G. ERTEL.

PORTABLE HAY-PRESSES.

No. 195,592. Patented Sept. 25, 1877.

Fig. 1

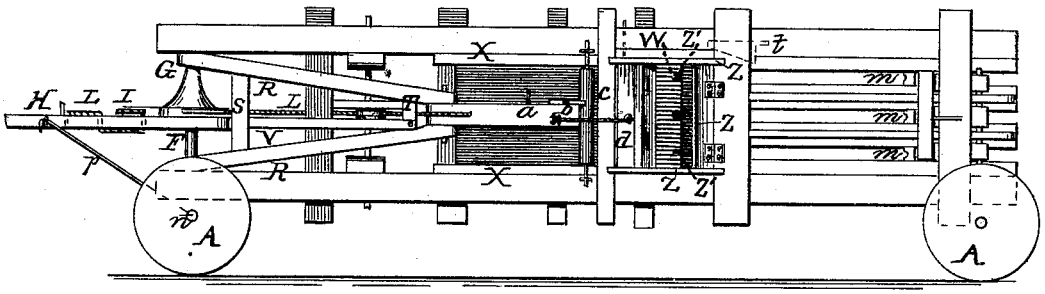


Fig. 2.

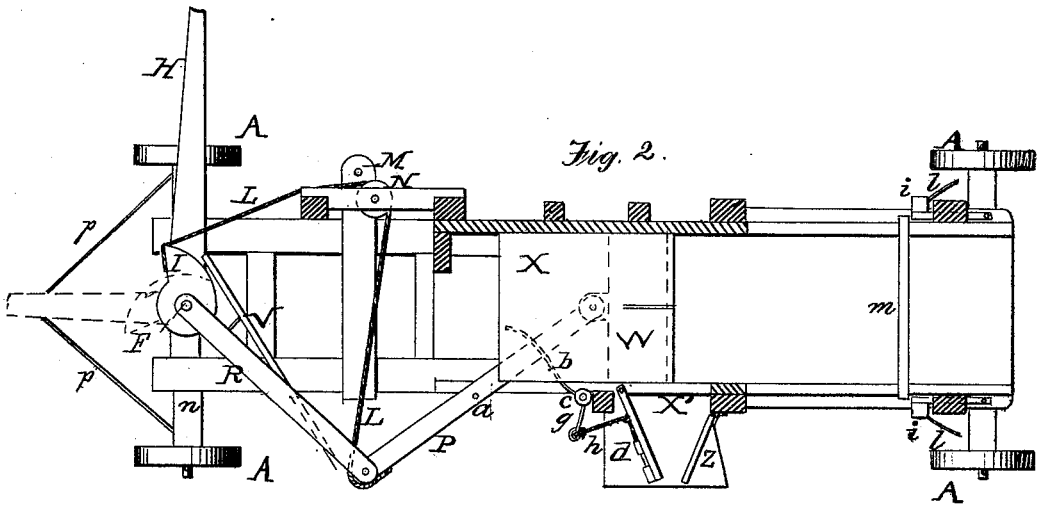


Fig. 3.

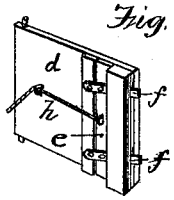
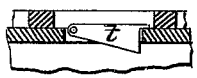


Fig. 4



Witnesses
Chas. C. Gill
D. P. Lowe

Inventor
George Ertel
by his Attys
Cox and Cox

UNITED STATES PATENT OFFICE.

GEORGE ERTEL, OF QUINCY, ILLINOIS.

IMPROVEMENT IN PORTABLE HAY-PRESSES.

Specification forming part of Letters Patent No. **195,592**, dated September 25, 1877; application filed April 5, 1877.

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 Portable 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 consists in the mechanism hereinafter specifically described; the object being to provide a press that is strictly portable, and at the same time one which will firmly and effectually press and bale hay.

In the accomyanying drawings, Figure 1 is a side elevation of a device embodying the elements of the invention. Fig. 2 is a top view of same, with the top of the machine removed. Fig. 3 is a detached perspective view of the door *d*, and Fig. 4 is a side view of the stud *t*.

In the accompanying drawings, A represents the wheels, upon which the press is mounted, and by means of which it can be conveyed to any desired location. In the front of the machine, between its upper and lower surfaces, is centrally secured the vertical rod F, provided with the sleeve G, upon which the tongue H is mounted, and has a free horizontal oscillatory movement. Upon the upper surface of the tongue H, at its rear end and below the enlargement of the sleeve, is rigidly attached the cam I, which is properly grooved to receive and retain the rope L, one end of which is secured to the tongue, and the other end, passing rearward, extends through the guide M and over the pulley-wheel N, where it turns inward, and is secured to the front end of the draw-rod P. Upon the rod F is provided the forked bars R N, which are connected and strengthened by the braces S T, and have secured in the fork at their rear end the front end of the draw-rod P, above mentioned. The bar V is secured to the braces S T, and extends forward to one side of and in juxtaposition to the cam I. The draw-rod P extends rearward a proper distance, and has its rear end centrally pivoted to the back of the follower or presser W, which is provided at its upper and lower surfaces with the extensions X, to insure a smooth even movement, and on its face with grooves Z′, to assist in binding the hay.

At a suitable place upon the upper surface of the draw-rod P is furnished the pin or stud *a*, which comes in contact with the arm *b* of the rod *c* in the operation of the machine, as will be more fully described hereinafter.

Upon the side of the press, at a proper distance from its rear end, is provided an aperture, X′, for the reception of hay, which is furnished with guards Z upon its upper, lower, and rear edges, and upon its front edge with the door *d*, which can be opened or closed. The rear guard is hinged, so that it can be partly closed, when necessary. The outside face of the door is furnished with a latch, which consists of the vertical sliding bar *e* and horizontal oscillating bars *f*, which are pivoted at their rear ends to the door, and beneath which is rigidly secured the said bar *e*. The rod *c* is vertically attached to the frame, a proper distance in front of the door *d*, and is provided with the radiating arm *g*, to the end of which is fastened one end of the cord or chain *h*. The other end, passing rearward beneath a staple or catch on the door, is secured to the bar *e* at a point below the horizontal plane of said staple, so that the tension of the cord *h*, when drawn, will have a tendency to elevate the bar *e* and bars *f*, and thereby withdraw the ends of the latter bars from their respective guards in the rear edge of the door-frame, and at the same time open the door. This latch and cord are operated by the pin *a* coming in contact with the arm *b*, secured to the vertical rod *c*, which, as it is caused to turn, either tightens or relaxes the tension of the cord, with the result above mentioned.

Immediately in the rear of the door the sides of the baling-chamber are horizontally slotted, as shown, at suitable intervals; but it is preferred to have three slots, so that the grooved cross-bars *m* can be inserted in the same directly opposite the grooves Z′ constructed in the follower or presser W. Thus bands or hoops can be inserted in the said grooves for securing the bale, and not interfere with the operation of the machine.

The stays *i*, pivoted on either side of the

rear of the device, are provided with handles *l* to operate them, and are for the purpose of preventing the cross-bars *m* from losing their position while the hay is being pressed. When the handles *l* are drawn rearward the lower surfaces of the stays are elevated, thus allowing the said cross-bars to escape through the rear end of the machine, and permitting the removal of the bale.

When the press is to be conveyed from one part of the field to another, the tongue or sweep H is kept at a right angle to the front axle *n* by the braces *p*, so that the interior mechanism is not disturbed; but when the operation of baling hay is to be commenced the braces are detached from the tongue or sweep, so that it can vibrate freely.

The horse being secured to the tongue and caused to move to the right of the machine carries the tongue in that direction, causing it to come in contact with the front end of the bar V, which is thereby forced rearward and outward, and as it is rigidly secured to the forked bars R their rear ends have the same movement, and draw the front end of the rod P with them. Thus the follower or presser is carried forward until its platen is nearly opposite the front edge of the door. The cross-bars *m* and bands being now properly inserted and the door *d* opened, a charge of hay is delivered to the press, either by means of a fork or by hand, when the door and rear guard Z are partly closed, and the movement of the tongue or sweep reversed. This draws the rope L, which conveys the end of the draw-rod P to its former position and forces the follower rearward, pressing the hay against the bars *m*. The door *d* and guard Z are now reopened, and the tongue again moved to the right of the machine. This draws the follower or sweep, as before, and admits the passage of another charge of hay, when the former operation is repeated.

After a sufficient quantity of hay has been pressed to form the bale the horse is stopped, with the follower bearing against the hay, and the bands or hoops secured. This completes one bale, which can be ejected, if desired, in the manner hereinbefore set forth; but if preferred to form another bale first, three extra bands and bars *m* should be inserted in front of the finished bale, and the operation above mentioned repeated, after which the two bales are ejected.

The inclined studs *t* are pivoted in the top and bottom of the machine, with their vertical ends projecting into the press and facing rearward, so that when one charge of hay has been pressed and the follower is returned for another they will keep the pressed hay in place. The follower is provided with slots opposite the studs, so that their operation is not impaired by its movement.

It is obvious that the bales are constructed of uniform size, and that the action of the device is simple, the operator having only to stand at the door and feed the hay, which is pressed without further assistance.

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

1. The tongue H, provided with cam I and mounted on rod F, in combination with the forked bars R, bar V, and rope L, substantially as set forth.

2. The combination of the tongue H, forked bars R, bar V, draw-rod P, and presser W, substantially as shown and described.

3. The combination of the forked bars R, draw-rod P, cord L, pulley-wheel N, and cam I, substantially as set forth.

4. The rod F, in combination with the forked bars R and bar V, substantially as expressed.

5. The draw-rod P, provided with pin *a*, in combination with the rod *c*, furnished with arms *b* and *g* and with door *d*, and bars *e f*, substantially as specified.

6. In a hay-press the vertical rod *c*, provided with arms *b g* and cord *h*, in combination with the bars *e f* and door *d*, substantially as set forth.

7. The combination of the rod *c*, arm *g*, cord *h*, and bars *e f*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing improvement in portable hay-presses as above described, I have hereunto set my hand this 30th day of March, 1877.

GEORGE ERTEL.

Witnesses:

HARRY COX,

RICHARD JANSEN.