T. D. POWERS.

Cotton-Press.

No. 163,805. Patented May 25, 1875.

FIG. 1.

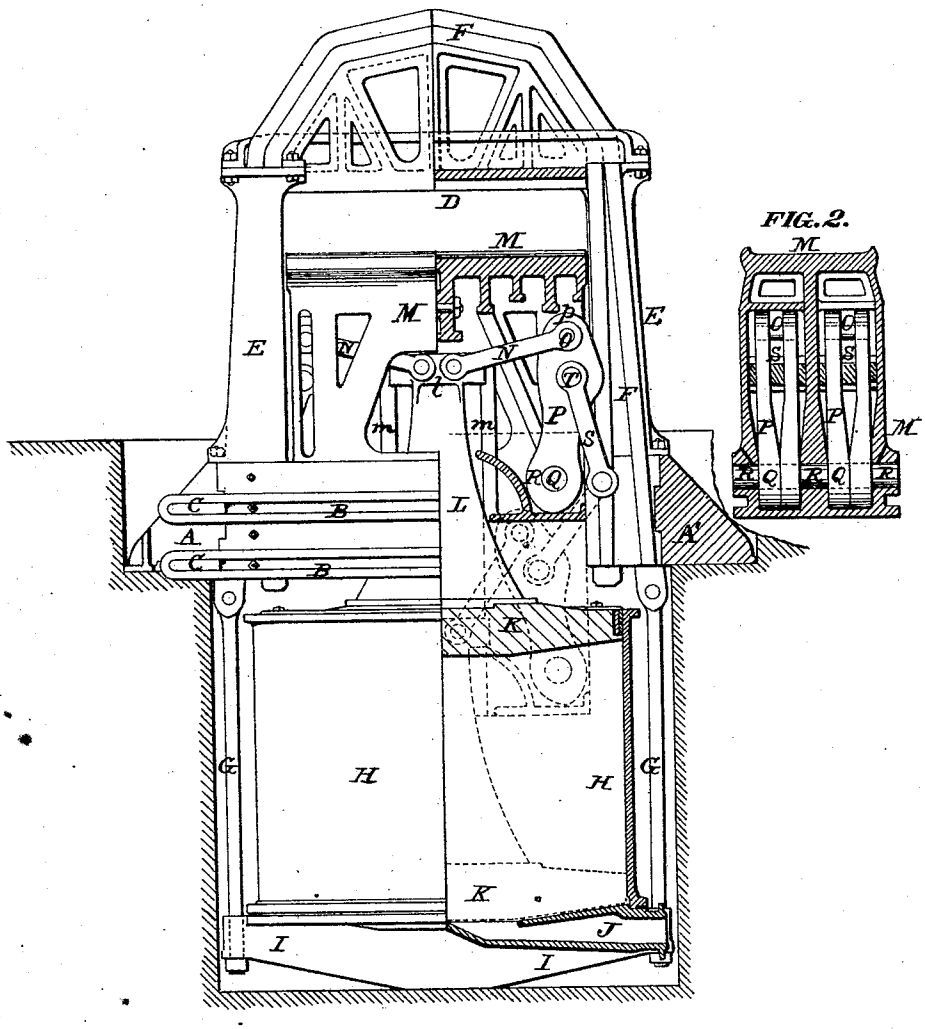


FIG. 2.

ATTEST:

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UNITED STATES PATENT OFFICE.

THEODORE D. POWERS, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN COTTON-PRESSES.

Specification forming part of Letters Patent No. **163,805**, dated May 25, 1875; application filed April 6, 1875.

T all whom it may concern:

Be it known that I, THEODORE D. POWERS, of St. Louis, St. Louis county, State of Missouri, have invented a certain new and useful Improvement in Cotton-Presses, of which the following is a specification:

This improvement belongs to that class of presses used for re-pressing the cotton-bale, so as to reduce the plantation bale to a size suitable for distant transportation.

The first part of my improvement consists in the inclosing of the operative arms, links, and struts (by which the piston acts on the moving platen) within the frame-work of the said platen. The second part consists in the combination of said piston, platen, links, arms, and struts with a central upright or column on the piston, to whose head the struts are connected, and which serves as a guide between the piston and platen, (slides of the platen working in grooves of the head.) The third part of my improvement consists in the combination of steam-piston, standard or column, (on piston,) struts, links, and arms with the moving platen, the construction and combination being such that the platen, when first commencing to rise, travels at a speed greater than that of the piston; but the platen as it rises travels at a constantly-decreasing speed relatively to the speed of the piston until, when near the top of the stroke, the comparative movement of the platen is so slow that a very powerful pressure is had upon the bale.

In the drawings, Figure 1 is a view half in elevation and half in section, with the moving platen in its upper position. The lower position of this platen is indicated by dotted lines. Fig. 2 is a transverse section of the lower platen.

The bed-plate of the machine is made in two parts, A A′, held together by straps or ties B and end bars C, which pass through the straps or ties and extend across the machine from side to side. The upper platen D is supported on columns E and attached to the bed-plate by tie-bars F, the latter passing unbroken over the top of the platen, and their ends are secured to the bed-plate by nuts, keys, or other means. G are hanger-bars, whose upper ends are secured to the bed-plate, and whose lower ends are secured to the open-topped steam-cylinder H. The bars G are shown as passing through lugs at the ends of strengthening-ribs I, passing beneath the cylinder-bottom. J is the steam-pipe, through which the steam is alternately admitted into and exhausted from the cylinder, these movements of the steam being governed by any suitable valve or valves. The piston K has at its center an upright column, L, whose head *l* is grooved upon the sides to receive the edges of guide-ribs or slides *m* upon the interior of the lower platen M, so as to guide the piston and platen relatively to each other, the platen and piston being also guided in the main frame or bed-plate and the cylinder, respectively. To the opposite sides of the head *l* are hinged a number of struts, N, extending in opposite directions, and each set or series connecting, by a horizontal pivot-pin, O, with the ends of four (more or less) link-levers, P, whose other ends are connected by a cross-pin, Q, to the lower part of the platen M, the pin being preferably fixed in the links, and turning in its bearings R in the platen.

S are a number of arms in a horizontal series, hinged at one end to the main frame or bed-piece, whose free ends are hinged to the link-levers P by means of a pivot-pin, T, passing through the whole of these series of the arms and links.

It will be seen that as the piston rises the ends *p* of the link-levers are thrust toward the column L by the arms S, and the struts N have their free ends moved in the same direction. The evident result of this movement of the struts and link-levers will be to cause the platen at the first part of its upward movement to rise at a greater speed than the piston, and this continues (the rates of speed gradually approximating) until the arms S reach a horizontal position; and after this the relative movement of the platen, in comparison with the movement of the piston, gradually decreases until at the last part of the stroke the piston moves at a much faster rate of speed than the platen, and the pressure force of the platen upon the bale is proportionally increased.

I claim as my invention—

1. The combination of the lower platen M, lever-links P, arms N and S, post or column L, piston K, and cylinder H, substantially as set forth.

2. The lower platen M, having guides *m* for the column L of the piston K, in combination with the link-levers P, struts N, arms S, and open-topped steam-cylinder H, substantially as set forth.

3. The combination of stationary platen D, columns E, ties F, moving platen M, link-levers P, arms S. secured to the frame, and struts N, connected to the column L of the piston K, substantially as set forth.

THEODORE D. POWERS.

Witnesses:

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ROBERT BURNS.