(No Model.)

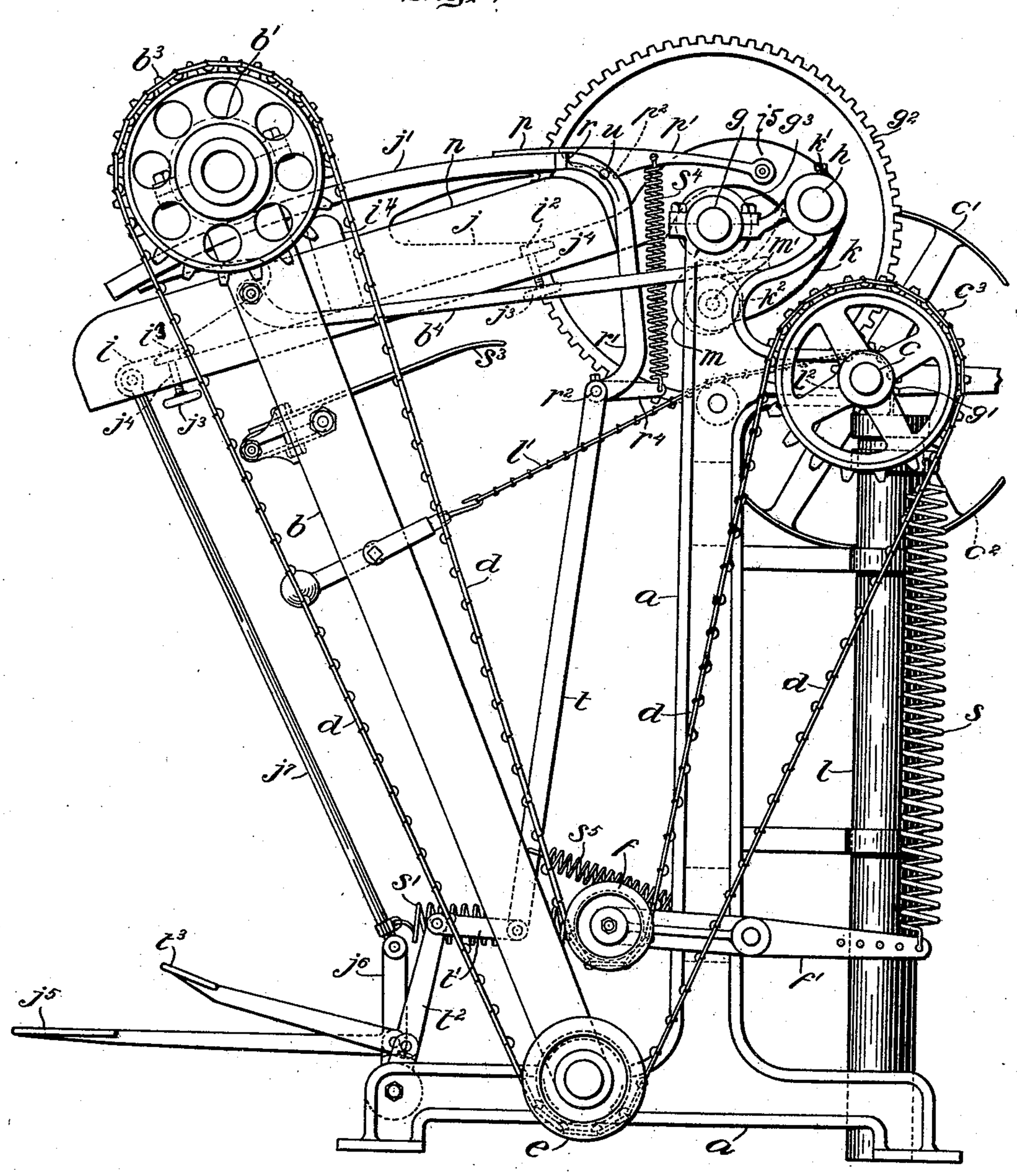
3 Sheets—Sheet 1.

G. BINDER.

IRONING MACHINE.

No. 506,660. Patented Oct. 17, 1893.

Fig: 1



Witnesses:
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Richard C. Maxwell.

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Attorney

(No Model.) 3 Sheets—Sheet 2.

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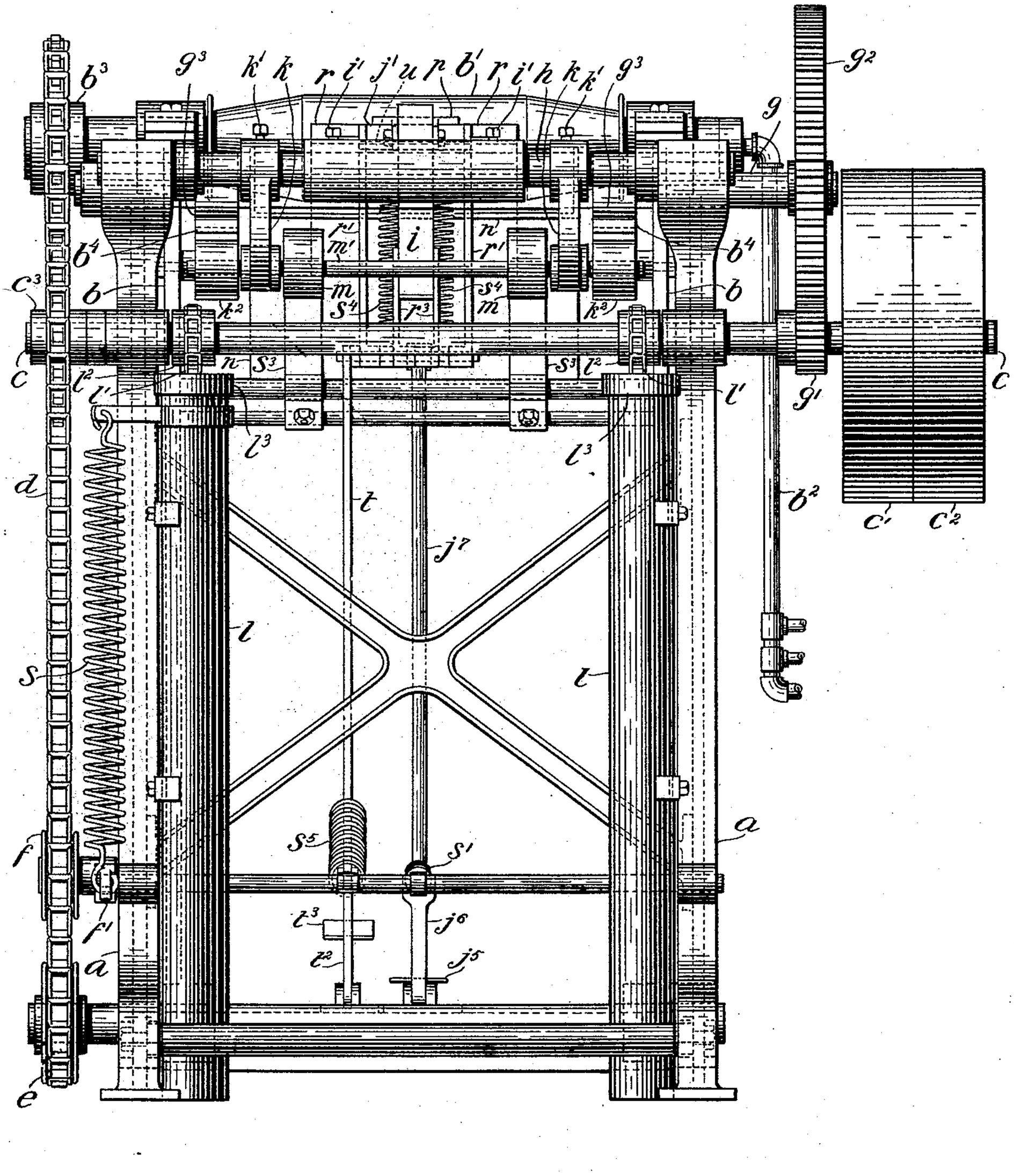
Fig: 2



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(No Model.) 3 Sheets—Sheet 3.

G. BINDER.

IRONING MACHINE.

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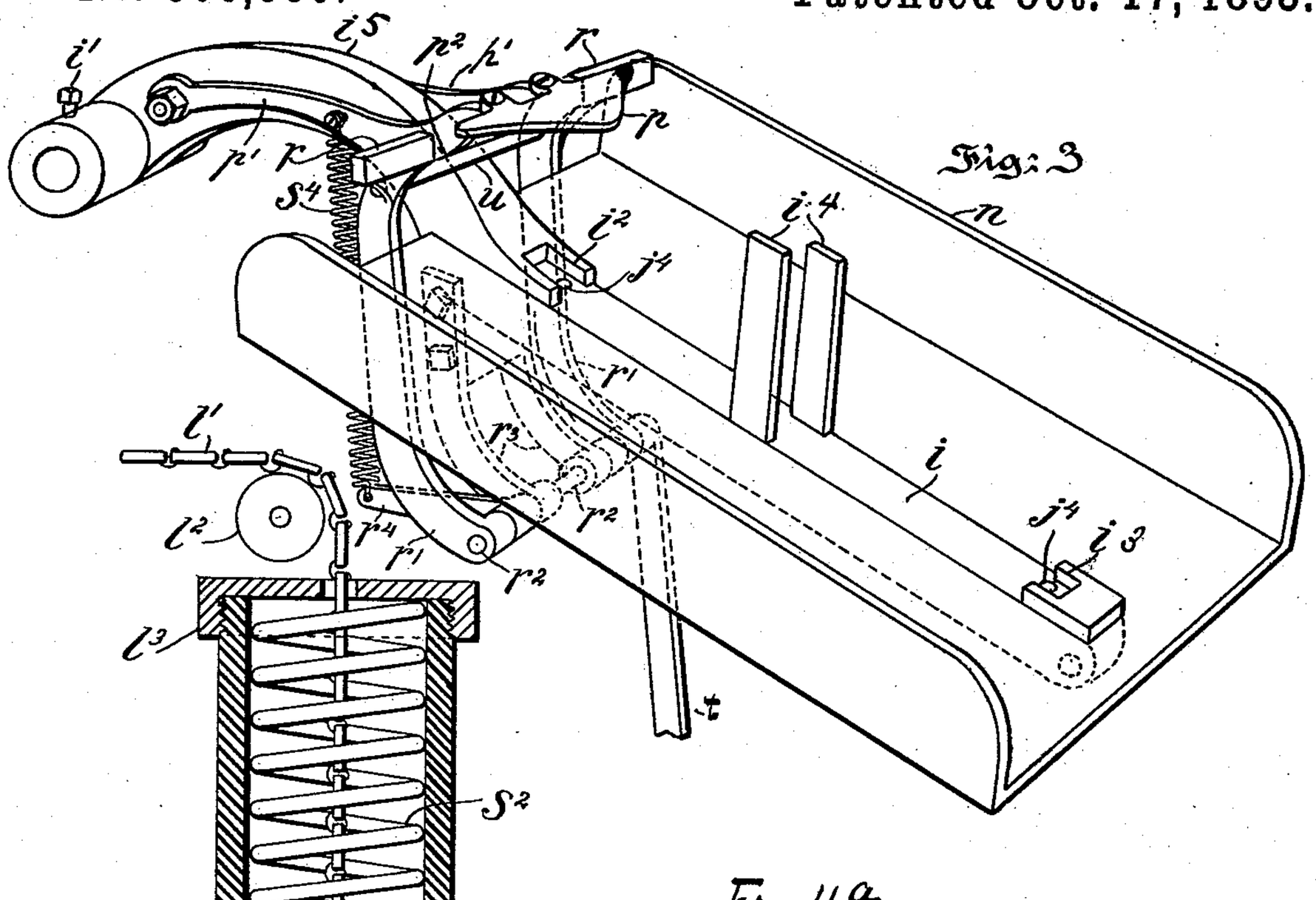


Fig: 3

Fig: 5

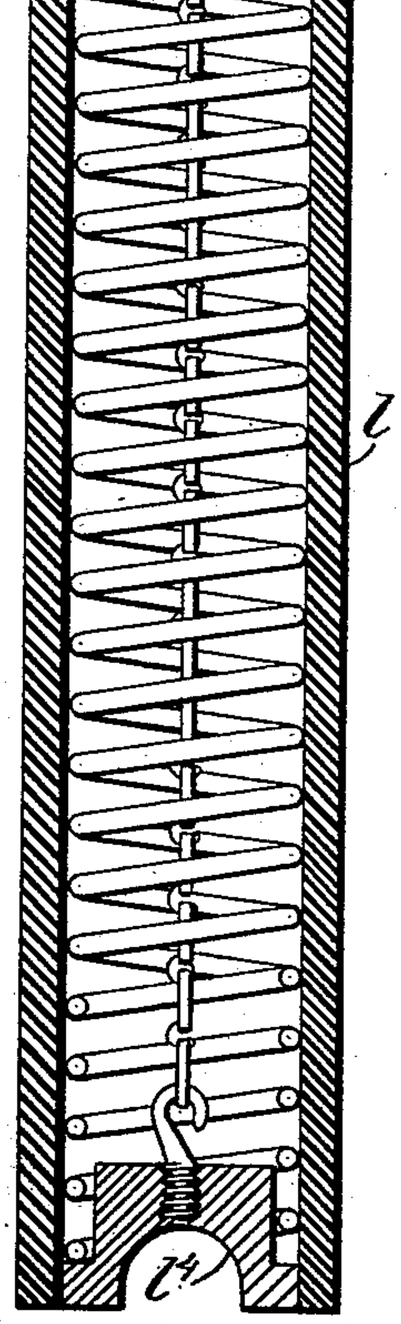


Fig. 4a

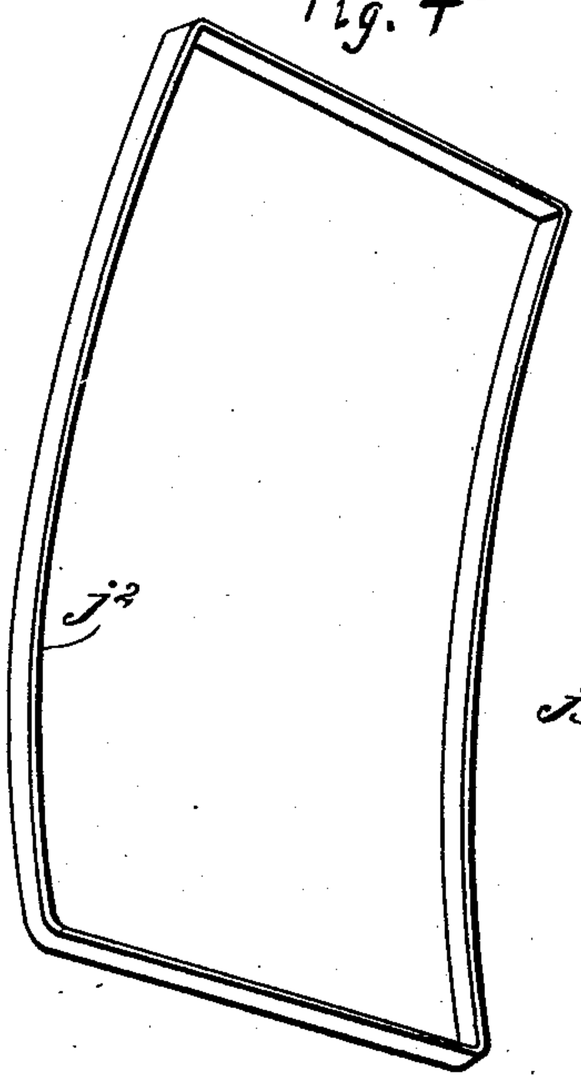
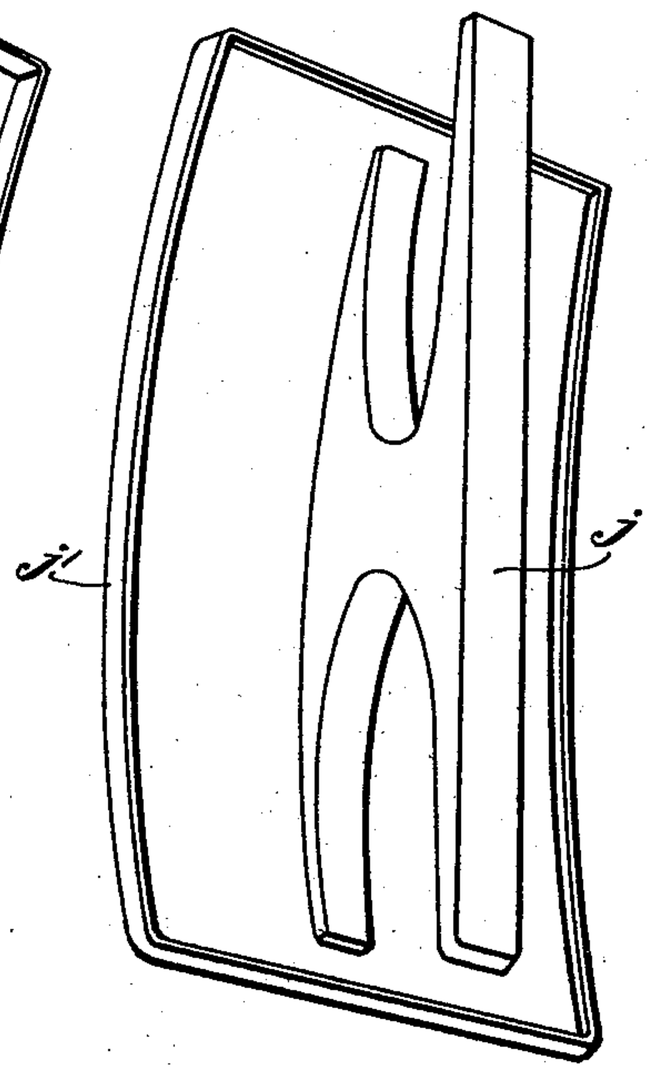


Fig. 4



Witnesses:
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Attorneys

UNITED STATES PATENT OFFICE.

GOTTLOB BINDER, OF PHILADELPHIA, PENNSYLVANIA.

IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 506,660, dated October 17, 1893.

Application filed May 10, 1893. Serial No. 473,676. (No model.)

To all whom it may concern:

Be it known that I, GOTTLOB BINDER, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Ironing-Machines, of which the following is a specification.

My invention relates to ironing machines in which a rotating iron is caused to traverse a curved table.

My invention consists of the improvements in ironing machines, hereinafter described and claimed.

The nature, characteristic features and scope of my invention will be more fully understood from the accompanying drawings forming part hereof; and in which—

Figure 1, is a side elevational view of an ironing machine embodying features of my invention. Fig. 2, is a view of the right hand end of the machine illustrated in Fig. 1. Fig. 3, is a detached perspective view illustrating the bed, clamps and certain of their accessories. Fig. 4 is a similar view illustrating the detachable table and Fig. 4ª is a view of the frame for securing the covering or pad to place upon the same; and Fig. 5, is a sectional view drawn to an enlarged scale of the spring and certain of its accessories that operate to return the revoluble iron to its normal position.

In the drawings *a*, is the main-frame of the machine.

b, is a frame pivoted to the base of the main-frame *a*, and provided with a revoluble iron *b'*, to the interior of which a supply of air and gas, steam or other heating medium is supplied by means of the pipe connections b^2.

c, is a main shaft journaled in the main-frame *a*, and provided at one of its extremities with tight and loose driving pulleys *c'* and c^2, and at the other of its extremities with a sprocket-wheel c^3.

d, is a sprocket-chain driven by the sprocket-wheel c^3, and serving to rotate the iron *b'*, through the instrumentality of the sprocket-wheel b^3. One side of this sprocket-chain *d*, passes under a guide-wheel *e*, journaled to the base of the main-frame *a*, and the other side thereof passes under a guide-wheel *f*, journaled to one end of a centrally pivoted arm *f'*, of which the other end is drawn upward by a spring *s*. The guide-wheel *f*, arm *f'*, and spring *s*, constitute a belt-tightener that compensates for the motion imparted to the iron *b'*, and sprocket-wheel b^3, by the movement of the frame *b*, and serves to keep the sprocket-chain *d*, taut at all positions of the frame.

g, is a counter-shaft driven by the main-shaft *c*, through the instrumentality of suitable gear-wheels *g'* and g^2, and provided with friction-rolls g^3, for a purpose to be presently described.

h, is a transversely ranging rock-shaft located at the rear of the machine.

i, is a bed provided with a rearwardly curved extension i^5, connected at one extremity to said rock shaft by means of set-screws *i'*, and the bed proper is provided with end projections i^2 and i^3 and with intermediate vertical projections i^4 that constitute a seat for the reception of a foot or support *j*, depending from the table *j'*, so that the table *j'*, may be readily detached or lifted from its bed *i*, in order to renew the cover or pad of the table or for any other purpose. The end projections i^2, and i^3, of the bed *i*, are recessed for the reception of the extremities of the foot or anvil-shaped support *j*, of the table *j'*, which detachably support the foot of the table in position against longitudinal or lengthwise play and the vertical projections i^4 disposed midway in the length of the bed *i*, as fully illustrated in Fig. 3, prevent sidewise movement of the foot or support while the table is in operative position. In this connection it may be remarked that the employment of a frame j^2, adapted to fit over the covering or pad and around the edges of the table *j'*, is advantageous, because it affords convenient means for detachably securing the cloth or pad to the metallic table.

j^3, are hand-wheels connected with set-screws j^4, working in suitable apertures in the bed *i*, and adapted to afford means for adjusting the respective ends of the table *j'*, in respect to the revoluble-iron *b'*.

j^5, is a treadle journaled to the base of the machine and provided with an arm j^6, connected with the front portion of the bed i, by means of a link j^7, so that the depression of the treadle j^5, causes the bed i, to lift the table j', into range of the iron b'.

s', is a spring tending to draw the treadle j^5, in such position as to permit of the descent of the bed and table under the influence of gravity.

k, are arms or hangers attached to the rock-shaft h, by means of set-screws k', and provided at their extremities with rollers k^2, upon which the pivotal-arms b^4, extending rearwardly from the frame b, rest. When the bed i, is rocked upward by the treadle j^5, the arms k, cause the rollers k^2, to press the arms b^4, against the friction-rolls g^3, and the latter causes the arms b^4, and frame b, to be moved towards the left. The degree of pressure brought to bear upon the arms b^4, may be increased or diminished by adjusting the bed i, and arms k, in respect to each other by means of the set-screws k' and i'. After the bed i, and rollers k^2, have been lowered the frame b, is automatically returned to its normal position by means of spiral springs s^2, mounted in hollow standards l, and connected with the frame b, by means of chains or cords l', running over guide-wheels l^2. The upper extremities of these springs s^2, as illustrated in Fig. 5, are seated upon caps l^3, secured to standards l, and the lower extremities thereof are connected with the chains or cords l', through the intervention of travelers l^4, so that the springs s^2 operate under compression.

In order to check the movement of the frame b, toward the right in the travel of the iron b', without undue shock or jar, use is made of leaf springs s^3, secured to and projecting rearwardly from the frame b, into range of disks or cams m, keyed to a revoluble shaft, carried by the arms or hangers k, which are connected with the rock-shaft h, by means of the set screws k', so that the springs s^3, and disks or cams m constitute in effect buffers, which in the operation of the frame b, at the end of its rearward movement, take up recoil due to the action of the springs s^2 upon the same.

n, is a trough located beneath the table j', in order to receive and drain off any liquid matter that may be expressed from the article being ironed.

p, is a shield shaped plate or collar-band clamp carried by arms p', respectively pivoted to the opposite sides of the shank of the bed i, and held to position in contact with the top of the table j', by means of the springs s^4, so that this plate or clamp p, affords the means whereby the neck-band of a shirt is firmly held down upon the table j', during the ironing operation.

r, are yoke clamps adapted to press the shoulder portions of a shirt against the right hand end of the table j', and carried by the upper ends of pivoted levers r', whereof the lower ends are keyed to a shaft r^2, mounted on and journaled in arms r^3, depending from the bed i. This shaft r^2, is controlled by a spring s^4, connected with the arms p', and with a radical arm r^4, in such manner that the clamps p and r, tend normally to engage the table j'.

t, is a lever on and keyed to the shaft r^2, and connected at its free extremity by means of a link t', to the arm t^2, of a treadle t^3.

u, is a rod connected at its respective extremities with the arms r', and disposed in range of lips or cams p^2, depending from the arms p', so that the depression of the treadle t^3, causes the clamps p and r, to be drawn clear of the table j', or shirt, as may be required.

s^5, is a spring tending to maintain the treadle t^3, in elevated position, whereby the clamps are permitted to remain normally in action.

The mode of operation of the hereinbefore described ironing machine, is as follows:— The table j', and frame b, are permitted to occupy their normal positions, that is, the table is depressed and the frame b, is at the extreme right hand end of its travel, and the treadle t^3, is depressed. This movement of the treadle t^3, causes the clamps p and r, to be moved out of engagement with the table. The neck of the shirt is placed under the clamp p, and the shoulders of the same are placed under the clamps r, whereupon the treadle t^3, is released and thus permits the clamps acting under the influence of the springs s^4 and s^5, to hold the shirt in place upon the table. The treadle j^5, is then depressed in order to lift the table j', and cause the frame b, and iron b', to be shifted toward the left in contact with the shirt. Upon the release of the treadle j^5, the frame b, and iron b', are returned by the influence of the springs s^2, to their initial positions. When the ironing operation has been completed the clamps r and p, are caused by the depression of the treadle t^3, to release the shirt, so that the latter may be readily removed from the machine.

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

1. The combination, in an ironing-machine, of a table detachably supported in position against longitudinal and lateral movement in a bed, a rotating iron mounted in a pivotal frame and afforded a range of movement over said table, a collar band clamp adapted to hold the neck of a shirt on said table, a pair of yoke clamps adapted to hold the shoulder of the shirt against the end of said table, levers for simultaneously operating said clamps, compression springs working in hollow posts or standards, chains or cords at-

tached respectively to said pivotal-frame and springs, spring-arms projecting from said frame, disks or cams disposed in range of said spring arms, and means for imparting motion to said iron, substantially as and for the purposes set forth.

2. The combination, in an ironing-machine, of an iron revolubly mounted in a reciprocating-frame, a curved table detachably supported against sidewise and lengthwise movements in a bed and provided with a removable frame for detachably securing a cloth or pad thereto, a shaft, a belt or chain engaging pulleys on said shaft and iron and having one of its sides run over a guide-pulley, a belt tightener mechanism engaging the other side of said belt, means for shifting said reciprocating frame in respect to said table, compression springs working in hollow standards and connected by chains or cords with said frame, spring buffers for checking said frame, a clamp tending to engage the top of the table, clamps tending to engage the end of the table, and levers for releasing said clamps from said table, substantially as and for the purposes set forth.

3. The combination, in an ironing-machine, of a revoluble iron mounted in a pivotal frame, a bed-plate provided with intermediate and end projections, a table provided with a depending foot adapted to engage the projections of said bed so as to be held against sidewise and lengthwise movements, compression springs working in hollow standards or posts, chains or cords attached respectively to said frame and springs, spring-arms projecting from said frame, disks or cams disposed in range of said spring-arms, means for shifting said frame in respect to said table, a clamp tending to engage the top of the table, clamps tending to engage the ends of the table, and a system of levers for simultaneously releasing said clamps, substantially as and for the purposes set forth.

4. The combination, in an ironing machine, of a revoluble iron mounted in a pivotal-frame, a pivotal bed-plate provided with side vertical projections and end recessed projections, a table provided with a depending foot or support and a removable frame or rim and said table adapted to engage said projections so as to be held against sidewise and lengthwise movements, means for shifting said pivotal frame in respect to said table, a positively driven shaft, means for imparting motion from said shaft to said iron, a belt-tightener mechanism, compression springs working in hollow standards and connected by chains or cords with said frame, spring buffers for checking the rearward movement of said frame, a clamp tending to engage the top of the table, clamps tending to engage the end of the table, and a system of levers for simultaneously releasing said clamps from an operative position, substantially as and for the purposes set forth.

5. The combination, in an ironing-machine, of a rotatable iron mounted in a pivotal frame, a pivotal bed-plate provided with intermediate vertical, and end recessed projections, a table provided with a depending foot or support adapted to engage with said bed so as to be held against sidewise and lengthwise movements, set-screws for elevating and depressing said table, means for shifting said frame in respect to said table, compression springs working in hollow standards and connected by chains or cords with said frame, spring-arms projecting from said frame and disks or cams disposed in range of said spring-arms, neck and shoulder clamps connected with said table and a system of levers for releasing said clamps, substantially as and for the purposes set forth.

6. The combination, in an ironing-machine, of an iron revolubly mounted in a frame adapted to be reciprocated over the curved surface of a detachable table supported against longitudinal and transverse movements, a positively driven main-shaft, means for imparting motion from said shaft to said iron, a guide-pulley, a belt tightener mechanism, means for shifting said frame in respect to said table, hollow standards provided with coiled springs and connected by chains or cords with said frame, spring-arms, cams or disks for checking the rearward movement of said frame, clamps connected with said table and levers for releasing said clamps from their operative positions, substantially as and for the purposes set forth.

7. In combination, an ironing machine provided with a rotatable iron mounted in a pivotal frame and adapted to be reciprocated over the curved surface of a detachable table supported against longitudinal and transverse movements, said pivotal frame provided with arms adapted to contact with positively driven friction rolls, a rock-shaft carrying a bed and hangers having rollers for controlling said arms, set-screws for adjusting said hangers and bed, hollow standards provided with springs working therein, chains or cords attached respectively to said frame and springs, spring-arms projecting from said frame and disks or cams disposed in range of said spring-arms, substantially as and for the purposes set forth.

8. An ironing machine provided with a revoluble iron mounted in a pivotal frame, compression springs working in hollow posts or standards, chains or cords attached respectively to said frame and springs, spring arms projecting from said frame, and disks or cams disposed in range of the spring arms, substantially as and for the purposes set forth.

9. An ironing machine provided with a revoluble iron mounted in a pivotal frame, a positively driven shaft, a belt or chain for imparting motion from said shaft to the iron, a guide-pulley and belt-tightener for said belt or chain, a table means for shifting said frame in respect to said table, compression springs working in hollow standards and con-

nected by chains or cords with said frame, spring buffers for checking said frame, a clamp tending to engage the top of the table, clamps tending to engage the end of the table, and a system of levers for simultaneously releasing said clamps, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

GOTTLOB BINDER.

Witnesses:
THOMAS M. SMITH,
RICHARD C. MAXWELL.