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PATENTED MAY 30, 1905.

W. E. ANDRÉE.  
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APPLICATION FILED JAN. 20, 1903.

3 SHEETS—SHEET 2.

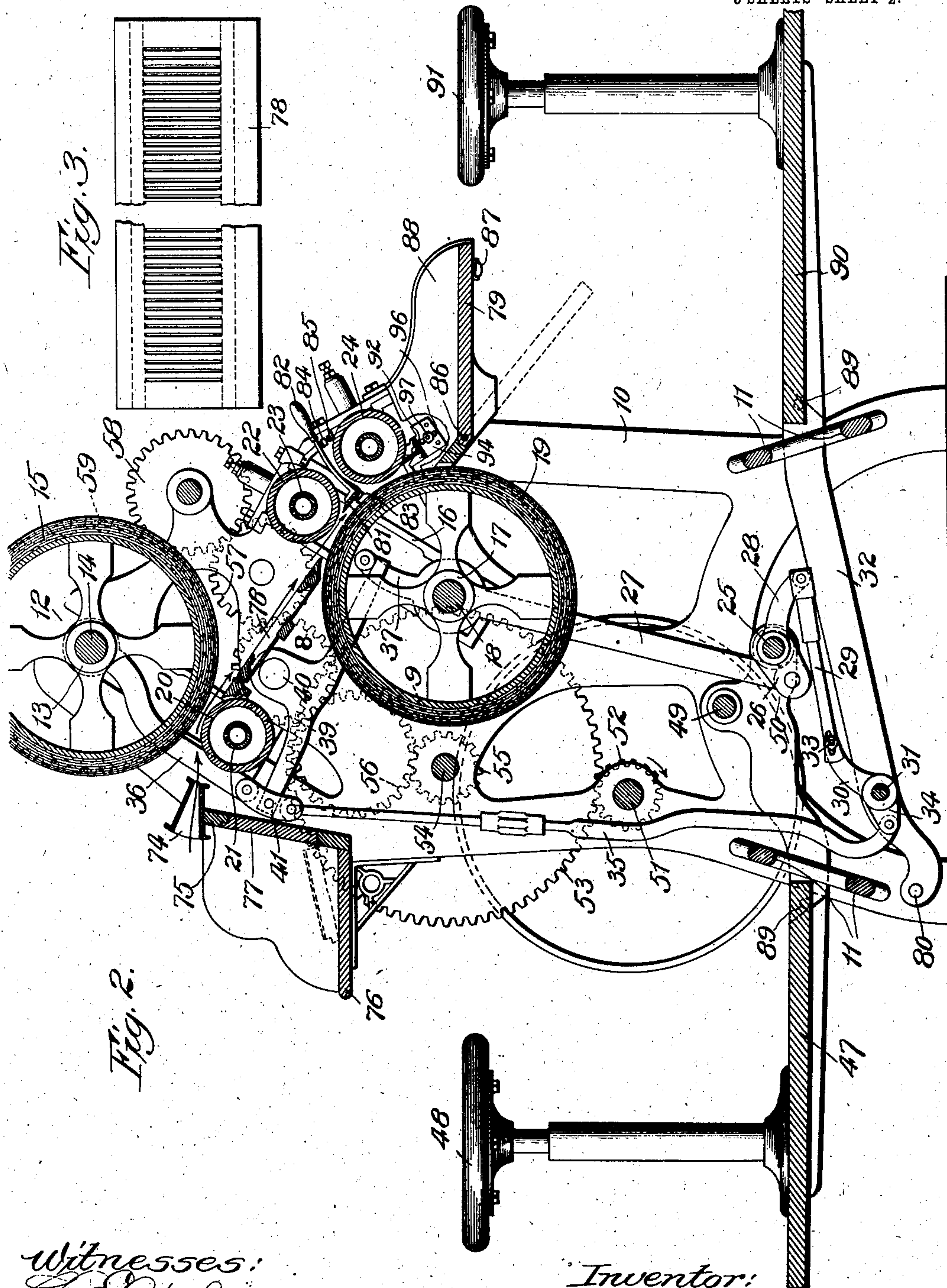


Fig. 3.

Fig. 2.

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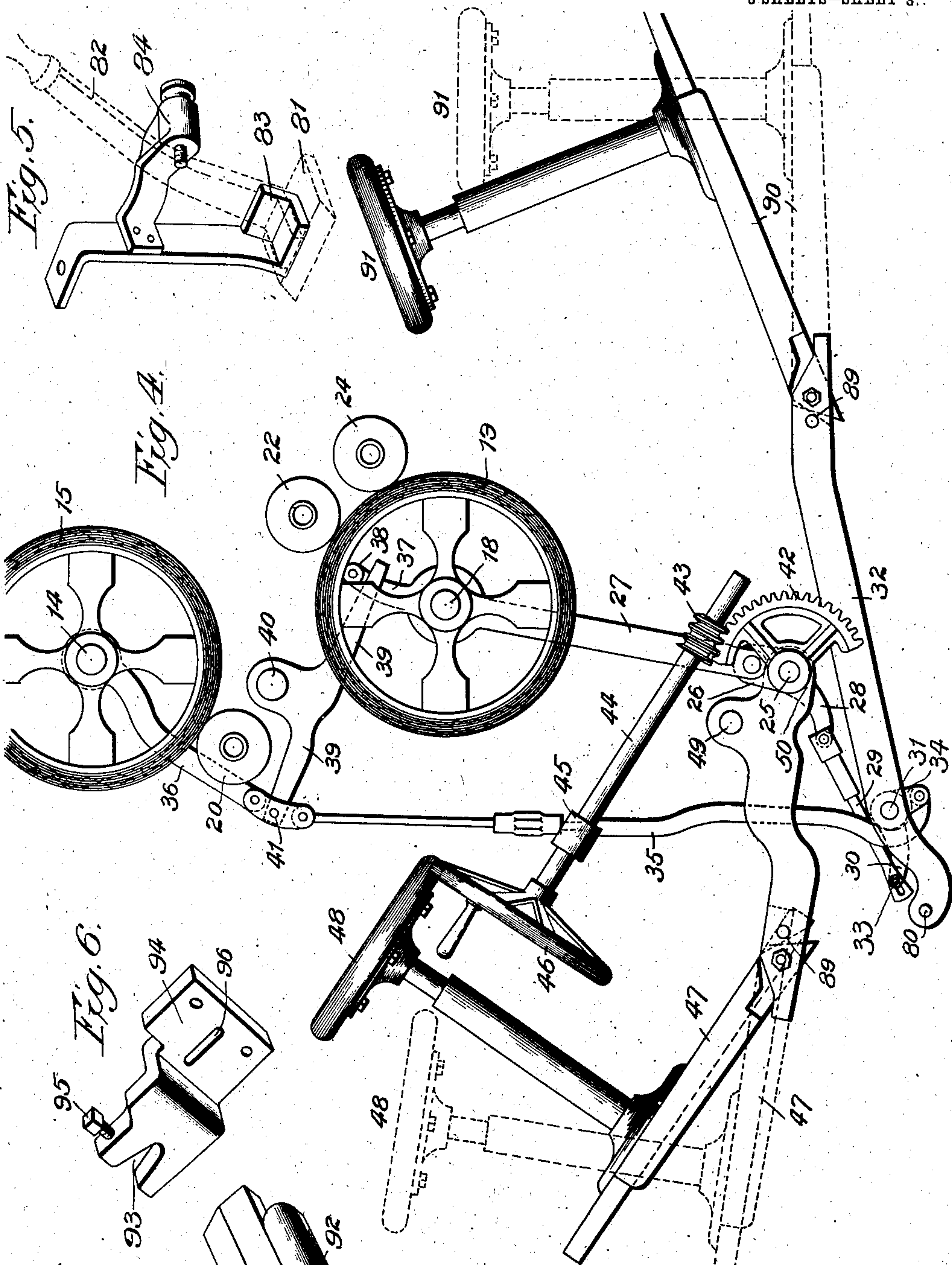
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# UNITED STATES PATENT OFFICE.

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## IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 791,395, dated May 30, 1905.

Application filed January 20, 1903. Serial No. 139,759.

*To all whom it may concern:*

Be it known that I, WILLIAM E. ANDRÉE, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Ironing-Machines, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

This invention has reference to improvements in that type of ironing-machines in which the articles to be ironed, particularly collars and cuffs, are passed between one or more sets of padded pressure-drums and heated rollers for drying and polishing the same; and the primary object of the invention is to provide improved means, controlled by the weight of the operator, for maintaining the said drum or drums under constant and uniform pressure irrespective of variation in thickness of the articles being ironed.

The invention has for further objects to generally improve machines of the class described in order to render the same more efficient and to simplify the operation thereof; and it consists of the combination and arrangement of parts hereinafter particularly described, specified in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the ironing-machine. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a detail of the perforated table over which the articles pass after leaving the first polishing-roll. Fig. 4 is a diagrammatic view of the mechanism for adjusting the pressure-drums, showing the same as adjusted during operation. Fig. 5 is a perspective of one of the supports of the deflecting-blade. Figs. 6 and 7 illustrate in perspective details of a second deflecting and shaping blade and the bracket or support therefor, and Fig. 8 relates to a detail of the pivoted journal-box in which the manually-controlled operating-shaft turns.

In the arrangement of the machine shown in the drawings, 10 indicates the sides of the frame on which the various rolls hereinafter

referred to are mounted or journaled, the said sides being tied together or braced by suitable bars, as 11. Near the upper end of the frame each of the sides 10 is provided with a slot or way 12, shown as being inclined downwardly and forwardly, and these ways receive sliding boxes 13, in which are journaled the ends of a shaft 14, having fixed thereon a large padded drum 15. Other slots or ways, 16, are formed in the sides 10 and are similar to and located below the slots or ways 12 and likewise receive sliding boxes 17, in which are journaled the ends of a shaft 18, having fixed thereto a drum 19, similar to the drum 15.

Journaled in the frame, below and in the line of movement of the drum 15, is a roll 20, shown with a gas-burner 21 located therein for heating the same, against which the drum 15 is designed to be forced during the ironing operation, and located above the drum 19 in the path of its movement is a roll 22, provided with gas or other heating means 23 and also journaled on the frame. A similar hot roll 24 may be arranged parallel to and spaced slightly from the roll 22, both rolls being so disposed that the drum 19 may be forced with more or less pressure against the same.

Provision is made for adjusting the drums 15 and 19 positively and simultaneously. To this end a transverse rock-shaft 25, mounted as hereinafter described, is provided at each end with a crank-arm 26, to which is jointed a bar 27, which supports at its upper end the adjacent journal-box 17 of the drum 19, and carrying the boxes 13, in which the shaft 14 of the drum 15 is journaled, as by being pivoted, as at 41, to bars 36, supporting said boxes, are levers 39, fulcrumed at 40, one to each side 10 of the frame, the rear arm of each of said levers engaging the under side of an antifriction-roller 38 on extensions 37 of the supports 27. Motion is imparted to the shaft 25 through the medium of a toothed segment 42, driven by a worm 43 on a shaft 44, journaled in a box 45, pivoted to the frame and provided with a hand-wheel 46. When the shaft is turned to the position seen in Fig.



4, with the crank-arms 26 directed upwardly, the drum 19 is forced into close contact with the polishing-rolls 22 and 24, and at the same time the rollers 38 tending to move away from and out of engagement with the levers 39 the drum 15 having nothing to support it drops by force of gravity against the roll 20.

In order to press the drum 15 into close contact against the polishing-roll 20, connection with the shaft 25 is provided for drawing it down positively. Such connection comprises a crank-arm 28, fixed to the shaft 25 and extending rearwardly before adjustment, Fig. 2, to which is pivoted a link 29, provided with a slot in which plays a pivot-pin 33, fixed in a crank-arm 30, extending from the shaft 31. When the shaft 25 is rocked, the shaft 31 is also turned through the medium of the link 29 throwing the crank-arm 34, one of which is fixed to each end of the shaft 31 at the side opposite the crank-arm 30, under and drawing the supports 36 by means of the links 35, jointed to the said supports 36, downwardly. Reverse movement of the shaft 25 turns the cranks 26, pulling the bars 27, and consequently the drum 19, downwardly and moving the rollers 38 against the levers 39, thereby raising the forward ends of the same and through the medium of the supports 36 elevating the drum 15, the latter operation being rendered less difficult by reason of the counterbalancing effect of the drums due to their movement in opposite directions.

The mechanism just described is intended to provide a preliminary or general adjustment only. In addition thereto it is desirable in order to secure the most satisfactory results to provide means for automatically maintaining the drums 15 and 19 under constant and uniform pressure in order to adapt the machine to the ironing of articles of varying thicknesses. The desired end is secured by providing a movable platform for the operator feeding the machine and which is designed to be connected with the mechanism for adjusting the drum 19, as previously described, in such manner that the weight of the operator will tend to hold the said drum firmly against the roll 20. Such platform 47, having a seat 48, may be hinged to the sides 10 of the frame, as at 49, and provided with rearwardly-extending arms 50, in which the ends of the shaft 25 are journaled.

In operating the machine after the preliminary adjustment has been imparted to the drums, during which adjustment the forward end of the platform will be elevated by being turned on its pivot, due to the reaction against the arms 50 when the drum 19 begins to press against the rolls 22 and 24, the weight of the operator will depress the front end of the platform, and consequently raise the shaft 25, thereby forcing the drum 19 against the rolls 22 and 24, as described. The drum 15

is also designed to be controlled in the same manner and is operated by the platform 90, designed to support the operator or assistant whose duty it is to remove the articles after they have passed through the machine. This platform, which may have mounted thereon a seat 91, is pivoted at its inner end to the sides 10 of the frame, as at 80, and has journaled thereon near the said end the rock-shaft 31. The ends of the links 35 connected to the crank-arms 34 are curved to conform to the curvature of the shaft 31 in order that when the drum 15 is drawn downward the point of connection will be substantially in the line of pull when the platform 90, carrying with it the shaft 31, is pressed downwardly by the operator.

During the preliminary adjustment of the drum 15 the platform 90 is elevated, caused by the shortening of the connection between the shaft 31 and the said drum, and the rollers 38 are slightly elevated above the inner ends of the levers 39, providing for independent movement of the drums 15 and 19, due to pressure on the platforms, such movement being permitted by reason of the sliding connection of the link 29 with the crank-arm 30.

Referring to Fig. 2, it will be seen that the main drive-shaft 51 has fixed to it a pinion 52, which meshes with a gear 53, turning on a shaft 54. The gear 53 is provided with a pinion 55, meshing with and driving a gear 56, loose on a stub-shaft, which in turn communicates motion to a gear 9 on the drum 19. The gear 56 also drives a gear 8, which turns a gear 57, driving a second gear 58, the latter giving motion to the drum 15 through the medium of a gear 59, fixed on the shaft 14, the intermediate gears 57 and 58 being of such size that the roll 19 travels at least as rapidly as the roll 15 in order to avoid clogging of the machine. At the opposite end of the machine the shaft 54 has fixed to it (see Fig. 1) a pinion 60, which communicates motion through the medium of a wide pinion 61, turning on a stub-shaft 62, to a gear 63, also journaled on a stub-shaft 64 and which drives a gear 65 on a stub-shaft 66, the gear 65 meshing with and driving a pinion 67, fixed on the polishing-roll 20. The gear 65 also transmits motion to a pinion 68, mounted on a stub-shaft 69, and the latter drives a gear 70, fixed on the shaft of the hot roll 22. Motion is communicated to the hot roll 24 through the medium of a pinion 71 on a stub-shaft 72 meshing with the gear 70 and a similar gear 73, fixed on the said hot roll 24.

The articles to be ironed are fed between the drum 15 and the hot roll 20 through a guide 74, located at the front of the machine and which may be supported by a front board 75, which forms the rear wall of a table 76, provided for the convenience of the operator, and this board 75 may be provided with an opening giving access to the roll 20



for the purpose of waxing the same and closed by a hinged door 77. The articles after receiving a preliminary pressing and drying pass from between the drum 15 and roll 20 and slide down an inclined table or board 78 to the padded roller 19 and the polishing-rolls 22 and 24. This board 78 is perforated or slotted, as shown in detail in Fig. 3, permitting a circulation of air therethrough to assist in drying of the articles while passing over the same.

In order to prevent the articles passing up between the rolls 22 and 24, a deflector is located between such rolls and disposed transversely of the machine in such manner that it may be turned with its edge against the roll 22, so as to direct the advancing end of an article between the drum 19 and the roll 24. The deflector consists of a long flat blade 81, having secured to its ends upwardly-extending handles 82, only one of which is shown, and it rests at its ends on seats 83, which form fulcrums therefor and permit of the blade being turned as necessary. The weight of the handles is sufficient to hold the blade against the roll. Each handle is supported by a lug 84, and a screw passing therethrough engages the handle to provide a fine adjustment for the blade, so that it may not bear with too great pressure against the roll and scratch the same. By throwing the deflector 81 down against the drum the goods may be thrown up along the face of the roll 22.

Such articles as collars and cuffs have a tendency to curve around the heated rolls, the polished surface being inward, and to reverse their course and shape them properly a knife 92 is located with its edge in close proximity to the roll 24, so as to deflect the articles and turn them in the opposite direction around the drum 19. This knife is loosely seated at its ends medially of its edges in slots 93 of brackets 94, secured to the sides 10 of the frame, and the rear edge thereof is weighted in order to throw the front edge against the roll. Screws 95, passing through the brackets and engaging the knife, serve to provide for the proper adjustment of the same with relation to the roll, and the brackets 94 have slots 96, through which the securing-bolts 97 pass for adjusting the knife when securing the same in place.

The table 79, whereon the ironed articles fall, may be hinged to the frame, as at 86, and adapted to drop downwardly, as shown in dotted lines, Fig. 2, to discharge the articles passing onto the same into a basket or other receptacle placed to receive them. When raised, this table may be fastened by latches 87, securing the same to the fixed end pieces 88.

In order to reduce the machine to as compact form as possible for shipping and when not in use in the laundry, the platforms 47 and 90 may be folded up against the machine, the supporting-bars of the said plat-

forms being hinged, as at 89, and when so folded the table 79 is dropped, so as to be out of the way of the seat on the platform 90.

I claim as my invention—

1. In an ironing-machine, in combination, a pair of movable pressure-drums, a polishing-roll coacting with each drum, a rock-shaft, means for turning the rock-shaft, crank-arms fixed to the rock-shaft, supports jointed to the crank-arms and on which one of the drums is mounted, a second rock-shaft, connection between the rock-shafts, crank-arms fixed to the second rock-shaft, supports on which the second drum is mounted, and links connecting the said supports and crank-arms of the second rock-shaft. 70 75

2. In an ironing-machine, in combination, a pair of movable pressure-drums, sliding boxes in which the drums are journaled, a polishing-roll coacting with each drum, a rock-shaft, means for turning the rock-shaft, crank-arms fixed to the rock-shaft, supports jointed to the crank-arms and on which the journal-boxes of one of the drums are mounted, a second rock-shaft, a crank-arm fixed to each of said rock-shafts, a link jointed to the said crank-arms, a crank-arm at each end of the second rock-shaft, links connected thereto, a pair of supports on which the journal-boxes of the second drum are mounted and which are jointed to the said links, and a pivoted lever the ends of which engage the drum-supports. 80 85 90 95

3. In an ironing-machine, in combination, a laterally-movable pressure-drum, a polishing-roll coacting with the drum, a tilting platform, a rock-shaft journaled on the platform, crank-arms fixed to the rock-shaft, supports jointed to the crank-arms and on which the drum is mounted, a segment fixed to the rock-shaft, a worm engaging the segment, a shaft carrying the worm, and a pivoted bearing in which the shaft is mounted. 100 105

4. In an ironing-machine, in combination, a pair of oppositely and laterally movable pressure-drums, a polishing-roll coacting with each drum, a tilting platform, a rock-shaft journaled on the platform, means for turning the rock-shaft, crank-arms fixed to the rock-shaft, supports jointed to the crank-arms and on which one of the drums is mounted, a second rock-shaft, a crank-arm fixed to each rock-shaft, a link jointed to the said crank-arms and having a slotted connection with one of them, other crank-arms fixed to the second rock-shaft, supports on which the second roll is mounted, connection between the last-named crank-arms and the said supports, pivoted levers pivotally engaging at one end the supports carrying the second drum, and antifriction-rollers carried by the supports of the first drum and engaged by the opposite end of the levers. 110 115 120 125

5. In an ironing-machine, in combination, a pair of oppositely-movable pressure-drums, 130



a polishing-roll coacting with each drum, a tilting platform, a rock-shaft journaled on the platform, means for oscillating the rock-shaft, crank-arms fixed to the rock-shaft, supports jointed to the crank-arms and carrying one of the drums, supports carrying the other drum, connection between the rock-shaft and the latter supports for moving them in a direction opposite to that of the first-mentioned supports, a medially-pivoted lever pivotally engaging at one end the said connection, and an abutment on one of the supports of the first drum engaged by the other end of the lever.

6. In an ironing-machine, in combination, a plurality of pressure-drums, a polishing-roll coacting with each drum, a tilting platform on each side of the machine, a crank-shaft carried by each platform, supports carried by the cranks of each shaft, for one of the drums, and means common to both crank-shafts for adjusting the shafts about their axes.

7. In an ironing-machine, in combination, a pair of drums, a pair of polishing-rolls one for coöperating with each of the drums; a crank-shaft for supporting each of the drums; link connection between the two crank-shafts whereby they may be rocked in unison; and means for independently moving the rock-shafts laterally to press the drums against their coöperating cylinders.

8. In an ironing-machine, in combination, a pair of movable pressure-drums, a polishing-roll coacting with each drum, a rock-shaft, supports on which the drums are mounted, operative connection between the shaft and the supports of one of the drums, a pivoted platform on which the rock-shaft is journaled, and a second platform for imparting independent movement to the other drum.

9. In an ironing-machine, in combination, a pair of movable pressure-drums, a polishing-roll coacting with each drum, a pivoted platform, a rock-shaft journaled on the platform, means for turning the rock-shaft, crank-arms fixed to the rock-shaft, supports jointed to the crank-arms and on which one of the drums is mounted, a second pivoted platform, a rock-shaft journaled thereon, crank-arms fixed to the latter shaft, supports carrying the other drum, links connecting said supports with the crank-arms of the second shaft, and operative connection between the crank-shafts.

10. In an ironing-machine, in combination, a pressure-drum, a polishing-roll coacting with and located below the drum, a feed-table adjacent to but below the roll and having an openable back plate extending upwardly before the roll.

11. In an ironing-machine, in combination, a pressure-drum, a pair of rolls located adjacent the drum and spaced from each other, a seat between the rolls at the ends thereof, a deflecting-blade resting on the seats and movable against one of the rolls, and an adjustable abutment for varying the pressure of the knife against such roll.

12. In an ironing-machine, in combination, a pressure-drum, a pair of rolls located adjacent the drum and spaced apart, seats between the rolls at the ends thereof, a deflecting-blade resting on the seats and movable against one of the rolls, a handle fixed to each end of the knife, a lug by which each handle is supported, and a screw passing through the lug and engaging the handle.

13. In combination with an ironing-machine, a pressure-drum, a hot roll coacting therewith, slotted brackets, a knife loosely resting with its ends in the slots and provided with a counterbalance-weight at its rear edge, and adjusting-screws passing through the brackets and engaging the knife.

14. In an ironing-machine, in combination, a pair of movable pressure-drums, a polishing-roll coacting with each drum, a pair of rock-shafts each of which is provided with a connection for moving one of the drums, connection between the rock-shafts, and a pair of hinged platforms on which the rock-shafts are mounted.

15. In an ironing-machine, in combination, a pair of movable pressure-drums, a polishing-roll coacting with each drum, a pair of rock-shafts each of which is provided with a connection for moving one of the drums, an arm fixed to each shaft, a link pivoted at its ends to the arms and having sliding engagement with one of them, and a pair of hinged platforms on which the shafts are mounted.

16. In an ironing-machine, in combination, a pair of pressure-drums, supports on which the drums are mounted, a polishing-roll coacting with each drum, a rock-shaft, operative connection between the shaft and the supports of one of the drums, a pivoted platform on which the shaft is journaled, a second rock-shaft, connection between the latter shaft and the supports of the other drum, a crank-arm fixed to each of the shafts, a link connecting the crank-arms and slidably engaging one of them, and a platform on which the said second rock-shaft is journaled.

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