

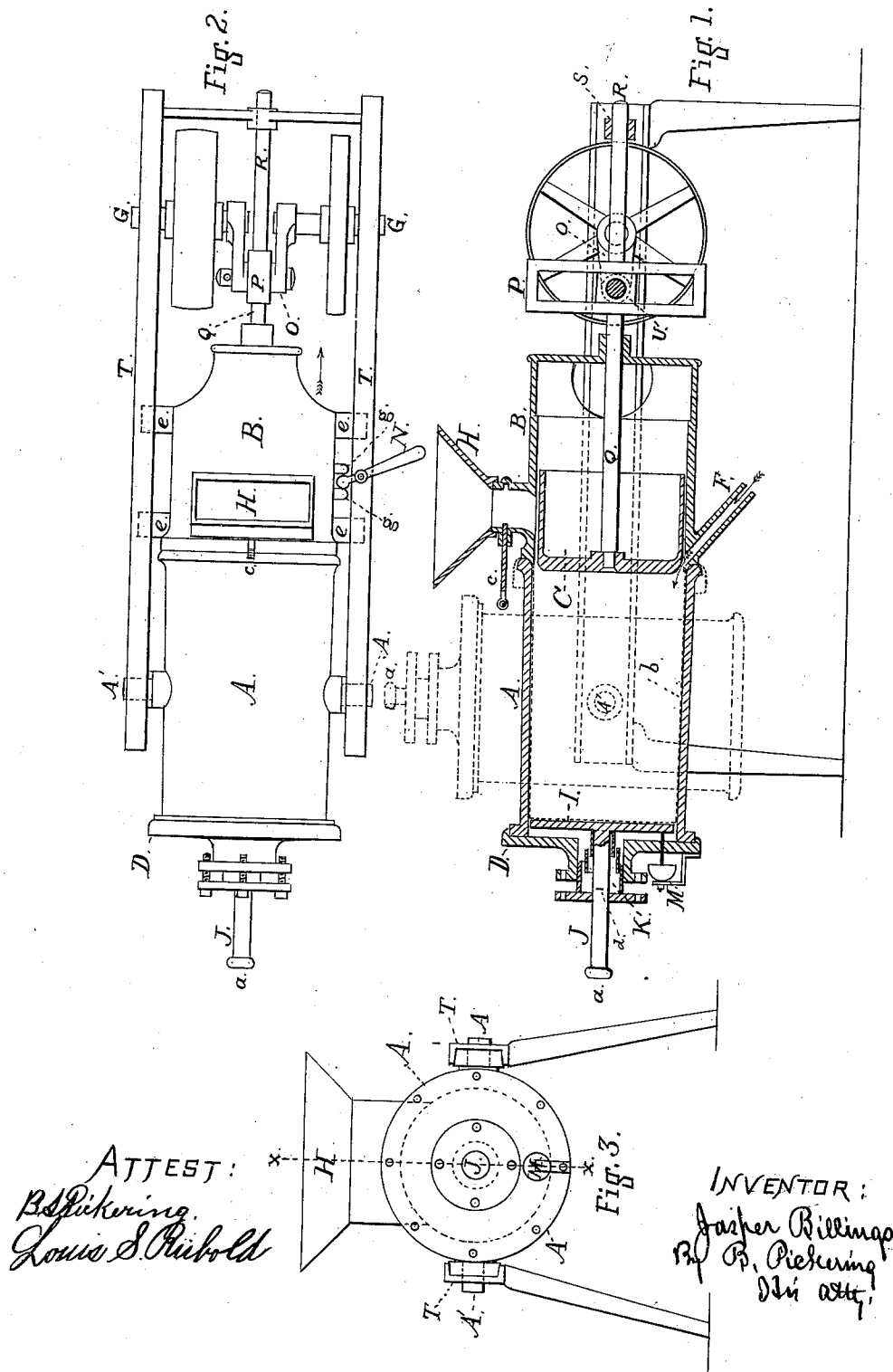
(No Model.)

J. BILLINGS.
HAY PRESS.

2 Sheets—Sheet 1.

No. 358.375.

Patented Feb. 22, 1887.



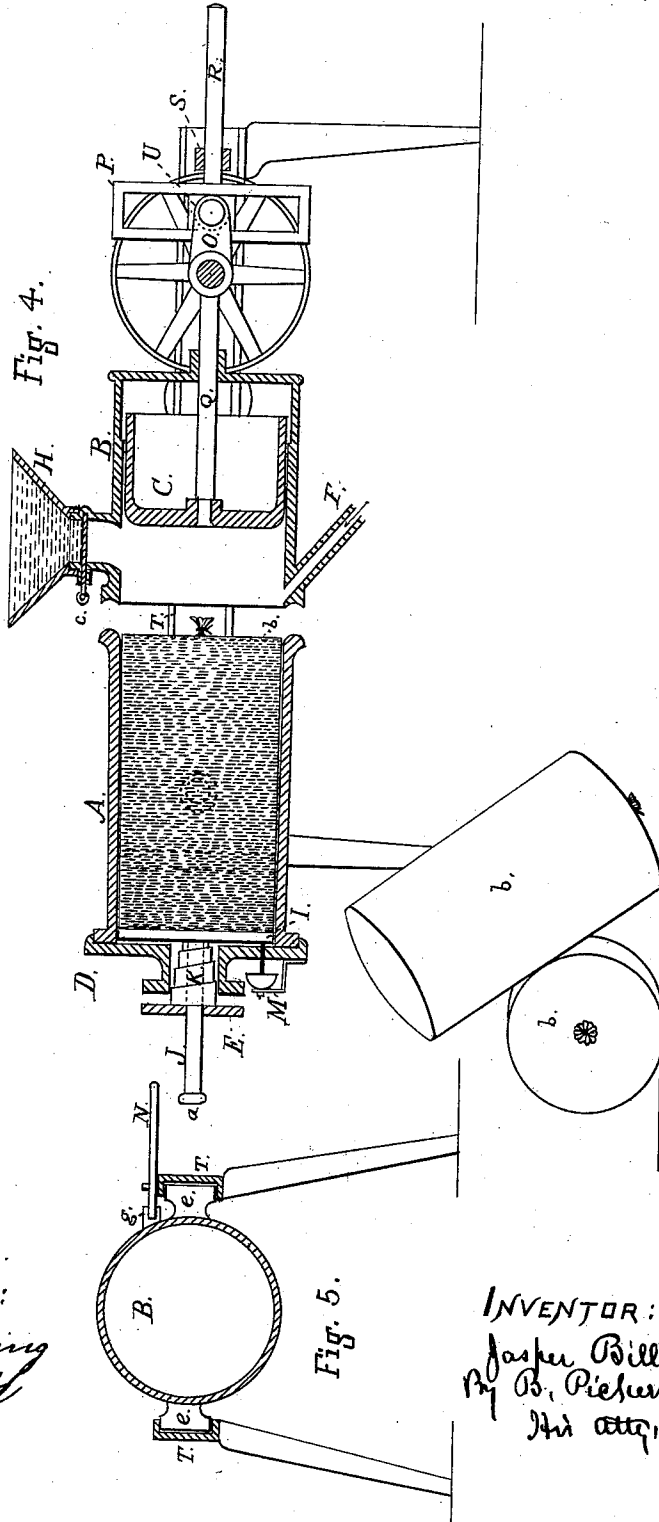
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UNITED STATES PATENT OFFICE.

JASPER BILLINGS, OF TOLEDO, OHIO, ASSIGNOR OF ONE-THIRD TO W. ROYCE, OF SAME PLACE.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 358,375, dated February 22, 1887.

Application filed June 23, 1886. Serial No. 205,965. (No model.)

To all whom it may concern:

Be it known that I, JASPER BILLINGS, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Improvement in Hay-Presses; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in hay and feed presses.

The object is the construction of a press simple and efficient, and one which will make the material very compact, and the several features of which will be fully hereinafter set forth.

The mechanism is illustrated in the accompanying drawings, (two sheets, A B,) in which—

Figure 1 is a longitudinal part-section on the line *xx*, Fig. 3. Fig. 2 is a plan or top view of the press. Fig. 3 is an end elevation of the pivotal cylinder. Fig. 4 is a longitudinal section of the cylindrical parts on line *xx*, Fig. 3, and the other parts of the press in elevation; Fig. 5, a sectional view of the supply-cylinder, showing the lugs on which it slides.

Like letters designate like parts throughout the several views.

The frame T is supported on four legs and serves to support the operative parts of the hay and feed press.

B is a supply-cylinder, the outer end being closed, and within said end is a bearing for the rod Q, and the inner end is open, with a groove around the edge to receive the rounded edge of the packing-cylinder A. On the top near the inner end is an orifice, to which the hopper H is attached, and beneath this hopper is the closing-slide C. On the under side of said cylinder is an air-tube, F, which aids in the withdrawal of the packing-piston C by supplying air behind said piston. The lugs *e* support the said cylinder in grooves of the frame in which the cylinder moves, the movement being controlled by the lever N, pivoted to the frame and engaging lugs *g g* on the cyl-

inder. When the cylinder is thus carried forward, it engages the end of the packing-cylinder, and is moved backward to permit a free movement of said packing-cylinder. The piston-head C is connected by the rod Q to the link P, and to the opposite side of this open link is attached the rod R, which has a bearing in the guide-arm at the end of the frame. To the link is connected the cranks O by means of the pin U, on which is a friction-roller that traverses the slot in the link. The cranks are supported on shafts G G, which have bearings in the frame. On one of these shafts is a driving-pulley and on the other a balance-wheel. The packing-cylinder A is supported on trunnions A', which have bearings within the frame. The inner end of this cylinder is open and adapted to be joined to the feeding-cylinder, as before explained. The outer end is closed by the head D. The central portion of this head is closed by the nut which forms the bearing for the rod J, which is connected to the circular plate I, that fills the interior of the chamber. The volute spring K is held within the hollow of the nut, and the inner end of which bears against the plate I. This spring has a double use—that of permitting the plate to move under the impact of the hay to indicate the pressure by operating the bell M, and to aid in discharging of the cylinder. The bell is held on an arm attached to the end of the cylinder, and is rung by a rod passing through the cylinder-head, which comes in contact with the plate I. This or other arrangement may be made to operate the bell as the plate is forced back. The bell would thus indicate that the pressure was sufficient. The dotted lines at A, Fig. 1, show the position of the cylinder when it is turned to a vertical position for the purpose of discharging the same.

The operation is thus described: A sack, *b*, (indicated by dotted lines at Fig. 1,) is placed in the packing-cylinder and the end of the same turned over the edge of said cylinder, and said cylinder is brought into horizontal position and the feeding-cylinder brought firmly in contact with it. Power is then applied to give a reciprocating motion to the piston. The cut hay is carried through the hopper into the feeding-cylinder, and the pis-

ton carries the same into the packing-cylinder until the pressure is sufficient, as indicated by the bell. Then the cylinders are separated, the packing-cylinder is turned into vertical position, and by force applied to the rod J the compacted sack of hay or feed is discharged. The end of the sack is tied or sewed up before the same is discharged from the cylinder.

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

1. In a hay-press, the combination of a feeding-cylinder having a hopper with a closing-slide and supported on legs in grooves of the frame, the packing-cylinder pivotally supported in bearings of said frame, and the reciprocating piston with bearing in the head of said feeding-cylinder, said piston carried by crank engaging the link carried by the supporting-rods, substantially as set forth.

2. In a hay and feed press, the circular dis-

charging-plate I, with rod J attached thereto, and the nut with a volute spring held therein and bearing against said plate, in combination with an alarm-bell, substantially as set forth.

3. In a hay and feed press, the circular plate I, with rod J, in combination with the packing-cylinder, to effect the discharge of the same, substantially as set forth.

4. In a hay-press, the combination of the feeding-cylinder with lugs to traverse the grooves in the side of the frame, and the pivotal lever N, pivoted to said frame to give longitudinal movement to said cylinder, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JASPER BILLINGS.

Witnesses:

ANTHONY BARROR,
J. H. TAPPAN.