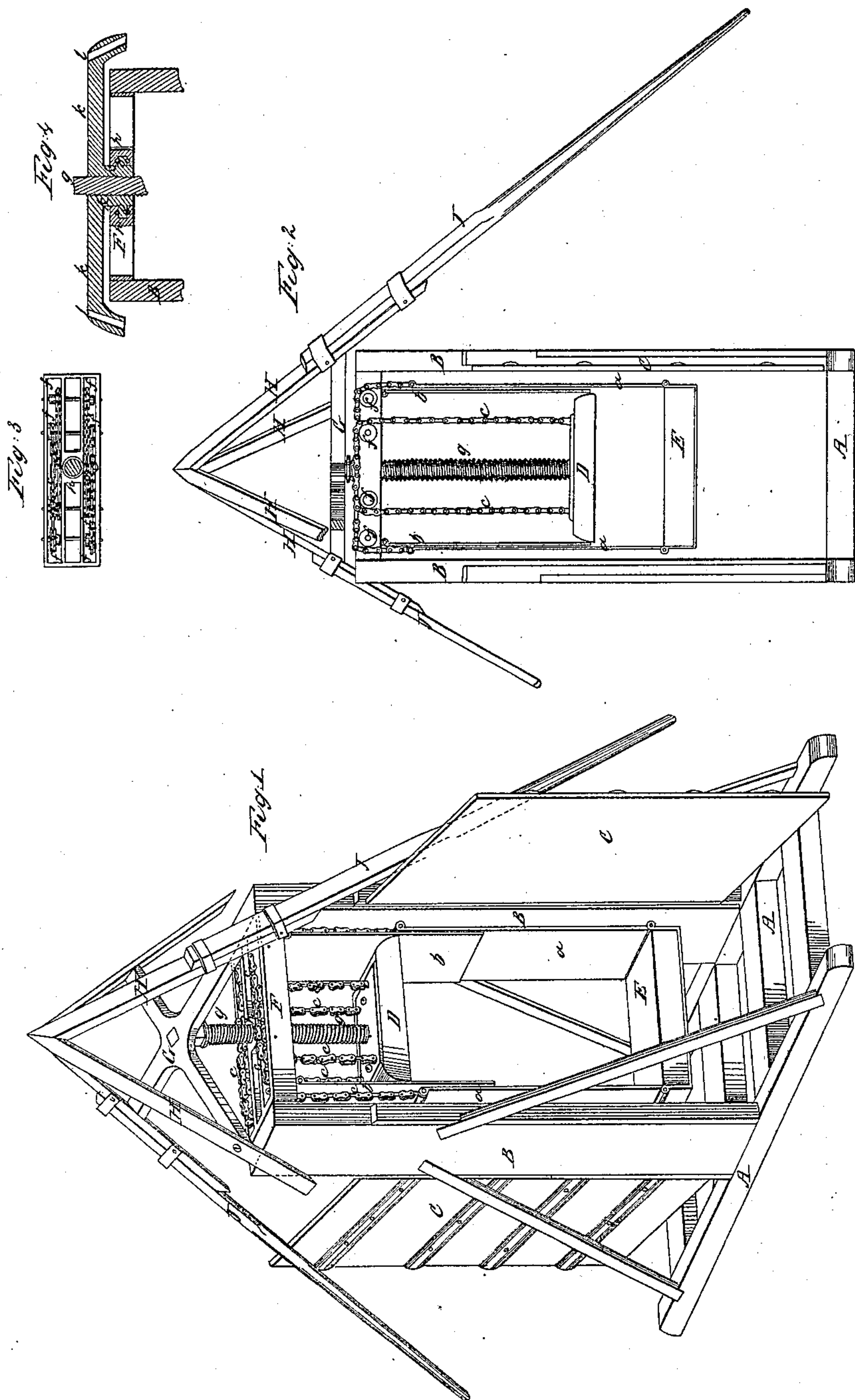


W. Field,
Cotton Press.

N^o 19,838.

Patented Apr. 6, 1858.



UNITED STATES PATENT OFFICE.

WM. FIELD, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN COTTON-PRESSES.

Specification forming part of Letters Patent No. 19,838, dated April 6, 1858.

To all whom it may concern:

Be it known that I, WILLIAM FIELD, of the city and county of Providence, State of Rhode Island, have invented certain new and useful Improvements in Cotton and Hay Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a perspective view of a press combining my improvements. Fig. 2 represents an elevation of the same, showing the arrangement of the chains and side plates. Fig. 3 represents a plan of the top girt of the press, with the chains. Fig. 4 represents a modification in the arrangement of the female screw or nut in the top girt, in order to avoid raising and lowering the sweeps.

My improvements in presses relate to that class in which two followers are used, so arranged as to move toward and from each other, and between which the material is pressed; and the object of my improvements is to relieve the supporting-frame of the press from strain, and transmit the power and motion through one follower to the other, instead of, as has heretofore been done, applying the power to each follower respectively, thereby simplifying the construction of the press, diminishing the cost, and rendering it less liable to derangement.

My invention for effecting this object consists, first, in connecting the followers with each other by chains or any other flexible connection so arranged that the motion imparted to the upper follower is transmitted by it to the lower, whereby the power is also applied directly to one instead of both followers; second, in arranging the chains connecting the followers, and also the screw that gives motion to the upper follower, so that the strain of the screw on one side of the top of the press is counterbalanced by the strain of the chains on the opposite side, by which means the strain of the press is borne by the top girt alone, and not, as in all other presses, transferred to the frame, thereby requiring it to be made of great strength, in order to resist the stress upon the frame; third, in protecting the chains from being clogged, and also making the box of the press independent of the frame by means of guard-plates extending upward from the lower follower and downward from the girt, over-

lapping each other, and thus forming the ends of the box.

In the accompanying drawings a press embracing my improvements is represented. A strongly-framed platform, A, has tenoned to it two upright posts, B, which form the supports for the press. To the top of the posts is bolted the girt or cap F of the press, and through the center of the cap, working in a nut, *h*, passes a powerful screw, *g*, which connects at its lower end with a follower, D. This follower D is connected with a lower follower, E, by means of four chains, *c*, which pass from the top of the upper follower (two at each end) through the cap, thence lengthwise of it, and again through it and outside the upper follower, and connects with guard-plates *a*, hinged to the ends of the lower follower. Thus the two followers are connected with each other, so that when the upper follower is run down by the screw the lower one is raised proportionally. Each of the chains passes over two friction-pulleys, *f*, in the girt F, arranged opposite the points through which they pass the girt. Two other guard-plates, *b*, are hinged to the under side of the cap F, pass outside the end of the upper follower, D, and extend down between the chains and upper follower below the top of the lower guard-plate when the lower follower is level with the platform, and protect the chain from being clogged by hay, cotton, or other material being entangled in the links. These guard-plates *ab* form the ends of the box of the press, while the doors *c*, hinged to either side of the posts, inclose the press and form the sides of the box into which the material to be pressed is thrown. The screw of the press may be turned by animal-power or any other motor. In the present instance it is arranged for animal-power, which is applied to inclined sweeps J, extending from pyramidal-shaped frame H, which is bolted to the ends of four arms, G, connected with each other at the center and coupled with the head of the screw. These sweeps rise and fall with the screw; but this may be avoided by making the nut turn in the cap instead of the screw, as seen in Fig. 4. The nut *k* has a central flange, *o*, which fits a recess in the cap F and turns on friction-rollers which run in grooves on each side of the flange and in the cap. The arms of the nut extend beyond the frame of the press, and in the end of each arm is a socket, *l*, for hold-

ing the sweeps. It will be seen that the descent of the upper follower raises the lower proportionally, and that from the arrangement of the chains passing from the end of the follower to the opposite end of the other, the followers retain their parallelism to each other, however unequal the resistance at either end, caused by irregular packing of the material. The cap of the press alone bears the strain of the screw and chains, and by their arrangement this strain is counterbalanced, the screw pressing the cap upward, while the chains draw it downward with equal force, so that none of the pressure-strain, as in all other presses, is transferred to the supporting-frame. The follower to which the power is applied, only moving through one-half the distance of the pressed material, a screw of less than one-half the length of those used in the single-follower press is required to give the same range of motion to the pressed material.

Having thus described my improvements in

cotton and hay presses, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The arrangement of the chains, or their equivalent, connecting the followers so that by applying power and motion to one follower it is transmitted to the other, and also the followers retain their parallelism to each other, however unequal the resistance at either end.

2. The combination of the screw for raising the upper follower with the chains or their equivalent for raising the lower, when arranged as described, for the purposes set forth.

3. The guard-plates, in combination with the followers, for the purpose described.

In testimony whereof I have subscribed my name.

WM. FIELD.

Witnesses:

JOHN S. HOLLINGSHEAD,
JOHN DAVIS.