G. ERTEL.

BEATER AND COMPRESSING PRESSES.

No. 181,564. Patented Aug. 29, 1876.

Fig. 1.

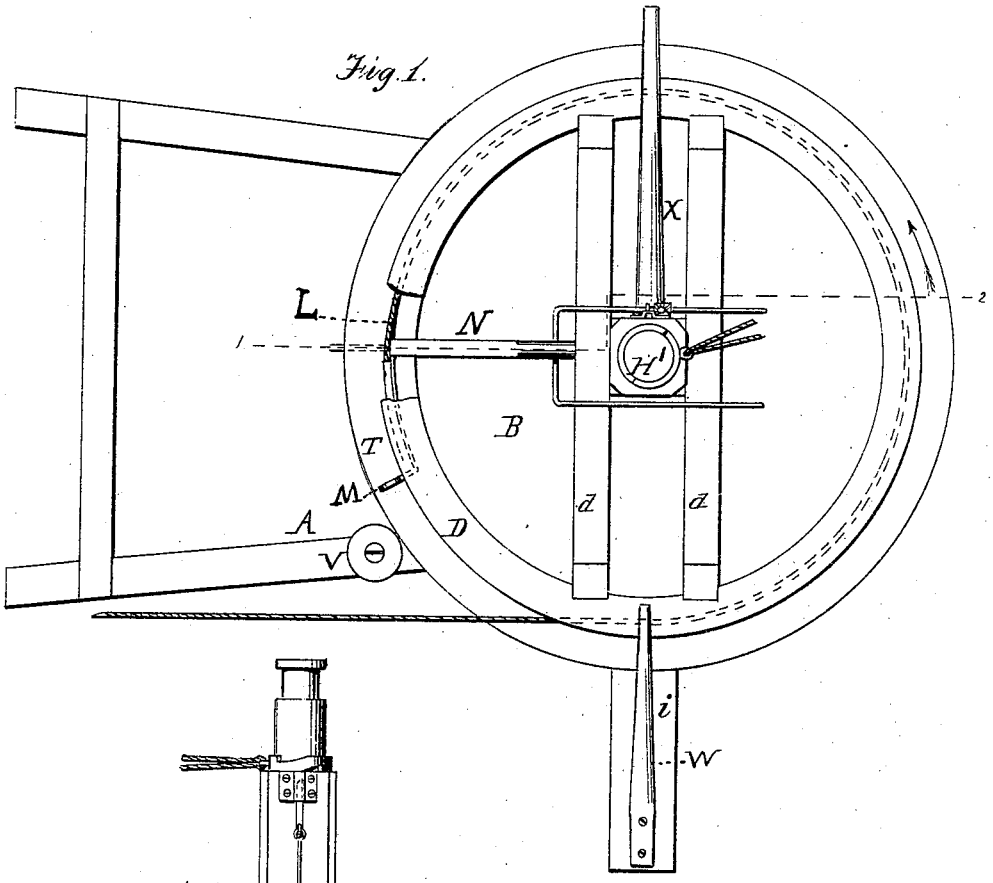

Fig. 2.

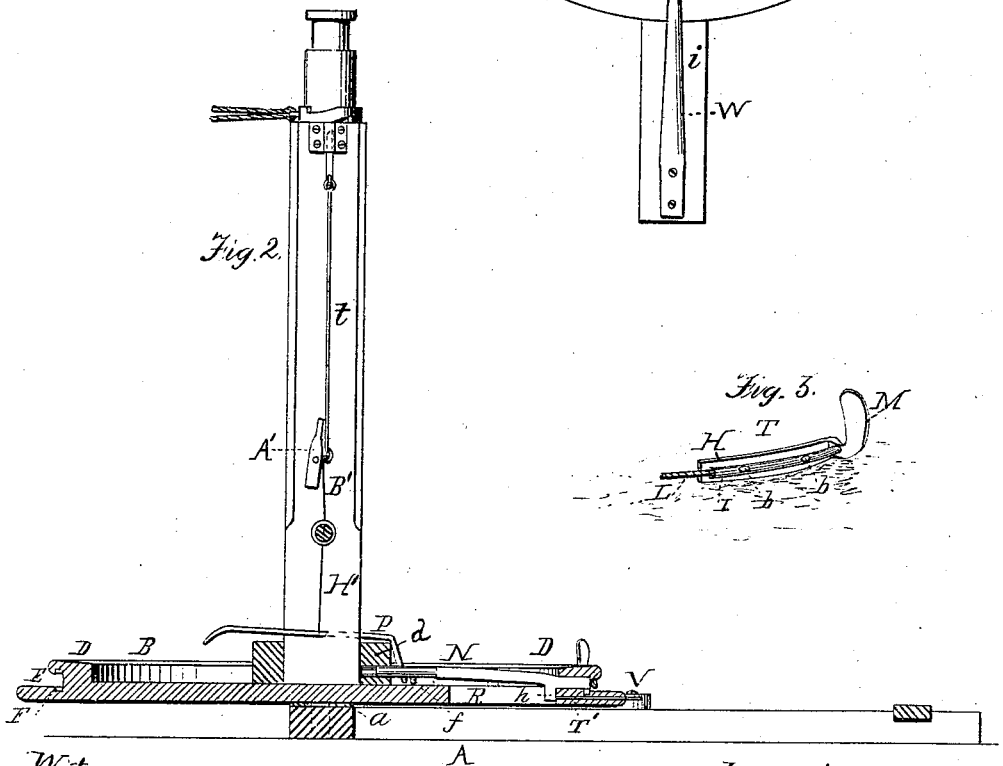

Fig. 3.

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GEORGE ERTEL, OF QUINCY, ILLINOIS.

IMPROVEMENT IN BEATER AND COMPRESSING PRESSES.

Specification forming part of Letters Patent No. **181,564**, dated August 29, 1876; application filed August 2, 1876.

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 Beater and Compressing Presses, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to hay-presses operating upon the beating and compressing plan; and consists in certain improvements upon the devices for which Letters Patent of the United States No. 135,533 were granted to George Ertel, February 4, 1873, for improvement in beater and compressing presses, as will more fully appear hereinafter.

Figure 1 is a top view of a device embodying the elements of the invention. Fig. 2 is a section of same through the lines 1 2 of Fig. 1. Fig. 3 is a detached perspective view of the shuttle.

In the accompanying drawings, A represents a platform, upon one end of which is mounted the beating and compressing mechanism. (Not shown.) Upon the other end of this platform is a pivot, which extends through the wheel B and enters the base of the driving-shaft H′, set firmly at the center of the wheel, a washer, *a*, being interposed about the pivot and below the wheel. Thus, as the driving-shaft is rotated the wheel revolves, and vice versa. Near the periphery of the wheel is provided the raised rim D, having in it the annular groove E, at the base of which is provided in the wheel a vertical annular recess, F, the groove and recess being suitably formed to accommodate the shuttle T, which consists of a traveler, H, curved to conform to the face of the groove E, and of such dimensions that its upper edge shall fit smoothly within the upper part of the groove E, and its lower in the recess F. Upon this traveler is placed a concave plate of metal, I, having a threaded extremity extending through the base of the stop M. One end of the beater-rope L is secured by bolts *b*, or in any other suitable manner, between the plate and the traveler, the end of which is provided with the upward-projecting ear or stop M. It is plain that the shuttle will run smoothly upon the edge of the rim D without danger of escape from the recess and groove which contain it. At the base of the driving-shaft H′, on either side, are placed the horizontal braces *d*, into one of which passes the clutch-bolt N, its outer end projecting beyond the vertical face of the groove E, to serve as a check to prevent the movement of the shuttle when the bolt is thrown outward. On the under surface of the bolt N, near the brace *d*, is placed the pin *f*, between which and the brace passes the lower front arch of the balance-lever P, the arms of which extend on each side beyond the opposite brace, and the whole device is of such weight that when allowed to descend it forces the bolt N outward. Below the outer parts of the bolt a slot, R, is cut in the wheel B, to receive the stud *h* on the under side of the bolt, which stud is in contact with the head of the pin T′ when the bolt is thrown forward, the opposite extremity of the pin projecting beyond the periphery of the wheel to come in contact with the tripping-wheel V, secured on the platform A, when the wheel B is rotated. At a suitable distance from the wheel V, in the direction in which the wheel B moves when operating, is provided the elastic bumper W, the base of which is secured to the bar *i*, the opposite end of which bar forms a part of the platform A. X is an arm projecting from the driving-shaft H′, and serves as a means of communicating movement thereto. The lever A′ is pivoted to the driving-shaft H, and is connected by the cord B′ to the balance-lever P, so that when the lever A′ is depressed the lever P is lowered and the clutch-bolt projects, as aforesaid. The wheel B being in motion, the head of the bolt catches the front edge of the shuttle T, and the beater-rope is wound in the recess E, which operation continues until the pin T′ comes in contact with the tripping-wheel V, whereby the pin is forced inward, and with it the bolt. The gravity of the beater now acting upon the rope, the beater falls, drawing the rope, and causing the shuttle to move rapidly around the wheel until the movement of the shuttle is arrested by the stop M coming in contact with the bumper W. In practice, however, the stop seldom comes in contact with the bumper, since, as the fall of the beater diminishes by the hay-pit becoming filled, the draft of the beat-

er-rope is proportionally reduced, so that after the first few revolutions of the wheel the stop will not come in contact with the bumper. The head of the bolt would act as a bumper; but this is objectionable, as bringing in contact two unyielding surfaces.

As soon as the tripping-wheel V is passed, the weight of the balance-lever throws the bolt forward, and it again engages the shuttle, taking up the rope, repeating the above operation. Upon the upper side of the lever A′ is attached the lower end of the draw-rod *t*, connecting with a bolting-pawl, working in conjunction with a sliding collar, as specified in said Letters Patent. Thus, when the lever A′ is elevated, the rod draws down the bolt, allowing the collar to which the presser-rope is attached to move freely upon the upper end of the driving-shaft, and thus check the operation of pressing. The lever A′ being connected by the cord B′, with the balance-lever P, this same movement of the lever allows the balance-lever to descend, throwing out the clutch-bolt and operating the presser-rope, as aforesaid. A contrary movement of the lever A′ operates to elevate the balance-lever, and thus determines the operation of beating, while it throws up the bolt, which arrests the sliding collar, thereby causing the operation of pressing to begin. Hence one movement of the lever A′ is all that is necessary to reverse the operation of the device, and to cause it to operate either in its beater or presser capacity, as desired.

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

1. The shuttle T, in combination with the wheel B, provided with a recess to confine its movement, as set forth.

2. The shuttle T, in combination with the wheel B, having the groove E and recess F, substantially as shown and set forth.

3. The shuttle T, provided with the stop M, substantially as set forth.

4. The shuttle T, having the stop M, in combination with a recessed wheel and an elastic bumper, W, as set forth.

5. The clutch-bolt N, for the purposes set forth.

6. The clutch-bolt N, in combination with the tripping-wheel V and balance-lever P, substantially as shown and described.

7. The lever A′, rod *t*, and cord B′, for the purpose forth.

In testimony that I claim the foregoing improvement in beater and compressing presses, as above described, I have hereunto set my hand this 10th day of July, 1876.

GEORGE ERTEL.

Witnesses:

J. N. CARTER,

WM. H. GOVERT.