

Cotton Press.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN STEAM-PRESSES.

Specification forming part of Letters Patent No. 5,007, dated March 13, 1847; antedated January 13, 1847.

To all whom it may concern:

Be it known that I, PERRY G. GARDINER, of the city, county, and State of New York, have invented a new and Improved Steam-Press for the Compressing of Cotton or other Substances; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation; Fig. 2 is an edge view; and Fig. 3 is a vertical section.

Similar letters refer to corresponding parts in all the figures.

The nature of my invention consists, principally, in the combination of the platen of a press with the piston-rod of a vertical steam-cylinder by means of double toggle-joint levers and connecting-rods, in the manner hereinafter set forth.

The accompanying drawings represent a press for compressing cotton.

The supporting-frame of the press is constructed of the corner-posts A A, the cap-pieces B B, the bed-pieces C C, the short ties B' B', and the base-pieces D D and E E, united in the usual manner.

F is a steam-cylinder (open at top) resting on the bed-pieces C C.

G is the bed, secured to the under side of the bed-pieces, against which the bales of cotton are pressed.

I is the piston in the steam-cylinder, and J is the piston-rod attached to the same, projecting out of the top of the cylinder.

K K are wings resting upon the bed-pieces C C, filling the space between the corner-posts A A and the steam-cylinder.

a is a flange on the upper end of the steam-cylinder, having recesses in it for the reception of the upper inner corners of the wings K K.

b is a ring projecting from the center of the steam-cylinder, (cast solid with the same,) fitting into recesses in the inner edges of the wings K K.

c is a flange on the bottom of the steam-cylinder.

L L are forked levers. Their forked ends

embrace the piston-rod J, and are connected to each other and to the piston-rod by the joint-pin *k*, forming a toggle-joint. The outer solid ends of the levers L L are embraced between the inner ends of the double levers M M, to which they are connected by the toggle-joint pins *e e*. The outer ends of the double levers M M are supported by the joint-pins *i i*, having their bearing-boxes secured to the top, of the wings K K.

N N are suspension-rods in pairs, connecting the toggle-joint pins *e e* (uniting the levers L L and M M) with each end of the platen H, to which they are connected by the joint-pins *l l*.

The steam-chest, pipes, and valves for supplying steam to the cylinder and discharging it from the same may be constructed in any well-known or convenient manner. When steam is admitted to the bottom of the cylinder, it elevates the piston, the piston-rod, and the central toggle-joint, uniting the levers L L to the same. The elevation of the central toggle-joints forces upward and outward the toggle-joints uniting the levers L L and M M, and thereby communicates motion to the platen through the medium of the suspension-rods N N. As the piston-rod J is elevated, its upper end is guided and all lateral play prevented by means of rollers *f f*, acting on each edge of the same, having flanges at their ends embracing the sides of the piston-rod.

g g are the bearings of the rollers *f f*, secured to the upper sides of the cap-pieces B B. The wings K K are combined with the steam-cylinder by means of the flange *a* and ring *b*, in the manner herein set forth, for the purpose of causing the levers M M to react upon the steam-cylinder and prevent their straining the supporting-frame.

It will readily be perceived that the power of my improved press is progressive, and that the leverage may be varied by changing the proportions of the levers L and M. By lengthening the levers L and shortening the levers M, the amount of motion of the platen will be diminished and its power increased, and vice versa.

Having thus fully described the construction and operation of my improved steam-

press, what I claim as my invention, and desire to secure by Letters Patent, is—

The connecting the platen H with the piston-rod J through the medium of the toggle-joint levers M M and L L and the suspension rods N N, arranged, combined, and operating with each other and with the wings K K, in

such a manner as to bring the reaction of the levers principally upon the cylinder and the bed-piece C, substantially as herein set forth.

P. G. GARDINER.

Witnesses:

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