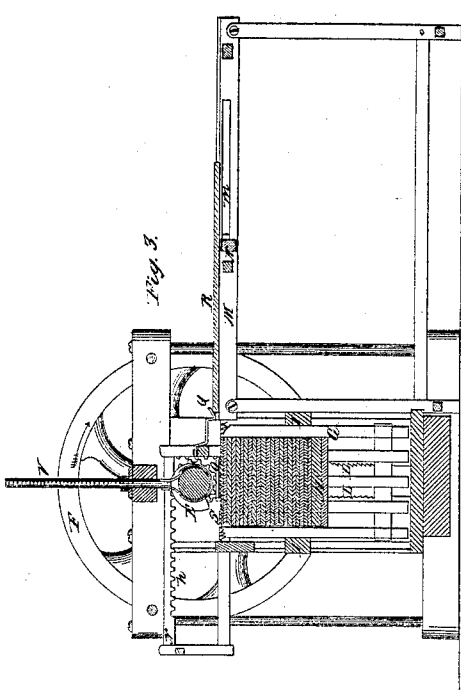
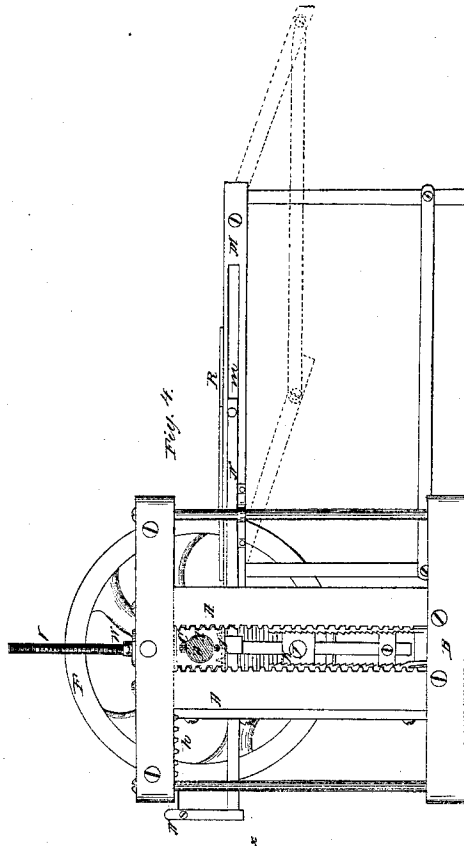
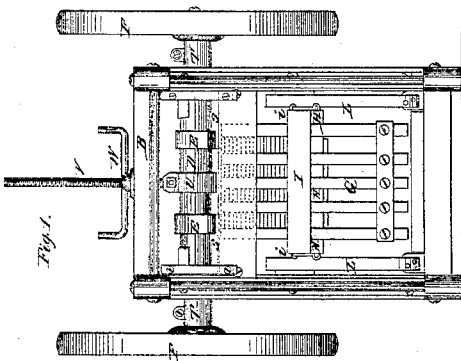
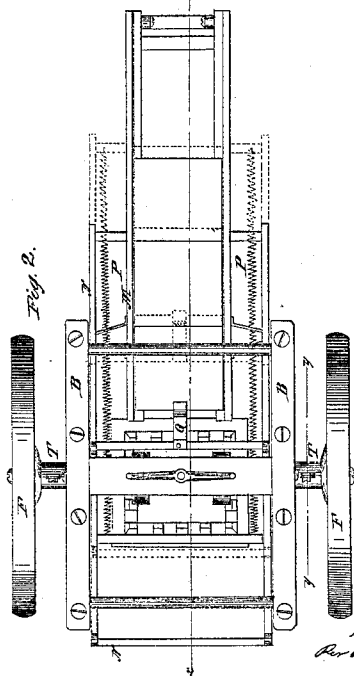


E. Thomas, Cotton Press.

N^o 31,495.

Patented Feb. 19, 1861.



Witnesses.

*Attest my hand
and the seal of the
Office of the
Comptroller of the
Patent Office
this 19th day of
February 1861.*

Inventor

*E. Thomas
Per *Wm. B. Bay*
*Att'y**

UNITED STATES PATENT OFFICE.

ENOCH THOMAS, OF BEVERLY, VIRGINIA.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. 31,495, dated February 19, 1861.

To all whom it may concern:

Be it known that I, ENOCH THOMAS, of Beverly, in the county of Randolph and State of Virginia, have invented certain new and useful Improvements in Cam-Presses; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a rear elevation of a press embodying my improvements. Fig. 2 is a plan of the same. Fig. 3 is a vertical section at *x x*, Fig. 2. Fig. 4 is a vertical section at *y y*.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of my invention consists, first, in a peculiar manner of mounting the driving-wheels to adapt them for three distinct uses—to wit, band-wheels, fly-wheels, and truck-wheels—as hereinafter explained; second, in the use of additional detached followers applied successively between the cams and the main follower, to effect an additional motion of the latter at each revolution of the cams, as hereinafter explained; third, in an automatic device for retaining the follower when released by the cams; fourth, in a device for reducing friction between the cams and the followers.

A A represent toothed standards, rigidly secured to a frame, B, and adapted to hold between them at any height the journal-boxes C of a shaft, D, which carries a pair of cams, E, and one or more heavy wheels, F, performing the combined functions of band-wheels and fly-wheels.

G is a crib, in which material is placed to be compressed.

H is a follower constructed with arms projecting through the spaces in the walls of the crib G.

I is a retainer, constituting in the present illustration a collar or band encircling the crib, and provided with ears J, pivoted in boxes K, each held between a pair of clamps, L, operating to permit the descent of the said retainer, but prevent it from rising.

i i represent clasps connecting the follower and retainer.

M is a platform extending horizontally from the front of the press and supported by a piv-

oted frame, so as to permit the descent of the platform when needful, as hereinafter explained.

N is a frame sliding in ways *n* in the platform M. The said frame encircles the shaft D, as clearly shown in Fig. 3, and is provided at each side with a rack, *n*, by means of which, gearing with toothed segments O upon the shaft, the frame is at intervals extended forward to the position shown by red lines in Fig. 2.

P P are springs, which retract the frame N when released by the segments O.

Q is a claw or hook projecting forward from the frame N.

R R are movable followers, which are placed in succession upon the platform M and being forwarded toward the frame N are caught by the hook Q and deposited above the follower, one at each revolution of the cam-shaft.

S S are oil-plates projecting from the boxes C and adapted to receive lubricating material, so as to reduce the friction, which would otherwise occur between the cams E and followers H or R.

T T are hinged collars, the removal of which from the shaft D permits its boxes C to be withdrawn from the standards A, thus enabling the shaft to be raised or lowered.

U is a collar encircling the shaft D and provided with a screw-stem, V, extending upward through the frame B.

W is a wrench-nut working on the stem V to raise or lower the shaft D when its boxes are withdrawn from the standards, as before stated.

The operation of the machine may be understood from the foregoing description. The material to be pressed is placed within the crib G, and the follower H inserted beneath the plates S, and connected with the retainer I by means of the clasps *i*. The wheels F being then rotated by a band in the direction indicated by the arrow, the follower is forced down by the cams E, and held from rising by the retainer. At the instant the most salient part of the cams passes the plates S the latter rise by their own resilience, and an additional follower, R, is inserted beneath them by the hook Q, operated in the manner previously explained. The operator stands in front of the machine, placing the followers one by one upon the platform, as

required; and in this manner the main follower is forced down at each revolution of the shaft until the work is completed.

The height of the shaft D may be changed to suit varying requirements of the materials to be pressed; or it may be so placed as to elevate the machine completely off the ground, and adapt it to be conveyed from place to place upon the wheels F. For this purpose the collars T are unclashed from the shaft, the boxes C withdrawn from the standards A, and the shaft D adjusted to the height desired by means of the wrench-nut W, and there secured by replacing the boxes C and collars T as before.

The cam-press combines cheapness of construction, strength with a given weight of material, and compactness in a greater degree than either the lever or screw. Its disadvantage is the difficulty of producing a stroke of sufficient length without too great friction.

The invention above described affords simple and effectual means of moving the follower to any extent desired, with a cam of moderate pitch and likewise of overcoming friction.

By increasing the size of the driving-wheels the power of the press may be increased to any desired extent.

If the power be found not fully sufficient for the work to be done, the insertion of additional followers, R, may be omitted occasionally, to enable the fly-wheels to acquire greater momentum.

In practice the crib is mounted on a movable platform, to facilitate the removal of the pressed material, by simply withdrawing the topmost follower at the proper instant and running the now released crib out from under the shaft.

It is then replaced with another, ready prepared and filled. By this means the operation is accomplished with great speed, the loss of time in retracting the follower being entirely obviated.

It is not essential that the retainer should be constructed in a separate piece encircling the crib, as shown. For some purposes the ears J, which are held in the ratchet-boxes K, may be permanently attached to the follower. When the retainer is separate from the follower, as in the present illustration, an additional follower placed above the retainer, with projecting arms, as shown, may enable the clasps connecting the follower and retainer to be dispensed with.

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

1. The movable boxes C and collars T, combined with the cam-shaft D and wheels F, in the manner and for the purposes set forth.

2. The use of the detached followers R between the cams E and follower H, in the manner and for the purposes set forth.

3. The combination of the ears J, toothed boxes K, and spring ratchet-clamps L, operating to retain the follower H, as explained.

4. The oil-plates S, interposed between the cams E and followers H or L, for the reduction of friction, as set forth.

The above specification of my improvement in presses signed by me this 16th day of October, 1860.

ENOCH THOMAS.

Witnesses:

GOODWIN Y. AT LEE,
R. W. FENWICK.