

Isaac P. Walker's,
Improvement in Baling Presses.

116650 Fig. 1.

PATENTED JUL 4 1871

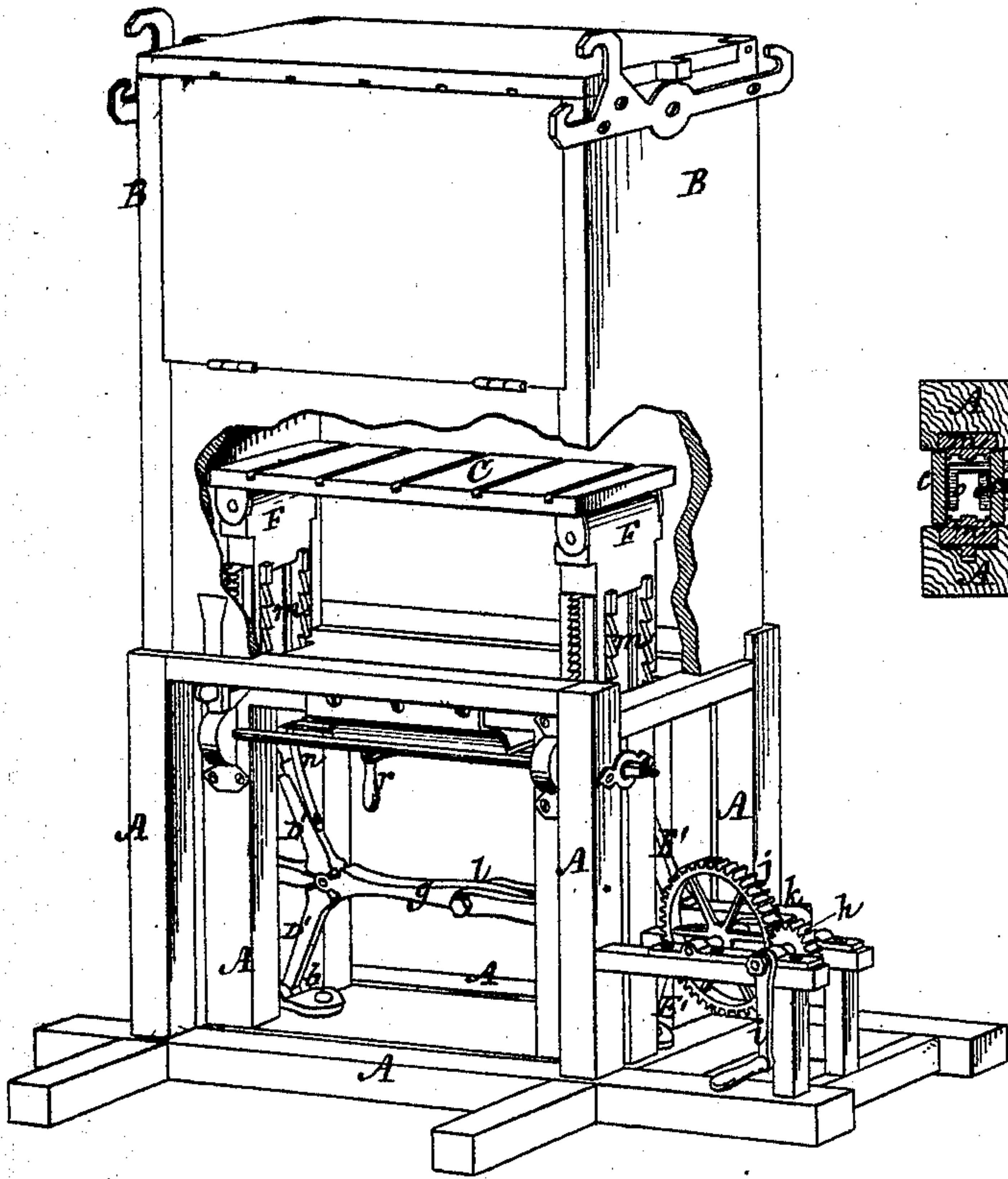


Fig. 3.

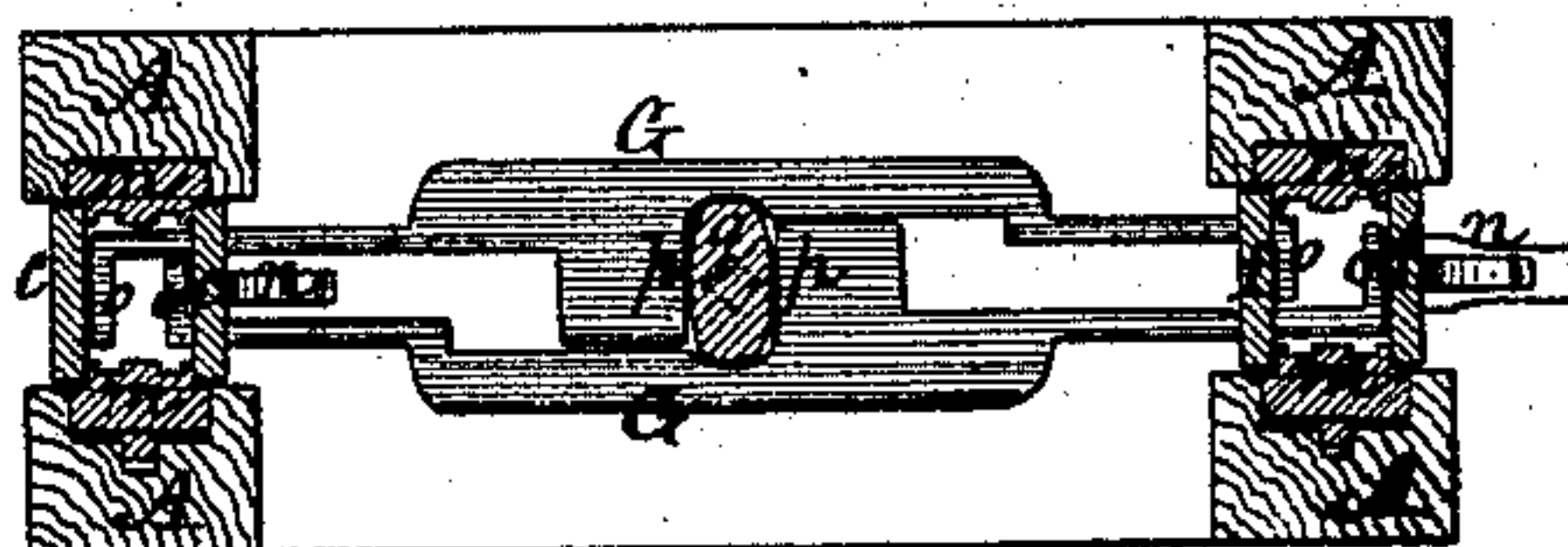
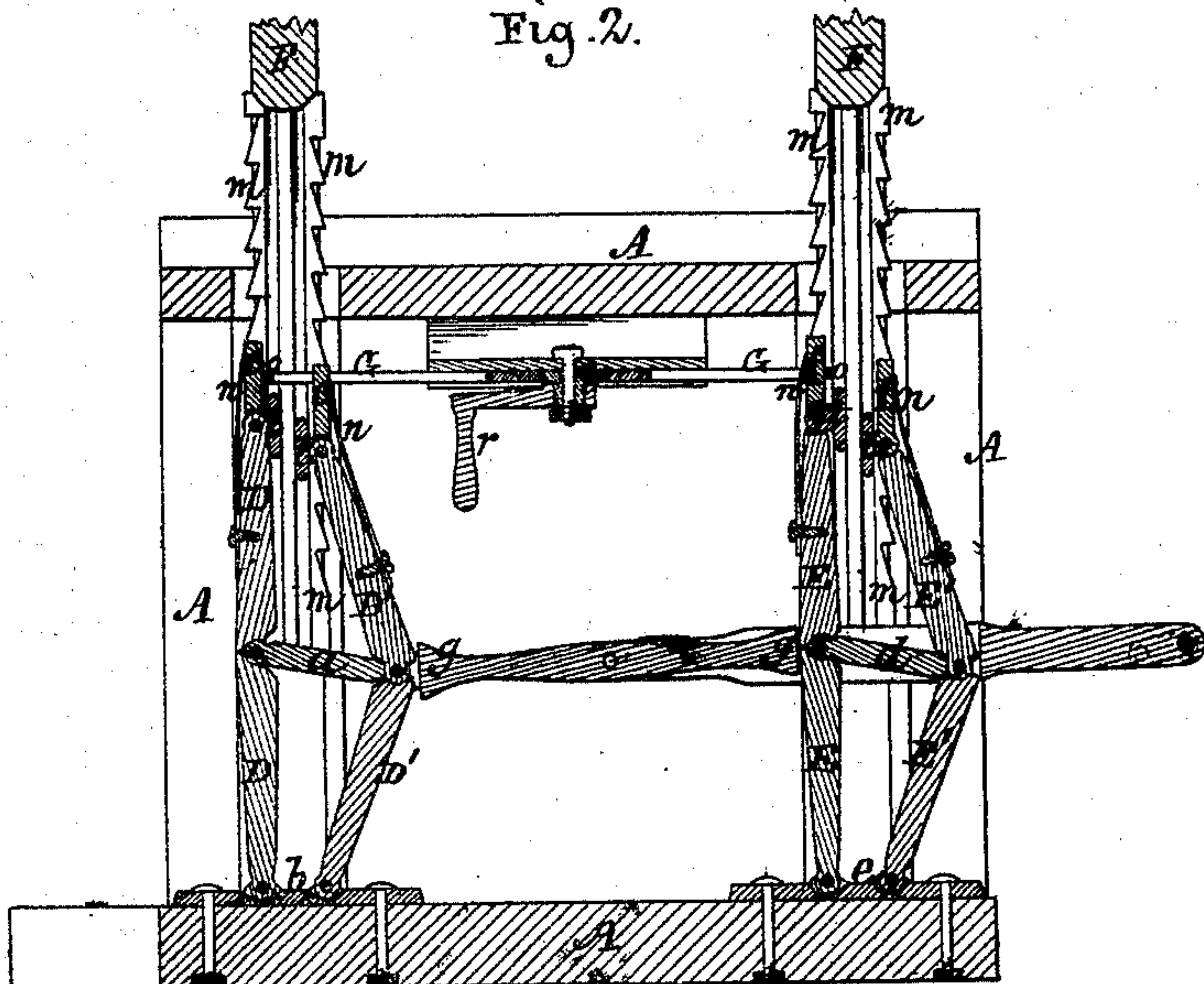


Fig. 4.



Fig. 2.



Witnesses.

A. B. Stoughton.

Edmund Masson

Isaac B. Walker.

UNITED STATES PATENT OFFICE.

ISAAC P. WALKER, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. 116,650, dated July 4, 1871.

To all whom it may concern:

Be it known that I, ISAAC P. WALKER, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Baling-Presses; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents the press in perspective view, a portion of the baling-box being shown as broken away to show the interior thereof. Fig. 2 represents a vertical longitudinal section taken through the working mechanism of the press. Fig. 3 represents a plan of the ratchet-engaging-and-disengaging mechanism; and Fig. 4 represents, detached, one of the spring-pawls, with which each of the toggle-levers is furnished.

Similar letters of reference where they occur in the separate figures denote like parts of the press in the drawing.

My invention consists, first, in the combination of two or more pairs of toggle-levers, linked together and operated by continuous power applied to said pairs of levers to move the platen or follower. It further consists in combining, with two or more pairs of linked and continuously-operated toggle-levers, pivoted spring-pawls and double ratchets, so that the alternating motion of the separate limbs of the pairs of levers and their pawls shall raise up the ratchet-bars, and with them the platen or follower. It further consists in the combination, with two or more pairs of linked and continuously-driven toggle-levers and spring-pawls connected thereto, of an engaging-and-disengaging mechanism for simultaneously moving the series of pawls into or out of action, as the case may be.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawing.

The frame A, in and upon which the working mechanism of the press is sustained and arranged, is substantially made, and constitutes the under part of the press when arranged in a vertical position. Upon the top of this under frame is placed the baling-box B, access to which is made in any of the usual well-known ways for introducing the material to be baled and to remove the bale when finished. Into this baling-box the platen or follower C is driven by the system of

linked double pairs of toggle-levers, as will be explained. The arms or limbs D and D', coupled together by a link, *a*, and pivoted together and to a base-plate, *b*, below, and to pawls *c c* at their upper ends, constitute one pair of toggle-levers, and are arranged and operated at one side of the press. The arms or limbs E and E', coupled together by a link, *d*, and pivoted to a base-plate, *e*, below, and to pawls *f* at their tops, constitute a second pair of toggle-levers, and are arranged and operated at the other side of the press. These two sets or systems of toggle-levers are linked together by a link, *g*, extending from one to the other and pivoted to both, so that the two sets are operated together. On the frame A is arranged a pinion, *h*, which may be turned by a crank or cranks, *i*, on its shaft, or by any motive power. This pinion *h* gears into and turns a toggle-gear, *j*, the shaft of which gear has a crank upon it to which one end of a connecting-rod, *k*, is attached, the other end thereof being attached at *l* to the link *g*, so that a rotary motion of the gears and cranks gives a vibratory motion to the limbs of the pairs of toggle-levers, and causes them, through their spring-pawls *c* and *f*, to raise the platen or follower through the ratchet-teeth on the ratchet columns *m m*, said columns being united at top by cross-heads F, to which the follower C is pivoted, and by which it is carried. The pawls *c* and *f* are pivoted, respectively, to their pairs of levers, as distinctly seen in Fig. 2, and they have springs *n* connected to hold the pawls into and against the ratchet-teeth when the platen is being forced up against the material that is to be pressed into a bale.

When the bale is finished the follower C is run down to prepare the press for the next succeeding baling operation. To do this speedily an engaging-and-disengaging mechanism is used, as follows: To the frame are suspended or attached two shouldered-plates, G G, distinctly seen in Fig. 3. These plates G extend clear across the press, and their extreme ends *o o o o* take over one set of the series of pawls and against the other series or set. In a central position in relation to the plates, and against shoulders *p p* thereon, a cam, *q*, is placed, which cam may be turned by a crank-lever, *r*, and the turning of which moves the plates G in contrary directions, and they simultaneously throw out all the pawls from their ratchets, and the platen or follower will run down by its own

weight. When the lever *r* is reversed, the pawls simultaneously engage with the ratchet-teeth, and are held thereto by their springs, and the press is again ready for another operation. The platen or follower may be lowered by a separate and positive mechanism, if preferred, but it will run down without injury to the parts. The driving-gear, instead of being at one side of the frame, as shown in Fig. 1, may be arranged and operated underneath the baling-box and between the side pieces of the main frame, which makes the press more compact; and, instead of a crank, cams or a change-gear may be used for vibrating or working the toggle-levers.

The operation of these double sets of toggle-levers is so obvious that it is scarcely necessary to refer to them in detail. The limbs or members *D E* and *D' E'* work together. When one set is straightening to exert its greatest lifting power, the other set is falling or moving down to take a new position on or against the ratchet-teeth. Then these last straighten out and expend their lifting power, while the other pair is moving down to take a new hold, and so the two sets alternate with each other in moving up the platen. Each of these pairs moves one end of the platen, and if the platen were divided, or made in two parts, then one pair would move its independent platen; or the press may be divided into two, and the separate pairs of toggles would still move its single rack-bar and separate platen. The importance of the pivoted pawls in such case is very obvious, as it admits of bringing the lifting devices directly under the load to be lifted. A very good press for lighter work might be made out of a single pair of toggles and pawls, and oper-

ated as herein described. The shape of the spring-pawls is shown at *f* in Fig. 4; those at *c* in Fig. 2 are of like shape or form. Guides *t t* are secured to the toggle-levers at their upper ends, and are made to move in grooves cut in the face of the ratchet-bars, so as to hold the upper ends of the levers proper to a parallel movement, as shown at *t t*, Fig. 2. The link *g*, instead of being pivoted to the joints of the toggle-levers *D E*, may be pivoted or otherwise connected to the links *a* and *d*.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The combination of two or more pairs of toggle-levers linked together and operated from one and the same source, as and for the purpose described and represented.

2. In combination with the pairs of toggle-levers herein shown, linked together and operated from one and the same source, and a double set of rack-bars or ratchet-notches, the spring-pawls pivoted to said levers, and catching and working in said bars or notches, all constructed and operating substantially as and for the purpose described and represented.

3. In combination with the toggle-levers herein shown, ratchet-bars, and spring pawls, an engaging-and-disengaging mechanism, substantially as described, whereby all the pawls may be simultaneously thrown out of or into action with the ratchet-teeth, as and for the purpose described.

ISAAC P. WALKER.

Witnesses:

A. B. STOUGHTON,
EDMUND MASSON.