

C. W. STANCLIFFE.
GEARING FOR IRONING MACHINES.

APPLICATION FILED MAR. 19, 1903.

NO MODEL.

5 SHEETS—SHEET 1.

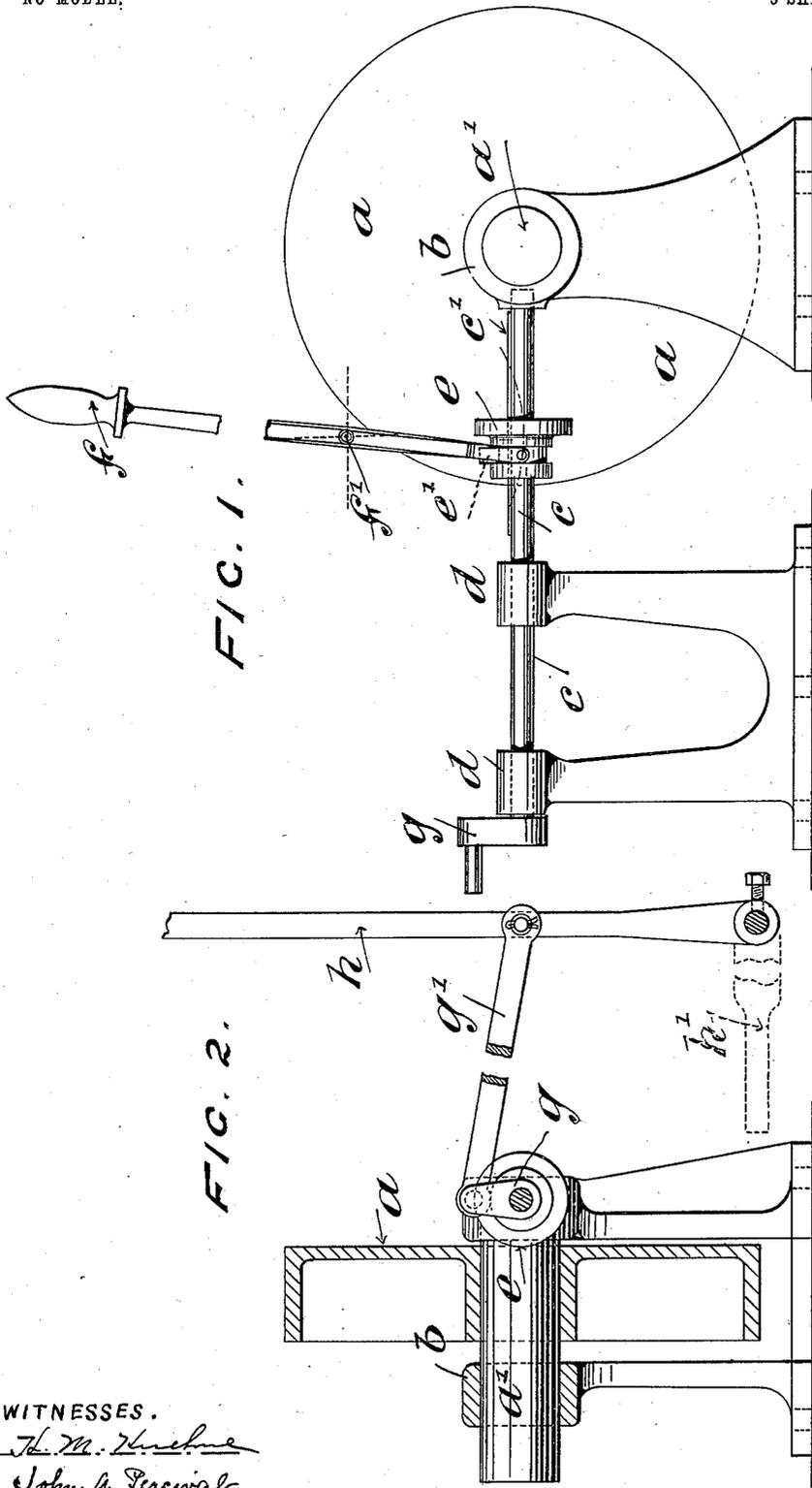


FIG. 1.

FIG. 2.

WITNESSES.

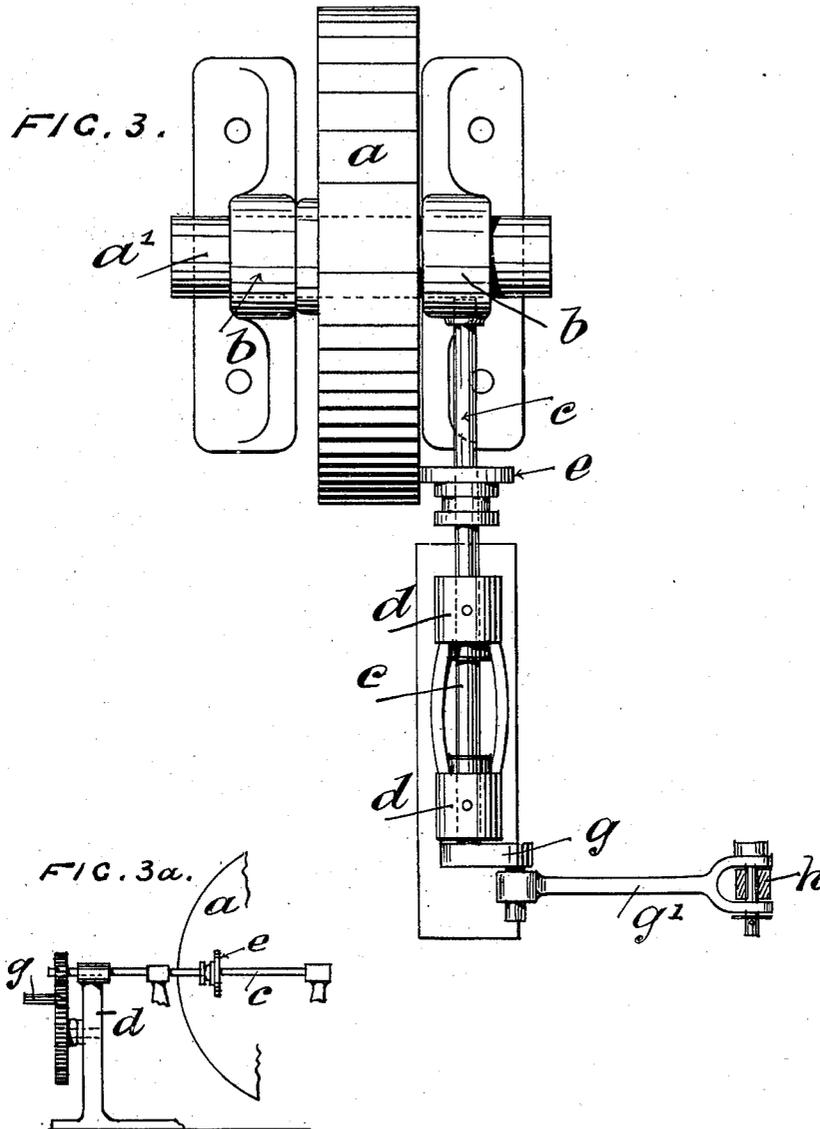
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5 SHEETS—SHEET 2.



WITNESSES.

W. M. Kirsch
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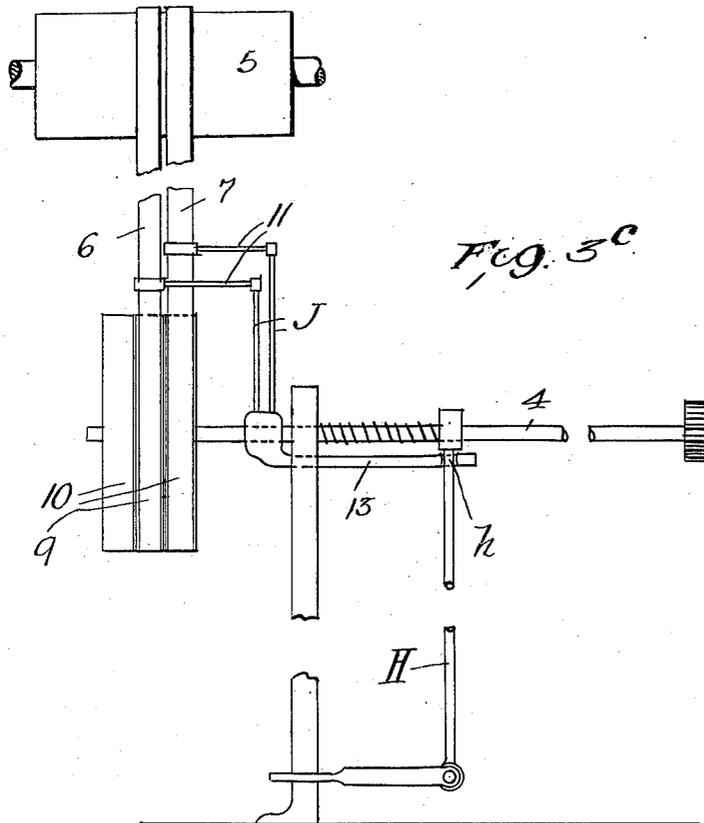
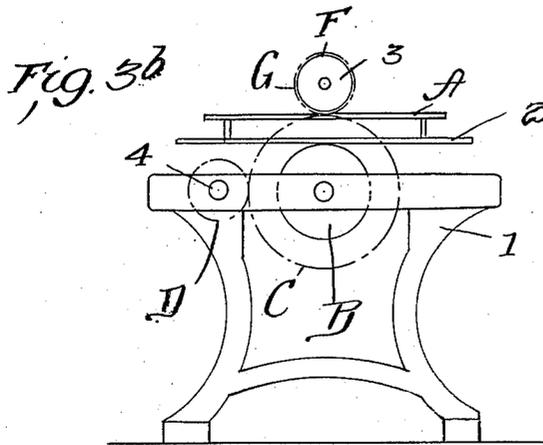
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5 SHEETS—SHEET 3.



WITNESSES.
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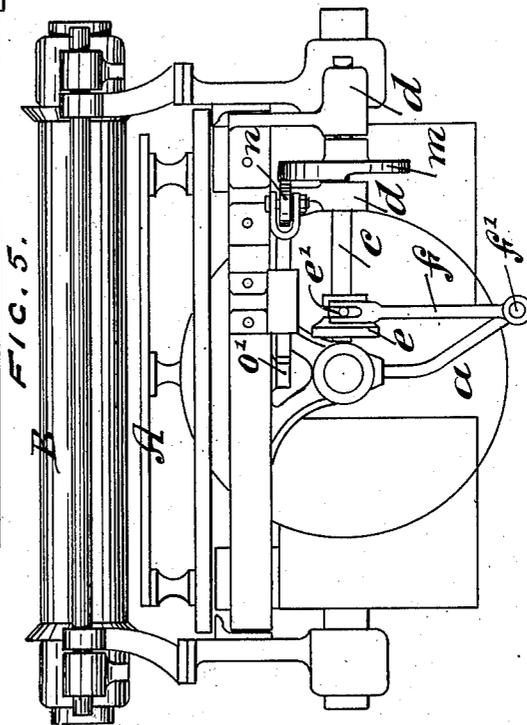
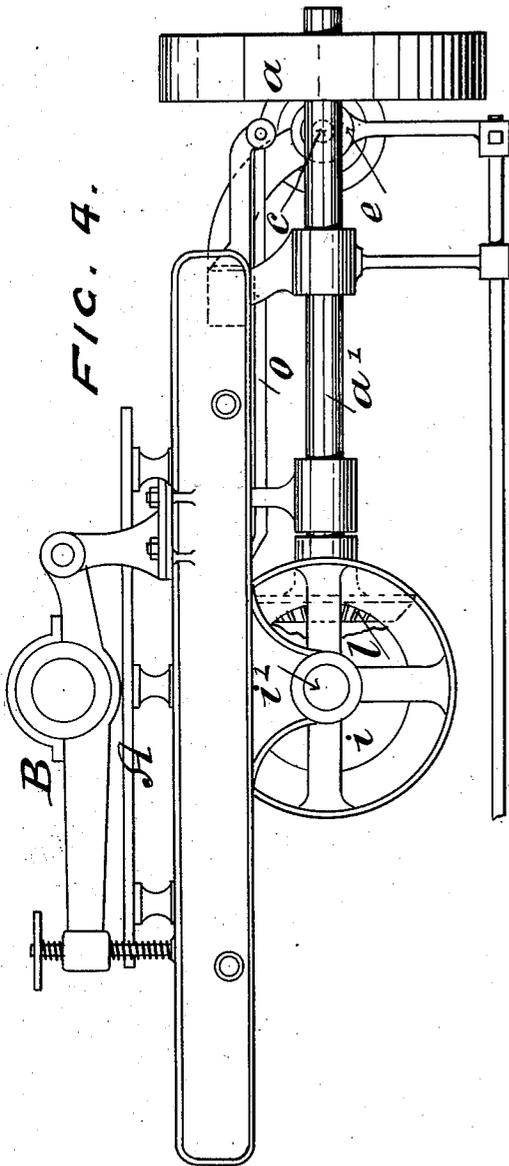
PATENTED DEC. 29, 1903.

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5 SHEETS—SHEET 4.



WITNESSES

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5 SHEETS—SHEET 5.

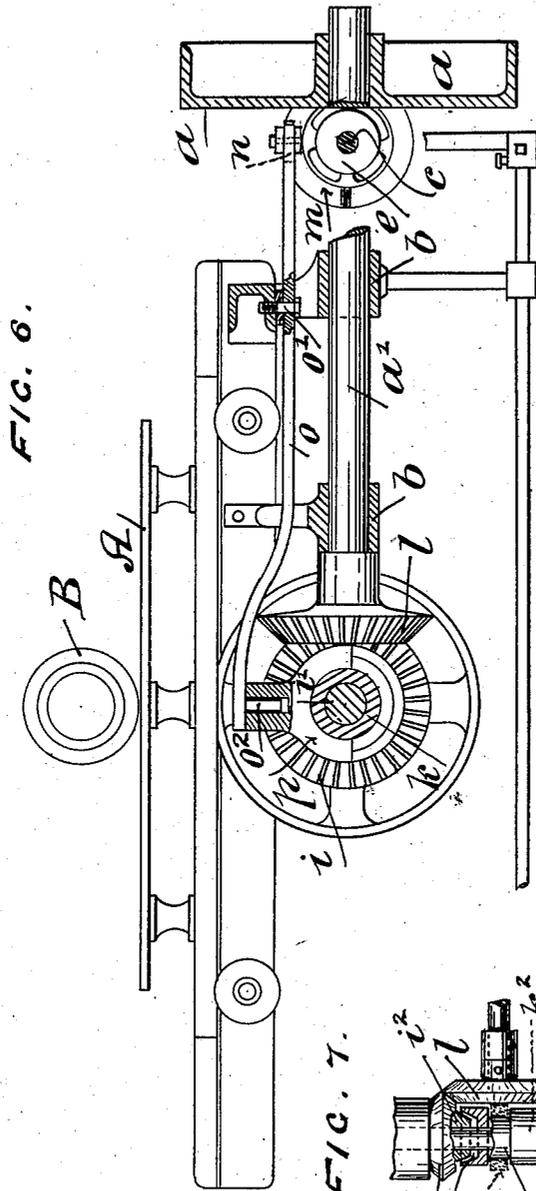


FIG. 6.

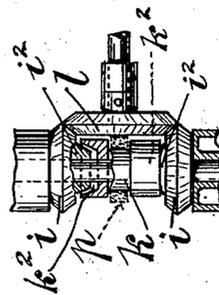


FIG. 7.

WITNESSES.

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UNITED STATES PATENT OFFICE.

CECIL WHEATLEY STANCLIFFE, OF MIRFIELD, ENGLAND.

GEARING FOR IRONING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 748,540, dated December 29, 1903.

Application filed March 19, 1903. Serial No. 148,625. (No model.)

To all whom it may concern:

Be it known that I, CECIL WHEATLEY STANCLIFFE, a subject of the King of Great Britain and Ireland, and a resident of Over Hall, Mirfield, in the county of York, England, have invented certain new and useful Improvements in Gearing for Ironing-Machines, of which the following is a specification.

My said invention has reference to ironing-machines used in steam-laundries and in which a rotary iron or glosser working in conjunction with a reciprocating table or bed is employed. In this class of machine driving-straps operate the mechanism which effects the movement of the table or bed, the said straps being controlled or moved from one pulley to another by a foot-lever or treadle upon which the operator or attendant places her foot. The actuating of this treadle is a severe tax upon the attendant, and I am informed that sooner or later she becomes a victim to cramp, while in many cases lameness has followed as a natural result of the enforced effort in operating the treadle. The less the traverse necessitated by the work in hand the more trying the operating of the treadle becomes.

According to my invention I employ mechanical means to effect transhipment of the belt or belts, (or change the action of the gear,) and so bring about the reversals or the reciprocation of the table or bed, the speed or rapidity of such reversals, and consequently the traverse of the table or bed, being regulated by the simple movement of a pivoted hand or other lever or equivalent device. Briefly, I employ a changeable-speed device to act on the part which controls the driving motion.

My invention will be clearly understood from the following description, throughout which reference is made to the annexed four sheets of drawings.

In the said drawings, Figure 1 in an elevation of a simple form of mechanism designed to carry my invention into practice and with attached parts to effect mechanical transhipment of the belt or belts. Fig. 2 is a partial elevation of Fig. 1, the view being taken at right angles and being partly in section. Fig. 3 is a plan of Fig. 2 and shows the shiftable friction-disk in contact with the driven disk

or pulley, together with crank connection to belt-shifting lever. Fig. 3^a is a view of a modification. Fig. 3^b is a diagrammatic elevation of an ironing-machine, and Fig. 3^c is a detail view showing the manner in which the belt shifting is effected to reverse the ironing-table. Fig. 4 is a side elevation of an ironing-machine with my improved mechanism combined therewith, the reversals being effected in accordance with my invention and in this case through bevel or miter gears actuated by clutches. Fig. 5 is an end elevation of Fig. 4. Fig. 6 is a sectional view of Fig. 4, while Fig. 7 is a detail view of the bevels and clutches on a reduced scale.

On Sheets 3 and 4 only so much of the ironing-machine is indicated as will render the nature of my invention quite clear.

I will now describe in detail a simple changeable-speed device for carrying my invention into effect. In such an arrangement I employ a revolving face-plate, disk, or pulley *a*, which is mounted on a shaft *a'*, supported in bearings *b b*, and is driven by means of a belt from any suitable source or is otherwise rotated, as may be most convenient. In juxtaposition to the rotating plate, disk, or pulley *a* I mount a shaft or spindle *c*, which is supported in bearings *d d*, so as to be free to revolve. The end of this shaft or spindle *e* may rest in one of the bearings *b*, if desired, as shown in Figs. 1 and 3. This shaft or spindle *c* is provided with a feather-key *c'* and has a small leather-covered or other friction-disk or wheel *e* slidably mounted thereon, the friction-disk *e* bearing against the revolving face-plate or pulley. The degree of pressure of the disk may be regulated by means of a suitably-mounted spring or otherwise. The friction-disk *e* is provided with a striking collar *e'*, with which a lever *f*, pivoted at *f'* or otherwise suitably centered or supported, engages, the movements of the lever *f* shifting the friction-disk *e* upon the spindle *c*. As the friction-disk is caused to recede from or approach the center of the rotating face-plate or pulley (which is rotated at a constant speed) so the speed of rotation of such friction-disk, and consequently the spindle or shaft, is increased or decreased, as will be understood.

Upon the spindle or shaft *c* I mount a crank

g, and I connect this crank by means of a connecting rod or link *g'* with the lever or part *h*, which is normally actuated by the treadle. The usual lever or part actuating or in connection with the belt-fork is, as just stated, lettered *h*, and the dotted lines *h'* represent the usual treadle. With the arrangement indicated it will be understood that as the crank rotates the lever *h* is vibrated and the belt is shifted from one pulley to another and the reciprocation of the table or bed controlled. This shifting is effected more or less rapidly, according to the position of the small disk *e* upon the pulley *a*, as will be quite clear.

In Figs. 3^b and 3^c I have shown the ironing-table and the driving connections for the purpose of illustrating my invention, though it will be understood that the ironing-table forms no part of the present invention. Referring to Fig. 3^b, numeral 1 indicates the frame of the ironing-table, and 2 the table proper or ironing surface, and 3 the glossing iron or cylinder. The table is suitably guided, and it is driven by gearing indicated by dotted lines on the shaft 4. On this shaft are mounted three pulleys 10, 9, and 10, the central one, 9, being a fast pulley and the other two loose pulleys. A pair of belts 6 and 7 pass over a broad driving-pulley 5 and around two of the pulleys 9 and 10, the belt 6 being an open belt and the belt 7 a crossed belt. It will thus be seen that if the open belt is on the fast pulley and the crossed belt on one of the loose pulleys the ironing-table will be moved in one direction, while if the open belt is shifted to the loose pulley and the crossed belt to the fast pulley the motion of the table will be reversed. The shifting of the belts is effected by ordinary forks 11, which are connected to a shifter 13, which is operated by the rod *h* in the manner hereinbefore described.

The form of connection between crank and belt shifting mechanism is not material and would vary with different classes of machine, and it will be obvious that an eccentric or cam or equivalent mechanical part may take the place of the crank, and the speed of the disk *e* may be further regulated by a reducing-gear, should the speed be too fast, simply by fixing a toothed wheel on shaft *c*, gearing into a larger pinion on which the cam or eccentric is mounted. (See Fig. 3^a.)

By such means as are above outlined I obviate the necessity for using a treadle at all, and I am enabled to reverse the table rapidly or slowly by simply operating the hand or other lever *f* so as to set the friction-disk *e* toward or from the center of the face-plate or pulley *a*. Once adjusted the ironing of the required portion proceeds without any need for effort on the part of the attendant.

A motion such as is hereinbefore outlined may be readily applied to existing ironing-machines.

Under my invention I am enabled to cause the table A to be reciprocated beneath the

ironing-roller B at any desired part of the said table and to get a long or short reciprocating motion over the desired part at the will of the attendant by means of a changeable-speed arrangement acting on the driving motion.

It will be obvious that the form of mechanism for giving the changeable or variable speed may be departed from without affecting the spirit of my invention and that although I have outlined a particular arrangement for giving this variable speed it is rather the employment of changeable-speed mechanism for the indicated purpose than a particular changeable-speed arrangement that I wish to protect.

Instead of using the shifting belts to secure the reversing of the ironing-table I may use miter or bevel friction gearing and clutches to drive the rolls which reciprocate the ironing table or bed, the action of the clutches being controlled by automatic mechanism substantially similar to that hereinbefore described. In this case I mount loose friction bevel-wheels *i i* upon the roll-shaft *i'*, the said bevel-gears being compounded with or connected to friction halves *i² i²*. Intermediate of said bevel-gears *i i* and friction-halves *i² i²* I arrange a clutch *k*, having conical or other friction-faces *k² k²*, said clutch engaging the bevel-gears alternately. The bevel-gears *i i* gear with or are in frictional contact with a bevel *l*, keyed or secured upon the shaft *a'*, said shaft being driven by the pulley *a*, as will be understood. By these means on the engagement of the clutch *k* one or other of the bevel-gears becomes fixed on the roll-shaft, which is thus driven by the bevel *l*, and the roll-shaft is rotated, so that it actuates or moves the table in one direction by reason of the frictional contact of the rolls A', as is usual. Immediately the clutch is withdrawn from gear with the bevel on one side the bevel on the other side is thrown into gear and the direction of rotation of the roll-shaft is reversed, so that the rolls A' now move the table A in the reverse direction, as will be understood. The clutch and bevel gears are clearly shown in the detail view Fig. 7. To operate the clutch *k*, the spindle *c*, carrying the friction-disk *e*, is provided with a cam or plate *m*, having two faces *m¹ m²* in different planes, as clearly shown in Figs. 5 and 6. Against this cam *m* a bowl or the like *n*, carried by a lever *o*, pivoted at *o'*, bears. This lever *o* is formed with a suitable head *o²*, engaging and operating a fork *p*, which in turn moves the clutch in and out of gear on either hand. The form of lever is of no consequence provided the automatic movement of the clutch is obtained. From this it will be seen that as the cam *m* revolves the pivoted lever *o* is operated to engage and disengage the clutch on either hand, and so reverse the direction of the friction-rolls which operate the ironing table or bed. The fork or striking lever *f* (clearly shown in Fig. 5) is cen-

tered at f' and is worked by any suitable form of handle or hand-lever or foot-lever so as to shift the disk e across the diameter of the disk or pulley a , and thereby vary the speed of revolution of the spindle c , and consequently the cam m .

I declare that what I claim is—

1. In an ironing-machine a reciprocating table, driving connections thereto, automatic means for reversing said driving connections, and devices for controlling the speed of said automatic means, substantially as described.

2. In an ironing-machine a reciprocating table, driving connections thereto, a rotary shaft, means whereby the rotation of said

shaft effects the reversal of the driving connections, a rotary friction-disk journaled with its face parallel to said shaft, a friction ring or wheel splined on said shaft and having its periphery in engagement with the face of the disk and means for shifting said friction-ring longitudinally on the shaft, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CECIL WHEATLEY STANCLIFFE.

Witnesses:

HERBERT HILL,
A. C. POPPLETON.