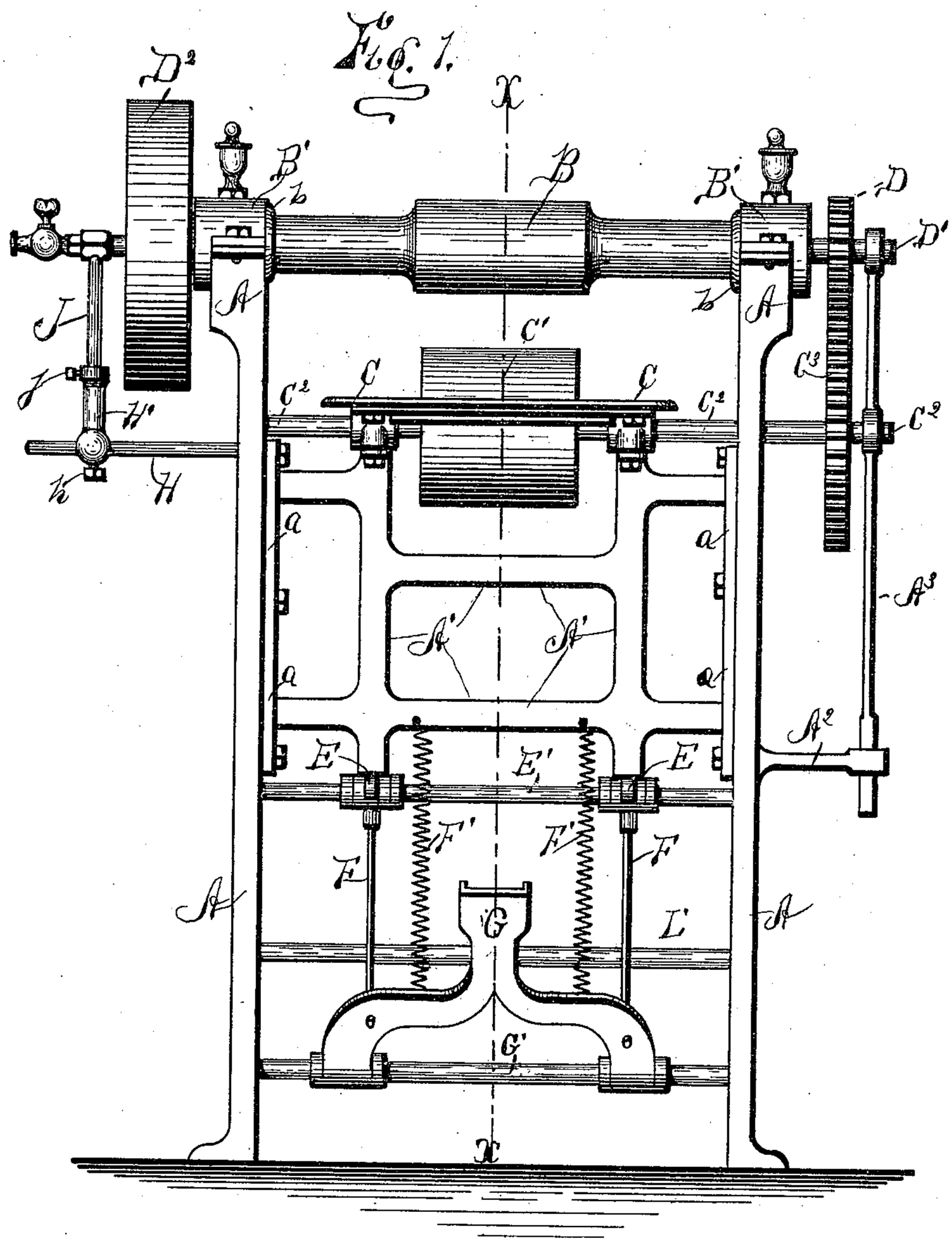
(No Model.) 3 Sheets—Sheet 1.

W. A. E. HENRICI.

IRONING MACHINE.

No. 436,016. Patented Sept. 9, 1890.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

W. A. E. HENRICI.

IRONING MACHINE.

No. 436,016. Patented Sept. 9, 1890.

Fig. 2

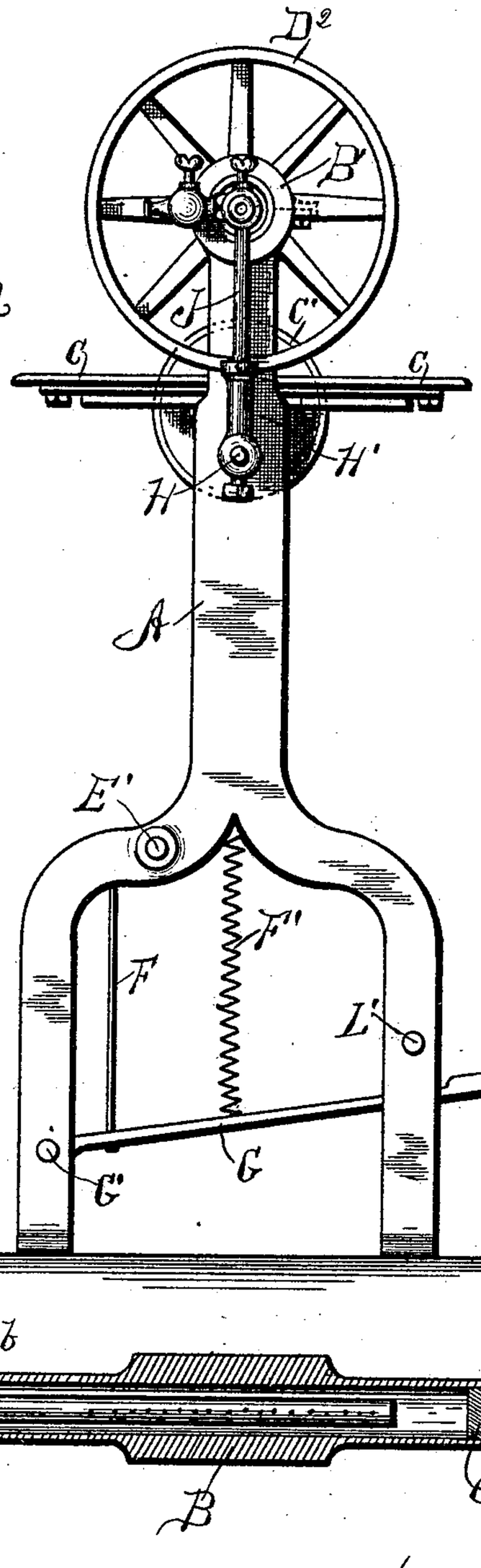
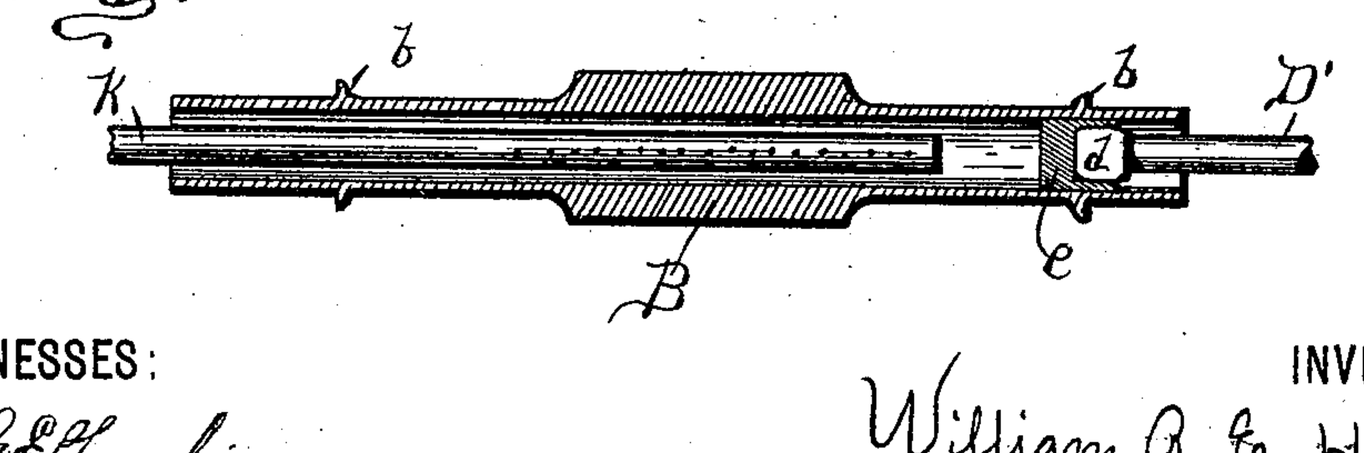


Fig. 4.



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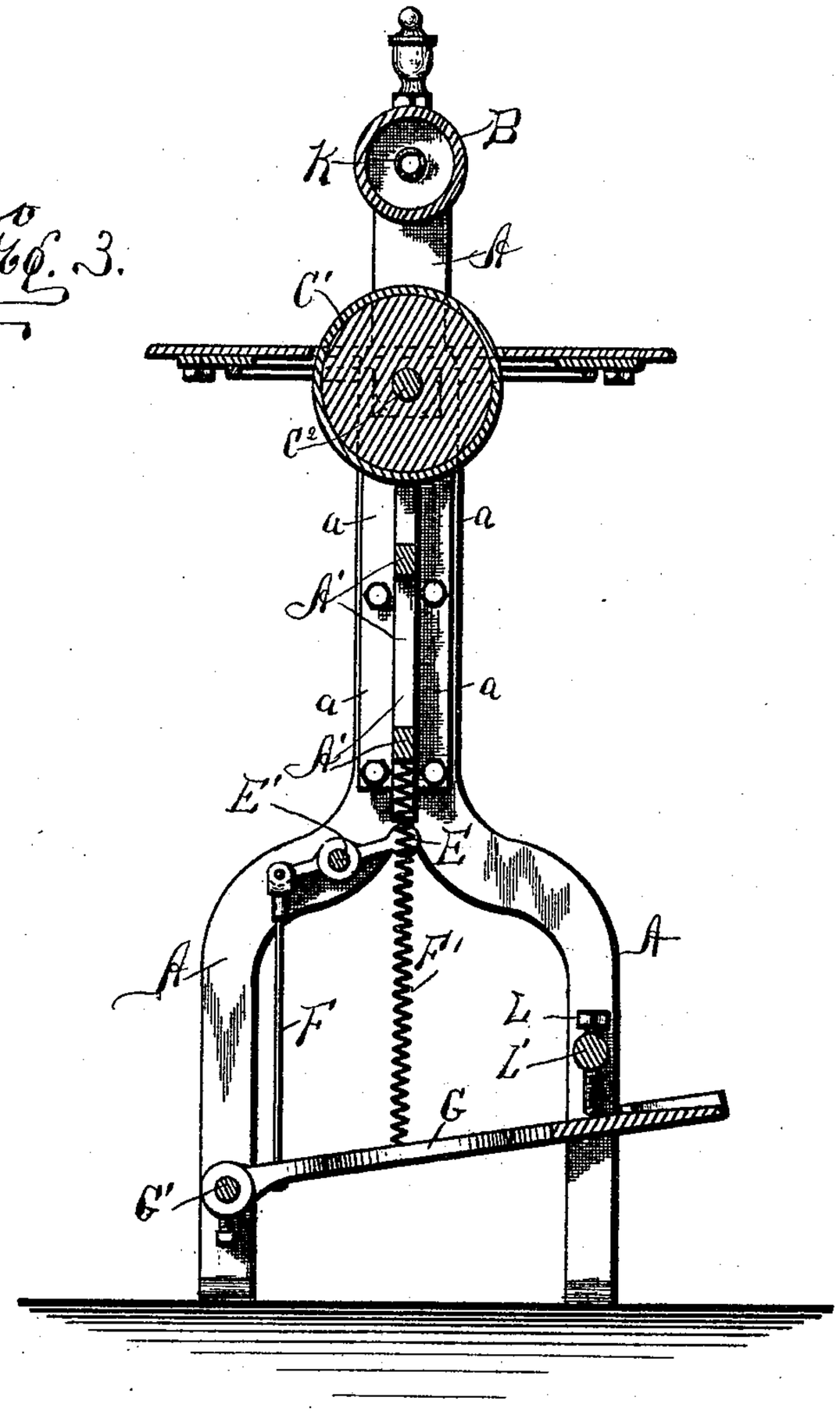
(No Model.) 3 Sheets—Sheet 3.

W. A. E. HENRICI.

IRONING MACHINE.

No. 436,016. Patented Sept. 9, 1890.

Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM A. E. HENRICI, OF SYRACUSE, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, OF ONE-HALF TO EDWIN E. SIBLEY, OF CHELSEA, MASSACHUSETTS.

IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 436,016, dated September 9, 1890.

Application filed January 26, 1889. Serial No. 297,724. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. E. HENRICI, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Ironing-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to machines used in laundries for ironing starched goods, particularly shirts; and it consists in certain peculiarities of detail, construction, and arrangement, all as hereinafter specified, and particularly pointed out in the claims.

In the annexed drawings similar letters of reference indicate corresponding parts in all the views, in which—

Figure 1 is an elevation of my improved machine, looking at it from the position occupied by the operator. Fig. 2 is a side view of the same. Fig. 3 is a sectional view of Fig. 1, taken on line *x x* from the left. Fig. 4 is a longitudinal section of the heated ironing-roll, showing the pipe for heating the same, together with the universal-joint coupling between said roller and the shaft D′ therein.

Heretofore ironing-boards have been secured to the bed of this class of machines and a reciprocating movement projected them under the ironing-rolls and returned them to their normal positions at which the shirt was secured thereon and removed after finishing.

To overcome difficulties heretofore met with, I have devised the accompanying machine and use therewith an ironing-board of any desirable pattern, which board is independent of my present invention. By using such boards it is possible to finish a great number of shirts, as the shirts may be secured on the boards by one or more hands while the operator is passing others through under the ironing-rolls.

In my improved machines, A is the main frame supporting the working parts, and at the upper portion of said frame the ironing-roll B is held by boxes B′, secured to the frame A.

A′ A′ is a supplemental frame sliding vertically in ways or guide-grooves formed, preferably, by bolting to the frame A a series of strips *a a*, between which the laterally-projecting arms of said frame A′ are held.

Carried by the frame A′ are the table C, roller C′, shaft C^2, and gear C^3. Meshing with the gear C^3 is a pinion D, carried on a shaft D′, which latter is provided on its inner end with an enlargment *d*, fitted into a block *e*, secured in the end of the roll B, and provided with a seat or bearing corresponding, substantially, to the contour of said enlargement *d*, thus forming a flexible or universal coupling, whereby the pinion D, gear C^3, and its connections are actuated as power is applied to the driving-pulley D^2, secured on the opposite end of the ironing-roll B. It will be observed that the frame A′ rests by gravity upon one end of the rocker-arms E, supported by the shaft E′, and said rockers E are connected at their opposite ends by means of rods F F to the treadle-frame G, hung on the shaft G′ at the lower end of the frame A.

Secured to the frame A is an arm A^2, provided at its outer end with an opening through which passes the lower end of a rod A^3, the purpose of which will be presently explained.

At the opposite side of the frame A is a rod H, upon which slides a block H′, provided with a set-screw *h* to secure it in the desired position on said rod H. The block H′ is provided at its upper end with an opening into which passes the rod J, which carries the pipes through which gas and air under pressure are conducted to the interior of the ironing-roll B, while the set-screw *j* secures the rod J and its connections at the desired elevation.

The roller C′ may be of wood or metal, and is usually covered with some softer facing material—such as rubber or cloth—wound thereon, while the table C is preferably a slab of marble cut out to allow the roller C′ to pass through the same.

The springs F′ F′ are secured at their ends, respectively, to the frame A′ and treadle G, and are designed to assist in raising the treadle and at the same time depress the frame A′ and roller C′ when pressure is removed from the treadle.

The roll B is heated by gas drawn from

pipes usually used to supply illuminating-gas to the building where used, and as the pressure is usually less after a considerable number of jets are burning than during the lighter portions of the day, it is desirable that the pipe K, through which gas passes into the roll B, may be shifted eccentrically in its relation to the axis of said roll B, so that the flame issuing therefrom may at all times impinge against the inner surface of said roll to maintain the requisite temperature thereof.

Owing to the vertical play of the roller C′ and gear C^3 with the pinion D meshing therein, I provide the guide-rod A^3, which has openings formed therein constituting boxes or bearings, in which rest the ends of the shafts C^2 and D′, and as the treadle G is actuated the guide-rod A^3 rises and lowers with said shafts and gearings, and to permit said elevation and depression I provide the box *e* with an enlarged seat for the knuckle *d* on the inner end of the shaft D′, the said guide-rod A^3 maintaining the gear C^3 and pinion D in proper operative position during said movement.

To secure the heated ironing-roll B against longitudinal movement, I provide thereon the raised collars *b b* at points near each end thereof, so as to abut against the boxes B′ B′, in which said roll B is journaled.

To prevent undue vertical movement of the treadle G and its dependencies, I provide the set-screw L, carried by the cross-bar L′, and as the treadle G rises it strikes against the lower end of said set-screw L, thus stopping it at the desired elevation, which may be varied by raising or lowering said set-screw, as desired.

In practice my invention works as follows: The operator takes his position at the front side of the machine with one foot on the treadle G, and a bosom-board with a shirt secured thereon is rested on the table C. The treadle G is then depressed, thus raising the table C and roller C′ nearly into contact with the ironing-roll B, after which the bosom-board is inserted between said rollers, and is carried by the roller C′ very quickly under the ironing-roll B, previously heated, and the pressure and rotation of the roll B upon the surface of the shirt-bosom smoothes and polishes the same to a high degree of perfection, this being assisted to a greater or less degree by the difference in speed at which the two rollers travel, which may be changed at will by increasing or diminishing the size of the rollers and their gearing, the relative speed depending upon the style of finish desired on the bosom, and the change of speed being facilitated by the ready removal of the pinion D and shaft D′ from their connections. After allowing the bosom-board to pass far enough to allow the entire bosom to be ironed, the operator releases the pressure from the treadle G and allows the roller C′, table C, and frame A′ to drop by gravity away from the ironing-roll B into their normal positions, this being greatly facilitated by the spring F′, after which the bosom-board may be withdrawn and another inserted and the operation repeated.

Having described my invention, what I claim is—

1. In an ironing-machine, a pair of continuously-rotating rolls, one of which is in fixed bearings and heated from within, in combination with a frame bearing the other roll and sliding in vertical ways on the main frame, substantially as described.

2. In an ironing-machine, a pair of continuously-rotating rolls, one of which is in fixed bearings and heated from within, in combination with a vertically-sliding frame carrying the other roll and the gears connecting the rolls, substantially as described.

3. In an ironing-machine, the combination, with the ironing-roll in fixed bearings, the carrying-roller and its sliding frame mounted in vertical ways, the rocking arms supporting said frame, and the treadle actuating said arms to raise and lower the frame and roller, substantially as described.

4. In an ironing-machine, two continuously-rotating rolls, one of which is fixed and heated from within, the sliding frame carrying the other roll, and the gears connecting the rolls, the guide-rod having bearings for the shafts of said gears, and the arm on the main frame through which passes said rod, all combined substantially as described.

5. In an ironing-machine, the combination, with the hollow ironing-roll, of a heating apparatus projecting into said roll and radially adjustable with relation thereto, substantially as described.

6. In an ironing-machine, the combination, with the hollow ironing-roll, of a heating-pipe extending therein, the rod projecting from the main frame, and the supports for the heating-pipe adjustable thereon, substantially as described.

7. In an ironing-machine, the combination, with the hollow ironing-roll and a heating-pipe extending therein, of the socketed block supported from the main frame, and the rod supporting said pipe and adjustable in the block by a set-screw, substantially as described.

8. In an ironing-machine, the combination, with the hollow ironing-roll and a heating-pipe extending therein, of the rod projecting from the main frame, the block adjustable thereon, and the rod supporting the pipe and adjustable in the block, whereby the pipe is made adjustable axially and radially with relation to the roll, substantially as described.

9. An ironing-roll heated from within, a driving-pulley on one end of said roll, a box *e*, secured in the other end of the roll and having an enlarged seat, a shaft connected therewith by means of a knuckle *d* on said shaft, pinion D thereon, and gear C^3, meshing with the pinion D for driving a carrying-roll C′, in combination with means for raising the roll C′, for the purpose specified, all constructed

and arranged substantially as described and shown.

10. A supporting-frame A, fixed ironing-roll B, carrying-roll C′, held in a sliding frame A′, rocker-arms E, treadle G, connecting-rods F, heating devices in the roll B, and gears continuously rotating said rolls B C′, as and for the purpose set forth.

11. In an ironing-machine, a main frame, a heating-roll journaled therein, a supplemental frame A′, sliding vertically in ways on said main frame, a roller C′, and shaft C^2, carried by the frame A′, gear C^3, and pinion D for transmitting motion to said roller C′, in combination with means, substantially as described, for controlling the vertical movement of said roller C′, as and for the purpose specified.

12. In an ironing-machine, the combination, with the ironing-roll in fixed bearings, the carrying-roller and its sliding frame mounted in vertical ways, the rocking arms continuously supporting said frame, and the adjustable treadle connected to said arms to raise and lower the frame and roller and govern their position, substantially as described.

13. In an ironing-machine, a pair of continuously-rotating rolls, one of which is in fixed bearings and heated from within, in combination with a vertically-sliding frame carrying the other roll, a table above which said roll projects, and the gears connecting said rolls, substantially as described.

14. In an ironing-machine, the combination of the ironing-roll in fixed bearings, the sliding frame mounted in vertical ways, the carrier-roll journaled in said frame and geared to move with the ironing-roll, the rocking arms continuously supporting the sliding frame, the treadle linked to said arms, and the springs connecting said frame and treadle, whereby the desired position of the parts is maintained, substantially as described.

In testimony whereof I have hereunto signed my name in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 11th day of January, 1890.

WILLIAM A. E. HENRICI.

Witnesses:

FREDERICK H. GIBBS,

A. D. ALLEN.