P. B. Tyler.

Cotton Press.

No 3885 Patented Jany 16. 1845.

Fig 1.

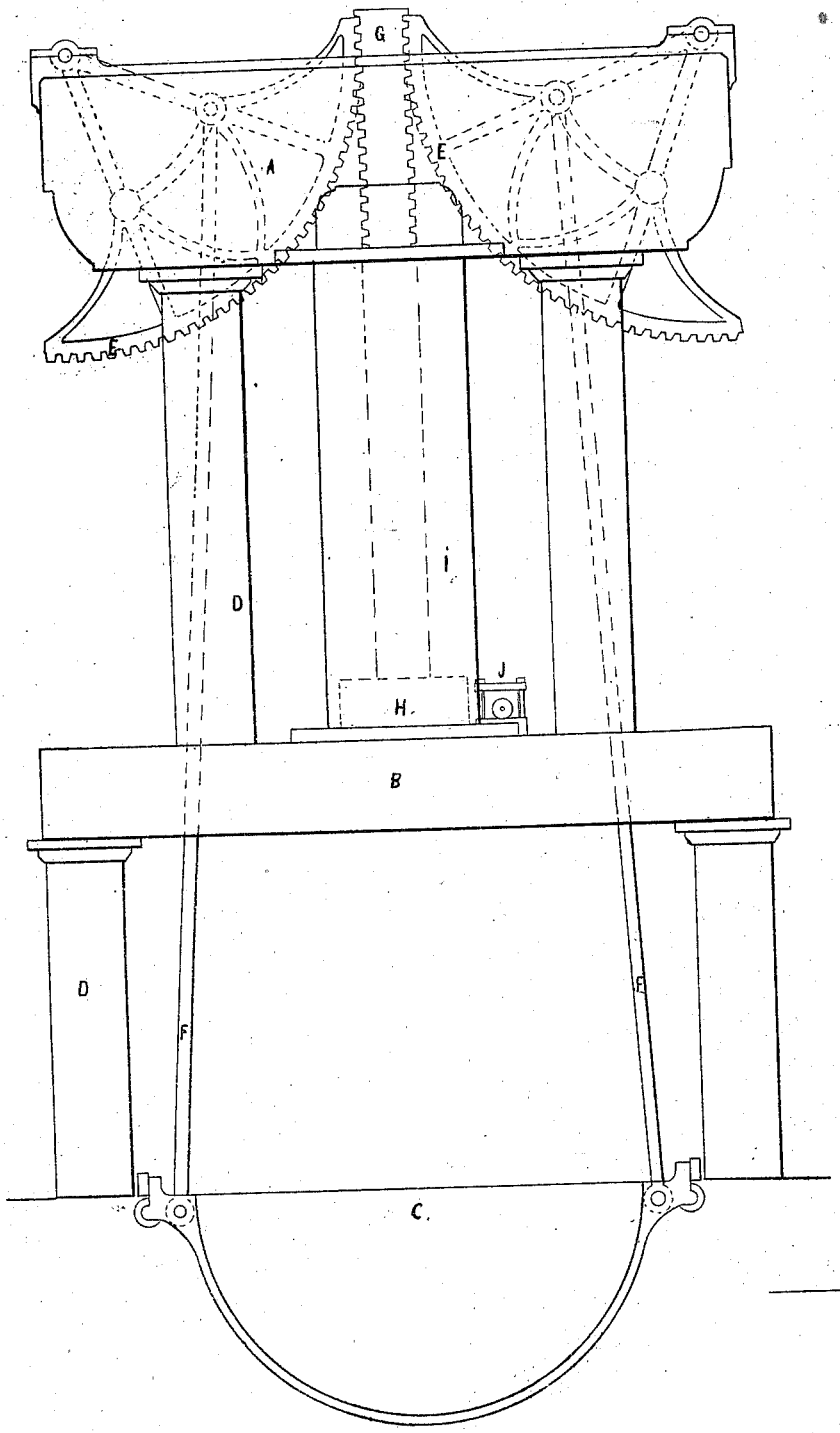
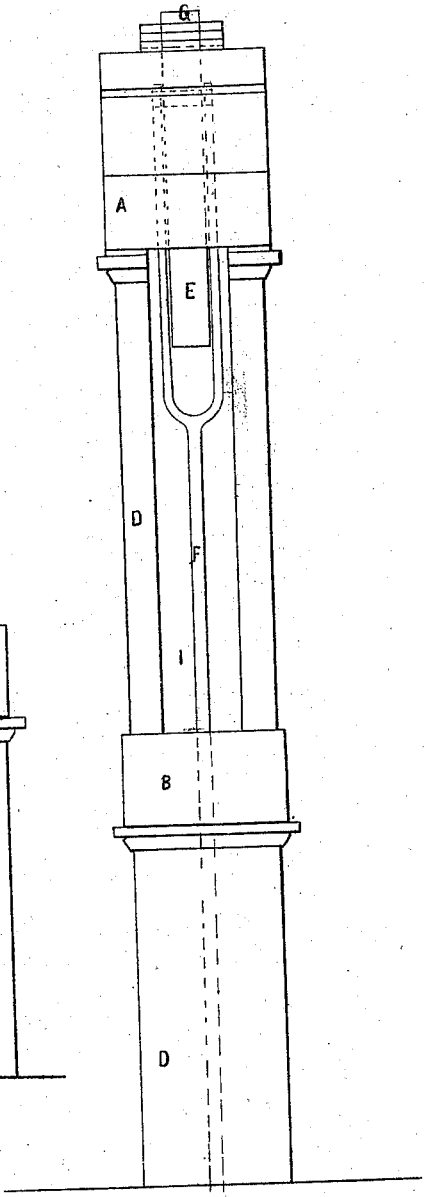


Fig 2.



UNITED STATES PATENT OFFICE.

PHILOS B. TYLER, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN COTTON-PRESSES.

Specification forming part of Letters Patent No. **3,885**, dated January 16, 1845.

To all whom it may concern:

Be it known that I, PHILOS B. TYLER, of New Orleans, of the State of Louisiana, have invented a new and Improved Press for Compressing Cotton, Hay, and other Substances; and I do hereby declare that the following is a full, clear, and exact description of the construction of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a front elevation, and Fig. 2 an edge or side view.

The nature of my invention consists in applying power to the compression of cotton or other substances through the intervention of two sectors gearing into a double rack attached directly to the piston of a steam-cylinder, or connected with the piston-rod by connecting-chains, in a manner well known to all mechanics, and connected with the platen by the means of two bars or rods, said connecting-rods being attached to the sectors at a point within their circumference which, when they revolve by the action of the racks, raise the platen with a power increasing in the proportion, or nearly so, of the increased resistance of the material under pressure.

The drawings will show the manner in which I intend to construct my press for the compression of bales of cotton.

Let A be the cap of the frame; B, the bed; C, the platen; D D, columns; E E, the sectors; F F, the rods connecting the platen with the sectors G, the double rack gearing into the sectors and connected directly with the piston H; I, the steam-cylinder; J, the steam-chest, in which is the valve operating upon the proper steamways for filling and exhausting the cylinder.

It will be seen that, for obvious reasons, I employ two sectors, one of which is connected to each end of the platen by means of the rods F F; and, in order to determine the best position for connecting the platen with the sectors, it is necessary to ascertain by experiment the ratio of increase of the resistance as the compression advances. With this view I have made a series of experiments with bales of cotton, and have regulated the distance of the connecting-rods from the center of the sectors according to the results of my experiments. In my press I attach the connecting-rods to the sectors two feet from their centers and about nine inches below the line drawn from the center of one sector to the center of the other when the platen is at the lowest point, which will give an increase of the power of the press very near the increase of the resistance shown by the experiments made by me; but I do not wish to confine myself to this exact position, as it may be found by further experience that the exact ratio of the increase of resistance is not yet determined, particularly of other compressible materials to which my press is adapted.

It may be here mentioned that, after the bale is sufficiently compressed, the steam may be expanded into the cylinder of another press, whereby about one-third of the amount of steam used may be saved.

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

The arrangement of the sectors and double-rack piston-rod, in combination with the follower of the press by means of the connecting-rods, to adapt the movement of the platen or follower to the increased resistance of the cotton, and thus attain the greatest amount of effect with the least expenditure of power, as described.

PHILOS B. TYLER.

Witnesses:

EDWIN L. BRUNDAGE,

WM. BISHOP.