B. G. MARTIN.

POWER-PRESS.

No. 179,209. Patented June 27, 1876.

Fig. 1.

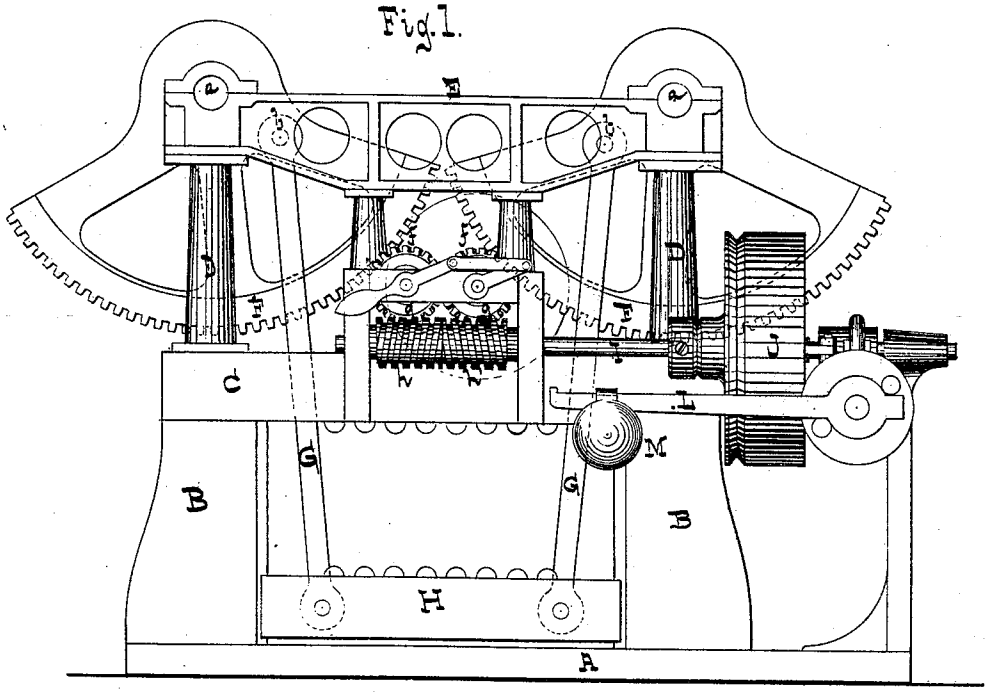
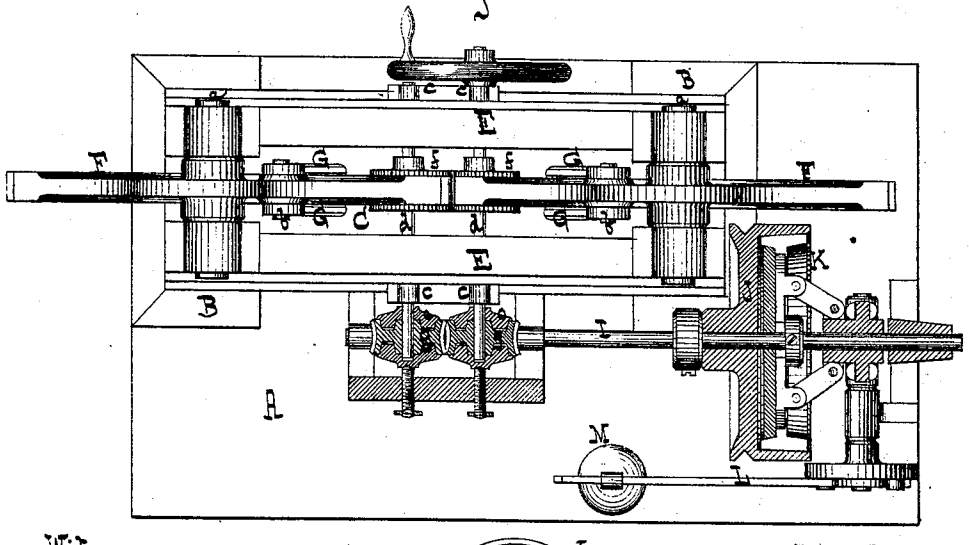


Fig. 2.

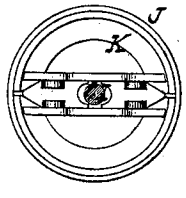


Witnesses.

Otto Hufeland.

Robt E. Miller.

Fig. 3.



Inventor.

Benjamin G. Martin

per

Van Santwood & Hauff

Attorneys

UNITED STATES PATENT OFFICE.

BENJAMIN G. MARTIN, OF NEW YORK, N. Y., ASSIGNOR TO JOHN W. WHEELOCK, OF SAME PLACE.

IMPROVEMENT IN POWER-PRESSES.

Specification forming part of Letters Patent No. **179,209**, dated June 27, 1876; application filed May 13, 1876.

To all whom it may concern:

Be it known that I, BENJAMIN G. MARTIN, of the city, county, and State of New York, have invented a new and useful Improvement in Power-Presses, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a front view of my press. Fig. 2 is a plan or top view of the same, partly in section.

Similar letters indicate corresponding parts.

This invention consists in the combination, with the follower of a press, and with two segments, which connect with said follower by straps or pitmen attached to eccentric wrist-pins secured to said segments, of two intermediate pinions, which are in gear with each other and with the segments, and which are mounted on shafts carrying worm-wheels, which engage one with a right-hand and the other with a left-hand worm mounted on the driving-shaft, so that by turning this driving-shaft both segments are compelled to turn absolutely with the same velocity, and the follower is prevented from assuming an inclined or oblique position. With the follower, the segments, the intermediate gear, the worm-wheels, and the right and left hand worms, are combined a friction-pulley and a weighted lever, which serve to regulate the friction of the pulley, so that when the material in the press has been compressed to the desired extent the friction-pulley slips, and the danger of overstraining the press is avoided. The worm-wheels are also fastened on their shafts by friction-clutches, so that when the same are subjected to an undue force they will slip, and injury to the working parts of the press is avoided.

In the drawing, the letter A designates the bed plate of my press, which connects, by standards B, with the head-block C. From this head-block rise a series of columns, D, which support the beams E, and in these beams are formed the bearings for two rock-shafts, *a a*, on which are mounted the segments F F. In these segments are secured eccentric wrist-pins *b b*, which connect, by pitmen G, with the follower H, four pitmen being used, (one on each side of the two segments,) so that the follower is effectually prevented from rocking in either direction. On the head-block C are secured four journal-boxes, *c c*, which form the bearings for shafts *d d*, on which are mounted pinions *f f* and worm-wheels *g g*. The pinions *f f* are in gear with each other, and each of them is in gear with one of the segments F F. The worm-wheels are in gear one with a left-handed worm, *h*, and the other with a right-handed worm, *h'*, both said worms being mounted on the driving-shaft I. On this shaft is placed a pulley, J, which revolves loosely on the same, and the rim of which forms a socket to engage with a friction-clutch, K. This friction-clutch is subjected to the action of a lever, L, from which is suspended a weight, M, so that by the action of said weight the clutch is pressed into the socket of the pulley J.

It is obvious that a friction-clutch of any suitable construction may be used in connection with the pulley J.

The device which I have represented in Figs. 2 and 3 of the drawing is of peculiar construction, however, and I do not wish to give a description thereof in this present specification, since the same forms the subject-matter of a separate application for a patent.

By moving the weight M on the lever L the amount of friction between the clutch and the pulley can be regulated.

The pulley J receives its motion by means of a belt, or by a friction-gear, and if the clutch is in gear with said pulley the shaft I receives a revolving motion, and the follower is raised toward the head-block. By raising the lever L the friction-clutch is thrown out of gear with the pulley J, and while this pulley continues to rotate independent of the shaft I the follower sinks down by its own weight, and by the weight of the material which rests on it.

By the action of the intermediate pinions *f f* both segments F F are always turned with precisely the same speed, and the follower is effectually prevented from assuming an inclined position. At the same time the pinions increase the power of the press.

The weight M is so adjusted on the lever L that the shaft I continues to rotate until the material on the follower has been compressed to the desired extent; then the pulley J slides on the friction-clutch, and all danger of breaking any portion of the mechanism is avoided.

The worm-wheels *g g* may also be secured on their shafts by means of friction-clutches *o*, as indicated in Fig. 2; but, in practice, I have found that such is not absolutely necessary, since the friction-pulley J produces the effect desired.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the follower of a press, and with segments F and pitmen G, attached to the eccentric wrist-pins secured to said segments, of intermediate pinions *f f*, shafts *d d*, worm-wheels *g g*, right and left hand worms *h h'*, and driving-shaft I, all constructed and operating substantially as shown and described.

2. The combination of a friction-pulley, J, and weighted lever L with the segments F, pitmen G, worm-wheels *g g*, right and left hand worms *h h'*, and follower H, all constructed and operating substantially as set forth.

3. The combination of friction-clutch *o* with the worm-wheels *g g*, worms *h h'*, pinions *f f*, segments F F, and follower H, all constructed and operating substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 9th day of May, 1876.

B. G. MARTIN. [L. S.]

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.