parts as will fall within the purview of the attached claims.

We claim:

1. Ironing mechanism comprising a base having a buck mounted thereon, an arm carrying a shoe cooperable with said buck and having a pivoted connection with said base so that said shoe may be moved toward and away from said buck, a locking mechanism comprising a friction clutch in the connection between the arm and base and operable for holding said arm against movement with respect to said base when said shoe is disposed in operative position over said buck, a lever carried by said arm and connected to disengage said locking mechanism, and means for applying pressure between the shoe and the buck after the arm and base have been locked against movement, said pressure applying means being operable by said lever carried by said arm.

2. Ironing mechanism comprising a base having a buck mounted thereon, a swinging arm carrying a shoe and having a pivoted connection with said base, said shoe being cooperable with said buck and being movable by said arm toward and away from said buck, a friction clutch in the connection between the arm and base and operable for holding said arm against movement with respect to said base when said shoe is in operative position over said buck, means including a single lever carried by said arm and having a link extending to said shoe and operable for applying pressure to said shoe when said shoe is disposed in operative position over said buck, and an operative connection between said lever and said friction clutch for releasing the same when it is desired to move said shoe away from said buck.

3. Ironing apparatus comprising a base member, an arm member pivotally supported thereby, locking mechanism comprising an overrunning clutch operatively associated with said members for holding said arm member against movement in one direction relative to said base member, a buck element carried by one of said members, a shoe element carried by the other of said members, said elements being carried by said members for relative movement toward and away from each other, pressure applying means operatively connected between one of said members and the element carried thereby to separate the same and apply pressure against the other element while the members are locked to one another, a lever for operating said pressure applying means, means for releasing said locking mechanism for permitting movement of said shoe element away from said buck element, and an operative connection between said locking mechanism releasing means and said lever.

4. Ironing apparatus comprising a base, an arm pivotally connected to said base, a buck supported by said base, a shoe carried by said arm and movable therewith into operative relationship with respect to said buck, a locking connection comprising an overrunning clutch located upon the pivotal connection between the arm and base and adapted to lock the arm and the base against relative movement, means including an operating lever mounted on said arm for relatively separating the arm and shoe and to apply pressure against the buck while the arm and base are locked, and means for disengaging the overrunning clutch comprising linkage extending from the operating lever to the clutch.

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