

T. B. Webster,

Cotton Press.

N^o 49,047.

Patented July 26, 1865.

Fig. 1.

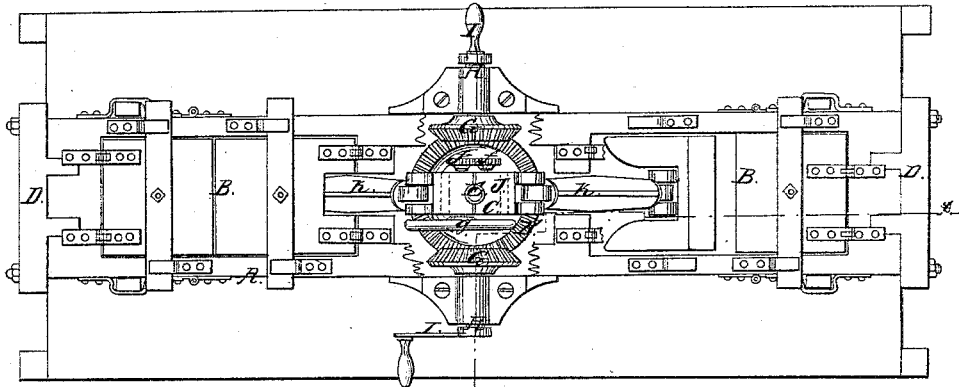


Fig. 4.

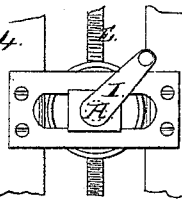


Fig. 2.

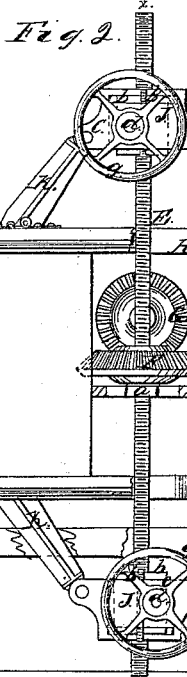
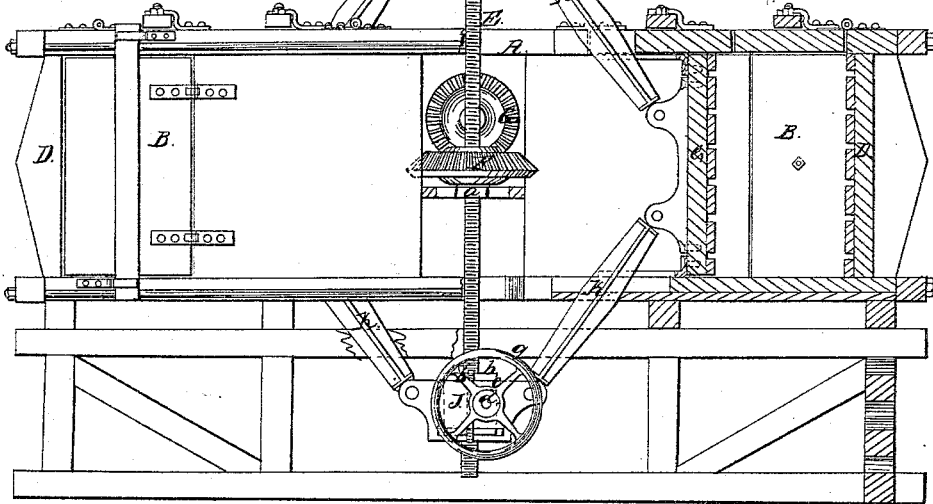
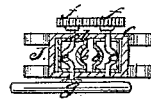


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS B. WEBSTER, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND
THOMAS GANNON, OF SAME PLACE.

IMPROVEMENT IN SCREW-PRESSES.

Specification forming part of Letters Patent No. 49,047, dated July 25, 1865.

To all whom it may concern:

Be it known that I, THOMAS B. WEBSTER, of the city, county, and State of New York, have invented a new and Improved Double-Screw Press; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a plan or top view of this invention. Fig. 2 is a longitudinal vertical section of the same, the line *xx*, Fig. 1, indicating the plane of section. Fig. 3 is a detached horizontal section of the device for releasing and closing up the nuts; Fig. 4, a detached elevation of one of the self-adjusting boxes of the driving-shaft.

Similar letters of reference indicate corresponding parts.

This invention relates to an improvement in that class of presses in which the power is exerted by a right-and-left-hand screw acting by means of toggle-arms on the follower or followers. The box in this improved press is placed in a horizontal position, the right-and-left-hand screw passing through its center in a vertical direction. On each side of the screw is a follower, and two nuts travel up and down on the screw whenever a rotary motion is imparted to the same. Said nuts connect by toggle-arms with the follower, and if by turning the screw in the proper direction the nuts are made to close up, the toggle-arms exert a progressive power on the follower, and the pressure on both sides of the screw is perfectly balanced, and all the power exerted by the screw and toggle-arms is utilized. The bearing of the screw-spindle and those of the driving-shafts are movable or yielding, so that they are allowed to adjust themselves according to the quantity of material in each press-box, and that the screw-spindle is not subjected to an unequal strain, which would have a tendency to bend it. The nuts are composed each of two jaws, which are made to open and close by means of eccentrics or crank-shafts passing through them and geared together in such a manner that by turning a hand-wheel both jaws open or close simultaneously, and the nut can be made

to release or grasp the nut instantaneously. By this arrangement much time is saved in operating the press, since in working the followers back the nuts can be released, and thereby said followers are brought in such a condition that they can be pushed back with little loss of time.

A represents a box or frame, made of wood or any other suitable material. Each end of this frame forms a press-box, B B, which is provided with a follower, C C, moving toward and from the stationary heads D D. Said followers are operated by means of a screw-spindle, E, which extends in a vertical direction through the center of the frame A. It has its bearings in suitable boxes, *a*, and it is provided with a right-and-left-hand screw-thread, one half being right and the other left. On the middle of said screw-spindle, between the two threads, is mounted a bevel-wheel, F, which gears in two other bevel-wheels, G G, mounted on the inner ends of horizontal shafts H H. These shafts extend beyond the sides of the frame A, and they are provided with cranks I I, (see Fig. 1,) so that they can be turned freely in either direction. By these means a rotary motion can be imparted to the screw-spindle E in either direction, and the nuts J J, which are fitted on said spindle, can be made to close up or to move farther apart, according to the direction in which the spindle is turned. Said nuts are composed each of two jaws, *b b*, which are fitted into a head, *c*, (see Fig. 3,) so that they can be made to close up and to grasp the screw-thread. This object is effected by means of two shafts, *d d*, which pass through the jaws *b b*, (see Fig. 3,) and each of which is provided with an eccentric, *e*, situated in the interior of the jaw. Said shafts have their bearings in the side plates of the head *c*, and they are geared together by small cog-wheels *f f*.

A hand-wheel, *g*, mounted on the end of one of the shafts *d*, serves to turn the same in either direction, and the eccentrics *e* are so arranged that by turning the hand-wheel both jaws recede or close up simultaneously. By these means the nut can be thrown out of gear with the screw-spindle instantaneously, and much time is saved in working the press back.

The heads *c c*, which inclose the nuts, connect by arms *K K* with the followers *C C*, as clearly shown in Fig. 2. These arms act as toggle-arms, with a progressive power which constantly increases as the nuts close up and the arms straighten out. By having the toggle-arms extend from both sides of the heads *c* the power on the screw-spindle is exactly balanced and no lateral strain is exerted on the same, which would have a tendency to cause the nuts to bind or to bend the spindle; and, furthermore, all the power exerted by the persons turning the cranks is employed in imparting motion to the followers, so that two bales of cotton or other material are turned out simultaneously, and the operation of pressing is effected with comparatively little exertion and with great dispatch.

In order to prevent an unequal strain on the screw-spindle if more material should be in one of the press-boxes than in the other, the box *a*, which forms the bearings for the screw-spindle, and also the boxes of the driving-shafts *H*, are adjustable or yielding, so that the same can accommodate themselves to the quantity of material in each box, and the bending of the screw-spindle is avoided.

The press is very simple in its construction. It is light and requires little machinery. The working parts are relieved from friction as much as possible, and the power is exerted to the best advantage. The material to be pressed

is readily introduced into the boxes, which are provided with doors on top and sides, as shown in the drawings, and through these doors the bales, when completed, can be readily removed; and, finally, by throwing the nuts out of gear with the spindle the followers can be worked back instantaneously, and no time is lost in performing this operation.

I claim as new and desire to secure by Letters Patent—

1. In a press provided with a right-and-left-hand screw-spindle, *E*, the gear-wheels *F G* and cranks *I I*, or their equivalents, in combination with heads *c*, detachable nuts *J J*, toggle-arms *K K*, and followers *C C*, situated on opposite sides of the spindle, all as herein shown and described.

2. Making the boxes which form the bearings for the screw-spindle and for the driving-shafts yielding, substantially as and for the purpose set forth.

3. The eccentric-shafts *d d*, geared together by cog-wheels *f f* and operated by a hand-wheel, *g*, or its equivalent, in combination with the jaws *b b*, spindle *E*, and followers *C C*, constructed and operating substantially as and for the purpose specified.

THOS. B. WEBSTER.

Witnesses:

W. HAUFF,
C. L. TOPLIFF.