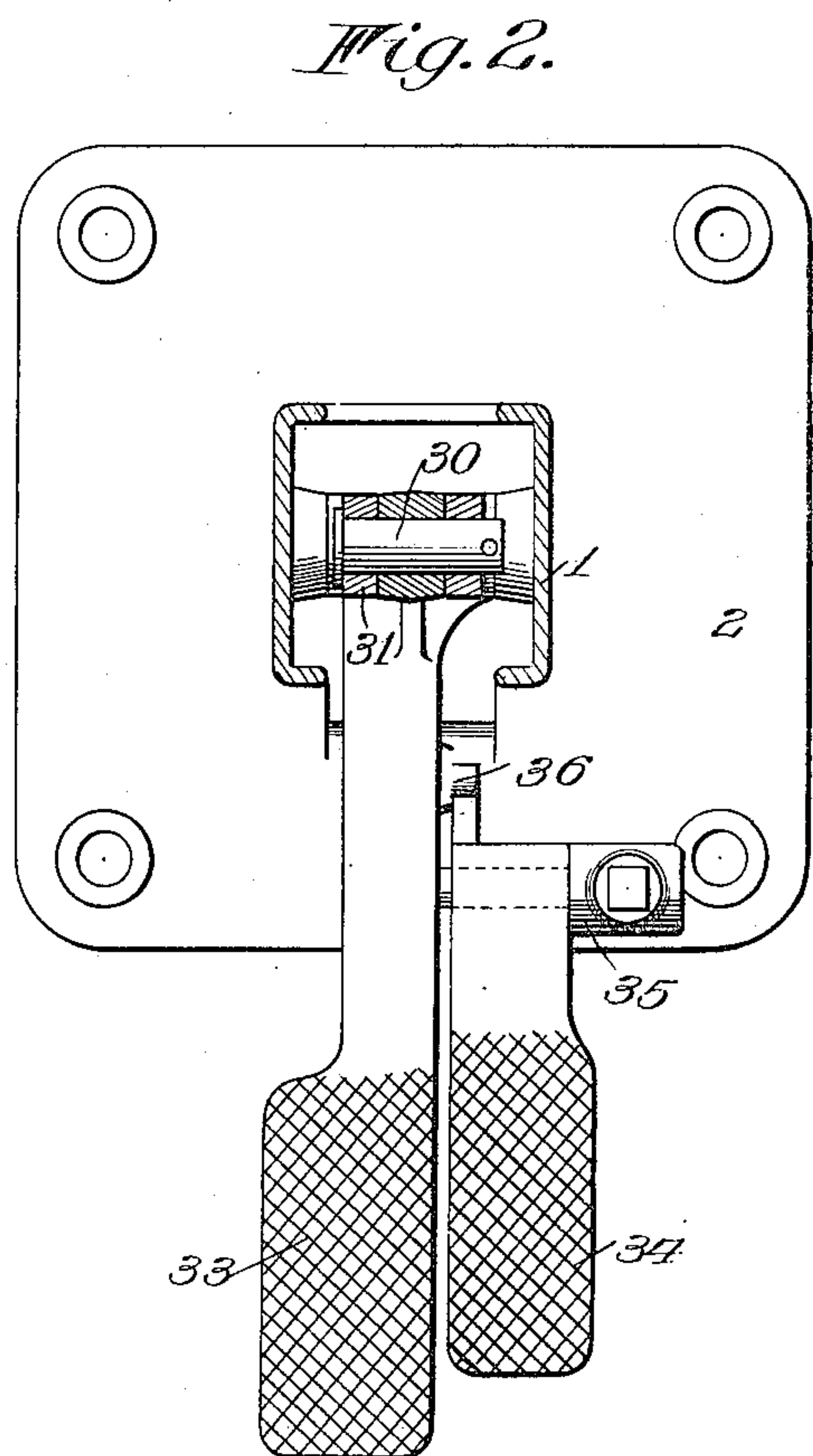
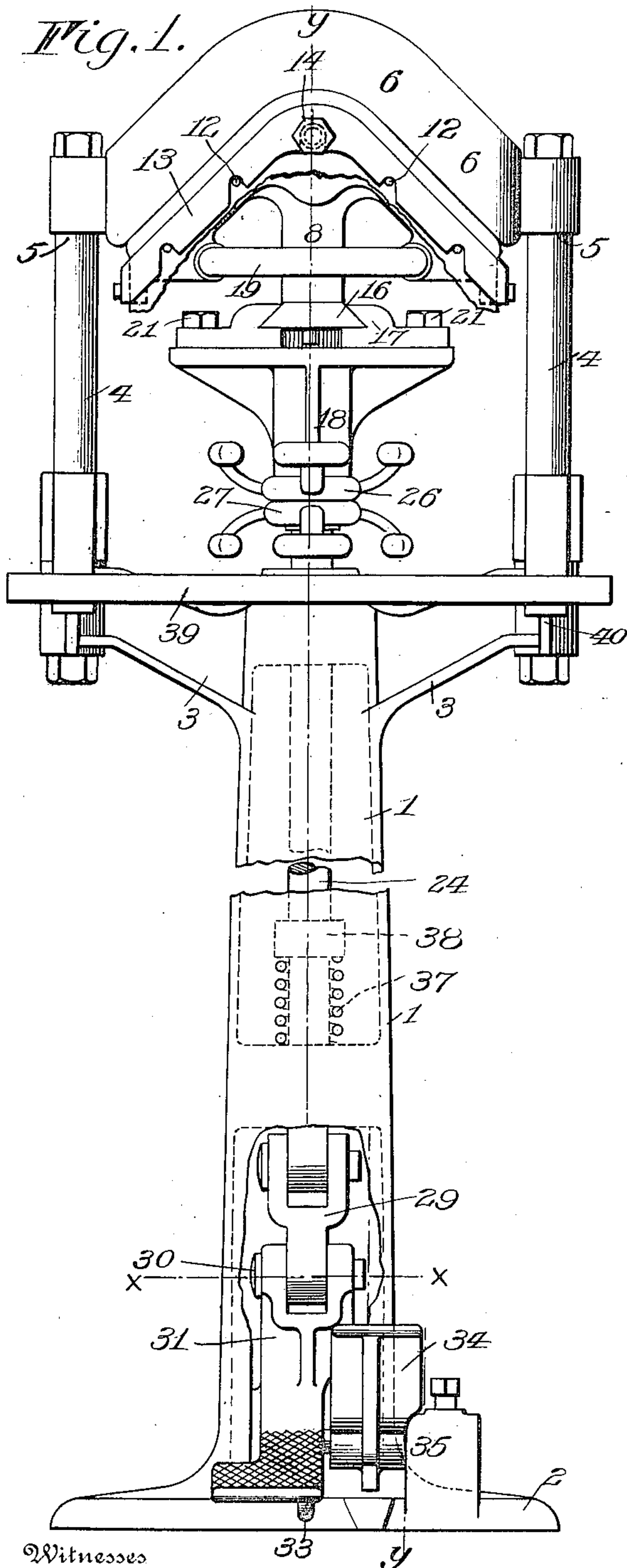


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CUFF PRESSING MACHINE.
APPLICATION FILED DEC. 27, 1904.

962,213.

Patented June 21, 1910.

2 SHEETS—SHEET 1.



Witnesses

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Harriett A. Guyer.

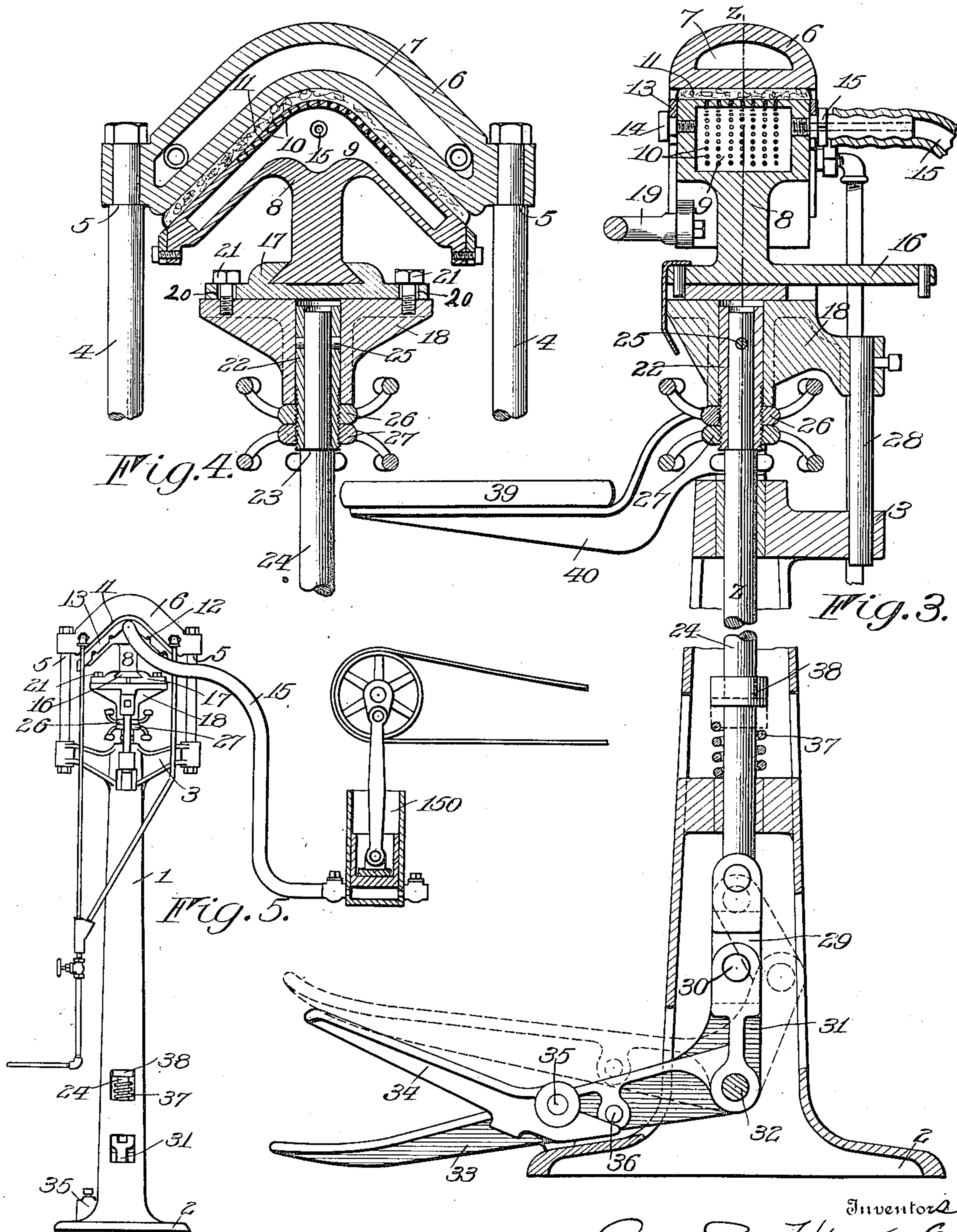
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Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR T. HAGEN AND DANIEL M. COOPER, OF ROCHESTER, NEW YORK, ASSIGNORS,
BY MESNE ASSIGNMENTS, TO AMERICAN LAUNDRY MACHINERY COMPANY, OF
CINCINNATI, OHIO, A CORPORATION OF OHIO.

CUFF-PRESSING MACHINE.

962,213.

Specification of Letters Patent. Patented June 21, 1910.

Application filed December 27, 1904. Serial No. 238,360.

To all whom it may concern:

Be it known that we, ARTHUR T. HAGEN and DANIEL M. COOPER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Cuff-Pressing Machines; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

Our present invention relates to ironing or pressing machines of the type in which the starched goods are ironed by being maintained for a greater or lesser period of time between surfaces one of which is a padded work support, and the other a heated metallic surface, and it has for its objects to provide a machine, the particular embodiment of which renders it particularly adapted for ironing or pressing the cuffs attached to the sleeves of men's shirts, whereby they may be operated upon in the best manner without liability of tearing the shirt sleeves or of straining the material unduly.

Our invention also provides an ironing or pressing machine of the type embodying a padded work support and a pressing iron movable relatively to each other, the latter of which remains in contact with the goods during the entire pressing and drying operation, of means for removing the steam and moisture from the padded surface and the goods, thereby keeping the pad dry and delivering the articles in the best possible condition, this result being accomplished by varying the air pressure at the under side of the padded surface and removing the moisture and steam as it is liberated or generated by the application of the hot iron.

To these and other ends our invention consists in certain improvements and combination of parts all as will be hereinafter fully described, the novel features being pointed out in the claims at the end of this specification.

In the drawings: Figure 1 is a front elevation of a cuff pressing machine embodying our improvements. Fig. 2 is a cross sectional view on the line X—X of Fig. 1. Fig. 3 is a vertical sectional view on the line y—y of Fig. 1. Fig. 4 is a sectional view

on the line z—z of Fig. 3. Fig. 5 is a rear view.

In the present embodiment of our invention, which, as stated, is particularly adapted for pressing cuffs attached to shirts, the heated ironing bed has its operating surface curved or formed with the sides thereof at a suitable angle, the connecting portion between said sides being curved slightly while the cooperating padded work support is similarly formed, this construction being particularly adapted for ironing cuffs but not being essential to the broad feature of our invention which consists in the employment of a hollow pad support and the means for intermittently forcing air through the padding and the support.

In the machine shown, 1 indicates a suitable base or standard preferably of cast metal and hollow, having a broad base 2 and the brackets 3 at the upper portion, to the outer ends of which, are secured the uprights or standards 4 shouldered at 5 and supporting the upper steam heated platen or iron 6, which, in the present instance, consists of an arched casting having a central chamber 7 adapted to receive the heating medium, as steam, the under side of this iron being ground and polished for imparting a suitable finish to the goods, and the shape of said surface being approximately that of an inverted V with the apex rounded or curved as shown. The work support which is adapted to cooperate with the iron is, in the present embodiment, in the form of a bed 8 having its upper surface conforming to the under side of the heated iron and provided with an internal chamber 9 from which a series of small apertures 10 extend to the exterior of the upper portion.

11 indicates the usual pad applied to the bed and consisting preferably of wool felt covered by a sheet of muslin or cotton cloth, the edges extending over the sides of the bed and over the pins or projections 12 shown in Figs. 1 and 5 and secured by a frame 13 extending around the edges of the bed and over the edge of the canvas covering and secured at the ends by bolts 14. The lower edges of the frame at the front and rear are provided with recesses for the accommodation of the pins or projections 12, and the upper portion of the front of the frame is provided with a slot for the accom-

modation of the shank of the bolt 14 attached to the bed and preventing the springing of the upper portion of the said frame near the apex of the bed.

5 The chamber 9 of the bed is connected by a suitable pipe 15, with means for varying the air pressure therein from the normal atmospheric pressure and thereby remove from the pad the steam and moisture
10 generated by the contact of the goods with the hot iron, and to keep the pad dry so that the pressing operation may be practically continuous.

The pressure within the bed may be increased above the normal atmospheric pressure and so blow the steam outwardly through the padding through the central portion thereof when removed from the iron and at the edges when in contact or it may
20 be below the normal and draw the steam down through the bed and discharge it elsewhere in either event carrying the steam out of the padding and preventing its becoming water soaked.

25 It is desirable that the pressure in the bed beneath the padding instead of being constant be varied intermittently at short intervals and it is found in practice that better results are obtained by increasing the air pressure in the bed to blow the steam outwardly than to draw it into the bed. To
30 carry out this portion of our invention we connect the pipe 15 with a suitable air forcing device in the form of a belt driven reciprocating pump 150 which serves at each
35 downward movement of the piston to force air into the bed, producing a series of pulsations that not only carry off the steam and moisture effectively but in a measure serve
40 to loosen up the wool felt and prevent its becoming matted. This air forcing pump is kept in continuous operation as well while the bed is against the iron as when removed therefrom and we find that by its use the
45 pad is kept dry and elastic and the machine may be continued in use indefinitely without the necessity of changing the pad. This portion of our invention is particularly advantageous in pressing machines of this
50 type where there is no escape for the steam while the goods are being operated upon, and is found in practice to be admirably adapted for the purpose, keeping the pad dry and allowing the pressing operations to
55 be continued indefinitely and continuously.

In the present embodiment of the invention the bed is movable forwardly from beneath the platen, the foot thereof being rearwardly extended as at 16 having laterally
60 extended flanges forming a dovetail, operating in a correspondingly formed way on the upper end of a plate 17 supported upon a head or casting 18 which is vertically movable by the means hereinafter described.
65 The forward portion of the bed is provided

with a handle 19 attached to lugs at the sides and by means of which it may be moved in the ways. In order that the bed may be properly centered when first raised into contact with the iron in adjusting it and to insure even pressure upon the goods, the plate 17 is provided at the sides with slots 20 through which operate the shanks of bolts 21, said bolts being loosened when the bed is first raised to allow any necessary lateral motion of the bed, and are tightened, holding the parts rigidly as will be understood. The head 18 is provided with a central aperture for the reception of a sleeve 22 resting upon a collar or shoulder 23 upon a vertically movable shaft or plunger 24 sliding in suitable bearings in the main frame, said sleeve 22 being secured to the plunger 24 by a pin 25 and having its lower portion threaded for the reception of an adjusting nut 26 screwed upon it, and upon which the head 18 rests. 27 indicates a jam nut for securing the nut 26 in an adjusted position. From this it will be seen that the head 18 may be adjusted upon the plunger 24 by screwing the nut 26 up or down. At the rear portion the head 18 is provided with a downwardly extending guide rod 28 cooperating with a suitable aperture in the upper portion of the base as shown particularly in Fig. 3. The plunger 24 is pivotally connected at its lower end to a link 29 which is pivoted at 30 to the upper end of the arm 31 of a bell crank lever pivoted at 32 in the frame, the longer arm 33 of said bell crank constituting a treadle by means of which the toggle, consisting of the link 29 and arm 31, may be straightened and the pivotal centers brought into line to raise the rod 24 and the bed attached thereto into vertical pressing position, as shown in Fig. 3.

34 indicates a treadle pivoted to the frame at 35, the rear end of said treadle being arranged beneath a projection or stud 36 on the lever 33 by means of which the outer end of the lever 33 may be raised and the toggle flexed as indicated in dotted lines in Fig. 3, to cause the bed to be lowered, the weight of the bed and connected parts causing this downward motion and the separation of the bed and iron, said parts being arrested in their downward movement by a spring 37 encircling the rod 24 and arranged between the frame and the collar 38. By the employment of the two treadles the operator may readily control the machine.

39 indicates a suitable table or support at the front of the machine resting upon arms or brackets 40 connected to the main frame.

From the above the operation of the device will be readily understood, the work support being in lowermost position, the operator draws forward the padded work support by means of the handle 19 until the former is forward of the iron and then places

the cuff to be pressed upon the pad, smoothing out the wrinkles as usual, and then slides the bed back beneath the platen and pressing upon the treadle 33, straightens the toggle and raises the goods into contact with it, in which position the parts are permitted to remain as long as desired, the moisture being removed from the pad and goods by the air pressure varying apparatus connected with the chamber. When the operation is finished pressure upon the releasing treadle 34 flexes the toggle allowing the bed to fall; and he then draws forward the pad support and removes the goods, applying another cuff, and proceeding as before.

By the employment of the curved or tapering bed shown, the machine is particularly adapted for ironing and pressing the cuffs attached to shirts without tearing the sleeves, and also the cuff is given the proper set or shape which it is desirable to have where the sleeve links or equivalent cuff fastenings are employed.

Instead of the air forcing pump connected with the interior of the bed or pad support an air exhausting device could be employed which would to some extent serve the purpose of removing the moisture and steam, but this is not found in practice to be as advantageous for the reasons stated.

The pad drying devices described could also be used with excellent effect in all ironing machines of this type whether for ironing cuffs, collars, shirts or goods which are not starched.

We claim as our invention:

1. In an ironing machine, the combination with a heated platen, a hollow bed cooperating therewith having a padded covering and means for moving one of said parts relatively to the other to press the material between them and holding them in contact with the material during the pressing operation, of a pump for varying the air pressure, as distinguished from a constant air pressure, beneath the padded covering of the bed.

2. The combination with the heated platen, a perforated bed cooperating therewith having a padded covering and means for moving one of said parts relatively to the other to press the material between them and holding them in contact with the material during the pressing operation, of means for intermittently varying the air pressure beneath the padded covering.

3. The combination with a perforated bed having a padded covering, a heated platen adapted to cooperate with the entire perforated portion of the bed at the same time during the pressing operation and means for moving one of said parts relatively to the other to press the material between them and holding them in contact with the material during the pressing operation, of

means for forcing the air under pressure through the bed and padding beneath the pressed material during the pressing operation.

4. The combination with the heated platen, a hollow perforated bed cooperating therewith having a padded covering, and means for moving one of said parts relatively to the other to press the material between them and holding them in contact with the material during the pressing operation, of means for forcing air intermittently through the bed and padding as distinguished from a constant air pressure.

5. The combination with the heated platen, and a hollow padded work support movable relatively toward and from the platen to press the material between them, the platen being adapted to cooperate with substantially the entire working surface of the bed at the same time during the pressing operation, of means for passing air through the padding to remove the moisture therefrom during the pressing operation.

6. The combination with the heated platen and a hollow padded work support movable relatively toward and from the platen to press the material, the platen being adapted to cooperate with substantially the entire working surface of the bed, at the same time, during the pressing operation, of means for forcing air outwardly through the padding during the pressing operation.

7. The combination with the heated platen and a hollow padded work support movable relatively to the platen to press the material and cooperating with substantially the entire working surface of the platen at the same time during the pressing operation, of means for forcing air intermittently outwardly through the padding, as distinguished from a constant air pressure, to remove the moisture therefrom.

8. The combination with the heated platen, of the hollow bed having perforations in its face, the padding applied thereto and means for moving the bed into engagement with the platen to press the material and an intermittently operating air forcing device connected to the interior of the bed.

9. In an ironing machine, the combination with a heated platen, of a hollow perforated bed having a padded covering and formed to permit the platen to cooperate with the entire working surface of said bed at the same time, and means for passing air through the bed and the padding at the edges of the latter during the pressing operation.

10. The combination with the curved heated platen, of a correspondingly curved padded bed, a support therefor movable relatively toward and from the platen and adjustable connections between the bed and support for centering the platen and bed.

11. The combination with the curved heated platen, of a reciprocatory support, in line with the platen and a padded bed having a curved surface corresponding to that of the platen mounted upon the support and movable thereon transversely of the curved cross section of the bed.

12. The combination with a stationary, curved, heated platen, and a curved bed, of a reciprocatory support for the bed having ways thereon transverse to the curved cross section of the platen and the bed permitting said bed to be moved into and out of line with the platen.

13. The combination with a curved heated platen, and a bed correspondingly formed to cooperate therewith, one of said parts being movable toward and from the other in a right line, and devices for relatively adjusting the platen and the bed transverse to said line for effecting the centering of the bed and the platen.

14. The combination with an arched, heated platen, of a support mounted to be reciprocated vertically in line with the platen, and having horizontal ways thereon transverse to the arched cross section of the platen, and a bed movably supported on the ways and movable horizontally into and out of line with the platen.

15. The combination with the heated platen, of the reciprocatory support, the adjustable plate thereon having the ways and the bed operating in said ways and movable therein transversely of the plane of movement of the support.

16. The combination with the curved heated platen, and the curved bed cooperating therewith, of the vertically movable support and the plate adjustable thereon and having the transverse ways in which the bed is movable.

17. The combination with the heated platen and the vertically movable plunger beneath it, of the head vertically adjustable on the plunger and the bed carried by the head and adjustable laterally thereof.

18. The combination with a platen and a base, of a plunger movable on the base beneath the platen, a pad, a head supporting the pad adjustable on the plunger and having vertical guiding connection with the base, and a pair of treadles one having a toggle connection with the plunger to move the latter in one direction and the other having connection to effect the movement of the plunger in the other direction.

19. The combination with a stationary, curved platen, of a curved bed to cooperate therewith, means for moving the bed toward the platen, and a right line guide arranged transverse to the curved cross section of the platen permitting the bed to be moved out of line with the platen.

20. The combination of the platen and

the plunger with the sleeve having a thread thereon, the nut adjustable on the thread, the head on the nut and the bed mounted on the head and cooperating with the platen.

21. In an ironing machine, the combination with a stationary platen and means for heating the same, of a padded bed, means for moving the bed toward and from the platen, a guide permitting said bed to be moved into and out of line with the platen, and a work supporting member supported in front of and below the padded bed so as not to interfere with the movement of the latter.

22. In an ironing machine, the combination with a stationary platen and means for heating the same, of a padded bed having substantially its entire surface cooperating with the platen at one time and carrying a foot extended rearwardly and having flanges on opposite sides, a plunger having a head at its upper end provided with ways overhanging the flanges, and a table arranged in front of the plunger and below the foot of the bed so as not to interfere with the movement of the latter.

23. The combination with a frame and a stationary platen thereon, of a work support, a vertically movable plunger guided on the frame in line with the platen and threaded at its upper end, a head adjustable longitudinally of and on the plunger and having the work support guided transversely of said plunger into and out of line with the platen, a nut turning on the threaded portion of the plunger to adjust the head on the latter, and a guide carried by and depending from the head and guided on the frame.

24. The combination with a frame and a stationary platen thereon, of a work support, a plunger guided vertically on the frame in line with the platen and having a threaded portion at its upper end, a link pivotally connected to the lower end of the plunger, a treadle pivoted to the frame and having an arm at its rear pivoted to the lower end of the link, a head adjustable longitudinally of and on the plunger and having the work support guided transversely of said plunger into and out of line with the platen, a nut turning on the threaded portion of the plunger to adjust the head on the latter, a guide carried by and depending from the head and guided on the frame, and a table supported at the front of the frame below the movable work support so as not to interfere with the movement of the latter.

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