

G. ERTEL.
Hay-Press.

No. 227,681.

Patented May 18, 1880.

Fig. 1.

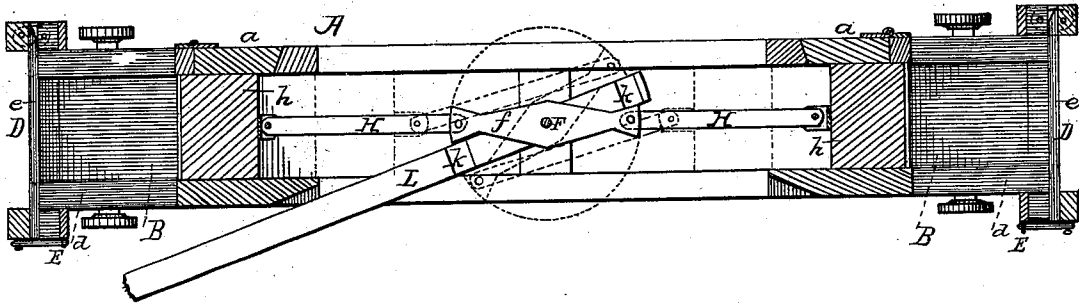


Fig. 2.

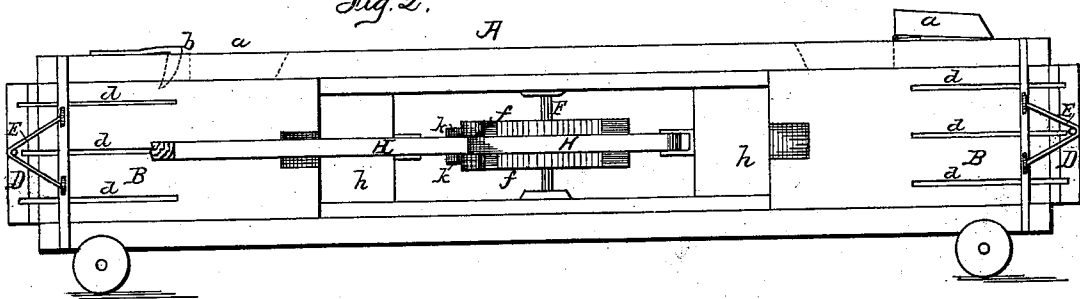


Fig. 3.

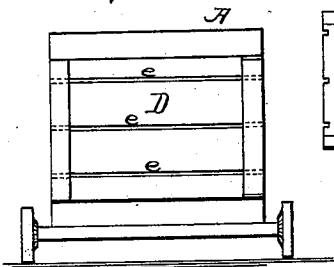
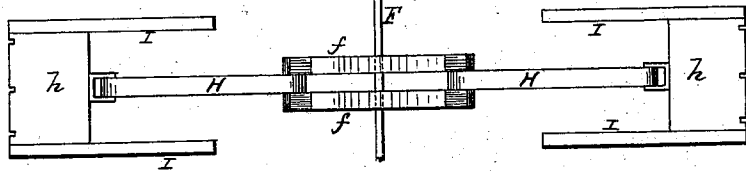


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE ERTEL, OF QUINCY, ILLINOIS.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 227,681, dated May 18, 1880.

Application filed December 17, 1879.

To all whom it may concern:

Be it known that I, GEORGE ERTEL, of Quincy, in the county of Adams and State of Illinois, have invented a new and useful Improvement in Hay-Presses, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to an improvement in hay-presses; and it consists in the devices hereinafter described, and pointed out in the claim.

The nature of the invention will be fully understood from the detailed description hereinafter presented.

Referring to the accompanying drawings, Figure 1 is a longitudinal transverse section of a press through one set of the slots on the sides and ends of the baling-chambers. In this view the followers, their connecting-bars, and the pivoted bars *f* are on a line with the longitudinal center of the press. When the ends of the bars *f* are forced beyond this line by the sweep *L* being pressed against the side of the press, the said bars *f* will rotate upon their axis and assume the position shown in the dotted lines. Fig. 2 is a side elevation of a press, with the position of the bars indicated in Fig. 1 in dotted lines shown in positive lines. Fig. 3 is an end view of the press, and Fig. 4 is a detached side elevation of the followers and their connections.

A indicates the press, which is horizontal and mounted upon wheels, so as to be portable. It is provided on each end with the baling-chambers B, which are supplied in any convenient manner with the doors *a*, through which the hay, when the bales are being formed, is fed. The baling-chambers are also provided with suitable catches *b*, to assist in retaining the hay in its compressed condition during the operation of the presser. The sides of the chambers B are supplied with slots *d*, and their outer ends with the hinged doors D, having slots *e* and a catch, E, whereby the doors may be locked when closed. The purpose of the slots *d e* is to permit the wiring of the bales when formed, and that of the doors D to allow their withdrawal from the press, as hereinafter described.

At a central point midway between the baling-chambers is pivoted or otherwise se-

cured between the top and bottom of the press, in a vertical position, the shaft F, upon which is centrally mounted, one above the other, the two corresponding bars *f*, having pivoted between their ends the inner ends of the draw-bars H. The pivots which secure the inner ends of the draw-bars H also connect the two bars *f* together. Thus the two latter bars move together, and as they are turned either to the right or left they either correspondingly force outward or retract the draw-bars H. The bars H extend outward toward each end of the press, and have pivoted to their outer ends the followers or pressers *h*, which are of usual construction, having guides I and slots upon their pressing-faces, corresponding with the slots *e*, to assist in wiring the bales. The purpose of the followers *h* is to press the charges of hay or other material, as they are fed to the baling-chambers, through the doors *a*, and they are governed in their movement by the draw-bars H, being securely connected with them. Between the bars *f* is also mounted upon the shaft F a sweep, L, one end of which extends outward on one side of the press a distance about equal to that of the bars *f*, while the other end passes outward upon the other side of the press far enough to permit the attachment of a horse for the purpose of operating it. The sweep L is furnished with blocks *k*, or other suitable devices, at the points where it comes in contact with the ends of the bars *f*, so as to effectually press against them in the operation of the device. The shorter end of the sweep L presses against one end of the bars *f* on one side, while the longer end bears against the other end of the bars on the opposite side, thus exerting a pressure in one direction against one end of the bars *f* and in another direction against the other end.

When the press is to be operated in forming bales, the doors at the ends of the baling-chambers being closed, the bars *f* are turned upon the shaft F to a position about at right angles to the horizontal longitudinal center of the press, with the sweep L pressing against them, as above described, and extending outward at an angle thereto. When the bars *f* and sweep L are in this position the draw-bars H and followers *h* are withdrawn from

the baling-chambers, the followers resting in the guides I in front of the said chambers, and the draw-bars extending outward from the followers, one on each side of the press, to the ends of the bars *f*, between which they are pivoted, as aforesaid. A charge of hay or other material to be baled is then fed through the doors *a* to each baling-chamber B, and after the said doors are closed the sweep L, which is to be operated by a horse, is moved on the shaft F toward the opposite end of the press. This causes the bars *f* to rotate upon the shaft F and drive the followers *h* and draw-bars H into the baling-chambers, pressing the charges of hay therein outward against the doors D, being prevented from returning to their former position, when the pressure of the followers is relieved, by the catches *b*.

When the sweep L has been moved in one direction until the pressure exerted by its longer end against the ends of the bars *f* in contact with it has caused the said ends of the bars *f* to pass the longitudinal line of center through the shaft F, the recoil of the compressed hay in the baling-chambers, acting against the followers *h* and draw-bars H, will cause the bars *f* to immediately leave the sweep L and fly around the shaft F until their ends again strike the said sweep, which, during this movement, remains undisturbed against the side of the press. In this event the bars *f* make nearly a half-revolution, their ends now pointing out on opposite sides of the press to which they did before, and impinging the opposite sides also of the sweep L. This movement of the bars *f* draws the bars H and followers *h* from the baling-chambers B, into each of which another charge of hay is now placed, when the doors *a* should be closed and the sweep L moved toward the other end of the machine. This forces the followers *h* outward against the hay, as before, and causes the bars *f* to again pass the center of the shaft F, when, by reason of the reaction of the compressed hay, they will again spin around upon their shaft, as before, except that this time they revolve in the opposite direction. The followers *h* are by this movement again withdrawn from the baling-chambers and the bars *f* caused to assume the same position with relation to the sweep L that they occupied before the last movement was made. Additional charges of hay are now again fed to the baling-chambers and the sweep L again operated as before. At each movement of the sweep the hay is pressed and the followers *h* forced backward into the rear parts of the baling-cham-

bers, so that additional charges of hay may be inserted and pressed, as above described. This operation is continued until sufficient hay has been pressed in each chamber B to form complete bales. The followers *h* are then forced firmly against the bales by the movement of the sweep L, and the wire or cord ties passed through the grooves in the followers in rear of the bales, and then outward on each side thereof through the slots *d*, after which they are carried along the outer ends of the bales in the slots *e*, where the ends of the said wire or cord ties meet and are fastened. The doors D are then opened and the finished bales withdrawn in any convenient manner. If desired, the bales may be forced out by leaving the doors D open and feeding hay or other substance to be baled through the doors *a*, and operating the sweep L to form new bales against the inner ends of those already completed. This will gradually expel the bales, and when they are in such condition that they are out, or nearly so, they may be removed and the doors D closed, when the press may be operated as before, and the new bales completed. The above operation may be continued until the desired number of bales have been formed, and the machine may then be transported at will.

By the employment of the slotted doors D the meeting ends of the wire or cord ties may be fastened on the outside of the baling-chambers, and thus not obstruct or hinder the expulsion of the bales by friction or otherwise.

The doors *a* may be either upon the sides or top of the press, and will preferably be provided with suitable catches for fastening them when closed.

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

In a hay-press, the baling-chambers B, arranged opposite to each other and supplied with followers *h*, having draw-bars H, the inner ends of which are pivoted between the ends of the bars *f*, mounted upon a central shaft, F, in combination with the horizontal sweep L, mounted upon the shaft F between said bars *f*, and independently of the same, substantially as set forth.

In testimony that I claim the foregoing improvement in hay-presses, as above described, I have hereunto set my hand this 29th day of November, 1879.

GEORGE ERTEL.

Witnesses:

RICHARD JANSEN,
EDWARD LEVI.