Z. PHILLIPS.
Baling-Presses.

No. 196,249. Patented Oct. 16, 1877.

Fig. 1.

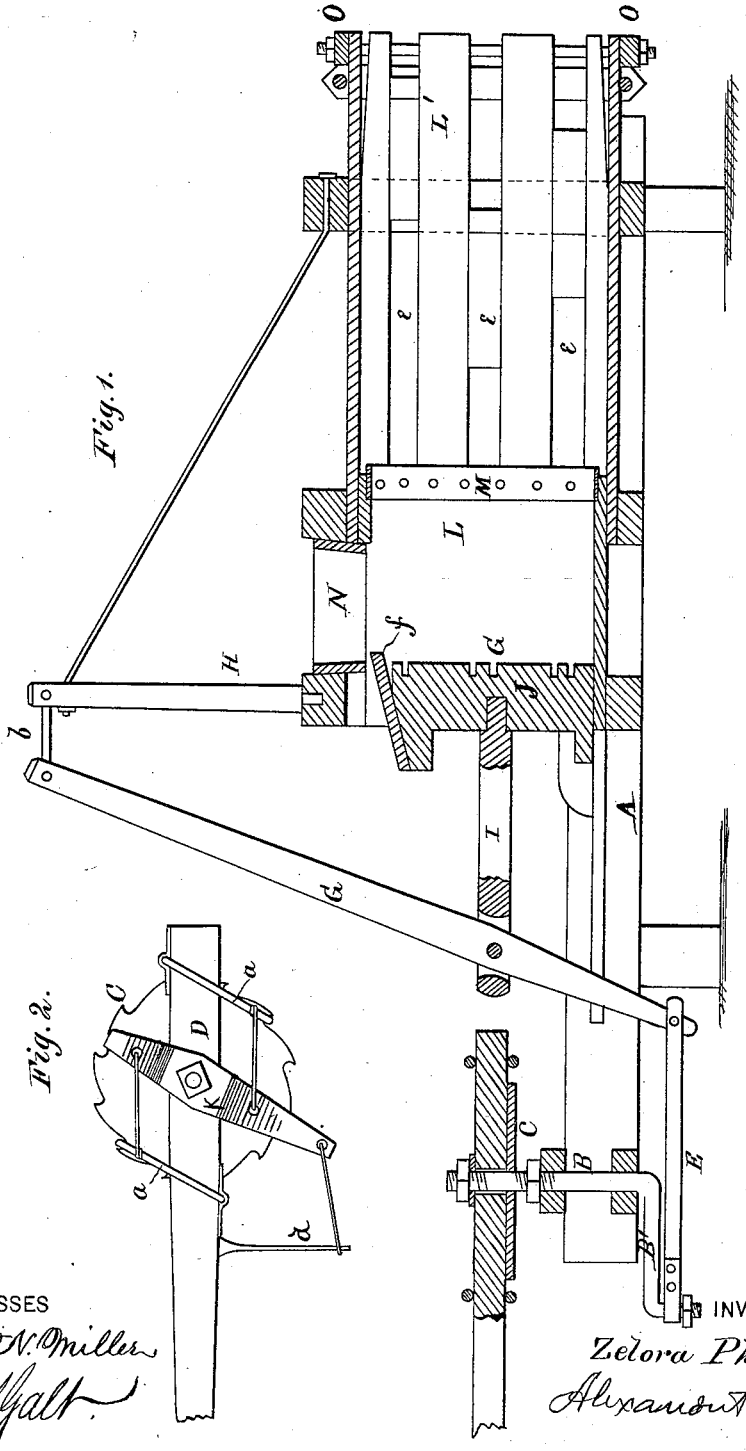

Fig. 2.

WITNESSES
Henry V. Miller
Frank Galt

INVENTOR
Zelora Phillips,
Alexander Mason
ATTORNEYS

UNITED STATES PATENT OFFICE.

ZELORA PHILLIPS, OF HAZEN TOWNSHIP, PRAIRIE COUNTY, ASSIGNOR OF ONE-HALF HIS RIGHT TO MICHAEL M. YEAKLE, OF PRAIRIE CENTRE, ARKANSAS.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. **196,249**, dated October 16, 1877; application filed June 8, 1877.

To all whom it may concern:

Be it known that I, ZELORA PHILLIPS, of Hazen township, in the county of Prairie, and in the State of Arkansas, have invented certain new and useful Improvements in Baling-Presses; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a baling-press, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal vertical section of my baling-press. Fig. 2 is a detached view of a part thereof.

A represents the frame of my press, at one end of which is an upright shaft, B, having a ratchet-wheel, C, secured to it. D is the sweep to which the horses are attached, said sweep being placed loosely on the upper end of the shaft B, and connected with the ratchet-wheel C by means of dogs or pawls *a a*, as shown.

The lower end of the shaft B is formed with a crank, B′, from which a pitman, E, connects with the lower end of an eccentric-lever, G. The upper end of this lever is, by a link, *b*, connected with a post, H, of the frame, and the lever is pivoted in a slot in an arm, I, projecting from the plunger J.

By the use of this eccentric-lever or walking-beam G power is gained, and also a center attachment to the plunger, and by this arrangement I am enabled to put the pitman underneath, instead of having the horses walk across it on top. When the press is being worked the rebound of the plunger is so great that it instantly reverses the crank, throwing it about half-way round. Here the ratchet takes hold. The result is nearly two plunges of the beater to one round of the horses. This about doubles the capacity of the press, and time is gained.

The pawls or links *a* are connected to a lever, K, and this actuated by a spring, *d*, so as to hold the pawls or links to the ratchet, and the ratchet is secured to the crank-shaft. Therefore, when the rebound of the plunger reverses the crank the ratchet goes along, the links sliding or springing over the teeth. Meanwhile the horses, hitched to the tongue at the end of the sweep, hold it, and keep moving on without stopping. In this manner two plunges of the beater are secured to one round of the horses, as stated above, during this operation the horses continuing their ordinary movement at each round. At the rebound the links loosen from a notch in the ratchet, and I have found by experiment that eleven plunges are made to six circuits of the sweep.

The box L of the press is made solid—that is, with side slots *e* only in the bale-chamber; none in the compress and finishing chamber.

The plunger J is of solid timber, with the exception of a spring-board, *f*, extending about two inches over the top face of the same, which effectually tucks and folds the overlapping hay, and making the top of the bale smooth.

The stops M, to hold the hay when pressed forward into the bale-chamber, are armed with a heavy piece of strap-iron extending over one-half inch and fastened with screws.

The bale box or chamber may be of any suitable dimensions, provided with slots *e* for the insertion of the ties. The first bale is formed by placing sticks at the outer ends of the slots *e*, and through them from side to side. After this bale they are withdrawn and laid aside. The machine being now in motion, the hay is thrown into the vertical opening N of the press, and forced down to the bottom with a fork in the hands of the feeder, and so on continuously until sufficient has been forced into the bale-chamber to make the first bale. At this moment a suitable follower-block is slid down in front of the plunger, said block being provided with slots corresponding with those of the bale-chamber. The horses are stopped while this first bale is being tied, but at no other time. The horses being then started to press the second bale, this bale forces the first one grad-

ually into the compress-chamber L′ without slots to increase the friction and resistance. This chamber is only about half the length of the bale-chamber, and is of the same size where it begins to receive the bale from the bale-chamber; but at the exit or point of delivery of the bale it is from one to two inches smaller. The exit or delivery is provided with clamps O O, as shown, to be tightened for contracting it when the hay is very dry. When the hay is damp the exit is to be enlarged. This compress-chamber accomplishes the cracking and subduing of the hay, making the strain on the ties much less when the bale issues from the press. The rigidity by which the bale is held in the compress-chamber, even when half out, accomplishes or forms a head against which to form each continuous bale.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a baling-press, the combination of the crank-shaft B, ratchet-wheel C, sweep D, dogs or links *a a*, lever K, and spring *d*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The combination of the shaft B with crank B′, pitman E, walking-beam G, arm I, and plunger J, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of May, 1877.

ZELORA PHILLIPS.

Witnesses:
MICHAEL M. YEAKLE,
HUGH M. LYNN.