Feb. 20, 1951 A. H. GERHARDT ET AL 2,542,244

STAND FOR IRONING MACHINES OR THE LIKE

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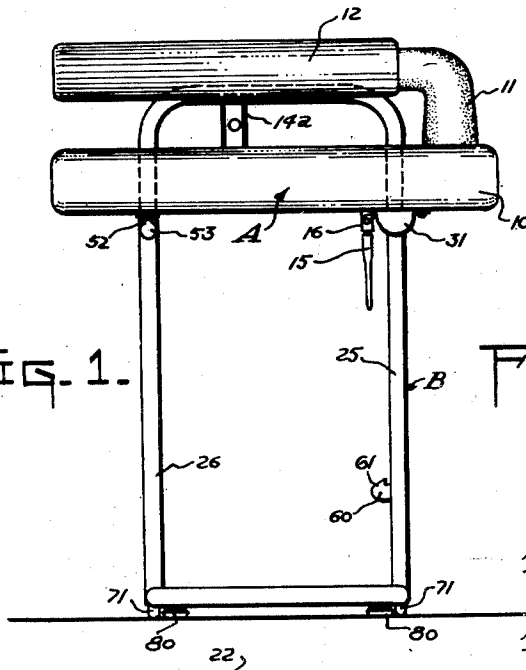


FIG. 1.

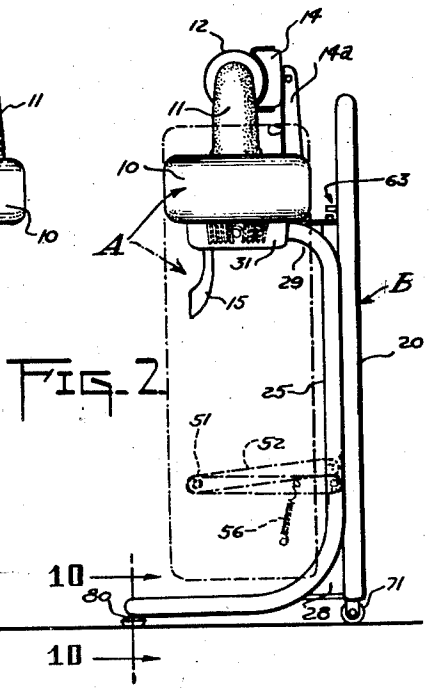


FIG. 2.

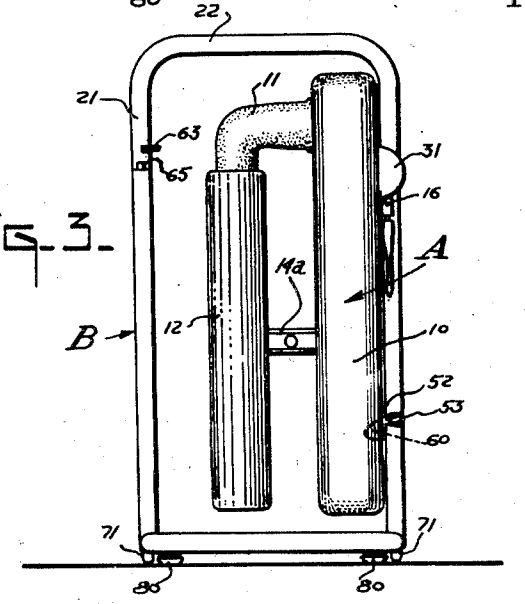


FIG. 3.

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STAND FOR IRONING MACHINES OR THE LIKE

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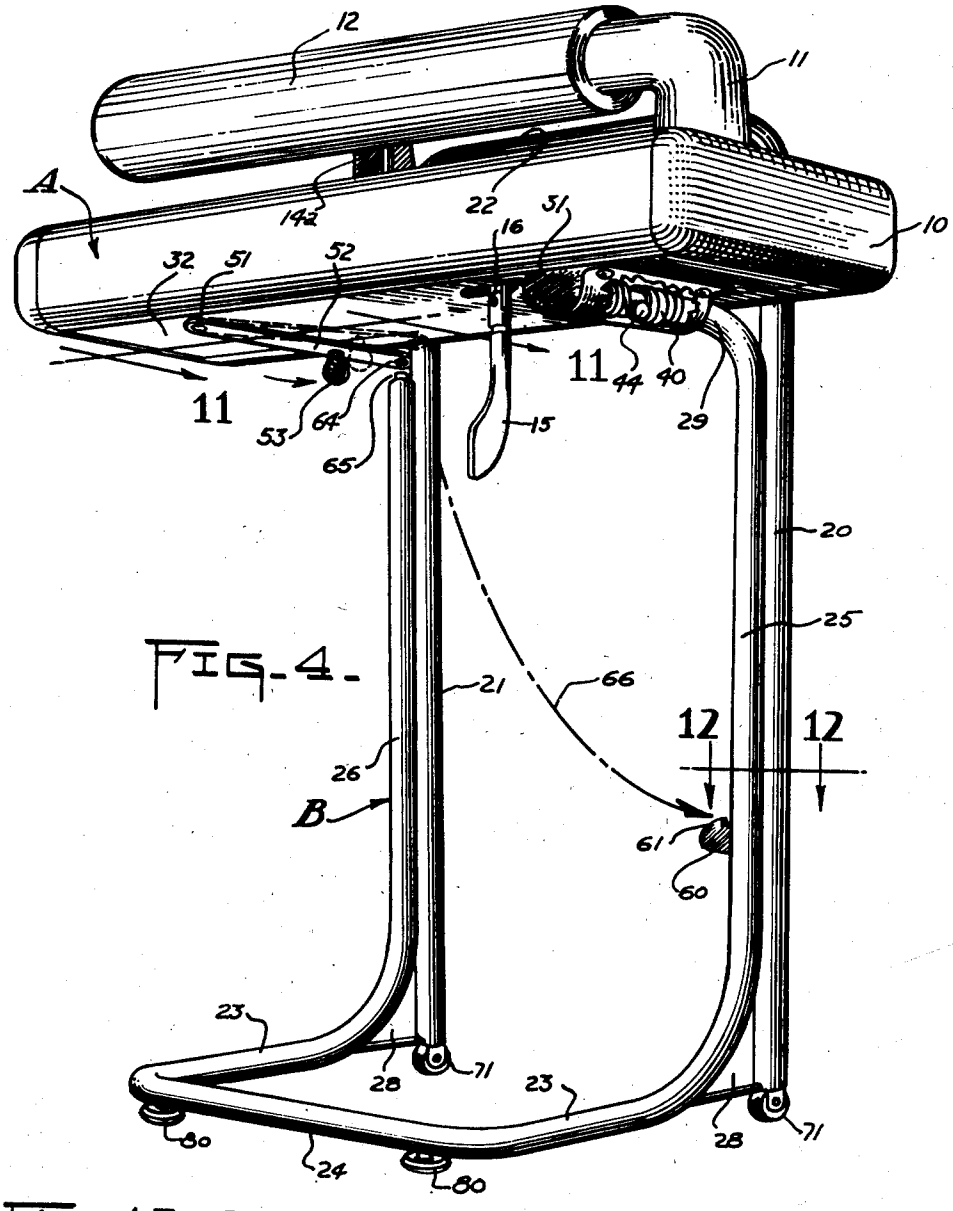


FIG. 4.

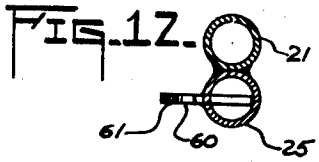


FIG. 12.

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FIG. 5.

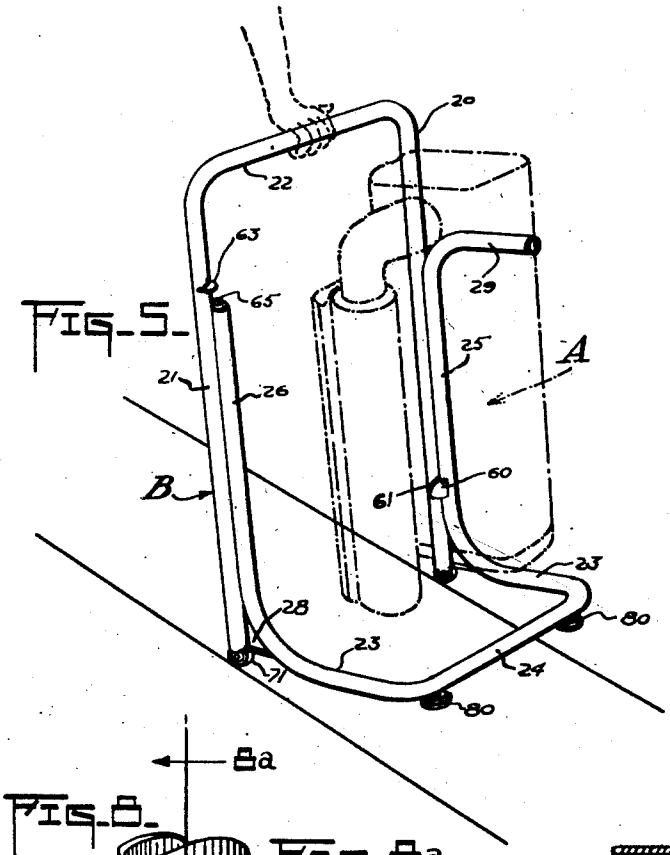


FIG. 8.

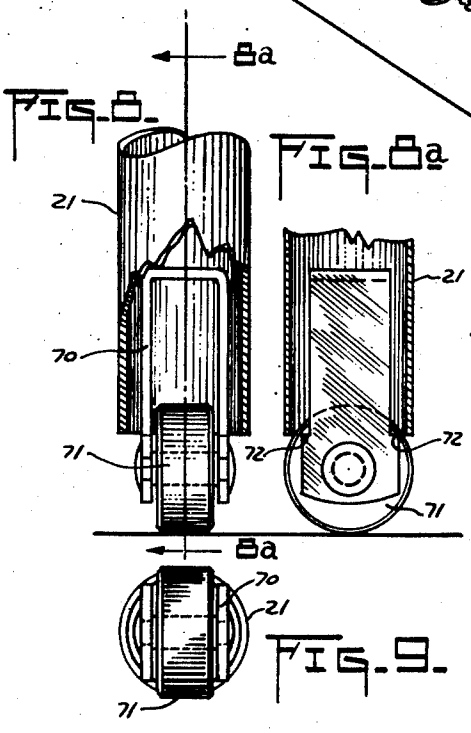


FIG. 8a

FIG. 9.

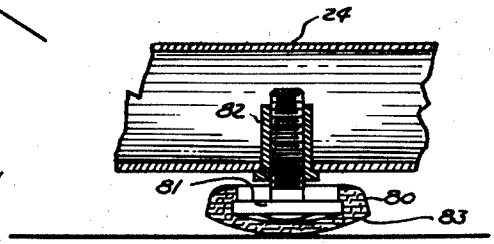


FIG. 10.

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STAND FOR IRONING MACHINES OR THE LIKE

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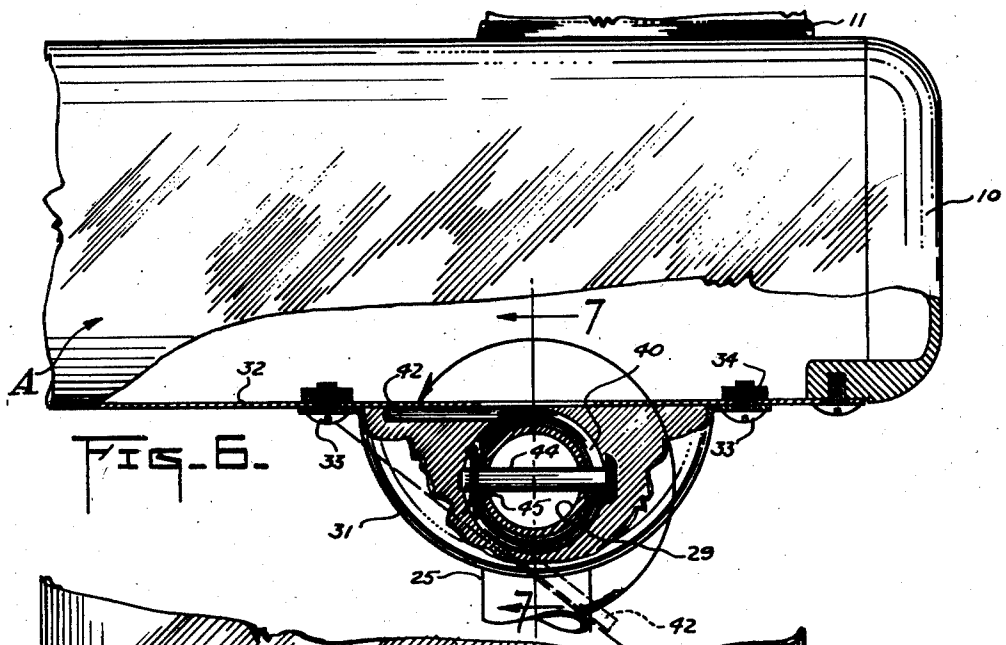


FIG. 6.

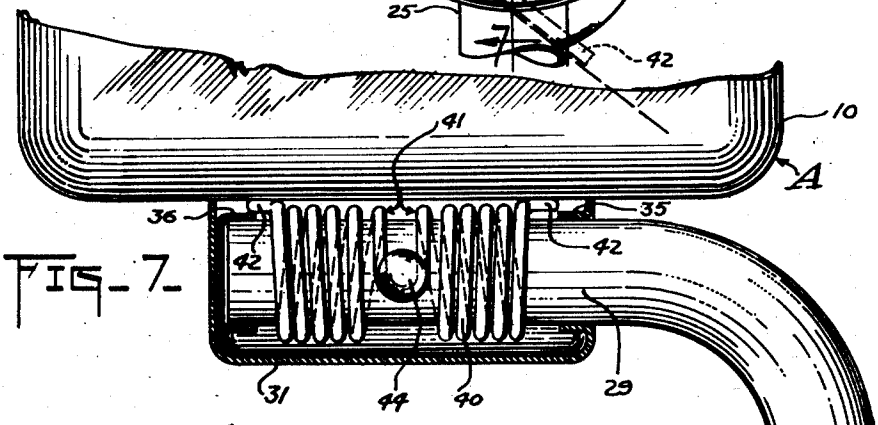


FIG. 7.

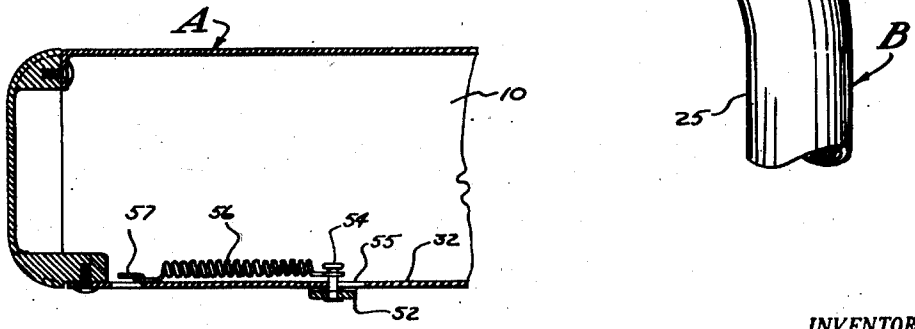


FIG. 11.

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UNITED STATES PATENT OFFICE

2,542,244

STAND FOR IRONING MACHINES OR THE LIKE

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Application January 20, 1945, Serial No. 573,682

7 Claims. (Cl. 38—1)

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This invention relates to domestic types of ironing machines and supporting structures therefor, and more particularly to structures wherein the ironing machine may be disposed in a horizontal operating position, or may be swung about a pivot mounting to a vertical inoperative position. The purpose of constructing machines and their supporting structures in this manner is to permit the machine and supporting structure to occupy a small amount of floor space when not in use. Heretofore, ironing machines of certain types have been associated with cumbersome, complicated, and expensive cabinet structures into which the machines were adapted to be folded or collapsed when not in use. Some of such machines were constructed and arranged so that the floor area occupied thereby, when the machine was folded therein, was comparatively small, but due to the nature of such cabinet structures, the height thereof was found highly objectionable. Moreover, such cabinet type ironing machine structures were also found objectionable due to the excessive weight thereof, which precluded convenient movement of the combined machine and cabinet structure from place to place, and which precluded their movement about the household for practical storage in an out of the way place, such as a closet or hallway.

One of the objects of this invention is to provide an improved ironing machine and supporting frame which is constructed and arranged so that when the ironer is folded in an inoperative position, it will occupy a relatively small compact volumetric space, requiring extremely small floor area for storage, and which is relatively light in weight, and arranged so as to permit the assembly to be conveniently moved from place to place about the household for use, or to be moved to a convenient out of the way place for storage, such as a closet, hall, etc.

Another object is to provide an improved ironing machine and supporting structure which is constructed and arranged so that the machine may be swung about a fixed horizontal pivot axis extending transversely of the machine, so that the machine may occupy either a horizontal operating position or a vertical inoperative position.

A further object is to provide an improved ironing machine and supporting frame wherein the machine is mounted for movement, about a fixed horizontal axis, from a vertical inoperative position to a horizontal operating position, and wherein automatic latch means is provided and is constructed to be automatically operated when the machine is moved to a horizontal operating position for supporting the machine in such a position of adjustment.

Still another object is to provide an improved

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ironing machine and supporting structure, wherein the machine is mounted for movement about a fixed horizontal axis from a vertical inoperative position to a horizontal operating position, and wherein spring means is provided in association with a pivotal mounting for counterbalancing the weight of the machine.

A still further object is to provide an improved ironing machine and supporting structure wherein the machine is mounted for movement about a fixed horizontal axis from a horizontal operating position to a vertical inoperative position, and wherein a knee operated control lever is mounted on and connected to the underside of the machine in a manner so as to cause it to be automatically folded against the machine when the latter is disposed in vertical, inoperative position.

Other objects and advantages of this invention will be apparent from the following description, taken in connection with the accompanying drawings, in which:

Fig. 1 is a front elevational view of the machine and supporting structure embodying the present invention, in which the machine is shown disposed in a horizontal operating position.

Fig. 2 is an end elevational view of the machine and supporting structure, with the machine shown disposed in horizontal operating position.

Fig. 3 is a front elevational view of the machine and supporting structure, with the machine shown disposed in a collapsed, vertical, inoperative position.

Fig. 4 is a perspective view of the machine and supporting structure, showing the machine in an unlatched position, ready for movement from a horizontal operating position to a vertical inoperative position.

Fig. 5 is a perspective view of the supporting frame structure per se, with the ironing machine represented in dot and dash outline, indicating the manner in which the supporting structure and machine thereon may be conveniently moved from place to place.

Fig. 6 is an enlarged, fragmentary, front elevational view, part in elevation and part in section, showing a portion of the machine and its pivotal mounting on the supporting structure.

Fig. 7 is a vertical, sectional view through the pivotal mounting of the machine, taken substantially as indicated at line 7—7 on Fig. 6.

Fig. 8 is a fragmentary view, part in section, of the caster wheel mounting in one of the standards of the frame structure.

Fig. 8a is a vertical, sectional view taken at line 8a—8a on Fig. 8.

Fig. 9 is a bottom view of the caster wheel mounting represented in Fig. 8.

Fig. 10 is a fragmentary, sectional view taken as indicated at line 10—10 on Fig. 2, showing one

of the adjustable supporting feet on the forward portion of the base of the supporting frame structure.

Fig. 11 is a sectional view, taken as indicated at line 11—11 on Fig. 4, showing the spring and latching member carried on the machine proper.

Fig. 12 is a transverse, sectional view through one of the standards, taken as indicated at line 12—12 on Fig. 4, showing one of the latch members carried on the frame structure.

The combined ironing machine and supporting frame structure, as represented in the drawings, comprises an ironing machine indicated generally at "A," and a supporting frame structure indicated generally at "B." The machine "A" includes a generally rectangular base 10, which it may be understood encloses a suitable driving mechanism, and extending upwardly from the right-hand end of the base is a housing 11, which encloses power transmitting mechanism for driving a rotatable roll 12, which in turn is journal supported at one end on the housing 11. An elongated shoe 14, is positioned rearwardly of the roll and is carried on a pivoted arm 14a, which extends down into the base 10, and which it may be understood is operably connected to the driving mechanism.

Since the driving mechanism and power transmitting mechanism for actuating the roll and the shoe form no direct part of the present invention, no detailed disclosure thereof is herein made, other than the disclosure of a single operating member 15, which it may be understood controls the operation of both the roll and the shoe. Said operating member 15 is in the form of a knee operating lever, adapted to depend from the underside of the machine, and pivotally connected at 16 to a bracket on the underside of the base 10. It is to be understood that the pivot connection for the knee lever is such that when the lever is disposed in the position seen in Fig. 1, it engages a fixed abutment so that said lever may be forcibly moved to the right from the position seen in Fig. 1, for operating the power transmitting mechanism in the base 10. Said pivotal connection permits said lever 15, to swing under influence of gravity in relatively close relation to the underside of the base 10, when the machine is disposed in a vertical inoperative position, as may be seen in Fig. 3 of the drawings.

The supporting frame structure "B," is of relatively simple form and is composed of two main members formed of tubular metal. One of said members is of inverted U-shaped formation, and includes upright leg members 20 and 21, connected at their upper end by an intermediate portion 22, and the latter serving as a hand grip for moving the supporting frame structure and machine from place to place, as will hereinafter be described. The other frame member includes a horizontal base of U-shaped formation, including side members 23, connected by an intermediate portion 24. The side members merge into upwardly extending leg members 25 and 26, disposed parallel to and adjacent the leg members 20 and 21 of the first frame member. Said leg members of the two frames are preferably welded together to form standards and the lower portions of said legs are rigidified by welded webs of metal, as indicated at 28. The upper end of the leg 25 of the second frame member, terminates in a forwardly and horizontally extending pivotal support arm 29, which serves to provide the main support for the ironing machine

"A." A bearing housing 31, is adapted to be fixedly attached to the bottom plate 32 of the base 10 of the ironing machine, as seen in Fig. 6 of the drawings, by screws 33, threaded into nuts 34, which preferably are welded onto the upper, or inner surface of the bottom plate 32 of the base 10. Said housing 31, is formed at the rear end with a bearing 35, for engaging an intermediate portion of the horizontal extension 29, of the frame structure and the forward portion of said extension 29, is adapted to be seated in a bearing 36, formed as a cup and welded in place to the forward end of the housing 31. While the housing and bearing structures are shown as sheet metal stampings, it is to be understood that if desired, they may be formed as a unitary casting.

Mounted on the horizontal extension 29 of the leg 25, is a double coil spring 40, composed of two sections, interconnected by a looped portion as indicated at 41, and the free ends of said coil sections, as indicated at 42, are positioned so that when the housing 31 is connected to the bottom of the base 10, said portions engage the underside of said base, as clearly seen in Figs. 6 and 7. The intermediate or loop portion 41, of the double coil spring is rigidly attached to the extension 29, by a headed pin 44, extending through said extension 29, and the free end of a pin 44, is provided with a cotter 45, to anchor the spring and pin on said extension 29. In assembling the machine "A" on the supporting frame, the housing 31 with the double coil spring 40, in place therein, is first telescoped over the extension 29, and the spring attached in place by the headed pin 44. The housing 31 is then turned through an angle, to a position so that the plane of open top lies substantially as indicated by dotted line in Fig. 6, at which time the housing 31 is then connected to the bottom 32 of the base of the machine, and the machine is then rotated counterclockwise, through an angle as indicated by the arrow in Fig. 6, and due to the engagement of the free ends 42, of the double spring against the underside of the bottom 32, said coil spring becomes tensioned. If the machine were permitted to rotate further in counterclockwise direction about the axis of the extension 29, from the horizontal position to the vertical position as seen in Fig. 3, said spring 40 is further increased in tension. Thus the tension in the spring serves to counterbalance the total weight of the machine "A," and serves to facilitate swinging the machine from the vertical inoperative position seen in Fig. 3, to the horizontal operative position seen in Figs. 1 and 4.

Pivotally mounted at 51 on the underside of the bottom 32 of the base of the machine is a latch lever 52, having a hand knob 53. A stud 54 extends upwardly from said lever through a slot 55, in the bottom 32 of the base and is connected to one end of a coil spring 56. The opposite end of the coil spring is connected to a lug 57 and projects upwardly from the bottom 32 of the base of the machine, as clearly seen in Fig. 11 of the drawings. Thus the spring 56 tends to yieldingly maintain the operating latch lever 52 with its pin 54 against one edge of the slot 55 as seen in Fig. 11 of the drawings. Said lever 52 is adapted to cooperate, when the machine is swung to a vertical inoperative position as seen in Fig. 3, with a latch detent 60 of hook shape formation, for automatically and positively latching the machine in said vertical

inoperative position. Said hook formation of latch member 60 is formed from a plate, having a leg portion projected through an aperture formed in the leg 25 of the second frame member, and is welded in place therein, as clearly seen in Fig. 12 of the drawings. As the machine swings downwardly, the edge of the latch lever 52 cams over the rounded nose 61, of the latch member 60, until it seats in the notch thereof, under influence of the spring 56. To release the machine from such latched inoperative position, merely requires moving the latch lever 52 upwardly from the position seen in Fig. 3 to disengage it from latch member 60, and then grasping the free end of the machine and swinging it upwardly about its pivotal mounting until it assumes a substantially horizontal operating position. As the machine approaches such position, the latch lever 52 cams against the inner surfaces of the leg 26 of the frame structure until it abuts against a stop lug 63 on the upper portion of the leg 21 of the first frame member for limiting the upward swinging movement of the machine, about its pivotal mounting. In such position the latch lever 52 is disposed with its aperture 64 in registration with a nubbin 65, carried in the upper free end of the leg 26 of the second frame member, so that the machine may then be lowered slightly about its pivot mounting until said aperture 64 of the latch lever telescopes unto the nubbin 65 and thereby positively and automatically latches the machine in a horizontal operating position. To release the machine from such position for disposing it in inoperative position, merely requires raising up on the free end of the machine to disengage the latch lever from the nubbin 65, and then by swinging said lever 52 in clockwise direction the machine may then be permitted to swing downwardly about its pivot mounting. The latch lever thus follows a path of travel as indicated in dot and dash outline at 66, in Fig. 4 of the drawings.

Incident to such movement of the machine to the horizontal operating position, or the vertical inoperative position, the knee control lever 15, automatically functions so that when the machine is in horizontal position, said knee operating lever is disposed in depending relation in position to be operated, and when the machine is disposed in vertical inoperative position, as seen in Fig. 3, said lever 15 is then disposed flat against the underside of the base 10 of the machine.

For convenience in moving the total machine from place to place, the lower ends of the legs 21 of the first frame member are each provided with a caster wheel including a sheet metal frame 70, of inverted U-shape formation in the lower end of which is pivoted a roller 71 in a conventional manner. The caster frame 70 is dimensioned with respect to the interior of the tubular leg 21 for a snug force fit therein, and the lower portions of the sides of the frame 70 are enlarged to provide shoulders 72 to abut against the lower end of the tubular leg 21 for limiting the extent of projection of the frame 70 into said leg. Thus, by virtue of the caster wheels, the machine in folded inoperative position on the frame structure, may be conveniently moved from place to place as seen in Fig. 5 of the drawings, requiring relatively little effort due to the light weight compact construction, and due to the relatively small dimensional relationship of the supporting frame structure and the machine, the machine may thus occupy a relatively small space and floor area in a suitable out of the way place, such as a closet or hallway.

To insure adequate stability of the machine when disposed in operative position on the frame structure, the forward connecting portion 24 of the second frame member is provided with a pair of adjustable feet 80. Each of these feet includes a threaded and headed stud 81, the shank of which is threaded into a sleeve 82, which is press-fitted into an aperture formed in the bottom of said member 24 of the base of the second frame member. Mounted on the head of the stud is a button 83 preferably of fabric composition or other suitable friction material. Thus these feet 80 may be vertically adjusted with respect to the base of the supporting frame so as to insure proper balancing of the machine when disposed in a horizontal operating position, as well as insuring adequate stability for the machine to preclude any tendency for tipping of the machine in normal use.

Although we have herein shown and described certain preferred embodiments of our invention, manifestly it is capable of modification and rearrangement of parts without departing from the spirit and scope thereof. We do not, therefore, wish to be understood as limiting this invention to the precise form herein disclosed, except as we may be so limited by the appended claims.

We claim:

1. In a structure of the character described, the combination of an ironing machine having an elongated base, of a supporting frame comprising an upright portion, means extending horizontally from the upright portion and operably connected to the underside of one end portion of the base and serving to provide a fixed, horizontally extending pivotal support for the machine, extending transversely of the length of the machine, whereby said machine may be swung about said pivotal support to assume a substantially vertical inoperative position or a horizontal operating position, latch means comprising cooperating features on the upright portion and the opposite end portion of the base constructed and arranged for automatically latching and supporting the machine in a horizontal operating position when said machine assumes such position of adjustment, and a latch feature on said upright portion, positioned so as to be engaged by said feature on the base for releasably and automatically latching the machine in vertical inoperative position when the machine assumes such position of adjustment.

2. In a structure of the character described, the combination with an ironing machine having an elongated base, of a supporting frame comprising an upright portion, means extending horizontally from the upright portion and operably connected to the underside of one end portion of the base and serving to provide a fixed, horizontally extending pivotal support for the machine, extending transversely of the length of the machine, whereby said machine may be swung about said pivotal support to assume a substantially vertical inoperative position or a horizontal operating position, and latch means comprising cooperating features on the upright portion and the opposite end portion of the base constructed and arranged for automatically latching and supporting the machine in a horizontal operating position when said machine assumes such position of adjustment, said latch feature on the base comprising a spring pressed lever pivoted to said

base and having a finger grip thereon for manual disengagement from the latch feature on said upright portion of the frame.

3. In a structure of the character described, the combination with an ironing machine having an elongated base, of a supporting frame comprising an upright portion, means extending horizontally from the upright portion and operably connected to the underside of one end portion of the base and serving to provide a fixed, horizontally extending pivotal support for the machine, extending transversely of the length of the machine, whereby said machine may be swung about said pivotal support to assume a substantially vertical inoperative position or a horizontal operating position, latch means comprising cooperating features on the upright portion and the opposite end portion of the base constructed and arranged for automatically latching and supporting the machine in a horizontal operating position when said machine assumes such position of adjustment, and a stop member on said upright portion, above the latch feature thereon, positioned to be engaged by the latch feature on the base for limiting upward movement of the machine when it is swung to horizontal operating position.

4. In a structure of the character described, the combination with an ironing machine having an elongated base, of a supporting frame comprising an upright portion, means extending horizontally from the upright portion and operably connected to the underside of one end portion of the base and serving to provide a fixed, horizontally extending pivotal support for the machine, extending transversely of the length of the machine, whereby said machine may be swung about said pivotal support to assume a substantially vertical inoperative position or a horizontal operating position, a coil spring surrounding said pivotal support means and having a portion fixed thereto and another portion positioned to engage the base of the machine for assisting in counterbalancing the weight of the machine when the latter is free to be swung about the pivotal support, and means comprising cooperating features on the upright portion of the frame and the opposite end portion of the base for cooperating with the pivotal support in supporting said machine in a horizontal operating position.

5. A frame structure for an ironing machine or the like, comprising a pair of spaced apart upright standards, a horizontally extending arm projecting forwardly from the upper portion of one of the standards and adapted to be operably connected to and serve as a pivotal support for the machine to be supported, and a horizontally and forwardly extending supporting base of generally U-shape form having its ends connected to said standards.

6. A frame structure for an ironing machine or the like, comprising a pair of spaced apart upright standards, forming a part of an inverted U-shaped frame member, the top or intermediate portion connecting the standards serving as a hand grasp for moving the frame structure, a horizontally extending arm projecting forwardly from the upper portion of one of the standards and adapted to be operably connected to and serve as a pivotal support for the machine to be supported, a horizontally and forwardly extending supporting base of generally U-shape form having its ends connected to said standards, caster wheels mounted on the lower ends of said standards, and one or more vertically adjustable feet connected to the underside of the intermediate portion of the U-shaped base.

7. A frame structure for an ironing machine or the like, comprising a frame member in the form of an inverted U-shape element, having a pair of spaced apart upright standards, and an intermediate portion connecting the upper ends of such standards, said intermediate portion serving as a hand grasp for moving the structure, and a second frame member, having a horizontally and forwardly extending supporting base of generally U-shape formation with the ends of its legs extending into a pair of upright standards, rigidly attached to said standards of the first frame member, the upper end of one of said upright legs of the second frame member terminating in a horizontally extending arm, projecting forwardly and adapted to be operably connected to and serve as a pivotal support for the machine to be supported.

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