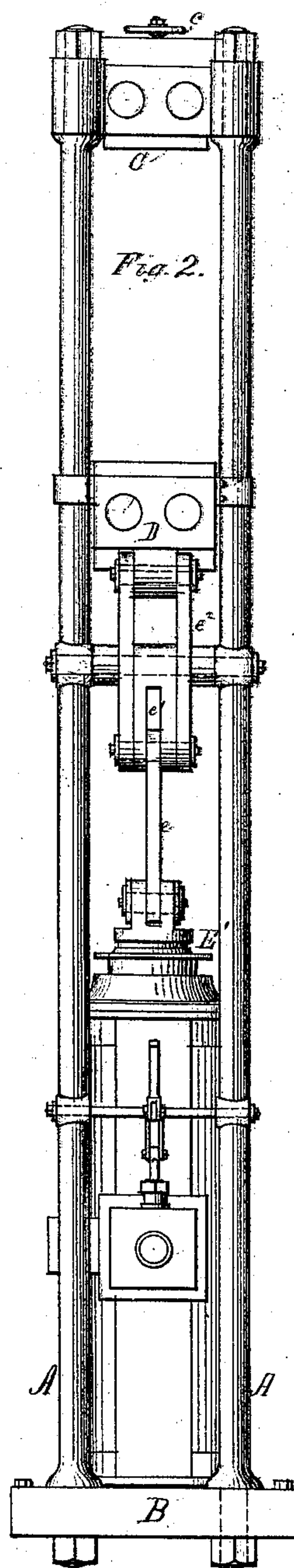
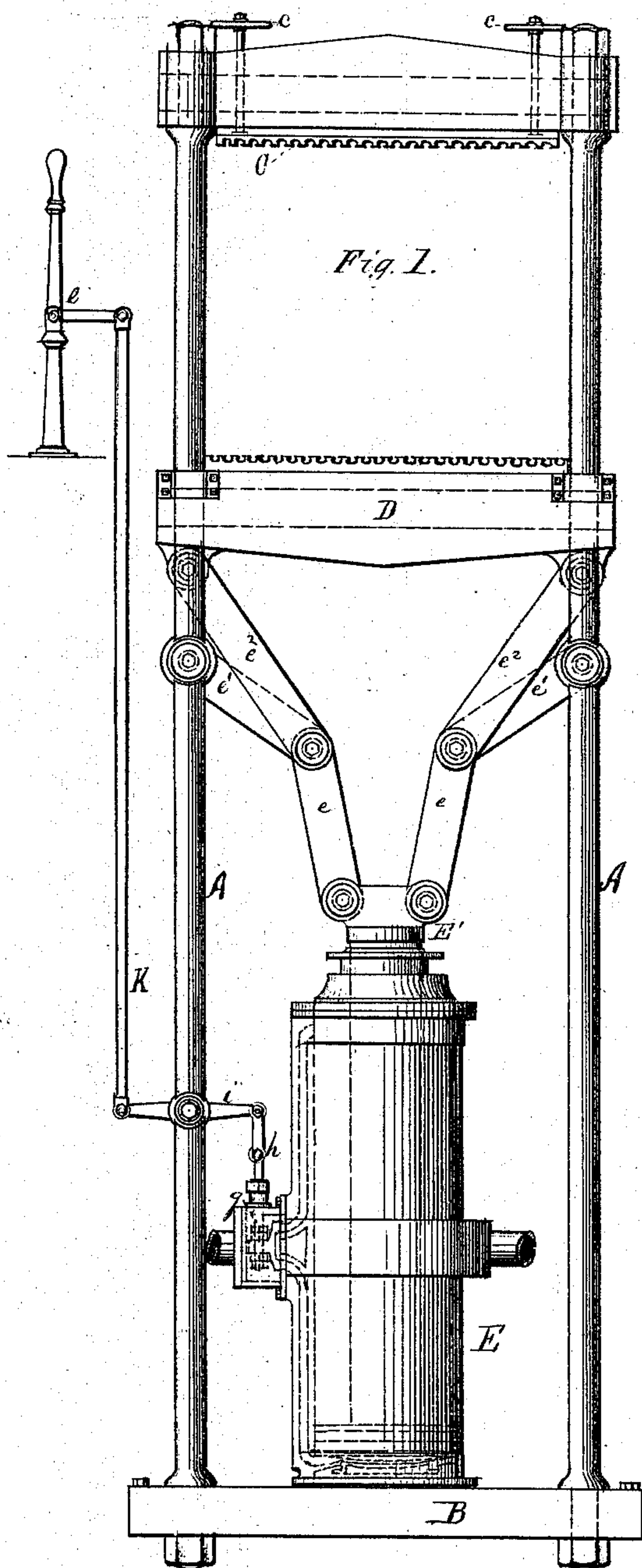


A. Baldwin,

Cotton Press.

No. 103,123.

Patented May 17. 1870.



Witnesses:
E. A. Clarkson
J. J. Noyes.

Inventor:
Augustine Baldwin by
H. W. Beadle atty

UNITED STATES PATENT OFFICE.

AUGUSTINE BALDWIN, OF NEW YORK, N. Y.

IMPROVED STEAM COTTON-PRESS.

Specification forming part of Letters Patent No. 103,123, dated May 17, 1870.

To all whom it may concern:

Be it known that I, AUGUSTINE BALDWIN, of New York city, in the county of New York and State of New York, have invented a new and useful Improvement in Steam Cotton-Presses; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention is an improvement in cotton and other presses; and it consists, first, in the arrangement of the levers or arms by means of which the platen is operated; secondly, in connecting the movable platen of the press to the piston of an engine by means of the intermediate arms or levers; and, thirdly, in the construction and arrangement of the press as a whole.

In order that those skilled in the art to which my invention appertains may be able to make and use my improved press, I will proceed to describe the same, referring to the accompanying drawings, and to the letters of reference marked thereon, the same letters denoting identical parts in both figures.

Figure 1 is a side elevation, and Fig. 2 an end elevation, of my improved press.

The frame-work of my improved press consists of four strong columns, A A A A, preferably of iron, which set below into a firm base, B, constituting the foundation of the press. The upper ends are similarly secured above. To the upper plate is secured the upper platen, C, adjusted by the set-screws *c c*, so as to be exactly parallel with the lower platen. On the standard slides the lower or moving platen, D, which is held upon the standard by suitable loose clamps.

e e e' e' e² e² represent toggle-joints, by means of which the movable platen is operated. The operation of these arms is as follows: When the press is ready for action, the piston rests at the bottom of the cylinder, the arms *e e e' e' e² e²* being in the position shown in Fig. 1. As the piston rises in its movement it will be observed that the arms *e e e² e²*, in moving upward, operate upon the platen in an almost direct line, giving it, consequently, a rapid initial motion. As the piston advances, however, the point of connection of the arms *e e' e²* will swing in the arc of a circle, the center of

which is the point of the fixed pivoting of the arm *e'*. It will result that the arms *e' e²* will approach more and more nearly to coincidence with the same straight line, and the arm *e* will be thrown more and more from a perpendicular position to a horizontal. This progressive action will give constantly-increasing power, with constantly-diminishing velocity of ascent of the platen until the arms *e' e²* are in the same straight line, when all forward motion must cease.

In the lower part of the frame-work, resting on the lower basis, is the engine E, with its piston E' working vertically, and connected directly by proper ears to the lower connecting-arms of the toggle-lever system. The engine is of ordinary construction, with suitable inductive and exhaust pipes, packing, and valve. It is, however, provided with a special arrangement of valve and induction and exhaust pipes, so that when the steam is admitted below the piston to cause its upward stroke on the cotton or other material to be pressed some portion of the steam admitted shall pass above the piston, be detained there, and serve as a cushion to break the force of the blow and relieve the machine from danger of jars resulting from concussion of its parts. The valve *g* is connected by the bar *h* to lever *i*, centrally pivoted to the stand A, and further connected by rod K to the hand-lever *l*, which is so arranged with the press as to be within reach of the operator standing on the platform where the cotton or other material is fed to the press.

The operation will be readily understood from the drawings. The machine having been fed with the material to be pressed, the operator, by movement of the hand-lever, admits steam beneath the piston, forcing up the lower platen, and a reverse motion returns the piston.

The engine is used with special economy and efficiency in connection with this system of toggle-joints, since the toggles acting with immense advantage of leverage at the end of the stroke, the steam may be cut off early in the stroke, and a great saving be thus effected.

Some of the special advantages obtained by this peculiar construction are compactness and simplicity. The engine-piston being directly connected to the movable platen by means of the toggle joints or arms, there is no

waste room, and the parts required are few and simple. No gearing or complicated system of levers is employed, and consequently the amount of friction is very largely reduced. If desired, the equivalent motor power—the screw, with traveling nut, as commonly used in presses of this class—may be employed instead of the cylinder and piston for driving home the platen; but the latter in the arrangement here shown is preferred.

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

1. The arrangement of the arms $ee'e'e^2e^2$,

substantially as described, for the purpose set forth.

2. The piston E' and movable platen D , when directly connected by means of arms, as described.

3. The herein-described press, with all its essential parts, as above claimed, constructed and operating together, as set forth.

This specification signed and witnessed this 12th day of February, 1870.

AUGUSTINE BALDWIN.

Witnesses:

EDM. F. BROWN,
S. J. NOYES.