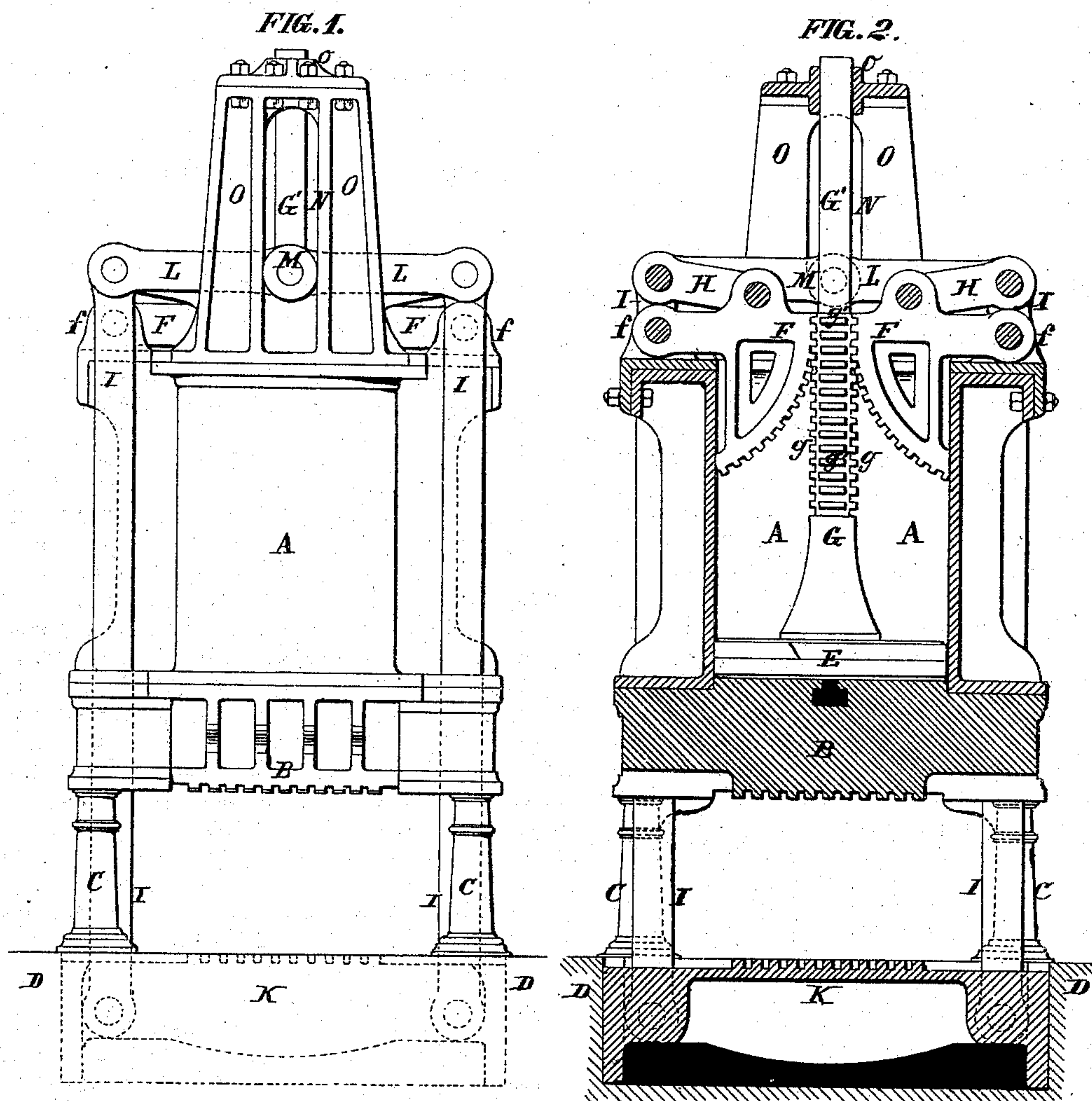


E. L. MORSE.
Cotton-Presses.

No. 156,811.

Patented Nov. 10, 1874.



ATTEST:

Robert Burns.
Henry Tamer.

INVENTOR:

Edmund L. Morse
By Wright & Co.
Atty.

UNITED STATES PATENT OFFICE.

EDMUND L. MORSE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF HIS
RIGHT TO JOSEPH W. BRANCH, OF SAME PLACE.

IMPROVEMENT IN COTTON-PRESSES.

Specification forming part of Letters Patent No. 156,811, dated November 10, 1874; application filed
July 3, 1874.

To all whom it may concern:

Be it known that I, EDMUND L. MORSE, of St. Louis, St. Louis county, Missouri, have invented a certain Improved Cotton-Press, of which the following is a specification:

This invention is an improvement on applicant's patent No. 148,079, issued March 3, 1874; and consists in the use of a steam-piston, having its piston-rod formed into a rack, that gears with and operates cog-sectors and links instead of the worms and worm-sectors shown in said patent.

In the drawings, Figure 1 is a side view. Fig. 2 is a section.

A is an open-topped steam-cylinder, the bottom part or head of which forms the stationary platen B of the press, and is supported in position by uprights or columns C resting on the base D of the press. E is the piston. F F are two cog sector-wheels, pivoted in bearings *f f* of the cylinder A, and operated by the toothed piston-rod G. The piston-rod G has duplicate pairs of teeth, *g g'*, so that should one pair become disabled a quarter-turn can be given to the piston, so as to bring the other pair in position. The sectors F F form each one member of a toggle, the other member being formed by the links H H, whose inner ends are pivoted to said sectors F F, and whose upper and outer ends are connected to the lifting-rods I, which are secured to the lower or movable platen K. The upper ends of the lifting-rods I, and toggle-links H, are connected together by horizontal stay-bars L, which carry at their midlength anti-friction rollers M, traveling in vertical grooves N in the frame or superstructure O, secured to the top of the cylinder A. The top *o* of the frame O acts as a housing and guide for the square upper part G' of the piston, and prevents its turning. The stay-bars L and piston-rod G, by means of their bearing M N *o*

in the frame O, confine the lifting-rods I to a direct vertical movement, and the stay-bars prevent the upper end of the lifting-rods being spread out under the action of the toggles.

It is evident that a secondary steam-cylinder and piston can be arranged over the frame O, and connected to the piston G to assist the lower cylinder in its work, in which case both cylinders would have a combined steam capacity sufficient to compress the largest bale, and when light or small bales are being compressed only one cylinder need be used.

The operation is as follows: The bale of cotton is placed on the lower platen K, and steam admitted to the steam-cylinder A beneath the piston E; as the piston rises it moves the sectors F and links H upward and outward, and raises the platen K, by means of the lifting-rods I, with a decreasing speed and increasing power, the pressure increasing as the resistance of the bale increases, (owing to its contraction.)

When the steam pressure is removed the piston E and platen K descend, by gravity, for the next operation.

I claim as my invention—

1. The combination of the piston E, rack-rod G, cogged sector-wheel F, bearing *f*, link H, and platens B K, substantially as set forth.

2. The combination and arrangement of the cylinder A, piston E, platen B, toothed piston-rod G, cog sector-wheels F F, links H H, lifting-rods I, platen K, and stay-bars L, substantially as set forth.

3. The piston-rod G, formed with duplicate teeth *g g'*, in combination with the sector-wheel F, as and for the purpose set forth.

EDMUND L. MORSE.

Witnesses:

SAML. KNIGHT,
ROBERT BURNS.