June 24, 1941. J. A. CASTRICONE 2,247,149

IRONING MACHINE CONTROL

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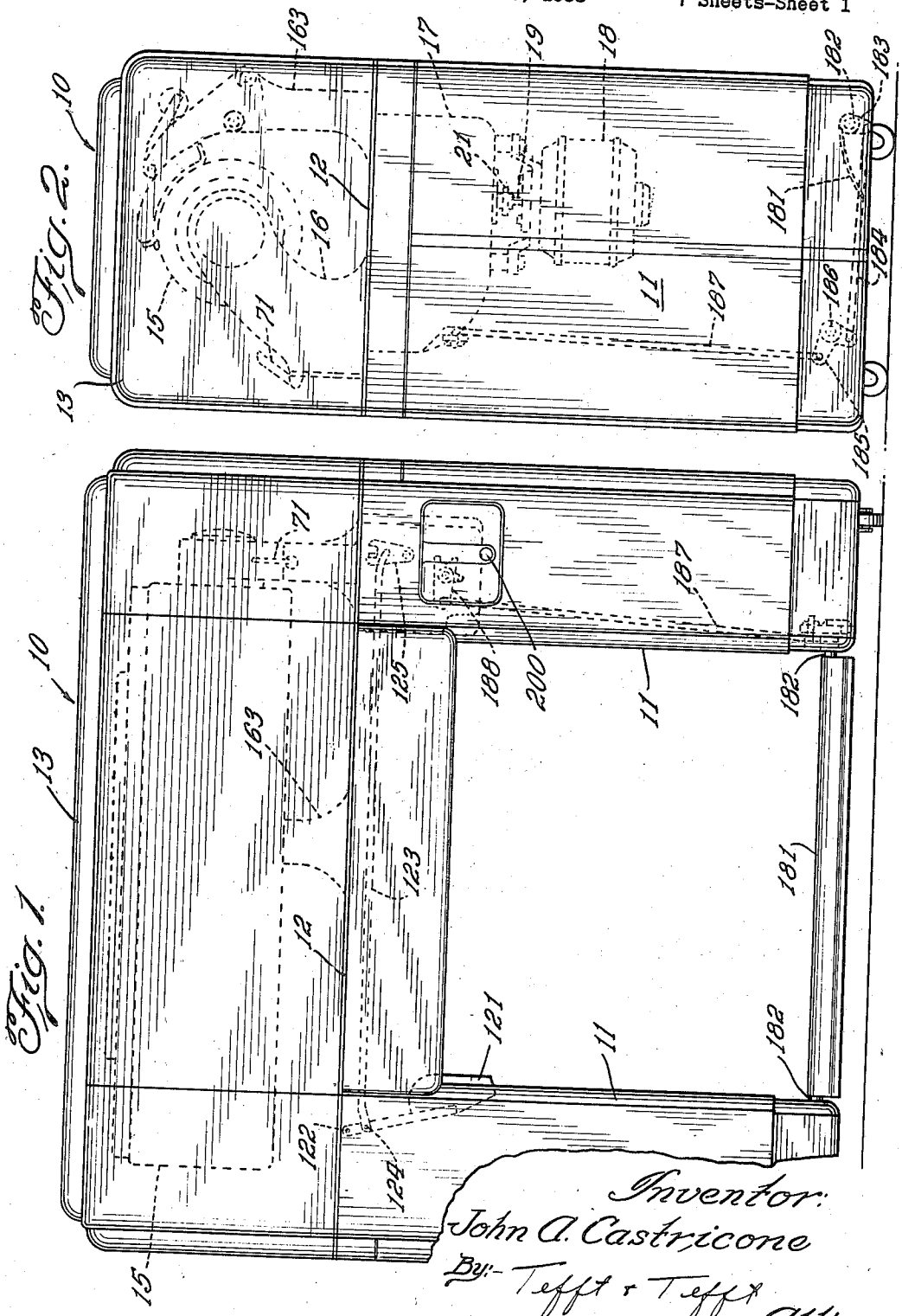

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Fig. 3.

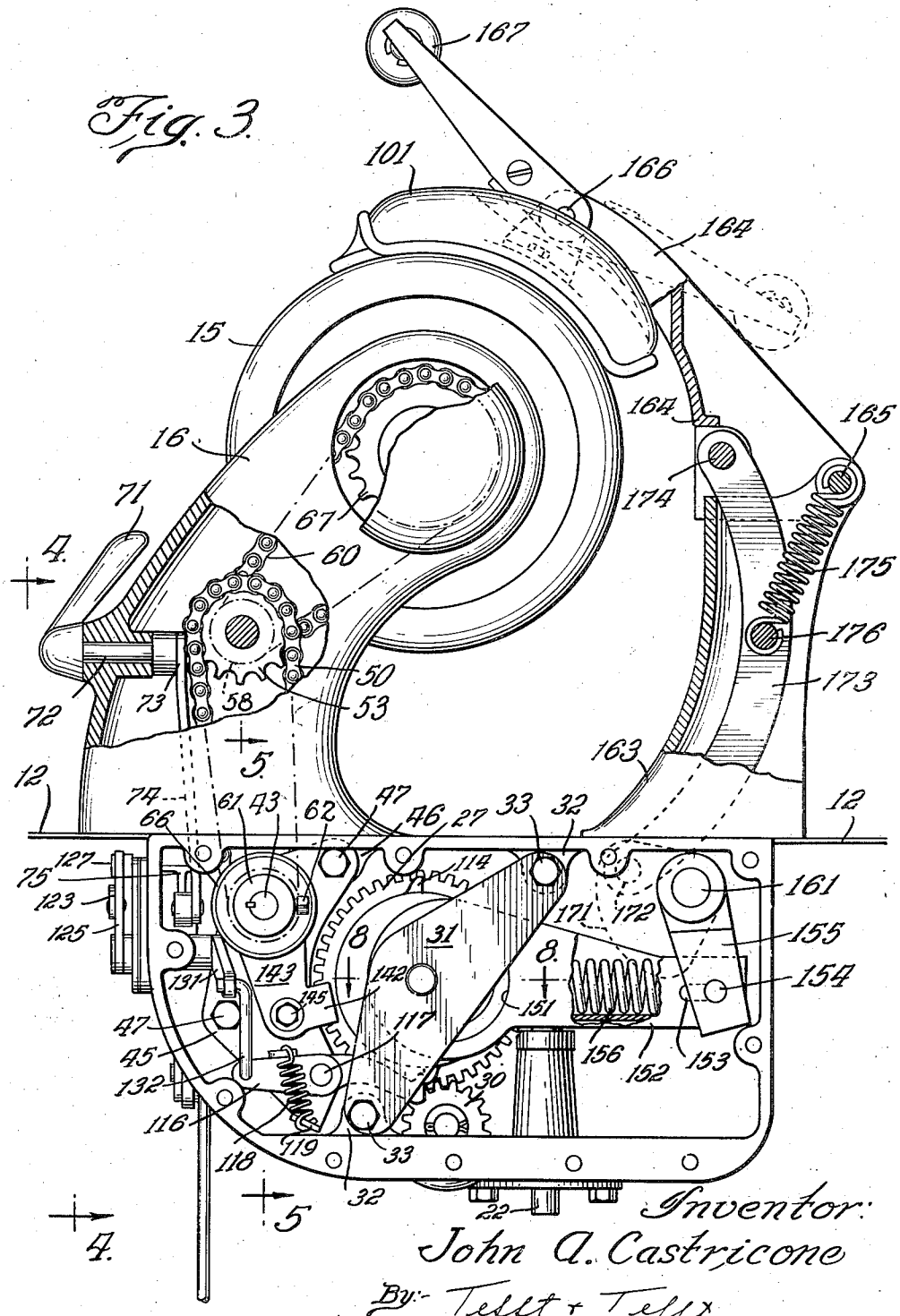

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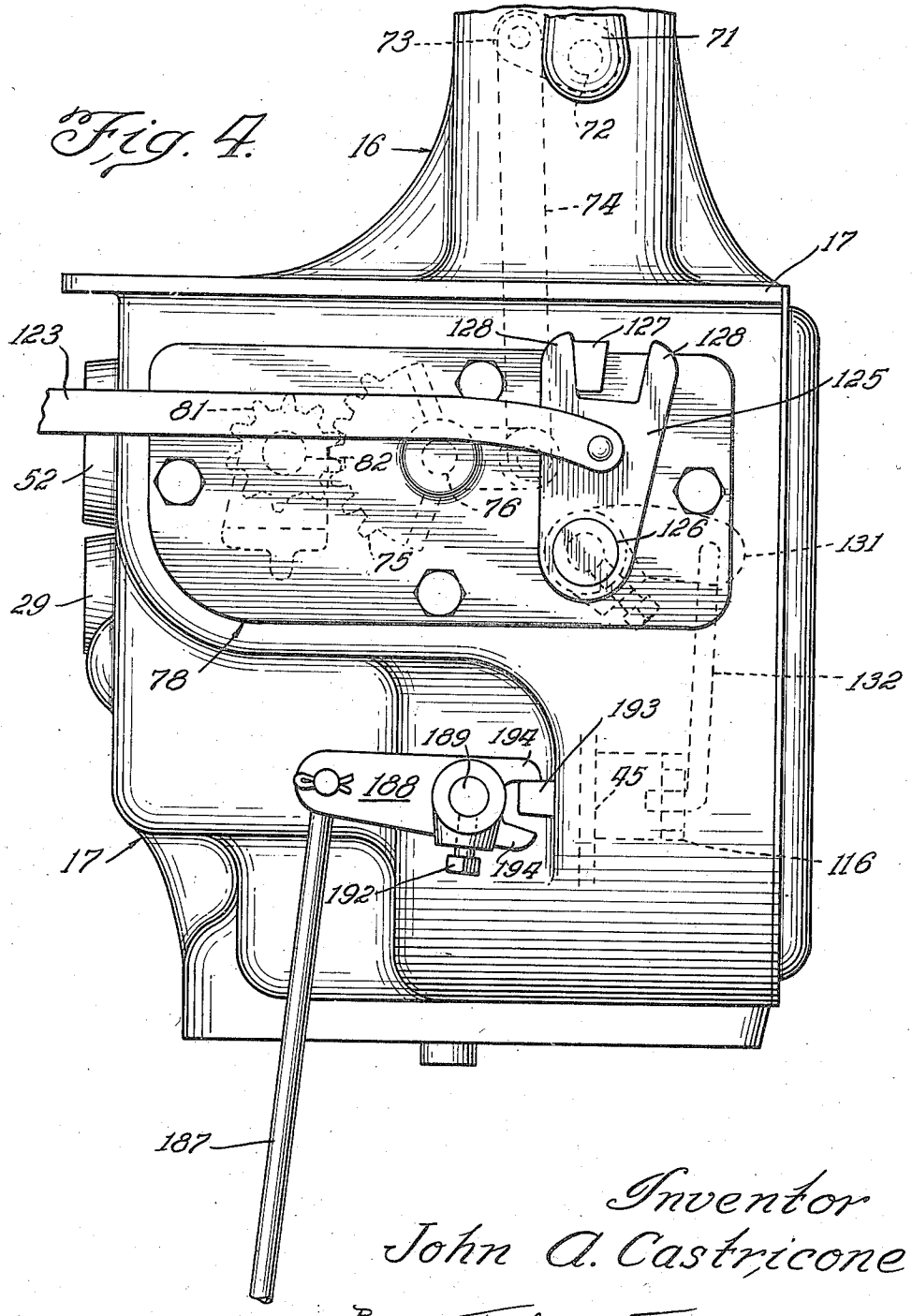
Fig. 4.



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IRONING MACHINE CONTROL

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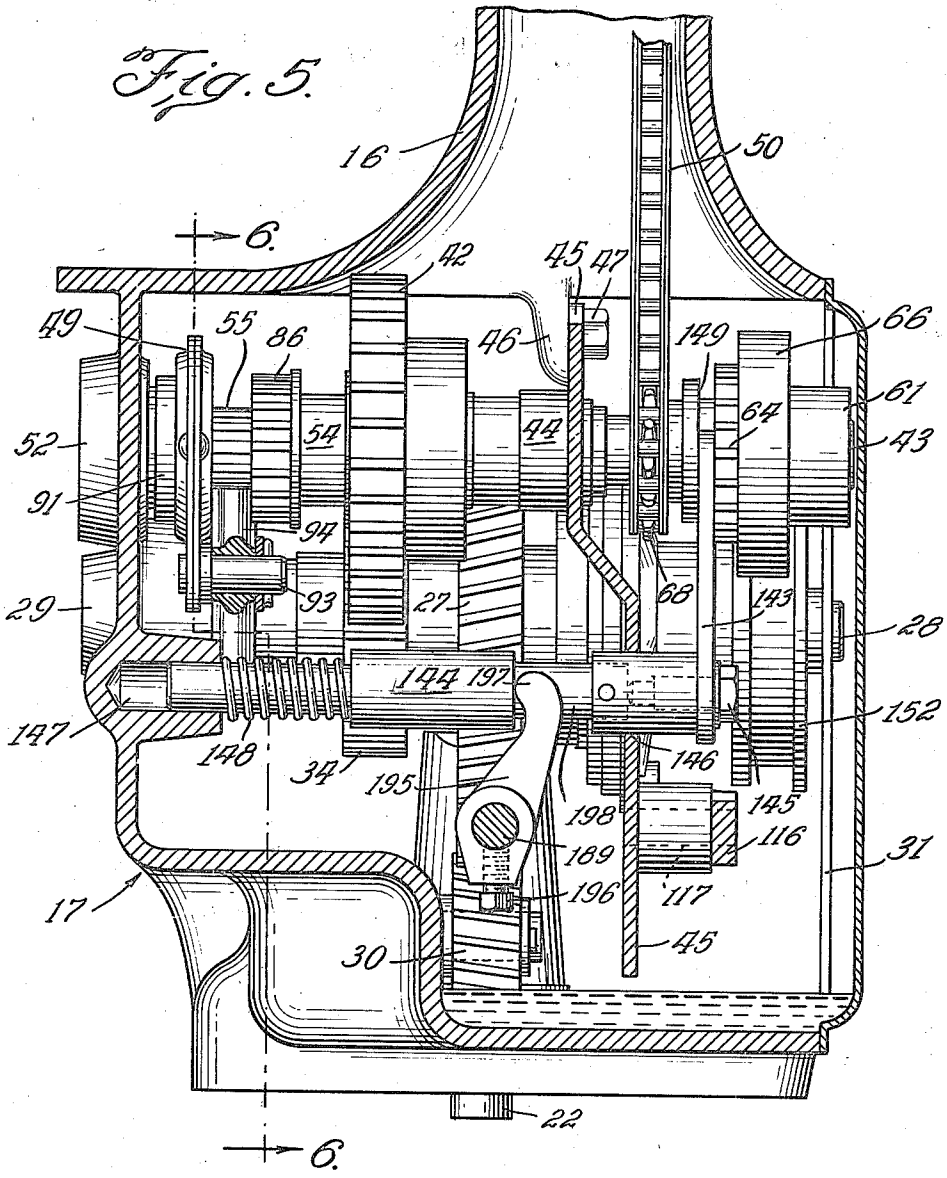
Fig. 5.



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IRONING MACHINE CONTROL

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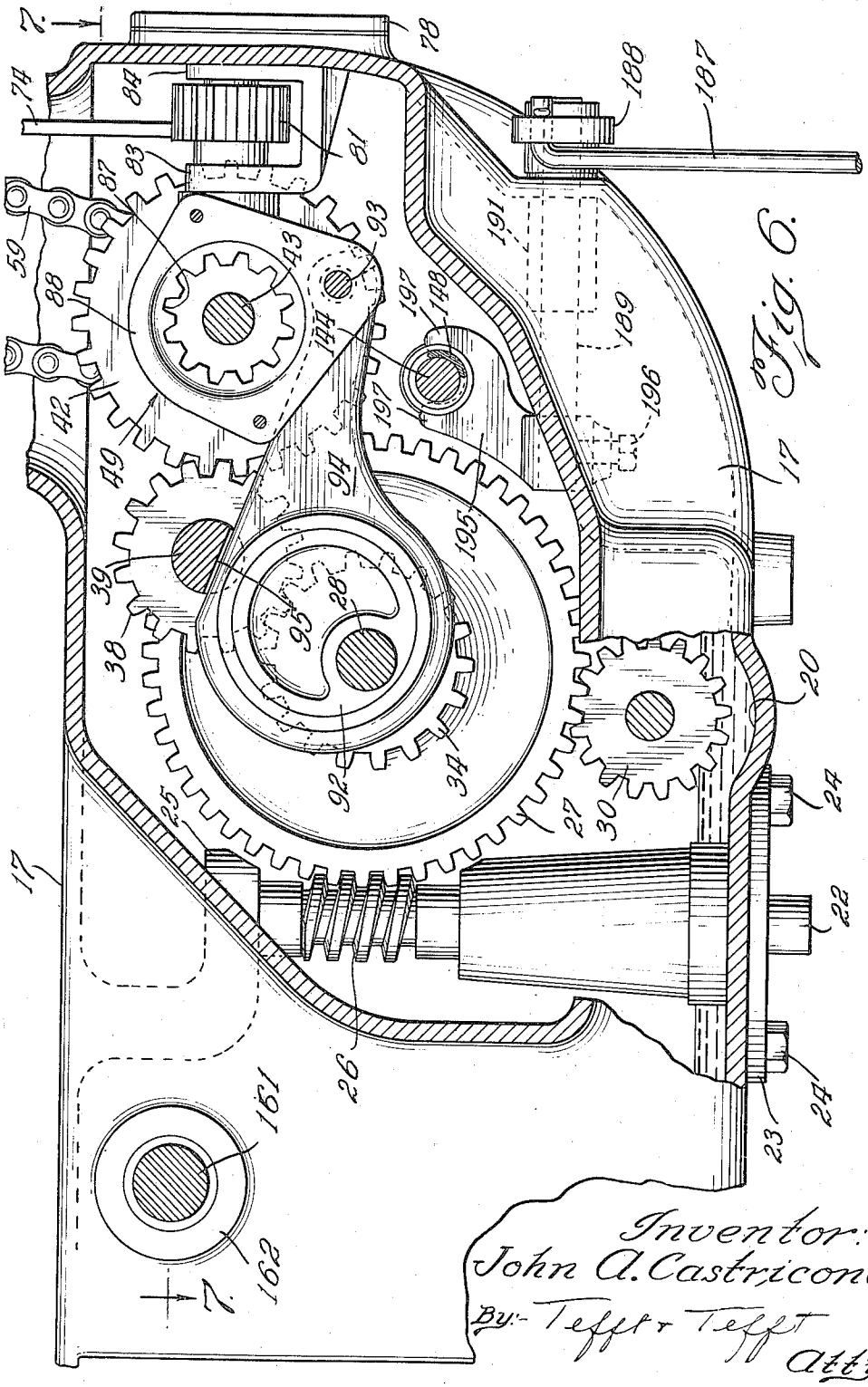

Fig. 6.

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IRONING MACHINE CONTROL

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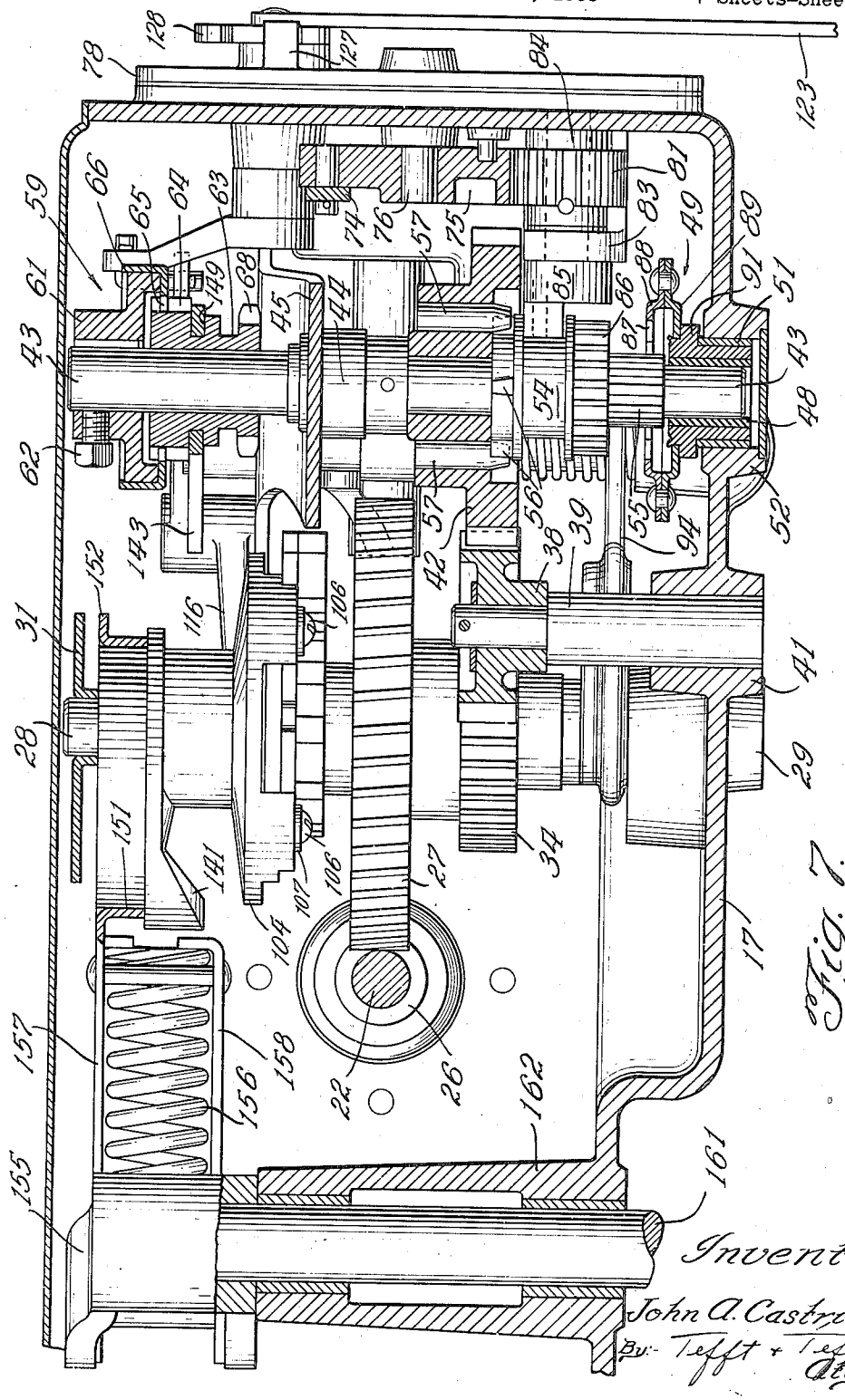

Fig. 7.

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IRONING MACHINE CONTROL

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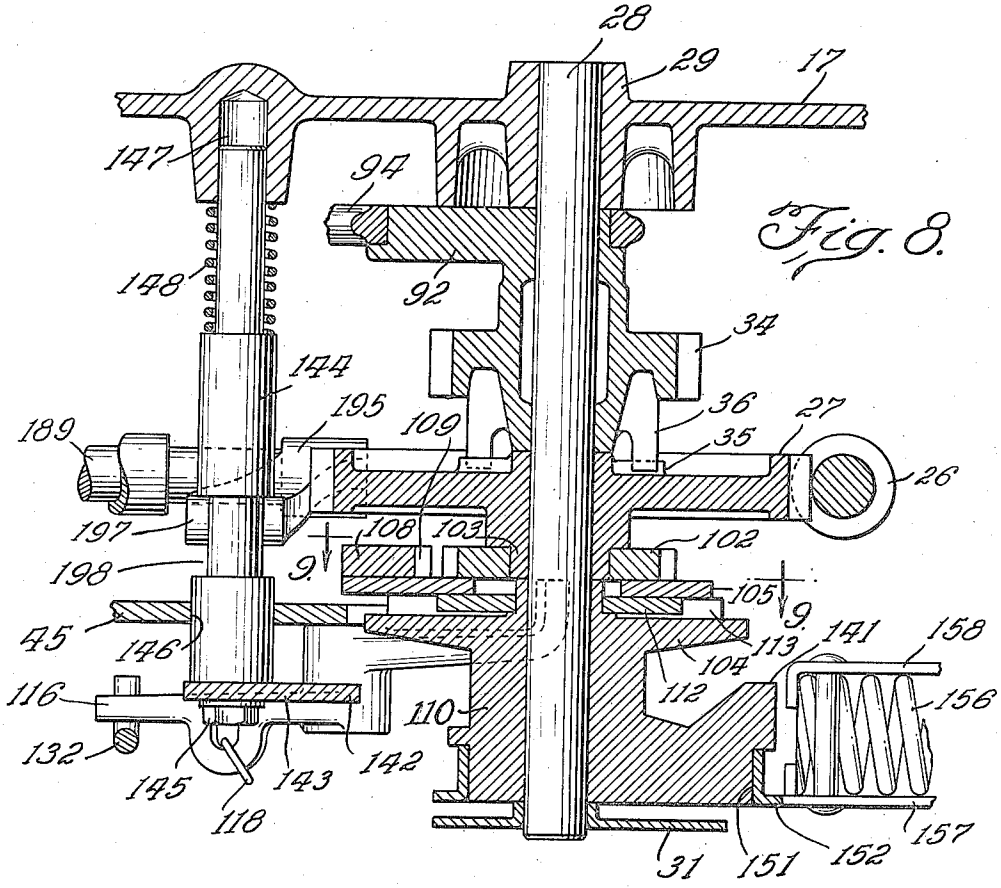

Fig. 8.

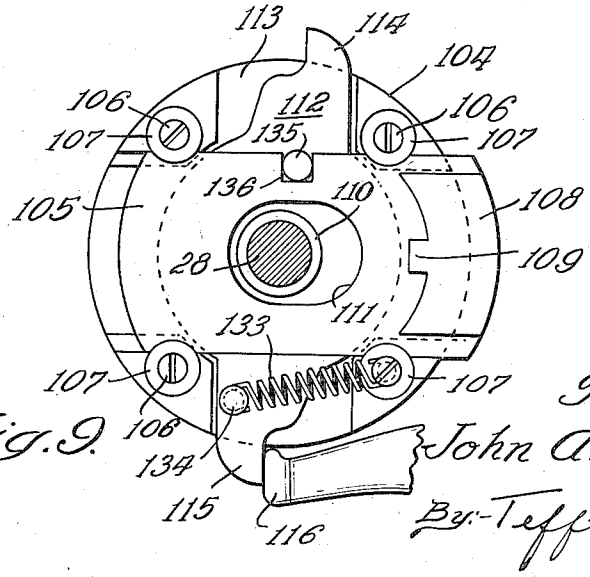

Fig. 9.

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Patented June 24, 1941 2,247,149

UNITED STATES PATENT OFFICE

2,247,149

IRONING MACHINE CONTROL

John A. Castricone, Peoria, Ill., assignor to Altorfer Bros. Company, Peoria, Ill., a corporation of Illinois

Application October 20, 1938, Serial No. 236,064

14 Claims. (Cl. 38—61)

The present invention relates to ironing machines, and more particularly to an improved control mechanism for accomplishing a more flexible control of the ironing elements than heretofore possible.

In the prior art it has been customary to provide ironing machines in which a cylindrical roll or ironing bed was rotatably mounted in cooperative relationship with a heated ironing shoe. In the usual construction power operated facilities have been employed to impart a rotary movement to the roll and to force the roll and shoe into cooperating pressure relationship, and it has become the common practice to provide a common control mechanism whereby the actuation of a single manual control will simultaneously cause the roll to rotate and cause the roll and shoe to move into engagement. Likewise the control means for stopping the rotation of the roll simultaneously causes the roll and shoe to disengage and release the work.

It is admitted in the art that such a control means as outlined above possesses certain very important advantages since it prevents any possibility of the roll and shoe being held in stationary engagement and therefore prevents any possibility of scorching the work or the fabric surface of the roll, but such a simultaneously operating control also possesses distinct disadvantages under certain conditions of operation, and it is these disadvantages that the present invention seeks to overcome.

When clothes have been dampened preparatory to ironing, it will be realized that it is a practical impossibility to accomplish an entirely uniform dampening of all parts of a garment, but at the same time the operation of ironing must complete the drying of all portions of the garment. It is, therefore, highly desirable that the ironer control mechanism be of such design that the rotation of the roll may be momentarily interrupted in order that the application of heat from the ironing shoe may be prolonged while certain unduly dampened or unduly heavy portions of the garment are in engagement between the roll and shoe, in order that the heat of the shoe be utilized to complete the drying of the garment.

It is, therefore, a primary object of this invention to provide an ironing machine with a control mechanism in which the roll and shoe are normally simultaneously operated by means of a single manual control, but in which the movement of the roll may be interrupted while the roll and shoe remain in engagement.

A further object of the invention is to provide an ironer control mechanism as outlined above in which the control mechanisms may be operated by the foot in such a manner as to leave the operators hands free to position and guide the work.

A further object of the invention is to provide an ironer driving means and control therefor of such design that the ironer roll is free for manual rotation to advance the work under the shoe when the roll is not being driven, without impediment due to mechanical or frictional resistance within the power transmission means.

Other objects will appear hereinafter, and will become readily apparent by an examination of the following specification and drawings, in which:

Fig. 1 is a front elevation of an ironing machine cabinet;

Fig. 2 is an end elevation of the ironing machine cabinet illustrated in Fig. 1;

Fig. 3 is an end elevation of the gear housing and ironer elements;

Fig. 4 is a front elevation of the gear housing;

Fig. 5 is a detail sectional view taken substantially on the plane of the line 5—5 of Fig. 3;

Fig. 6 is a detail sectional view taken substantially on the plane of the line 6—6 of Fig. 5;

Fig. 7 is a detail plan sectional view taken substantially on the plane of the line 7—7 of Fig. 6;

Fig. 8 is a detail plan sectional view taken substantially on the plane of the line 8—8 of Fig. 3; and

Fig. 9 is a detail sectional view taken substantially on the plane of the line 9—9 of Fig. 8.

Referring now more particularly to the drawings, the entire ironer mechanism is mounted in a cabinet 10 which preferably comprises legs 11, a work table 12 and a top or cover member 13. The arrangement is such that the top 13 may be removed to provide an unobstructed working surface on the table 12. The ironer mechanism comprises an ironing bed which is preferably in the form of a roll 15 carried by and rotatably mounted on a roll bracket 16 formed integrally with a gear case 17 and secured in any suitable manner to the table portion 12 of the frame 10.

The roll 15 is rotatably driven by means of a motor 18 which operates through certain power transmission mechanisms housed within the gear case 17 and the roll bracket 16. The motor shaft 19 is connected by means of a suitable coupling 21 to the lower end of a worm gear shaft 22 supported between a lower bearing 23 bolted to the gear case 17 by means of cap screws 24, and an upper bearing 25 which in the present preferred

construction is formed integrally with the top wall of the gear case. A worm 26 is formed adjacent the upper end of the worm gear shaft 22 in order to drive a worm gear 27 mounted for free rotating movement on a shaft 28, and adapted to constantly mesh with a lubricating gear 30 which serves to carry lubricant from the sump 20 in the gear case 17 to the gear 27. One end of the shaft 28 is secured in a boss 29 formed in the wall of the gear case 17 and the other end is supported by a plate 31 secured between bosses 32 in the gear case 17 by the cap screws 33. A driving connection between the worm gear 27 and a pinion gear 34 is established by a pair of lugs 35 which are formed on the worm gear 27 and which interlock at all times with complementary lugs 36 formed on the pinion gear 34. The pinion 34 meshes with and drives an idler gear 38 mounted on a stub shaft 39 secured in a boss 41 of the gear case 17 in order to transmit rotary motion from the pinion 34 to a driven gear 42 mounted for free rotation on the ironer roll drive shaft 43. One end of the roll drive shaft 43 is rotatably mounted in a stationary bearing 44 carried by a bearing support plate 45 bolted to suitable bosses 46 on the gear case 17 by means of the cap screws 47. The opposite end of the roll drive shaft 43 is freely rotatable within a bushing 48 carried by an oscillating clutch assembly 49 journaled in the bushing 51 fixed in a boss 52 formed in the wall of the gear case 17. The arrangement is such that the gear 42 may be continuously driven without imparting any motion to the roll drive shaft 43 but a clutch mechanism is provided whereby the motion of the gear 42 may be transmitted to the roll drive shaft 43 and consequently to the roll 15 by means of mechanism to be hereinafter described.

Clutch mechanism operative between the gear 42 and the roll drive shaft 43 comprises a clutch selector element 54 splined to an enlarged portion 55 of the roll drive shaft 43, which selector element carries a plurality of lugs 56 adapted to engage and be driven by the clutch pins 57 mounted in the hub of the gear 42. Thus when the clutch element 54 is in the position illustrated in the drawings the continuous rotary movement of the gear 42 will be transmitted to the roll drive shaft 43 and thence to the roll 15 through the medium of a disengageable clutch 59. The clutch 59 includes a driving element 61 keyed to the roll drive shaft 43 and secured thereon by means of the set screw 62, and a driven element 63 mounted for free rotation and longitudinal sliding movement on the roll drive shaft 43 at a point between the clutch driving member 61 and the stationary bearing 44. The driven clutch element 63 includes a gear portion 64 which is adapted to mesh with corresponding internal gear teeth 65 formed on a cap 66 rigidly secured to the driving clutch member 61. Thus when the gear teeth 64 are in engagement with the internal gear teeth 65, the rotary movement of the roll drive shaft 43 is transmitted through the clutch 59 to the driving sprocket wheel 68 and thence to the ironer roll 15 through the medium of the chain 50, the sprocket 53, sprocket 58, chain 60 and roll shaft sprocket 67.

Disengagement of the clutch 59 may be accomplished by moving the driven clutch element 63 longitudinally along the shaft until the gear teeth 64 disengage the internal gear case 65. This longitudinal movement of the clutch element 63 may be accomplished either automatically or manually at the will of the operator as will be hereinafter described.

At certain times the operator may desire that the ironer roll 15 shall oscillate in to and fro partial rotations rather than to rotate continuously in one direction. When this result is desired, the operator may manually move the selector handle 71 mounted on a stub shaft 72 in the roll support bracket 16 in such a manner that the crank arm 73 will operate through the link 74 to effect a partial rotation of the segmental gear 75 mounted on the stub shaft 76 (see Fig. 4). The stub shaft 76 is rigidly secured in and carried by a removable end plate 78 bolted to and forming one end of the gear housing 17. The segmental gear 75 meshes with a pinion 81 fixed to a rotatable rock shaft 82 journaled in the bearings 83 and 84. This rock shaft 82 includes a crank portion 85 adapted to engage the clutch selector member 54 in such a manner that the rotation of the pinion 81, rock shaft 82, and crank portion 85 will move the clutch element 54 longitudinally along the splined portion 55 of the roll drive shaft 43. It will be apparent that when this motion takes place the lugs 56 will be caused to disengage the clutch pins 57 and the gear teeth 86 formed on the clutch element 54 will be moved into engagement with registering internal gear teeth 87 formed on the cap 88 of the oscillating clutch assembly 49. This oscillating clutch assembly 49 comprises the cap 88 which is riveted to a plate 89 stationarily mounted upon a hub 91 rotatably mounted in the bushing 51.

Oscillating movement is imparted to the oscillating clutch assembly 49 by means of an eccentric 92 which is carried by and formed as an integral part of the pinion gear 34 heretofore described. As will be seen in Fig. 6, the eccentric 92 is operatively connected to the plates 88 and 89 of the assembly 49 by means of an eccentric strap 94 and the pin 93. In the construction illustrated it will be noted that the stationary stub shaft 39 supporting the idler gear 38 has been notched at 95 to provide sufficient clearance for the movement of the eccentric strap 94 and thus prevent any interference between the several parts of the mechanism when constructed according to the design and dimensions here illustrated.

When the selector clutch element 54 has been caused to disengage the continuously rotating gear 42 and to engage the oscillating clutch assembly 49, the power transmitted from the motor 18 through the worm 26 and worm gear 27 will cause the eccentric 92 to be continuously rotated in such a manner that the oscillating clutch element 49 will move in to and fro partial rotations, and when the gear teeth 86 are in engagement with the corresponding internal gear teeth 87, this motion will, of course, be transmitted from the clutch selector element 54 to the roll driving shaft 43; and from this shaft through the disengageable clutch 59 to the sprocket 68, and thence through the chains 59 and 63 to the ironer roll 15.

It will be understood that whenever the ironer roll 15 is being driven, the ironer shoe 101 must be held in firm pressure relationship therewith in order to effect the proper pressing of the work passing between the rolls and the shoe. For this reason it is desirable that a single manual control be provided of such design that the actuation of the control will simultaneously cause the roll 15 to begin its rotary or oscillating move-

ment and bring the shoe 101 into proper pressure relationship. To accomplish this result a notched disk or driving clutch element 102 is rigidly secured to a hub portion 103 of the worm gear 27 in such a manner as to rotate constantly at all times when the motor 18 is in operation. The driven clutch element comprises a casting 104 in which a transverse slide plate 105 is mounted. The slide plate 105 is secured in position by means of the several screws 106 and washers 107 and carries a latch plate 108, including a tooth 109 which is adapted to engage the toothed disk 102. It will be seen from Fig. 9 that the slide plate 105 is capable of sufficient transverse movement and that the tooth 109 may engage or disengage the tooth disk 102 at different periods of operation of the machine. To permit this transverse movement an elongated opening 111 is formed in the slide plate 105 in order to clear the shaft 28 and the hub 103 of the worm gear 27.

To actuate the slide plate 105 a rocker arm 112 is mounted for free rotation upon the hub 110 of the casting 104 and is secured in the recess 113 between the body of the casting 104 and the slide plate 105. During the normal operation of the machine one of the outwardly extending dogs 114 or 115 will be engaged and held in stationary position by the stop arm 116 which is pivotally mounted on the stub shaft 117 and resiliently held in engagement with the rocker arm 112 by means of a tension spring 118 anchored on a bracket 119 of the supporting plate 45. At this time it will be clear that none of the external parts of the machine will be in motion, since the driving force as transmitted from the motor 18 will be effective only to rotate the several gears and eccentrics in the gear case 17, but will not drive the roll 15 due to the fact that the clutch mechanism 59 is in its disengaged position.

When the operator desires to start the machine, she will actuate the knee control 121 which is effective to engage the tooth 109 with the toothed disk 102 in such a manner that the casting 104 will be driven through one-half of a revolution of movement. This movement will result in engaging the clutch 59 to establish the driving connection to the roll 15, and simultaneously will cause the ironer shoe 101 to move into engagement with the roll 15. The knee control 121 is pivotally mounted on the pin 122 and when it is actuated by the operator the motion will be transmitted through the link 123 pivoted on the control lever 121 at 124 to a control arm 125 secured to a stub shaft 126 journaled in the removable end plate 78 of the gear housing 17. If desired, a lug 127 may be formed on the end plate 78 and positioned between the bifurcated end portions 128 of the arm 125 in such a manner as to limit the arcuate movement of the arm 125 and consequently limit the rocking movement of the stub shaft 126.

When the knee control lever 121 is thus actuated, the partial rotation of the stub shaft 126 will cause the crank arm 131 to exert an upward force on the tie-rod 132 in such a manner as to lift the free end of the stop arm 116 upwardly against the tension exerted by the spring 118, and allow the operating end of the arm 116 to release the dog 115. When the dog 115 is released, the tension spring 133, which extends between an anchor pin 134 on the rocker arm 112 and one of the screws 106 on the casting 104 will exert sufficient tension to pivot the rocker arm 112 about the hub 110 of the casting 104 in a counterclockwise direction, as viewed in Fig. 9. At this time a pin 135 which is stationarily secured to the rocker arm 112 and freely movable within a slot 136 in the slide plate 105 will cause the slide plate 105 to move to the left as viewed in Fig. 9, in such a manner that the toothed portion 109 of the block 108 will engage the toothed disk 102. It will be understood that the toothed disk 102 is rotating at all times and that when the tooth 109 engages the disk 102, the entire casting 104, together with all its associated parts is caused to rotate in a counterclockwise direction, as viewed in Fig. 9, until the dog portion 114 of the rocker 112 is engaged by the stop arm 116. In this connection it should be pointed out that in operating the machine the operator will depress the knee control lever only momentarily in such a manner that when the stop arm 116 disengages the dog 115, it will immediately move back to its original position in time to be engaged by the dog 114 when the casting 104 and its associated parts have moved through approximately one-half of a revolution of movement.

As the dog 114 engages the stop arm 116, the casting 104 will momentarily continue its rotary movement with the result that the continued movement of the casting 104 will cause the tension spring 133 to be elongated and the rocker arm 112 will pivot about the hub 110 of the casting 104 in such a manner that the pin 135 will move the slide plate 105, disengage the tooth 109 from the tooth disk 102, and stop the rotation of the casting 104 and its associated mechanism.

From the above it should be clear that each time the knee control lever 101 is actuated the casting 104 and its associated mechanisms will rotate through one-half of a revolution of motion and come to a stop until such time that the control lever 121 is again actuated. This movement of the casting 104 accomplishes two purposes; the first being to engage or disengage the clutch mechanism 59 controlling the rotary movement of the roll 15; and the second being to simultaneously move the heated ironing shoe 101 into or out of engagement with the roll.

In order to actuate the clutch 59, a cam surface 141 (Fig. 7) is formed on the casting 104 and is adapted to engage a cam extension 142 on a shifting yoke 143 secured at the end of a slide shaft 144 by means of a cap screw 145. As will be seen in Fig. 8, the outer end of the slide shaft 144 is supported for longitudinal movement in an orifice 146 in the support plate 45, while the reduced inner end of the shaft 144 is carried in a suitable bearing 147 in the wall of the gear case 17. A spring 148 tends to urge the shaft 144 outwardly in order that the shifting yoke 143 which engages an operating groove 149 in the movable clutch element 63 will normally hold the clutch element 63 in such a position that the gear teeth 64 are in engagement with the internal gear teeth 65 (see Fig. 7). However, when the casting 104 rotates and the cam surface 141 engages the cam extension 142, the slide shaft 144 will be moved inwardly and the shifting yoke 143 will disengage the elements of the clutch 59, which, as hereinafter pointed out, serve to establish the driving connection to the ironing roll 15.

The means for moving the ironing shoe 101 into pressure engagement with the roll 15 comprise an eccentric 151 which is formed as an integral part of the casting 104 and which car-

ries an eccentric strap 152 provided with an elongated slot 153 through which a pin 154 carried to the crank 155 may be positioned in order that the movement of the eccentric may exert pressure upon the pin 154 through the medium of a coil compression spring 156 housed between the walls 157 and 158 of the eccentric strap 152.

The crank 155 is carried by a rock shaft 161 journaled in a suitable bearing 162 in the gear case 17 and extending longitudinally of the machine to a point adjacent a stationary ironer shoe support 163. This ironer shoe support 163 is secured to the frame of the ironing machine in any suitable manner and carries at its upper end an ironer shoe arm 164 which is pivoted on the support 163 by means of the rivet 165 and which is pivotally connected to the ironer shoe 101 by the rivet 166. The rivet 166 also serves as a pivotal mounting for a manual handle 167 movable between the solid and dotted line positions indicated in Fig. 3, but in the normal operation of the machine this handle 167 need not be used since the shoe 101 will be automatically moved into and out of engagement with the ironing roll 15 whenever the roll 15 begins to rotate or ceases its movement.

This automatic movement of the ironer shoe 101 is accomplished by providing the rock shaft 161 with a crank arm 171 having a crank pin 172 upon which the connecting rod or link 173 is mounted. The upper end of the connecting rod 173 is mounted on a cross-pin 174 stationarily carried by the arm 164. The arrangement is such that whenever the eccentric 151 moves to the position shown in the drawings, the spring 156 will exert a resilient pressure against the pin 154 tending to rock the shaft 161. This rocking movement of the shaft 161 will be transmitted through the crank 171, connecting rod 173 and pin 174 in such a manner as to pivot the arm 164 downwardly and cause the ironing shoe 101 to resiliently engage the roll 15. The parts will remain in this position until such time as the knee control lever 121 will again be actuated in order to stop the roll 15 and disengage the ironer shoe 101. When this is done, it will be clear that the casting 104 will again move through one-half revolution of movement which will result in relieving the pressure exerted between the shoe 101 and roll 15 by the eccentric 151. This movement of the eccentric 151 will operate to withdraw the shoe 101 to a predetermined spaced relationship with the roll 15, and will also cause the cam 141 to disengage the clutch 59 and interrupt the rotary drive to the roll 15. A tension spring 175, which extends between the pivot 165 and the pin 176 carried on the connecting rod 173 will assist in moving the connecting rod 173 upwardly in such a manner as to cause the arm 164 to pivot about the point 165 and disengage the ironing shoe 101 from the surface of the roll 15.

With the mechanism, as thus far described, it is possible to operate the machine either by continuous rotation in one direction or by an oscillating movement comprising to-and-fro partial rotations of the roll 15. In either event the arrangement is such that when the operator actuates the knee control 121 the roll 15 and shoe 101 will operate simultaneously, so that the roll 15 will begin to move as the ironing shoe 101 moves into engagement with it, and the shoe 101 will disengage the roll automatically whenever this movement ceases. In ordinary circumstances this type of operation is preferable, since there is no danger that the ironing shoe 101 will bear against a given portion of the fabric surface of the roll 15 for a sufficient length of time to cause scorching, but in the prior art this mode of operation has at times been objectionable in that it did not readily permit the operator to interrupt the rotation of the roll and yet hold the shoe in engagement. It will be appreciated that at certain times it becomes quite important that stationary pressing engagement be possible between the roll 15 and the ironing shoe 101, in order to properly meet certain conditions that arise in practice. Such conditions may arise in a number of situations, as, for example, in the event that the operator encounters an unduly dampened portion of the work and wishes to facilitate drying by means of stationary contact between the work and the heated ironing shoe.

It has, therefore, been found desirable to provide means for interrupting the normal operation of the machine in order that the roll 15 may be momentarily stopped while it is engaged by the heated ironing shoe 101. In the preferred embodiment of the invention illustrated the operator may accomplish this result by depressing the treadle 181 which extends between the two vertical leg members 11 of the machine frame 10. The treadle 181 is secured to a pivoted shaft 182 extending between the legs 11 and one end of this shaft 182 is secured to a crank 193 connected by means of a pull rod 184 to one arm of a bell crank 185 pivoted on the pin 186 within the leg 11. The other arm of the bell crank 185 is connected by means of a pull rod 187 to a crank 188 secured to a rock shaft 189 journaled in a bearing 191 formed integrally with the gear case 17. The crank 188 is preferably secured to the rock shaft 189 by means of a set screw 192 and, if desired, a stop lug 193 may be positioned between two bifurcated end portions 194 of the crank 188 in order to limit the rocking movement of the rock shaft 189. At the inner end of the rock shaft 189 a shifting yoke 195 is secured in any suitable manner, as by means of a set screw 196, and is arranged to have its bifurcated operating portions 197 extend upwardly into an operating groove 198 in the slide shaft 144, which, as hereinbefore described, serves to control the operation of the clutch 59.

When the operator desires to interrupt the rotary movement of the roll 15 without disturbing the pressure relationship between the parts, she will depress the treadle 181 with her foot. The movement of the treadle 181 will be transmitted through the several cranks and links to the slide shaft 144 and will be effective to disengage the clutch 59 through which the roll 15 is driven, and allow the roll 15 to remain stationary until the treadle 181 is released. When the treadle 181 is released, the clutch 59 will reengage to again impart rotary movement to the roll 15 and the treadle 181 and associated linkages will be returned to their original position by the spring 148 carried on the slide shaft 144.

While it is believed that the operation of the machine should be apparent from the foregoing description, it will nevertheless be briefly reviewed.

The operator will first start the motor 18 by closing the electrical switch 200 which will remain closed during the entire period of operation. She will then select either the constantly rotating mode of operation or the oscillating movement of the ironing roll 15 by moving the selector control 71 into either of its two operating positions. The material to be ironed may now

be placed on the roll 15 adjacent the ironing shoe 101 and the knee control 121 actuated. The movement of the knee control lever 121 will be transmitted through the link 123 to the crank 125 and thence from the crank 131 to the stop lever 116 in order that the dog 115 of the rocker arm 112 will be momentarily disengaged by the stop arm 116. When this disengagement takes place, the tension spring 133 will pivot the rocker arm 112 about the hub 103 and cause the slide plate 105 to engage the tooth 109 in the toothed disk 102, which is being driven by the motor 18 operating through the worm and gear 26 and 27. When the tooth 109 engages the disk 102, the entire casting 104 will move through one-half revolution of the movement, at which time the dog 114 will engage the stop arm 116 causing the tooth 109 to disengage the tooth disk 102 and bring the casting 104 and its ascociated mechanisms to a standstill. However, this movement will have caused the cam surface 141 to disengage the cam extension 143 of the shifting yoke 142 and will thus engage the clutch mechanism 59 and complete the driving connection between the motor 18 and the roll 15. This driving connection may be either the continuous drive mechanism comprising the gears 34, 38 and 42, or the oscillating drive mechanism comprising the eccentric 92, spring 94 and oscillating clutch assembly 49, depending upon the positioning of the clutch element 42 as accomplished by the movement of the selector lever 71. This will cause the roll 15 to begin its movement and at the same time the ironing shoe 101 will be moved into resilient engagement by means of the eccentric 151 which operates through the eccentric strap 152 and pressure spring 155 in order to exert a rocking movement upon the shaft 161 which will be transmitted through the crank 171 and link 173 to the ironing shoe arm 164 in such a manner as to move the shoe 101 into resilient engagement with the surface of the ironing roll 15. This relationship of parts will continue until the knee control lever 121 is again actuated to disengage the shoe 101 and stop the roll 15 or until the foot treadle 181 is actuated.

When the foot treadle is operated, motion is transmitted through the several cranks, 183, 185 and 188 to the shifting yoke 195, which will move the slide shaft 144 longitudinally in such a manner as to cause the shifting yoke 143 to move the clutch element 63 longitudinally along the roll driving shaft 43 until the teeth 64 disengage the teeth 65. This movement will be effective to completely disengage the roll driving clutch 59 and bring the roll to a stop while it is still being engaged by the heated ironing shoe 101.

When the operator removes her foot from the pedal 181 the clutch 59 will be reengaged and all of the associated mechanism will be returned to its normal operating position by the force of the compression spring 143 coiled upon the slide shaft 144.

While a preferred form of this invention has been shown and described in compliance with the patent statutes, it is nevertheless subject to numerous alterations and modifications without departing from the spirit of the invention and should not, therefore, be limited except as by the scope of the appended claims.

I claim:

1. In a clothes ironing machine, the combination with a rotatably mounted feeding and pressure roll and a cooperating ironer shoe movable into and out of engagement therewith, of a roll driving shaft operatively connected to said roll, a motor, power transmission means comprising a reduction gear train for continuously rotating said roll driving shaft in one direction, power transmission means comprising an eccentric for imparting successive oscillations between two fixed limits about its axis to said roll driving shaft, control means for selectively effecting either said oscillations or said continuous rotations, a disengageable clutch interposed between said roll driving shaft and said roll whereby said roll may be released from driving connection and from all mechanical or frictional resistance inherent in either of aforementioned power transmission means, means responsive to the disengaging movement of said ironer shoe for automatically disengaging said clutch, and a foot-operated control whereby the operator may manually disengage said clutch.

2. In a clothes ironing machine the combination with a feeding and presser roll and cooperatively mounted ironing shoe, of mechanism including an eccentric and a connecting rod to impart to said roll successive oscillations about its axis, control means to start up said successive oscillations and for stopping the same at will, and foot-operated control means for momentarily interrupting all relative movement between said roll and shoe while maintaining said roll and shoe in engagement to effect stationary pressing of the article to be ironed.

3. In a clothes ironing machine, the combination with a feeding and presser roll of an ironing shoe, means for effecting engagement of the articles to be ironed between the roll and shoe, mechanism including an eccentric and a connecting rod for imparting continuous oscillation of the roll between two fixed limits whereby an area of the garment to be pressed will be subjected to repeated pressing actions, and mechanism for maintaining said roll and shoe in stationary engagement whereby an area of the garment to be pressed will be subjected to one continuous pressing action.

4. In a clothes ironing machine the combination with a feeding and presser roll and cooperatively mounted ironing shoe, of mechanism including an eccentric and a connecting rod to impart to said roll successive oscillations between two fixed limits about its axis while it is maintained in a fixed position, control means to start up said successive oscillations and for stopping the same at will, and control means for momentarily interrupting all relative movement between said roll and shoe while maintaining said roll and shoe in engagement to effect stationary pressing of the article to be ironed.

5. In a clothes ironing machine, the combination with a feeding and presser roll of an ironing shoe, means for effecting engagement of the articles to be ironed between the roll and shoe by power operated pressure mechanism including an eccentric and a connecting rod, mechanism for imparting continuous oscillation of the roll between two fixed limits whereby an area of the garment to be pressed will be subjected to repeated pressing actions, and mechanism for maintaining said roll and shoe in stationary engagement whereby an area of the garment to be pressed will be subjected to one continuous pressing action.

6. In a clothes ironing machine, the combination with cooperative members comprising a feeding and presser roll and ironing shoe mounted for relative movement towards and from each other,

of operating mechanism including means for stationary pressing of the article to be ironed between said presser roll and said ironing shoe, means for imparting to-and-fro movement between the feeding and presser roll and ironing shoe within fixed limits when in ironing engagement, and a control for mechanically effecting the character of operation of the operating mechanism to accomplish spot ironing in to-and-fro directions or stationary pressing.

7. In a clothes ironing machine, the combination with cooperative members comprising a feeding and presser roll and ironing shoe mounted for relative movement towards and from each other, of operating mechanism including means for stationary pressing of the article to be ironed between said presser roll and said ironing shoe, means for continuously rotating the roll in a given direction, means for imparting to-and-fro movement between the feeding and presser roll and ironing shoe within fixed limits when in ironing engagement while maintaining one of said members stationary and the roll in a given position with reference to the shoe, and a control for mechanically effecting the character of operation of the operating mechanism to accomplish ironing in a continuous direction; spot ironing in to-and-fro directions, or stationary pressing.

8. In a clothes ironing machine, the combination with a feeding and presser roll and cooperatively mounted ironing shoe, of mechanism for engaging the article to be ironed between said roll and shoe, mechanism including an eccentric and a connecting rod for rotating the roll in to-and-fro partial rotations, and a manually operable foot pedal control whereby all relative movement between said presser roll and shoe may be momentarily interrupted to effect stationary pressing of the article to be ironed.

9. In a clothes ironing machine, the combination with a feeding and presser roll and cooperatively mounted ironing shoe, of mechanism for engaging the article to be ironed between said roll and shoe, mechanism including an eccentric and a connecting rod for rotating the roll either continuously in one direction or in to-and-fro partial rotations, setting means for said mechanism whereby it will rotate the roll in said continuous direction or automatically repeat to-and-fro partial rotations, and a manually operable foot pedal control whereby all relative movement between said presser roll and shoe may be momentarily interrupted to effect stationary pressing of the article to be ironed.

10. In a clothes ironing machine the combination with a feeding and presser roll and cooperatively mounted ironing shoe, of driving mechanism to impart rotary movement to said roll, pressure mechanism including an eccentric and a connecting rod to move said roll and shoe into cooperating pressing engagement, a single manually operable control whereby said driving mechanism and said pressure mechanism are simultaneously caused to operate, and foot-operated control means for momentarily interrupting all relative movement between said roll and shoe while maintaining said roll and shoe in engagement to effect stationary pressing of the article to be ironed.

11. In a clothes ironing machine including a rotatably mounted feeding and pressure roll, a cooperating ironing shoe including a concave portion adapted to engage the surface of the feeding and pressure roll and to engage the surface of fabrics being passed between said roll and shoe to iron said fabrics, supports for said feeding and pressure roll and for said ironing shoe, a manually controlled power actuated eccentric and a connecting rod whereby said roll and shoe may be relatively moved between an operating position wherein their surfaces may engage each other, and an inoperative position wherein their surfaces are moved into spaced relationship with each other, a motor, power transmission means comprising a reduction gear train whereby said motor may impart rotary movement to said roll, power transmission means whereby said roll may be successively oscillated within predetermined limits, the combination of a disengagable clutch for said roll whereby said roll may be released from driving connection and from all mechanical or frictional resistance inherent in aforementioned power transmission means, means responsive to the disengaging movement of said ironer shoe for automatically disengaging said clutch, and a foot-operated control whereby the operator may manually disengage said clutch.

12. In a clothes ironing machine including a rotatably mounted feeding and pressure roll, a cooperating ironing shoe including a concave portion adapted to engage the surface of the feeding and pressure roll and to engage the surface of fabrics being passed between said roll and shoe to iron said fabrics, supports for said feeding and pressure roll and for said ironing shoe, a manually controlled power actuated eccentric and a connecting rod whereby said roll and shoe may be relatively moved between an operating position wherein their surfaces may engage each other, and an inoperative position wherein their surfaces are moved into spaced relationship with each other, a motor, power transmission means comprising a reduction gear train whereby said motor may impart rotary movement to said roll, power transmission means comprising an eccentric whereby said roll and shoe may be successively engaged and disengaged, the combination of a disengagable clutch for said roll whereby said roll may be released from driving connection and from all mechanical or frictional resistance inherent in aforementioned power transmission means, means responsive to the disengaging movement of said ironer shoe for automatically disengaging said clutch, and a foot operated control whereby the operator may manually disengage said clutch independently of the operation of said eccentric to momentarily interrupt the feeding movement of the feed roll and effect stationary pressing of the fabrics then engaged between the rolls.

13. In a clothes ironing machine including a rotatably mounted feeding and pressure roll, a roll driving shaft operatively connected to said roll, a cooperating ironing shoe including a concave portion adapted to engage the surface of the feeding and pressure roll and to engage the surface of fabrics being passed between said roll and shoe to iron said fabrics, supports for said feeding and pressure roll and for said ironing shoe, a manually controlled power actuated eccentric and a connecting rod whereby said shoe may be relatively moved into and out of engagement with said roll, a motor, power transmission means comprising a reduction gear train whereby said motor may impart continuous rotary movement in one direction to said roll driving shaft, power transmission means driven by said motor whereby said roll and shoe may be successively engaged and disengaged, the

combination of control means for simultaneously operating both of said power transmission means, a disengagable clutch interposed between said roll driving shaft and said roll whereby said roll may be released from driving connection and from all mechanical or frictional resistance inherent in aforementioned power transmission means, and a foot-operated control whereby the operator may manually disengage said clutch independently of the operation of said eccentric to momentarily interrupt the feeding movement of the feed roll and effect stationary pressing of the fabrics then engaged between the rolls.

14. In a clothes ironing machine including a rotatably mounted feeding and pressure roll, a roll driving shaft operatively connected to said roll, a cooperative ironing shoe including a concave portion adapted to engage the surface of the feeding and pressure roll and to engage the surface of fabrics being passed between said roll and shoe to iron said fabrics, supports for said feeding and pressure roll and for said ironing shoe, a manually controlled power actuated eccentric and a connecting rod whereby said roll and shoe may be relatively moved between an operating position wherein their surfaces may engage each other, and an inoperative position wherein their surfaces are moved into spaced relationship with each other, a motor, power transmission means comprising a reduction gear train whereby said motor may impart rotary movement to said roll, power transmission means comprising an eccentric whereby said roll and shoe may be successively engaged and disengaged, the combination of control means for simultaneously operating both of said power transmission means, a knee operated actuating member for said power transmission control, a disengagable clutch for said roll whereby said roll may be released from driving connection with said reduction gear means, means responsive to the disengaging movement of said ironer shoe for automatically disengaging said clutch, and a foot operated control whereby the operator may manually disengage said clutch independently of the operation of said eccentric to momentarily interrupt the feeding movement of the feed roll and effect stationary pressing of the fabrics then engaged between the rolls, said foot-operated control pedal being so positioned as to provide a foot rest adapted to support the foot of the operator and thus position the knee adjacent the aforementioned knee-operated control member.

JOHN A. CASTRICONE.

CERTIFICATE OF CORRECTION.

Patent No. 2,247,149. June 24, 1941.

JOHN A. CASTRICONE.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 7, first column, line 17, claim 14, for "cooperative" read --cooperating--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 26th day of August, A. D. 1941.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.