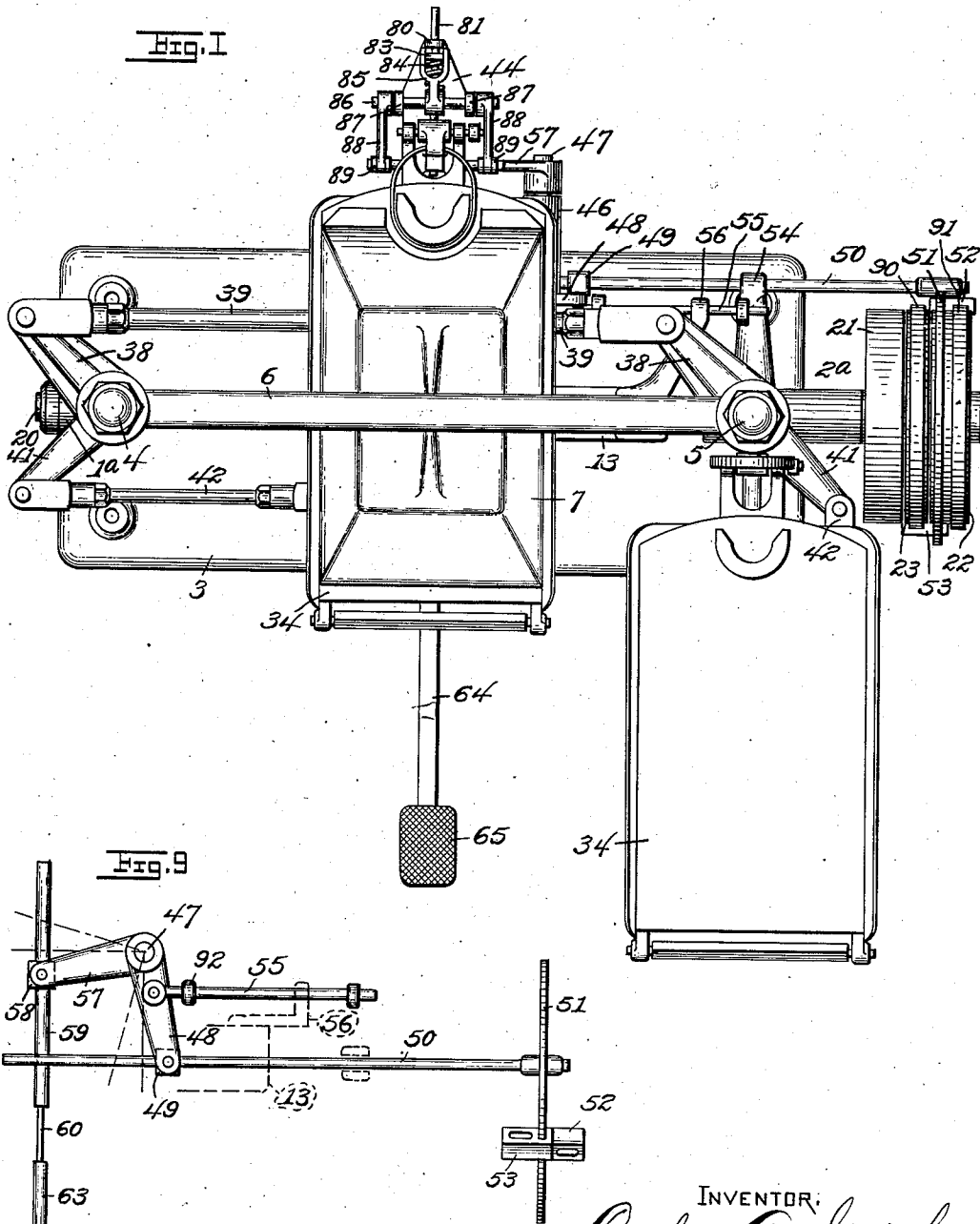


C. A. SMITH.
LAUNDRY PRESSING MACHINE.
APPLICATION FILED NOV. 26, 1909.

1,010,696.

Patented Dec. 5, 1911.

6 SHEETS—SHEET 1.



WITNESSES:
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N. A. Brown.

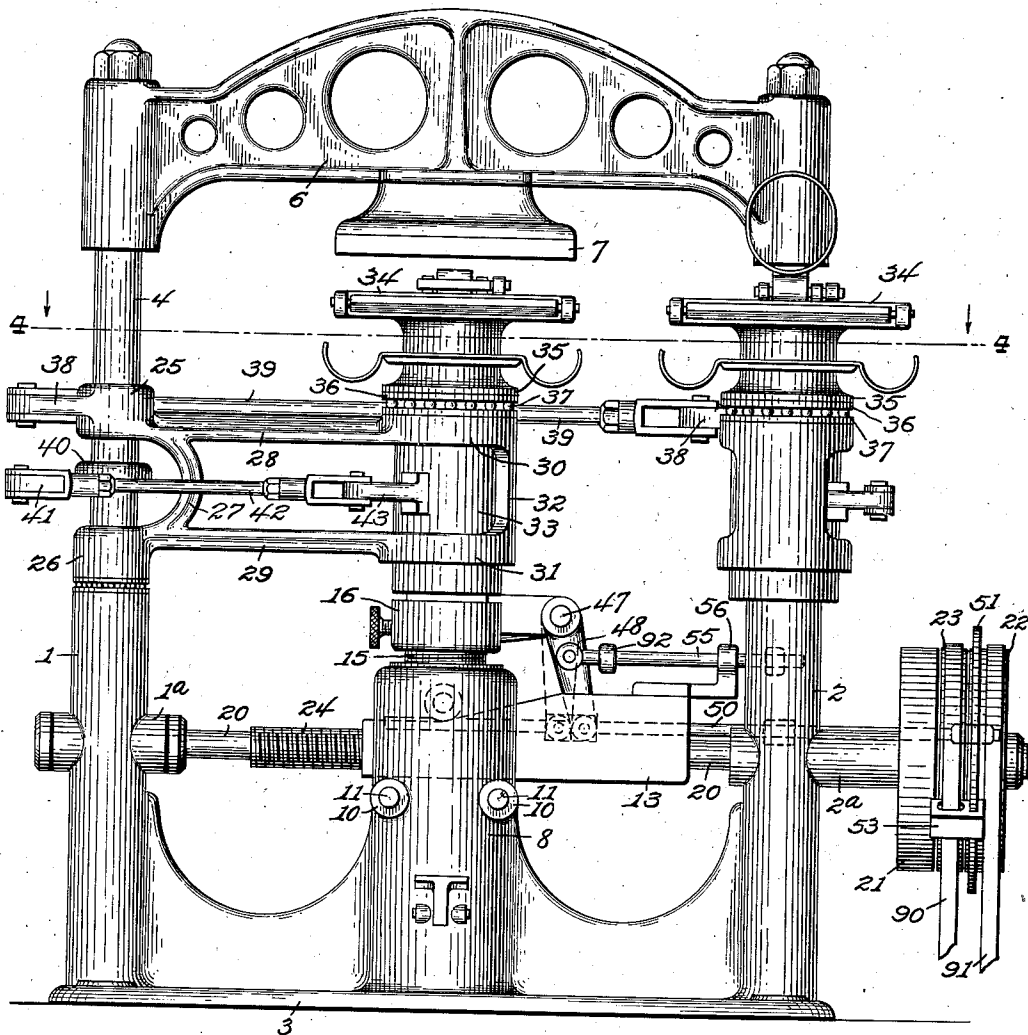
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6 SHEETS—SHEET 2.

Fig. 2



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6 SHEETS—SHEET 3.

Fig. 3

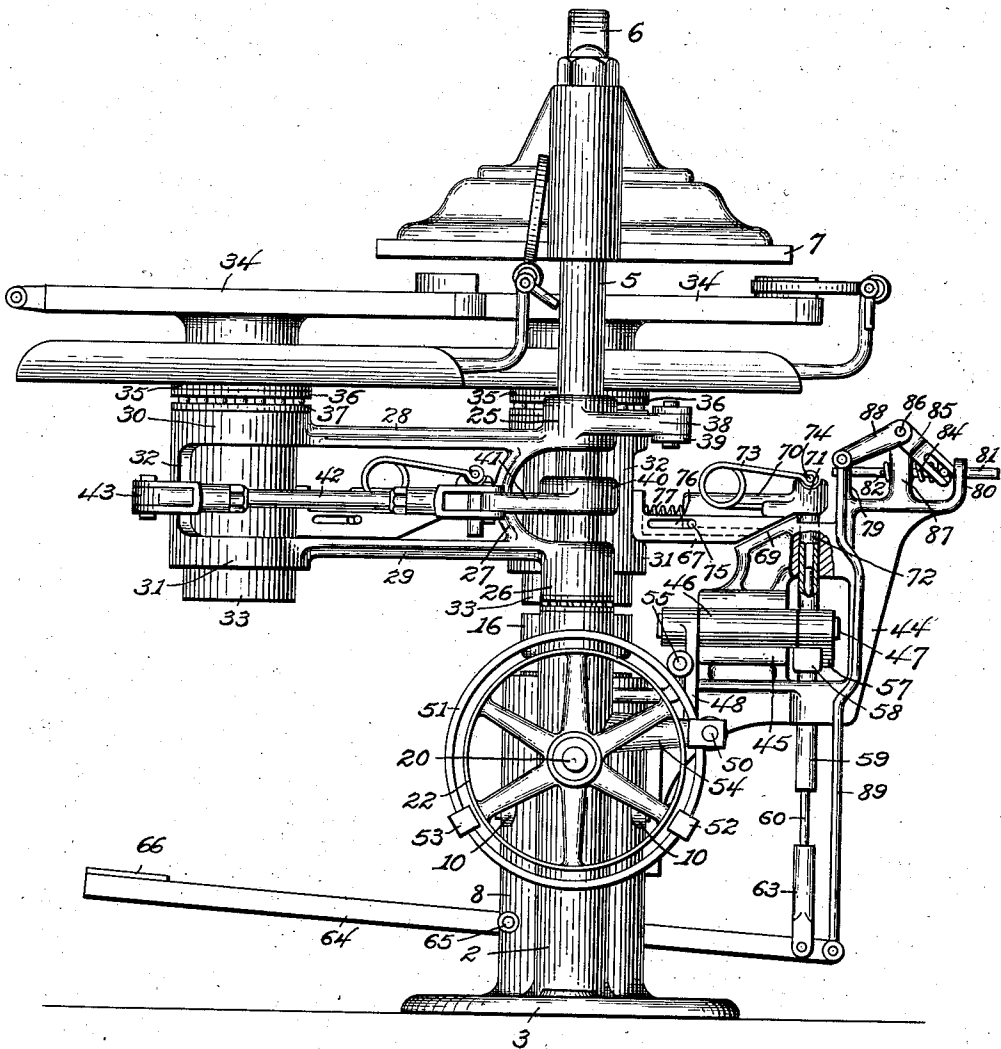
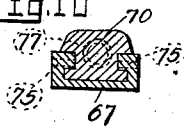


Fig. 10



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6 SHEETS—SHEET 4.

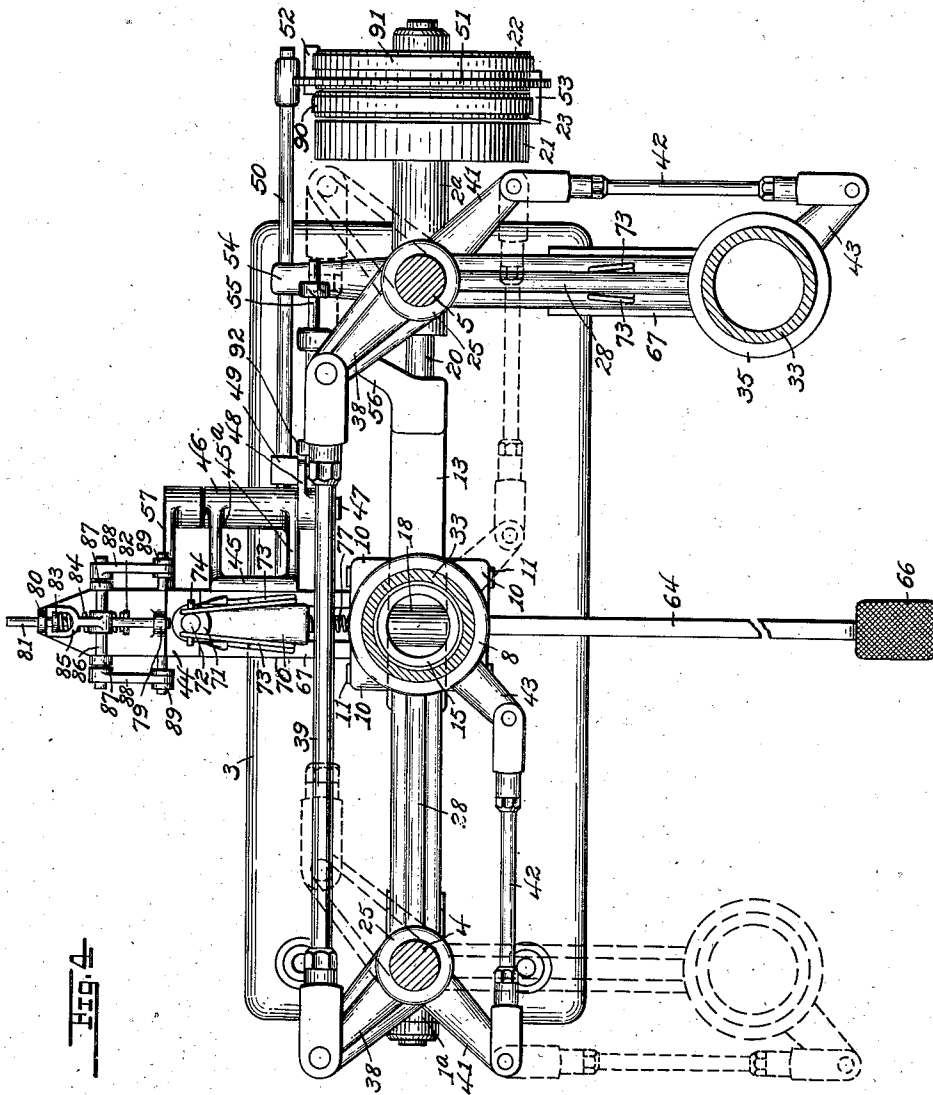


FIG. 4

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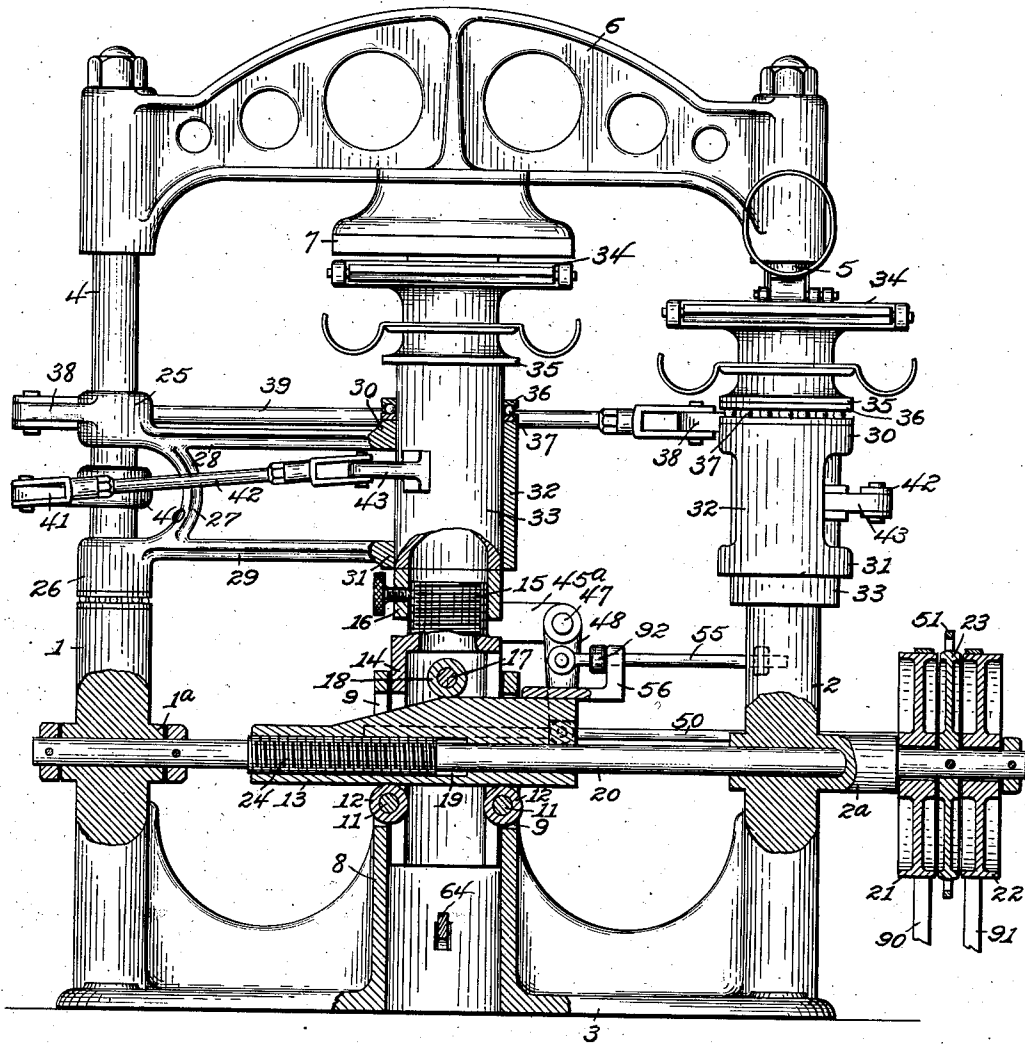
C. A. SMITH.
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APPLICATION FILED NOV. 26, 1909.

1,010,696.

Patented Dec. 5, 1911.

6 SHEETS—SHEET 5.

Fig. 5



WITNESSES:

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N. Q. Brown

INVENTOR

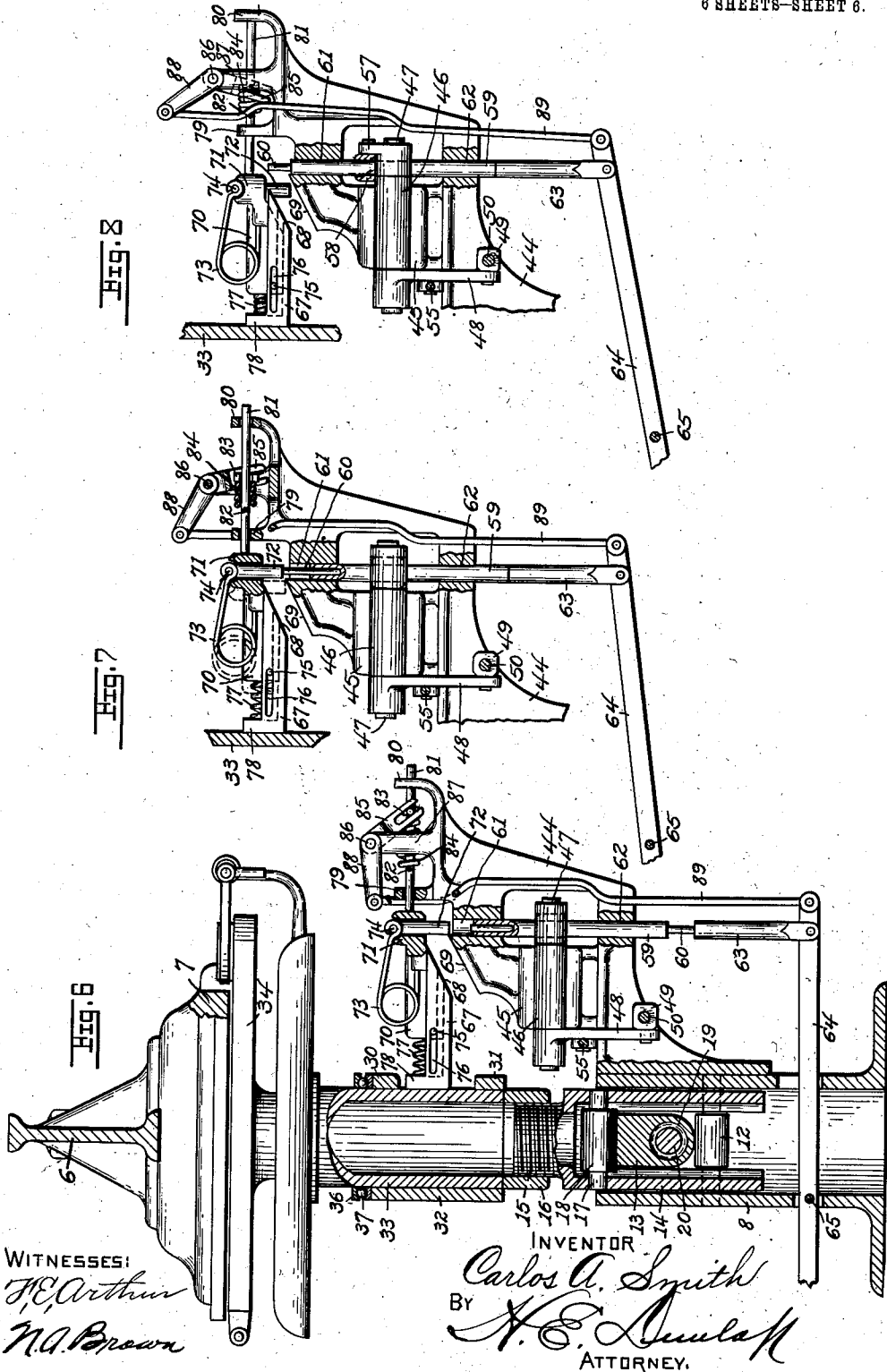
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C. A. SMITH.
LAUNDRY PRESSING MACHINE.
APPLICATION FILED NOV. 28, 1909.

1,010,696.

Patented Dec. 5, 1911.

6 SHEETS-SHEET 6.



UNITED STATES PATENT OFFICE.

CARLOS A. SMITH, OF BELLAIRE, OHIO.

LAUNDRY PRESSING-MACHINE.

1,010,696.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed November 26, 1909. Serial No. 529,852.

To all whom it may concern:

Be it known that I, CARLOS A. SMITH, a citizen of the United States of America, and resident of Bellaire, county of Belmont, and State of Ohio, have invented certain new and useful Improvements in Laundry Pressing-Machines, of which the following is a specification.

This invention relates to improvements in ironing machines, and more particularly to an automatic machine of that class wherein the article to be acted upon is subjected to the pressure of a heated plate.

The primary object of the invention is to provide a machine which is particularly adapted for ironing shirts and which shall mechanically and automatically subject a shirt mounted thereon to an ironing pressure.

A further object is to provide in a machine of the character mentioned a construction wherein a pair of ironing plates are employed and wherein the movement of one plate to operative position actuates the other plate to move from such position. And a still further object is to simplify and structurally improve that class of laundrying machines known as flat ironing machines.

With these and other objects in view, the invention finally consists in the particular construction, arrangement and combination of parts which will hereinafter be fully described, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a top plan view of the invention; Fig. 2 is a front elevation of the same; Fig. 3 is an end elevation of the same; Fig. 4 is a horizontal section on the line 4—4, Fig. 2; Fig. 5 is a partial longitudinal section, showing the elevating means; Fig. 6 is a partial central cross sectional view, parts of the mechanism being shown in elevation; Fig. 7 is an elevation of the plate locking mechanism illustrated in Figs. 3 and 6, showing the same partly in broken section and parts thereof in different positions assumed in the operation thereof; Fig. 8 is a view similar to Fig. 7, showing parts of the plate-locking mechanism in a still different position; Fig. 9 is a detail view of a part of the belt-shifting mechanism; Fig. 10 is an enlarged cross section of the slide-block and the arm in which said slide-block is mounted.

Referring to said drawings, in which like

designating characters distinguish like parts throughout the several views—1 and 2 indicate two supporting pillars formed on a common base 3 and having respectively fixed upright standards 4 and 5 upon the upper ends of which are mounted the opposite ends of a cross-head 6. Supported by said cross-head on its under side in a central position is an ironing plate 7 which is maintained at a substantially constant high temperature in any appropriate manner, as by passing there-through steam or heated air.

Formed on the base 3 midway between and in alinement with the pillars 1 and 2 is an upright hollow casing 8 provided at opposite sides for a portion of its length with slots 9, also in alinement with said pillars. Having its ends fixed in bosses 10 formed on said casing and extending transversely of each slot 9 adjacent to the lower end of the latter is a shaft 11 upon which is mounted an anti-friction roller 12. A wedge 13 having a straight lower face and an inclined upper face is projected horizontally through the slots 9 and rests upon said rollers 12. Said wedge is arranged to be movable longitudinally through the slots of the casing for a purpose which will presently be explained. Vertically movable within said casing 8 is a slotted tubular member 14 which has a reduced exteriorly-threaded upper end 15 upon which is carried an adjustable collar 16. With its ends fixed in opposite sides of said tubular member 14 so as to lie transversely and centrally of the same is a shaft 17 upon which is rotatably mounted an anti-friction roller 18 adapted to rest upon the upper face of said wedge 13 and to thus support said tubular member and the superposed parts.

Extended longitudinally through the wedge 13 is a bore 19 through which extends a revoluble shaft 20 whose opposite ends are journaled in appropriate bearings 1^a and 2^a in the pillars 1 and 2 and which carries upon one end two loose pulleys 21 and 22 with an interposed fixed pulley 23. The bore 19 is threaded a portion of the way and has in operative engagement with the threads thereof the threaded portion 24 of the shaft 20 whereby, when said shaft is rotated, said wedge is moved forward or backward, according to the direction of movement of said shaft. As is obvious, when the wedge is moved forward, the tubular member 14,

supported on the inclined face thereof by means of the roller 18, is elevated, and vice versa.

Rotatably mounted on each of the standards 4 and 5 is a pair of separated collars 25 and 26 which are connected by an arch-brace 27, as shown in Fig. 3. Carried upon or formed integral with the ends of the parallel outstanding arms 28 and 29 which are carried by or formed integral with said collars 25 and 26 are collars 30 and 31 which are connected at the side opposite to said arms by a web 32. Said collars 30 and 31 loosely embrace a tubular plunger 33 upon the top of which is carried an ironing table 34 which is adapted to be reciprocated with said plunger into and out of pressure-applying relation with ironing plate 7, in a manner which will herein be explained. Said plunger 33 has an annular flange 35 which, when said plunger is at rest, in its lowered position, rests upon a bearing ring 36 encircling said plunger and mounted upon ball-bearings 37 interposed between it and the top of collar 30. Said collar 25 carries thereon and preferably integral therewith a horizontal crank-arm 38 which stands at substantially an angle of 135° to said arm 28. Connecting the free ends of the opposite crank-arms 38 is a pitman 39, as shown.

Rigidly mounted on each of the standards 4 and 5 intermediate the collars 25 and 26 is a collar 40 having an integral crank-arm 41 to the free end of which is pivotally connected one end of a rod or pitman 42 whose opposite end is pivotally connected to a crank-arm 43 carried by said plunger 33 at a point intermediate the embracing collars 30 and 31.

As is obvious, when one of the plungers 33 bearing an ironing table 34 is moved or swung from an outwardly extended position into superposed relation to the adjustable collar 16 with the table beneath the ironing plate 7, the other plunger is moved or swung outward, through the intermediate mechanism just described, into the position indicated in Figs. 1, 2, 3, 4 and 5. In other words, the movement of one plunger for bringing one ironing table into operative position beneath the ironing plate moves the other table from the last mentioned position to an outwardly extended position.

The mechanism employed for shifting the belts for operating the plungers and for locking the ironing tables in pressure applying relation to the ironing plate will now be described.

Fixed upon the rear side of the casing 8 is a bracket 44 upon one side of which is rigidly mounted a plate 45 having outwardly extended parallel arms 45^a which are in supporting engagement with, or have formed integral therewith, a sleeve-bearing 46 in which is rotatably held a shaft 47.

Fixed upon one end of said shaft is a crank-arm 48 to which is pivotally connected a rocker 49 in which is adjustably held one end of a rod 50 whose opposite end is rigidly attached to the encircling ring 51 of a belt-shifter which comprises said ring and a pair of oppositely disposed belt-guides 52 and 53 carried by said ring, the body of said rod 50 being slidably supported by an arm 54 carried by the pillar 2. Also pivotally connected to said crank-arm 48 intermediate its ends is a rod 55 which is longitudinally movable through an angular bracket-arm 56 fixed in appropriate position upon the rear end of the wedge 13.

Fixed upon the end of the shaft 47 opposite that which bears the crank-arm 48 is an oppositely-disposed crank-arm 57 the free end of which is pivotally connected to a collar 58 which is rigidly borne by the movable sleeve 59 of an upright plunger rod 60 which operates in a pair of vertically aligned bores 61 and 62, said rod 60 having an enlarged lower end 63 which is pivotally mounted upon one end of a lever or treadle 64. Said lever or treadle is pivotally mounted intermediate its ends, as at 65, and has a foot-plate 66 on its opposite end.

Fixed upon each plunger 33 intermediate the collars 30 and 31 is an outstanding arm 67 the outer end of which is provided with an upwardly-inclined bevel 68 which, when the plunger is moved to a position underlying the ironing plate, rests upon an inclined seat 69 provided upon the bracket 44, as shown at the right of Fig. 3. A dove-tail channel or mortise is provided in the upper face of said arm 67, and slidably mounted in said channel is a slide-block 70 having an integral vertically-bored hub 71 formed upon its outer end. Seated in the bore of said hub and normally held depressed with its lower end projected therefrom is a vertically-movable locking-spindle 72 whose said lower end is adapted to seat in the upper end of the bore 61 in the bracket 44 for locking the plunger 33 in position beneath the ironing plate 7. Springs 73 connected to the projecting ends of a cross-pin 74 carried by the upper end of said spindle 72 serve to normally hold the latter depressed in locking position. The slide-block 70 has an outwardly directed pin 75 movably held in slots 76 provided in the sides of the arm 67 for limiting its range of sliding movement. A coil spring 77 interposed between the inner end of said block and the foot 78 of said arm normally holds said block forced outward to the limit of its outward movement. Slidably mounted in supporting posts 79 and 80 carried by said bracket 44 in the rear of said slide-block 70 and in alignment therewith is a rod 81. Mounted upon said rod 81 between a transversely directed pin 82 carried thereby and a slidable collar 130

83, also carried thereby, is a coil spring 84. A yoke 85 fixed upon a transverse shaft 86 journaled in the upper ends of posts 87 carried by the bracket 44 on opposite sides of the path of movement of the rod 81, has its arms pivotally connected to oppositely disposed trunnions carried by said collar 83, so that movement of the shaft 86 will result in the collar being moved with relation to the spring 84. Fixed upon the opposite ends of said shaft 86 are crank-arms 88 to which are pivotally connected the upper ends of rods 89 whose lower ends are pivoted to the end of the treadle 64.

Now, assuming that all parts of the mechanism hereinbefore described have just been moved to the position shown in Figs. 2 and 3, in which one of the ironing tables 34 is shown in underlying relation to the ironing plate 7, but not elevated in pressing engagement therewith, and the other table is shown in extended position, this movement has caused the locking-spindle 72 to seat in the bore 61 and to depress the sleeve 59 bearing collar 58 and to consequently lower the crank-arm 57 below its normal horizontal position, as shown in Fig. 3, and the crank-arm 48 to move rearwardly, thus producing the shifting of the belts 90 and 91 outward to bring straight belt 90 into operative relation to fixed pulley 23. Consequently, Figs. 2 and 3 illustrate the revoluble shaft 20 just beginning to rotate forward for forcing wedge 13 inward to elevate the ironing table 34 into pressure applying relation to the ironing plate 7. The elevating movement continues until the wedge 13 has reached a point where the bracket arm 56 carried by the latter engages a fixed collar 92 located at an appropriate point on the rod 55 and forces the crank-arm 48 forward, shifting the belts to inoperative position with relation to fixed pulley 23, as shown in Fig. 5. At this point in the operation, the arm 67 of the elevated plunger stands in substantially the position shown in Fig. 6 with the lower end of the locking spindle 72 about to escape from interlocking engagement with the bracket 44 at the terminus of the inclined seat 69. When it is desired to lower the said ironing table for changing the relative working positions of the tables, the operator depresses the front end of the treadle 64, thus elevating the rear end thereof. As is obvious, this movement of the treadle will elevate the plunger-rod 60 so that the locking-spindle will be raised against the tension of the springs 73 out of its interlocking position, substantially as shown in Fig. 7, whereupon the parts are in position to admit of a reversal of the positions of the two ironing tables. As the tables are reversed, one of the arms 67, with slide-block 70 and locking-spindle 72, is carried away from the bracket 44, and the other arm, with

slide-block and locking-spindle, moves toward said bracket. In approaching said bracket the lower end of the locking-spindle 72 may engage the inclined face 69 of said bracket, in which case it is gradually raised against the tension of spring 73 as it moves or rides forward along said incline. Reaching a position in register with bore 61 the spindle is actuated by spring 73 to drop into said bore, as shown in Fig. 3. At the time that the treadle is first depressed, the rods 89 are elevated, producing, through the intermediate mechanism hereinbefore described, a forward movement of the rod 81 which brings the front end of the latter into engagement with the hub 71, as shown in Fig. 6. Further elevation of said rod 89 results in the coil spring 84 being compressed, as shown in Fig. 7, and, upon the locking spindle 72 being withdrawn from its locking position, said spring 84 kicks the slide-block inward against the tension of the spring 77, to substantially the position shown in Fig. 8, allowing the sleeve 59, bearing the collar 58 to which the crank-arm 57 is pivoted, to move upward, as is also shown in Fig. 8, which last movement effects the shifting of the belts 90 and 91 inward from the position shown in Fig. 5 to positions wherein the former rides upon the inner edge of loose pulley 21 and the latter upon the fixed pulley 23. The belt 91 being a crossed belt, a reverse movement is imparted to the revoluble shaft 20 which effects the withdrawal of the wedge 13, and consequently the lowering of the plunger 33. When the wedge 13 has been sufficiently withdrawn, the operator removes the foot pressure from the treadle, whereupon the weight of the parts automatically effects the return movement of the rod 50 and a consequent return shifting of the belts so that the fixed pulley is again released.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with an ironing plate, of a pair of ironing tables adapted to be alternately moved into vertical alinement with said plate, said tables being so arranged with respect to each other that horizontal movement imparted to one in one direction effects a reverse horizontal movement of the other, and means for reciprocating the tables with relation to said plate.

2. The combination with an ironing plate, of a pair of ironing tables adapted to be alternately moved into vertical alinement with said plate, said tables being so arranged with respect to each other that horizontal movement imparted to one in one direction effects a reverse horizontal movement of the other, and means for singly reciprocating the tables with relation to said plate.

3. The combination with an ironing plate, of a pair of ironing tables adapted to be alternately moved into vertical alinement with said plate, means interposed between said tables whereby horizontal advance-
 5 movement of one table imparts a reverse horizontal movement to the other, causing it to traverse the same path traversed by it in its advance movement, and means for moving said tables, one at a time, into pressing
 10 relation to said plate.

4. The combination with an ironing plate, of a pair of ironing tables adapted to be alternately moved into vertical alinement
 15 with said plate means interposed between said tables whereby horizontal movement of one table imparts a reverse horizontal movement to the other, automatic means for elevating said tables, one at a time, into pressing
 20 relation with said plate, and automatic locking means whereby said tables are maintained against reverse movement when in pressing position.

5. The combination with an ironing plate, of a pair of ironing tables adapted to be alternately moved into vertical alinement with
 25 said plate, means including a pitman interposed between said tables whereby horizontal movement of one table imparts a reverse horizontal movement to the other, automatic
 30 means for elevating said tables, one at a time, into pressing relation with said plate, automatic locking means whereby said tables are maintained against reverse
 35 movement when in pressing position, and means for disengaging said locking means.

6. The combination with an ironing plate, of a pair of ironing tables, means interposed
 40 between said tables whereby movement of one table into a position in vertical alinement with said plate effects a reverse movement of the other table from said position, and means whereby the alined table and
 45 plate are caused to assume coöperative pressing relation.

7. The combination with an ironing plate, of a pair of ironing tables, means interposed
 50 between said tables whereby movement of one table into a position in vertical alinement with said plate effects a reverse return movement of the other table from said position, means for locking the table for maintaining
 55 such relation, and means for releasing said locking means.

8. In combination with an ironing plate, a pair of tables adapted to coöperate with
 60 said plate, means for individually advancing said tables into vertical alinement with said plate, means whereby such movement of one table causes the other table to move
 65 away from said plate, traversing the same path in reversing as traveled thereby in advancing, and means for elevating the advanced table into pressure-exerting relation with said plate.

9. In combination with an ironing plate, a table adapted to coöperate with said plate,
 70 means for advancing said table into vertical alinement with said plate, a drive-shaft, means actuated by operation of the first-mentioned means whereby said shaft is rotated, means operated by said shaft where-
 75 by rotation in one direction effects the elevation of said table into pressure-exerting relation to said plate, means whereby, when said table assumes such relation, the rotation of said shaft is stopped, and means
 80 whereby rotation of said shaft in a reverse direction may be effected for lowering said table.

10. In combination with an ironing plate, a table adapted to coöperate with said plate,
 85 means for moving said table into vertical alinement with said plate, a drive-shaft, means actuated by operation of the first-mentioned means whereby said shaft is rotated, means operated by said shaft where-
 90 by, rotation in one direction effects the elevation of said table into pressure-exerting relation to said plate, means whereby, when said table assumes such relation, the rotation of said shaft is stopped, automatic means
 95 for maintaining said table in fixed position when the limit of its upward movement is reached, means for releasing said maintaining means, and means under the control of the last-mentioned means whereby rotation of said shaft in a reverse direction for lowering the table is effected.

11. In combination with an ironing plate, a pair of tables adapted to coöperate with
 100 said plate, means for individually advancing said tables into vertical alinement with said plate, means whereby such movement of one table causes the other table to
 105 move away from said plate, traversing the same path in reversing as traveled thereby in advancing, means for elevating the advanced table into pressure-exerting relation with said plate, and automatic means for
 110 maintaining the advanced table in fixed position.

12. In combination with an ironing plate, a pair of tables adapted to coöperate with
 115 said plate, means for individually advancing said tables into vertical alinement with said plate, means whereby such movement of one table causes the other table to move away from said plate, traversing the same
 120 path in reversing as traveled thereby in advancing, means for elevating the advanced table into pressure-exerting relation with said plate, automatic means for maintaining the advanced table in fixed position, and means for releasing said maintaining means.
 125

13. In combination with an ironing plate, a pair of tables adapted to coöperate with
 130 said plate, means for individually advancing said tables into vertical alinement with said plate, means whereby such movement

of one table causes the other table to move away from said plate, traversing the same path in reversing as traveled thereby in advancing, means for elevating the advanced table into pressure-exerting relation with said plate, automatic means for maintaining the advanced table in fixed position, means for releasing said maintaining means, and means controlled by the last-mentioned means for lowering the advanced table.

14. In combination with an ironing plate, a pair of tables adapted to cooperate with said plate, means for individually advancing said tables into vertical alinement with said plate, means whereby such movement of one table causes the other table to move

away from said plate, traversing the same path in reversing as traveled thereby in advancing, means for elevating the advanced table into pressure-exerting relation with said plate, automatic means for maintaining the advanced table in fixed position, means for releasing said maintaining means, and automatic means under the control of the last-mentioned means whereby the lowering of the table is effected.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

CARLOS A. SMITH.

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