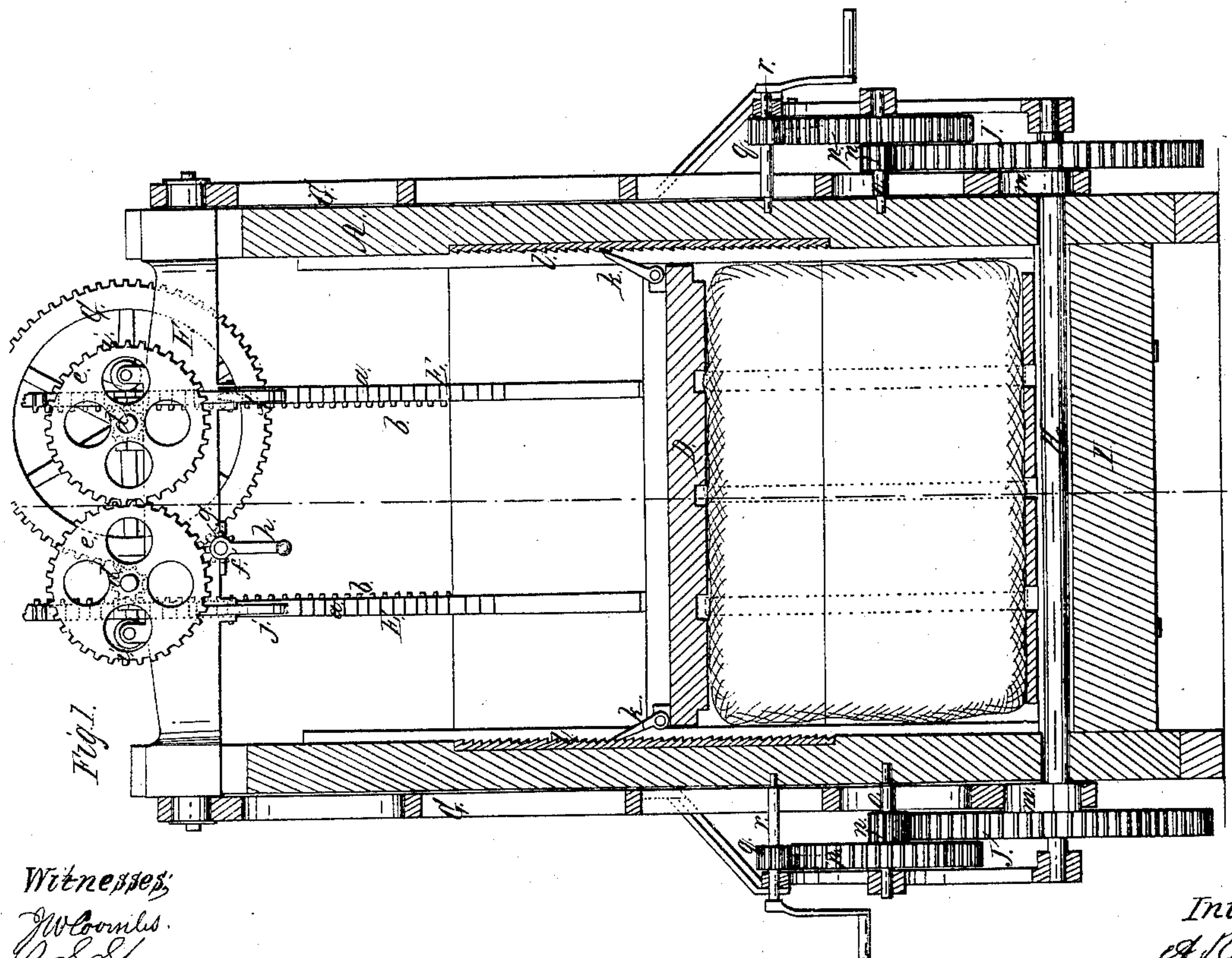
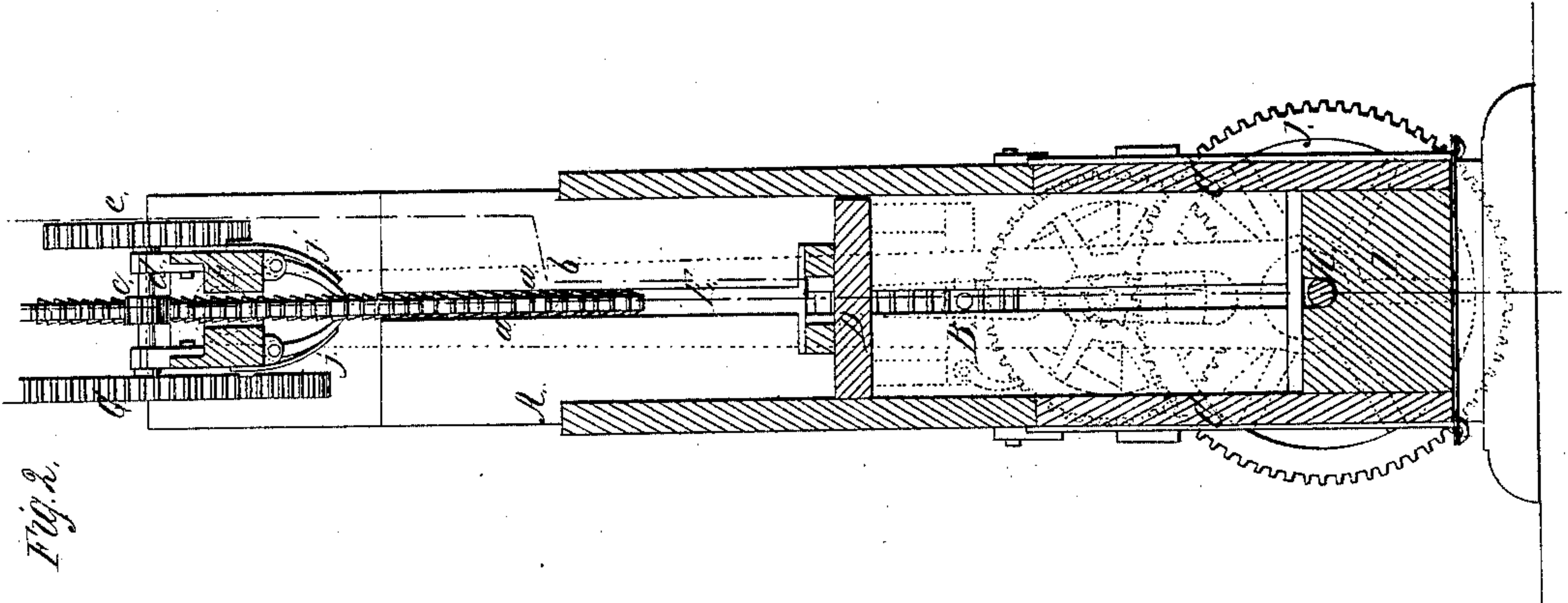


A. Randel,

Cotton Press.

N^o 30,500.

Patented Oct. 23, 1860.



Witnesses,
J. W. Corbin,
R. S. Spencer.

Inventor,
A. Randel.

UNITED STATES PATENT OFFICE.

A. RANDEL, OF NEW YORK, N. Y.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. 30,500, dated October 23, 1860.

To all whom it may concern:

Be it known that I, ADONIJAH RANDEL, of the city, county, and State of New York, have invented a new and Improved Press for Compressing Substances for Baling and other Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a vertical section of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts the two figures.

The object of this invention is to obtain a press of simple and economical construction, which will admit, under the same application of power, of giving two different degrees of pressure, so that the substance may be compressed expeditiously and in a proper manner, and excess of power being dispensed with for speed, and the latter dispensed with when power is required.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents an upright framing, the principal part of which is inclosed to form a press-box, B, in which the substance to be compressed is placed. The box B is provided with a door, C, at each end.

D is a follower or plunger, which is placed within the box B and allowed to rise and fall freely therein. This follower or plunger has two vertical rack-bars, E E, attached to it, said bars being each provided with three racks, *a a b*, the racks *b* being at the inner sides of the bars, and the racks *a a* at the two adjoining sides. (See Fig. 2.) The rack-bars E E pass through a cross-head, F, the ends of which are fitted in slots at the upper parts of the framing A, and into the racks *b* of the bars E pinions *c* gear, said pinions being on shafts *d d*, which are connected at one end by gear-wheels *e e*. One of the shafts *d* has a spur-wheel, G, on it, and this wheel has a pinion, *f*, gearing into it, said pinion being on a driving-shaft, *g*, which has a crank, *h*, at one end of it. Each bar E has a friction-

roller, *i*, bearing against its outer side. The racks *a a* of the bars E have pawls, *j*, which catch into them, and to each end of the follower or plunger D there is attached a pawl, *k*, and these pawls are in contact or engage with racks *l l* at the inner sides of the framing A, as shown clearly in Fig. 1.

From the above description it will be seen that by turning the shaft *g*, the follower or plunger D may be raised or lowered within the box B, and when the follower or plunger is forced down and the substance below it compressed the racks *a l* and pawl *j* prevent the follower or plunger from casually rising.

The above arrangement of gearing admits of a speedy movement of the follower or plunger D, and it is used only at the first movement of the follower or plunger. When more power is required, the follower or plunger is operated through the medium of the cross-head F, the pawls *j j* being fitted in the racks *a*. This cross-head has an arm or bar, G', attached to each end of it. These arms or bars extend down at each side of the framing, and they are fitted at their lower ends on eccentrics *m m*, which are placed on the ends of a shaft, H, which passes through the base I of the framing A. At the ends of the shaft H there are secured spur-wheels J J. These wheels gear into pinions *n n*, which are placed on shafts *o o*, the outer ends of which have wheels *p p* on them, which wheels gear into pinions *q q* on shafts *r r*, to which the power is applied. When the follower or plunger D has been forced down sufficiently far by the gearing connected to the cross-head F, and previously described, the shafts *r r* are rotated, and the shaft H is rotated through the medium of the gearing J J *n n p p q q*, and the eccentrics *m m* will draw down the cross-head F, and the follower or plunger D will be forced down with an increased power. In this latter operation the pawls *k k* and racks *l l* prevent the casual rising of the follower or plunger when the power is removed from the shafts *r r*, the pawls *j* and racks *a* forming the connection between the cross-head F and rack-bars E E.

The relative size of the gearing J *n p q* may be varied, as occasion may require. The movement of the cross-head F is of course quite

small, compared with the first movement of the follower or plunger.

I do not claim separately any of the within-described parts; but

I do claim as new and desire to secure by Letters Patent—

The rack-bars *EE*, provided with the racks *a a b*, and actuated through the medium of the pinions *c c*, in connection with the cross-head

F, provided with the pawls *j*, and actuated through the medium of the eccentrics *m m*, all being arranged essentially as and for the purpose set forth.

A. RANDEL.

Witnesses:

L. W. BENDRÉ,
JAMES LAIRD.