(No Model.) 2 Sheets—Sheet 1.

J. N. BROWN.

BELTING MACHINE.

No. 412,364. Patented Oct. 8, 1889.

Fig. 1.

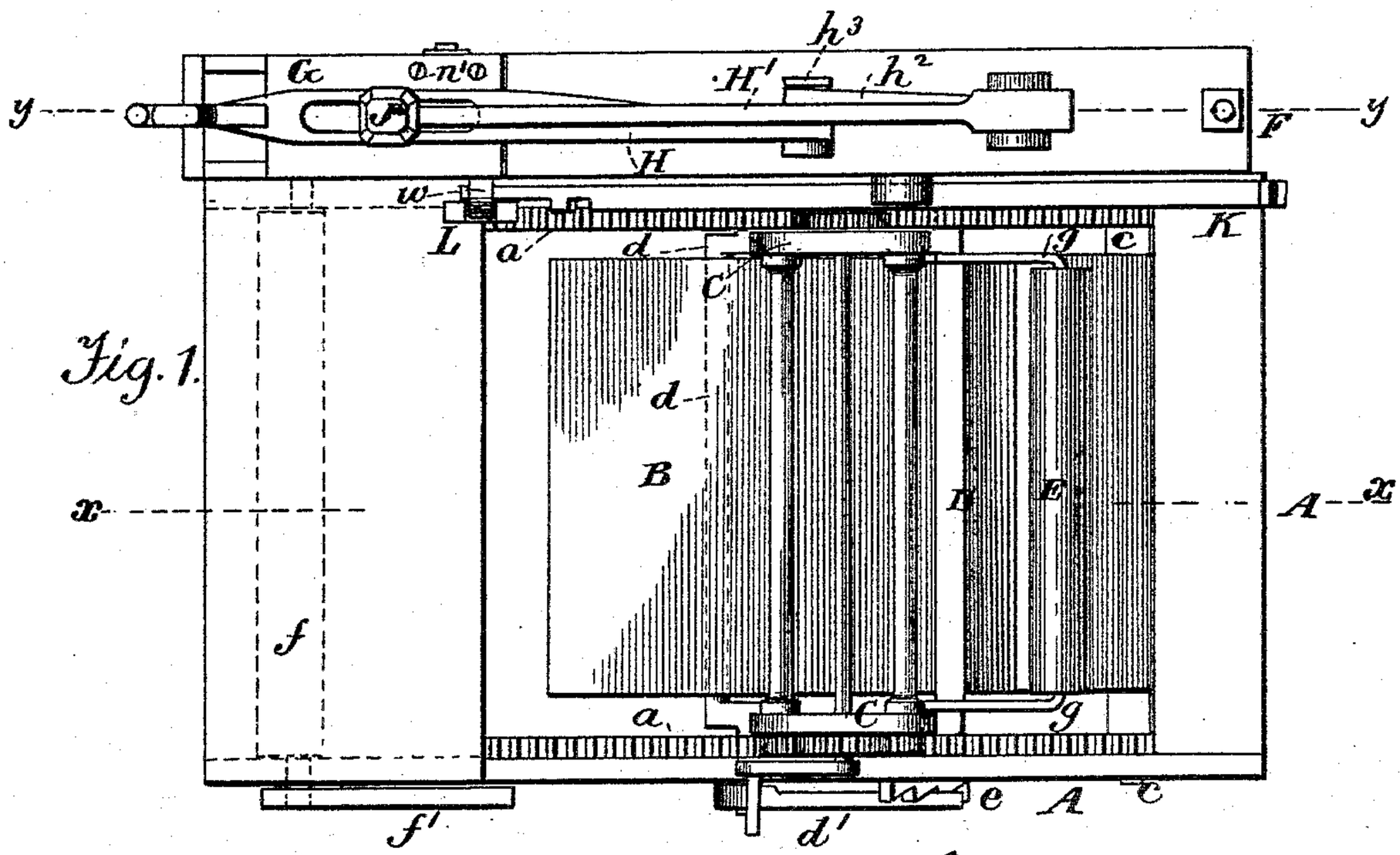
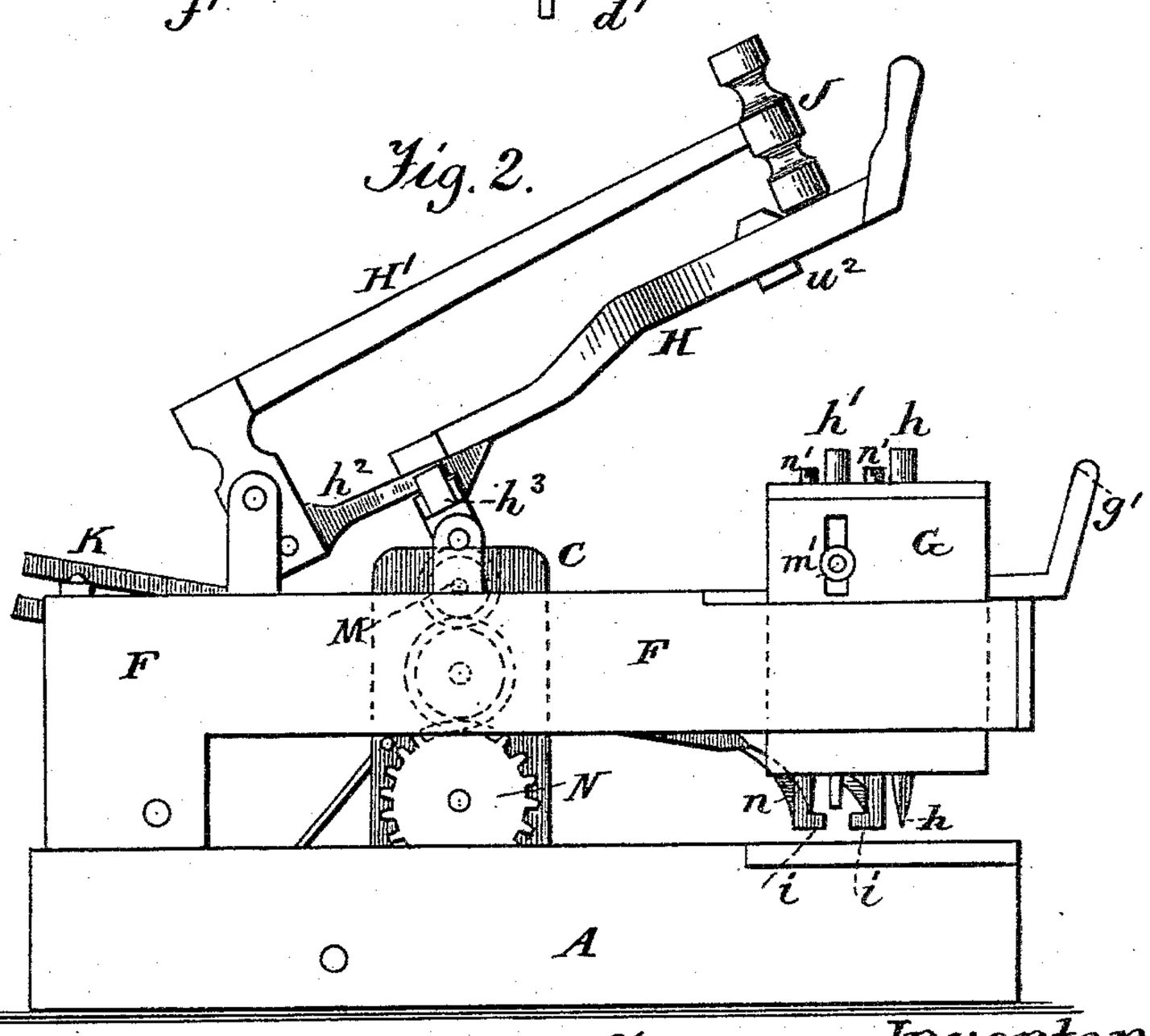


Fig. 2.

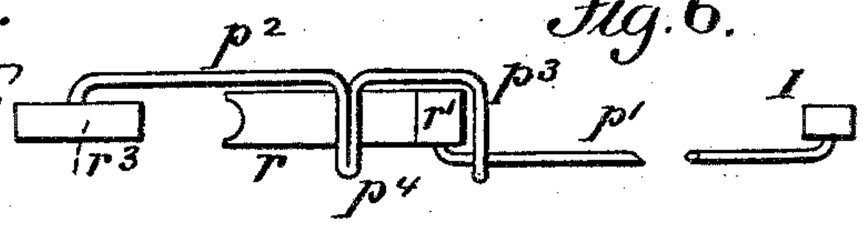


Witnesses.

A. Ruppert.

H. A. Daniels

Fig. 6.



Inventor.

Joseph N. Brown

per

Thomas P. Simpson

atty

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

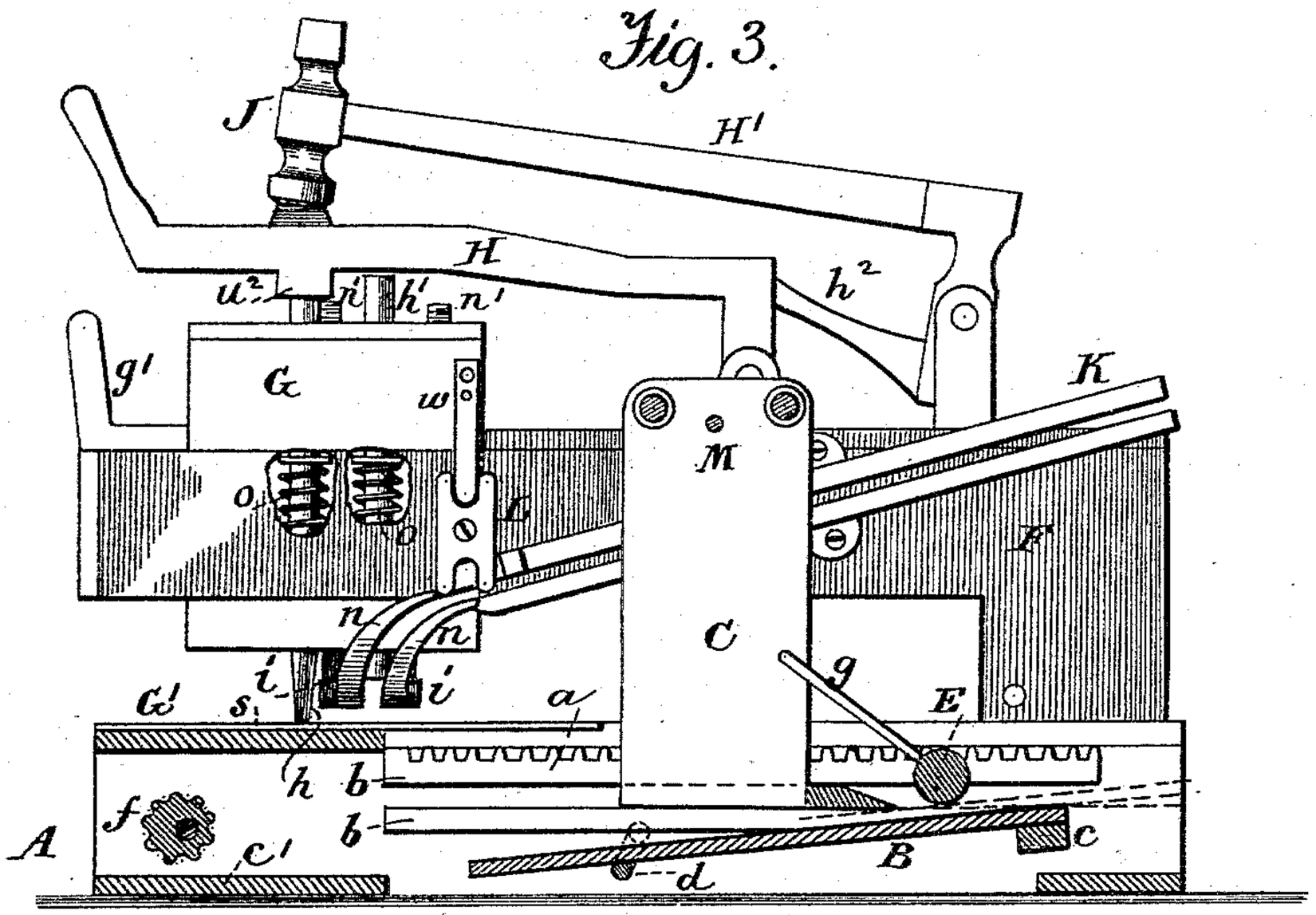


Fig. 4.

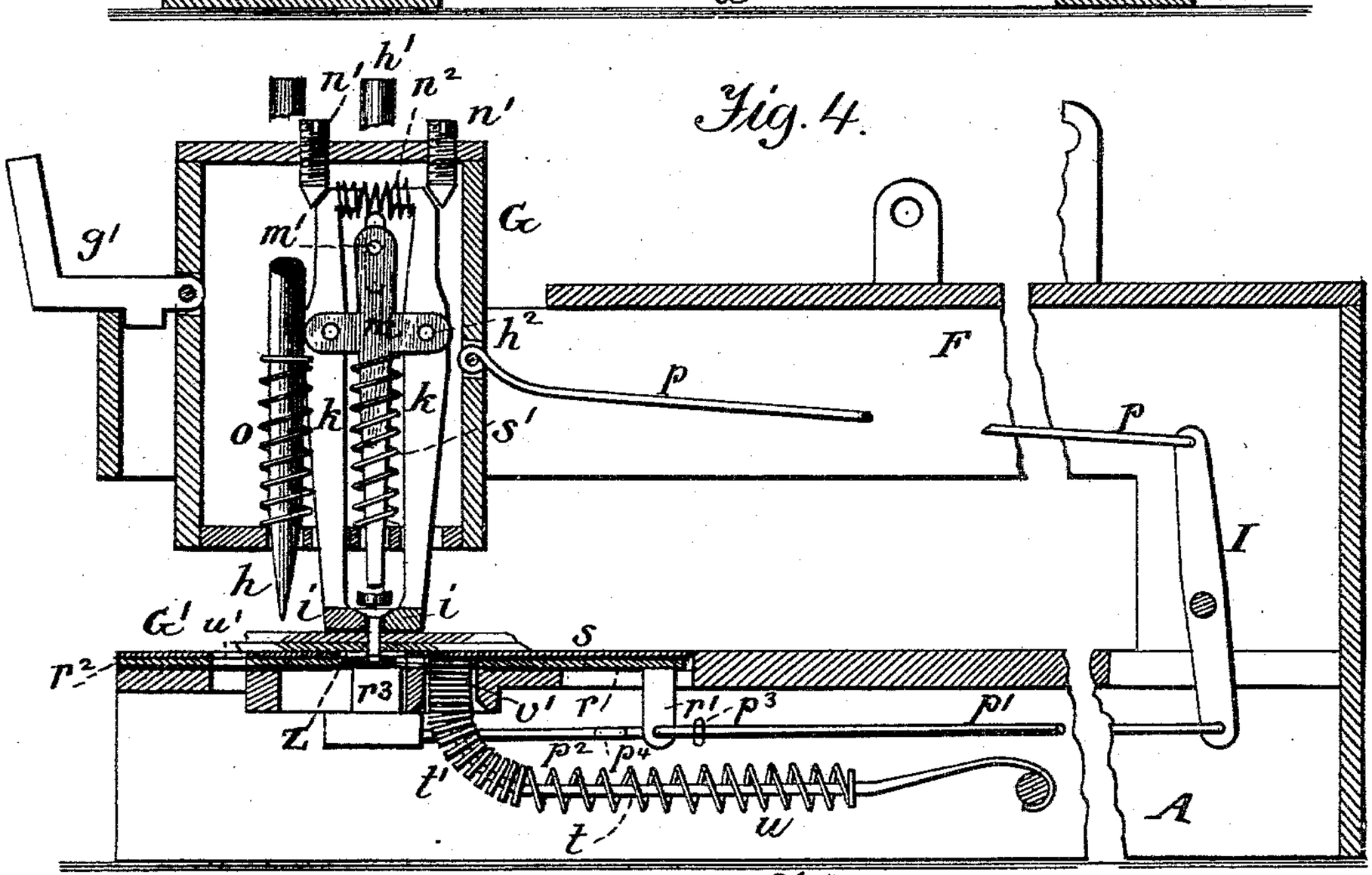
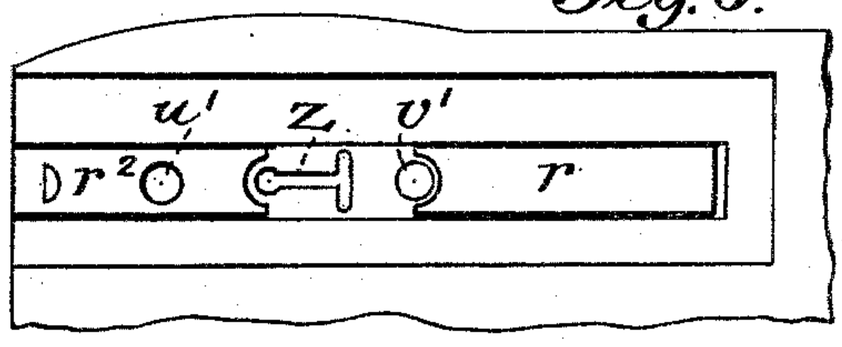


Fig. 5.



Witnesses.
A. Ruppert A.
H. A. Daniels.

Inventor:
Joseph N. Brown
Per
Thomas P. Simpson
atty

UNITED STATES PATENT OFFICE.

JOSEPH N. BROWN, OF FARWELL, MICHIGAN, ASSIGNOR OF ONE-HALF TO FRANK E. PRESLEY, OF SAME PLACE.

BELTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 412,364, dated October 8, 1889.

Application filed July 1, 1889. Serial No. 316,214. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH N. BROWN, a citizen of the United States, residing at Farwell, in the county of Clare and State of Michigan, have invented certain new and useful Improvements in Belting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for making and repairing leather belting for machinery; and it consists in certain improvements in machines of this class, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a belting-machine provided with my improvements. Fig. 2 is a side view of the same. Fig. 3 represents a section taken on line *x x* of Fig. 1. Fig. 4 represents a section taken on line *y y* of Fig. 1. Fig. 5 is a plan view of a punch-block. Fig. 6 is a plan showing certain details in the punch-block and connections.

A designates a frame, to the inner and opposite sides of which are secured the longitudinal racks *a*, under which are the fixed longitudinal guides *b* for a sliding frame which carries a cutting-blade, as hereinafter mentioned.

B indicates a table which has pivotal connections *c* with said frame and is adjustable in its inclination by means of a cam-shaft *d*, extending under the table and having bearings in the frame. The shaft *d* may be turned and fixed in position by means of a lever *d'* on the extended end of the shaft and a rack *e*, which is fixed to the frame. A corrugated eccentric-roller *f* is journaled in the frame and provided with a hand-lever *f'*, the purpose of said roller being to clamp the belting when being cut against a base-board *c'*.

A sliding frame is formed of the uprights C, which are connected by cross-rods at the top and are provided with cleats at the bottom, which extend into the guides *b*. To the uprights C at their lower extremities is fastened a cutting-blade D, which extends across the table and is in position to cut the leather belting on the table B with a shearing cut.

E indicates a roller, which extends across the table B and is loosely connected by rods *g* with the uprights C of the sliding frame, said roller being intended to rest on the belting in front of the blade D to keep the belting flat against the table during operation.

F indicates an arm or additional frame, which is located at one side of the frame A and somewhat elevated, as shown. A head-block G is carried by the arm F, and two punches *h* and *h'* are mounted in the head-block, being passed through perforations in the same. The punch *h* is formed to punch holes in the belting for rivets, and the punch *h'* is adapted to stamp the rivets severally as they are passed into the holes made by the punch *h*.

Within the head-block G is also mounted a cross-form or T-shaped connection *m*, which is held in position by a screw *m'*, passed through a slot in the casing of the head-block, and by a spiral spring *s'* on the lower stem of the cross-form, which extends through an aperture in the bottom of the head-block. Two vertical arms *k* are carried by the cross-form *m*, being pivoted thereto at h^2. The said arms *k* extend upward nearly to the top of the head-block and downward through openings in the bottom, as shown, the lower ends being provided with jaws *i*, extending laterally therefrom and being adapted to hold a rivet between them. From the jaws *i* extend two curved guides *n*, for the purpose hereinafter set forth. The upper ends of the arms *k* are bent toward each other and are connected by a spring n^2, which tends to press them apart, and consequently to close the jaws *i* at the lower ends of said arms. Two screws *n n'* are set in the top of the head-block in position to impinge against the beveled surfaces on the upper ends of the arms *k* when the latter are raised by the action of the spring *s'* on the cross-form, the upper ends being thus pressed together and the jaws *i* being opened.

The punch *h'*, which stamps the rivet, is in position over a point between the jaws *i*, where the rivet is held by said jaws, and both of the punches are sustained by springs *o*, which raise them after being driven downward. The head-block is provided with a handle *g'*, by which it may be moved forward and

backward to bring the punches each to the right point to be driven.

The face of the punch-block G′ (shown in plan in Fig. 5) is provided with a slot *z*, over which each of the punches is brought to be driven—one to make the hole in the leather and the other to stamp the rivet. It is also provided with a way for the slides *r* and r^2, which are placed therein, and an aperture *v′* for the passage of the burrs to be used with the rivets, as hereinafter stated. A covering of sheet metal *s* is placed on the punch-block to keep certain parts in place, openings being made in the covering over the slot *z* and the aperture *u′*.

The head-block G is connected by a rod *p* with a pivoted lever I, to the lower end of which is attached a rod *p′*, which is connected with a stock or stud *r′*, projecting down from the notched slide *r*, which moves in the face of the punch-block. An edged tool r^3 is carried by a rod p^2, which is loosely connected with the rod *p′*, the said tool r^2 being held in position with its edge in the slot *z* in the punch-block. The rod p^2 is provided with an elbow p^3 and an arm p^4, as seen in Fig. 6, and is so connected with *p′* that when the latter is moved in either direction by the movement of lever I a slight similar movement is imparted to the tool r^3. A rod or wire *t* is fixed in position within or under the punch-block, the free end of the rod being turned up to the aperture *v′* in the block. On the rod *t* are placed the burrs *t′*, which are to be set with the rivets, the said burrs being pressed up through the aperture *v′* against the plate *s* by a spring *u*, which is placed on the rod. The uppermost of the burrs is then in position to be pushed along by the movement of the slide *r*, as hereinafter stated.

H indicates a pivoted arm, which extends over the head-block G and is provided with a contact-surface u^2, to rest on either of the punches *h h′* when they are severally driven.

J indicates a striking-hammer, which is carried by a pivoted arm H′, which extends over and is on the same vertical plane with the arm H. A hook h^2 is pivoted to the arm of the hammer J, and when the arms H H′ are both raised the hook h^2 connects with a catch h^3 on the arm H, and both of said arms are thus held in the raised position shown in Fig. 2. One of the punches being then brought in position to be driven, the arm H is pulled downward, being thus released from the hook h^2, and rests at u^2 on the punch, when the hammer falls, striking the arm H and driving the punch.

K indicates a magazine or inclined way for the rivets, which is formed of two parallel strips fixed in position adjacent to the frame F, the rivets being placed with the heads to said frame, with the shanks between the parallel strips.

From the jaws *i* on the lower ends of the arms *k* extend two curved guides *n*, which are turned to the lower ends of the strips forming the inclined way K and are adapted to receive the rivets therefrom and conduct them to said jaws. The rivets are moved one at a time from the magazine K to the guides *n* by a pivoted notched block L, which is actuated by a tongue *w*, which is made fast to the head-block G and moves therewith.

The sliding frame, which carries the cutting-blade D, is moved on the guides *b* by means of a shaft M, provided with a crank and gearing N, carried by said frame, said gearing connecting with the racks *a*.

The table B is adjusted in its inclination by means of the cam-shaft *d*, so that as the frame which carries the cutting-blade moves forward a diagonal shearing cut is made through the belting toward the edge of the table, where the belting is cut off, the end being thus formed for a lap. The two ends of the belt thus formed are placed one over the other on the punch-block, and the hammer is raised to its elevated position by means of the pivoted arm H, being retained in such position by the hook h^2. The head-block G is then pushed back by means of the handle *g′*, bringing the punch *h* to position over the slot *z* in the punch-block, such movement actuating the slide *r* through rods *p p′* and pivoted lever I, and the said slide pushes the uppermost of the burrs *t′* into position over the slot *z*, so that the punch *h* when driven will pass through the leather and the burr under it. The pivoted arm H is then brought down on the punch *h*, and the hammer, being released, strikes the arm H directly over the punch *h*, which is driven through the leather and the burr and is then raised by its spring *o*. A rivet meantime has been passed to the guides *n* by the pivoted notched block L, actuated by a movement of the head-block, and said rivet has rolled down the said guides into its seat in the jaws *i* under the stamping-punch *h′*. The head-block being then drawn forward brings the punch *h′* and the rivet to position over the hole made in the leather by the punch *h*, such movement bringing the tool *r′* by rods *p′* p^2 under the rivet, the edge of said tool being in the slot *z*. The punch *h′* being then driven by the hammer, as before described, forces down the jaws and rivet, the latter being driven through the hole in the leather and through the burr, and the jaws, being spread apart by the punch as they strike the leather, are raised by the spring *s′*. The arms *k*, which carry the jaws *i*, come in contact at their upper ends with the screws *n′ n′*, by which the upper ends are moved toward each other sufficiently to open the jaws to receive another rivet. The point of the rivet is spread by contact with the edge of the tool r^3 sufficiently to hold the parts of the belt together, and after enough rivets have been set in the manner described the belt is turned over and finished in the ordinary way.

The slide r^2, with the hole *u′*, is used in connection with the punch *h* when it is desired to punch out rivets from a belt to take the

ends apart. The head-block is moved to bring the punch *h* over the hole *w'*, and the belt is placed with the rivet under the punch, which is then struck with a hammer. The slide r^2 may be drawn out when it is desired to take out the tool r^3.

I claim—

1. In a belt-machine, the combination, with a frame provided with horizontal guides, of a movable frame provided with a cutting-blade D, a pivoted table B, and means for adjusting said table in inclination, substantially as and for the purposes described.

2. The combination, with a supporting-frame, of the sliding frame provided with the blade D, the pivoted table B, the roller E, connected with said sliding frame, and a cam-shaft by which said table is adjustable in inclination, and operating mechanism, substantially as set forth and described.

3. The combination, with a supporting-frame, of a movable head-block, two punches loosely mounted in said head-block and provided with springs, a cross-form mounted in said head-block and provided with a spring, two pivoted arms which are carried by said cross-form and are provided at their upper ends with a spring and at their lower ends with jaws adapted for holding a rivet, and a punch-block located under the head-block and provided with an opening for a punch and another opening for rivets, substantially as and for the purposes described.

4. The combination, with the head-block G, of two punches *h h'*, which are loosely mounted therein and are provided with springs, a cross-form *m*, mounted within the head-block and provided with a spring, two arms *k*, which are pivoted to the cross-form and beveled at their upper extremities, which are provided with a spring, the lower extremities of said arms being provided with jaws *i*, which are adapted to hold a rivet, screws *n n'*, in position above said arms *k*, and a punch-block provided with apertures for the punch *h* and for rivets, substantially as set forth and described.

5. The combination, with a movable head-block, of a cross-form which is mounted therein and is provided with a spring, two arms pivoted to said cross-form and provided at their lower ends with jaws which are adapted for holding a rivet, two screws in position for contact with said pivoted arms at their upper extremities, which are provided with a spring, a punch-block provided with a slot *z*, an aperture *v'*, and a covering-plate *s*, a slide which is adapted to move in said punch-block and is connected by a rod *p'* with a pivoted lever I, which is connected by a rod with the head-block, a tool located under the slot *z* in position for contact with the end of a rivet when the latter is driven, said tool being loosely connected by a rod with said rod *p'* and actuated by the movement of *p'*, and a burr-holding rod *t*, fixed in position in said punch-block and provided with a spring, the free end of said rod being turned up to the aperture *v'*, substantially as set forth and described.

6. A movable punch-block provided with a stamping-punch which is mounted therein, in combination with a cross-form provided with a spring, two arms pivoted to said cross-form and provided at their lower ends with jaws which are adapted to hold a rivet, and two curved guides extending from said jaws, an inclined way adapted to hold rivets and conduct them to said curved guides, a tongue which is rigidly attached to the head-block, and a pivoted notched block in position to be engaged by said tongue and to pass the rivets severally from said inclined way to said curved guides, substantially as and for the purposes described.

7. The combination, with the movable head-block provided with one or more punches, of the pivoted arm H, provided with a contact-surface, a pivoted arm H', provided with a hammer, and a hook h^2, which is pivoted to the arm H' and is adapted to connect with arm H, substantially as set forth and described.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOSEPH N. BROWN.

Witnesses:

F. M. HINDS,

GEO. W. GRAHAM.