

(No Model.)

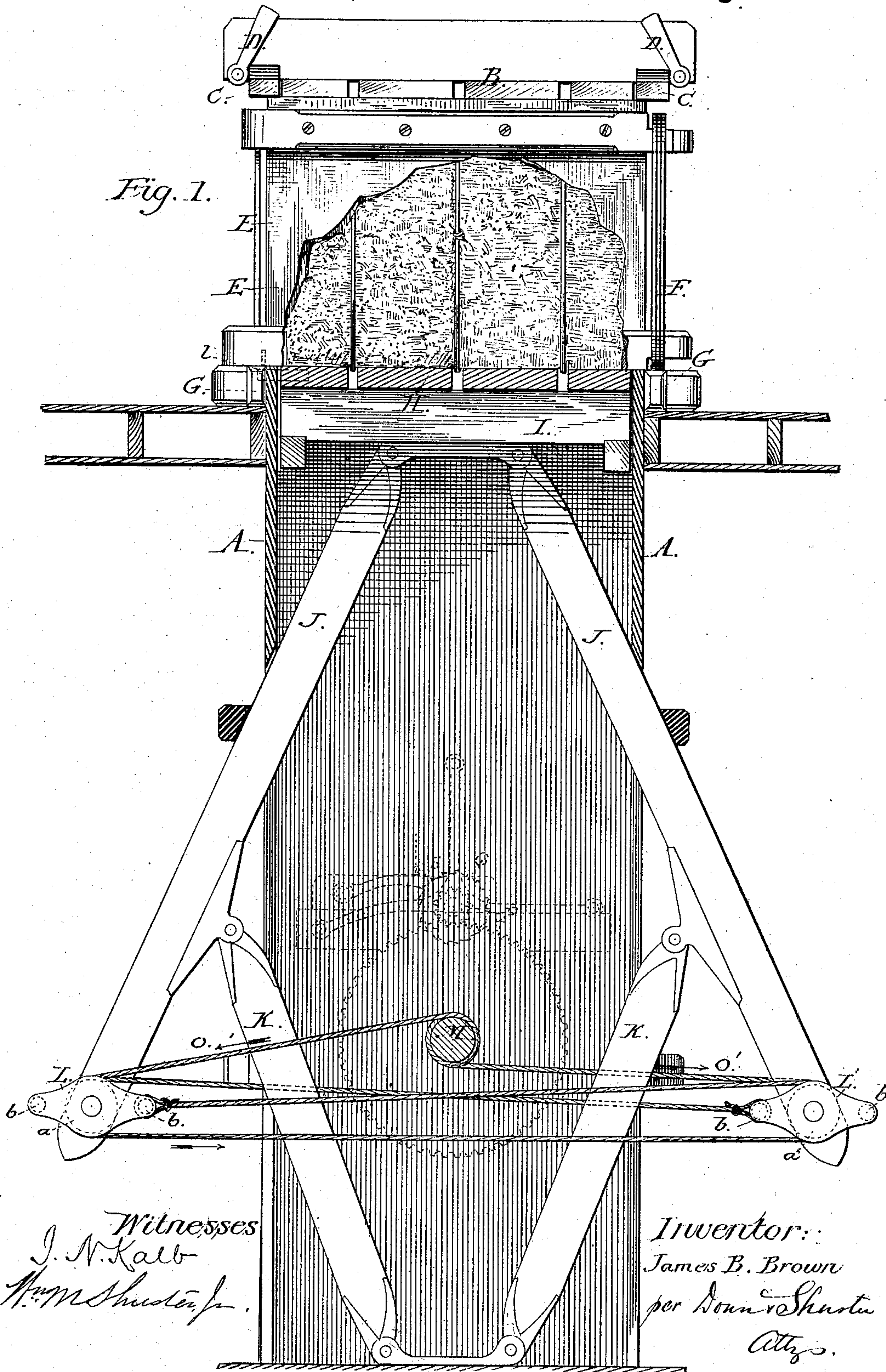
2 Sheets—Sheet 1.

J. B. BROWN.

HAY PRESS.

No. 261,828.

Patented Aug. 1, 1882.



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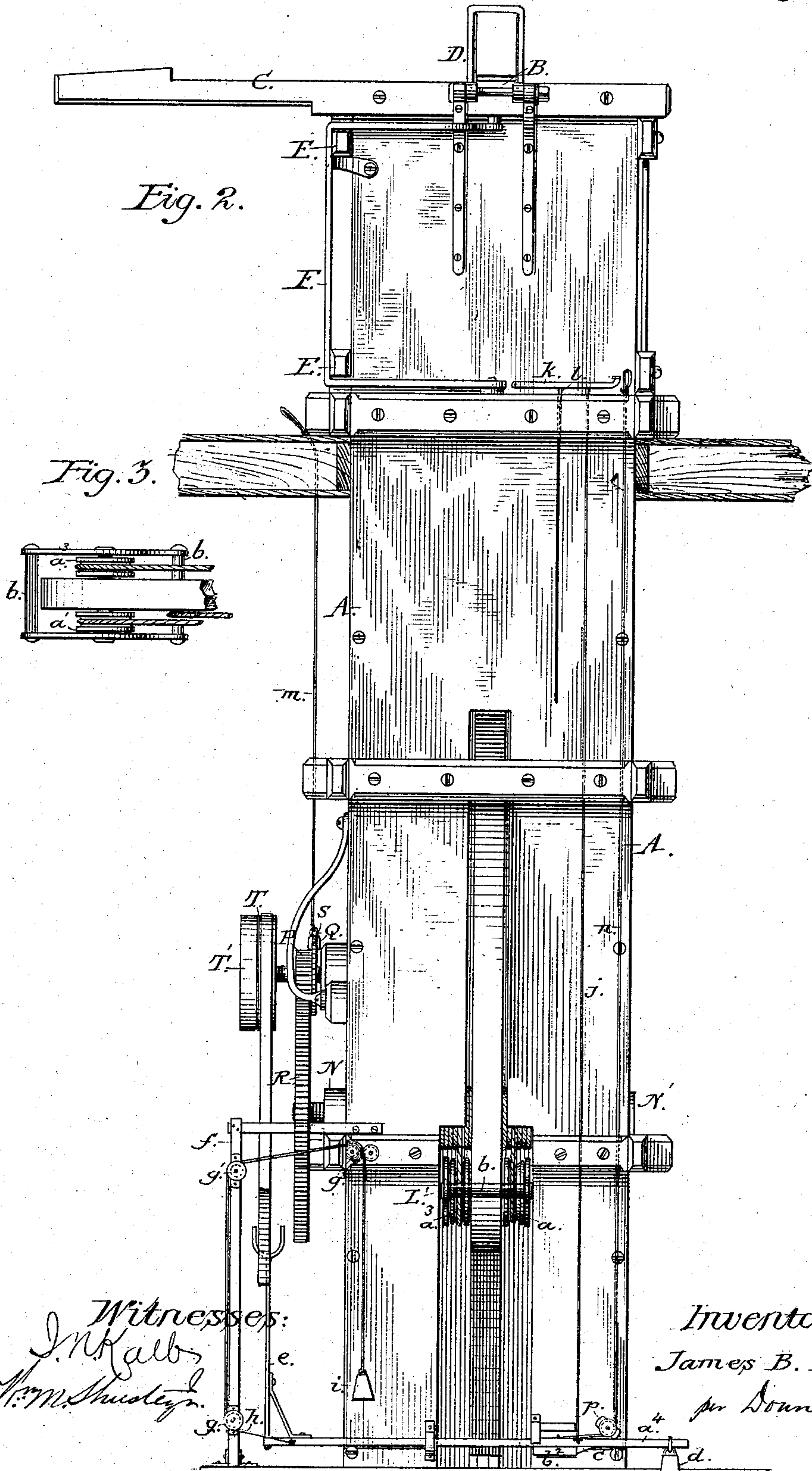
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UNITED STATES PATENT OFFICE

JAMES B. BROWN, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
OF ONE-HALF TO CLARENCE HALL, OF SAME PLACE.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 261,828, dated August 1, 1882.

Application filed May 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. BROWN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Hay-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to that class of hay-presses in which the follower is operated upward by means of toggle-joint levers and certain pulleys and ropes or chains, the latter of which are wound about the axle of a windlass.

In my drawing, A is an upright chest, built of wood in a manner to give a maximum of strength, and preferably of a length to occupy more than the space between two floors of a building, so that when in position the portion to contain the pressed bale will stand above the upper of the two said floors. This chest is re-enforced on the outside with carefully-jointed beams, which interlock at the angles.

B is the cover forming the abutment, which is constructed of heavy plank, with spaces between, secured to a heavy beam, which, when in place upon the chest A, rests on two transverse beams, C C, while said planks to which said beam is secured fit snugly within the walls of the said chest on three sides. The beams C C project horizontally backward from the chest and terminate with stop-projections, to form a rest for the cover when the same is thrown back to expose the completed bale.

D D are U-shaped clamps, hinged to the beams C C, which serve to securely fasten the cover or abutment to place before the power is applied to press the hay. Doors E E, intended to be opened above the upper floor of the building, are hinged to the beams by suitable rods run through and bolted to the outside strengthening-beams. These doors are clamped, when closed, by iron clamps F F, which are pivoted to the ends of the upper strengthening-beams, at the top of the chest.

H is the follower, formed of plank, like the

top or abutment, and secured to a heavy beam, I, beneath.

To the beam I, at the bottom of the follower, are pivoted long beams or levers J J, which move inward and outward in vertical slots formed in the transverse sides of the chest. To the floor of the chest are pivoted two other beams or levers, K K, which are also pivoted to the said levers J J at points within the outer ends of the latter. On the ends of the levers J J are pivoted blocks or shells L L', which embrace both ends of said beams or levers J J and inclose pulleys a a' a^2 a^3 . The shells L L' are connected together with bars b b , which serve as holds, for purposes to be mentioned hereinafter.

M is the shaft of a windlass, with journals at its ends, which find seats in suitable journal-bearings, N N', formed in opposite sides of the chest. A rope or cable, O, is secured to the shaft M, and passes to the left over pulley a in the direction of the arrow 1, thence through the chest to pulley a' , and thence to one of the bars b of the shell L, where it is secured. Another cable or rope, O', is secured to the windlass-shaft M, and runs in the opposite direction or to the right, passes over pulley a^2 , thence to pulley a^3 , and below to one of the bars b of the shell L', where it is secured. On one end of the windlass-shaft M is fixed a pinion, P, and a ratchet-wheel, Q, the former of which meshes with a driving-wheel, R, and the latter is engaged by the pawl S, pivoted at a convenient point in the frame of the chest. A crank or pulley, T, is fitted to the end of the pinion-shaft, and serves to operate the press in the following manner: The lever-arms and follower being down, the hay or straw is thrown into the chest from the upper floor, and drops onto said follower until a sufficient quantity to form a bale has been so placed. The cover or abutment B is now drawn over the top of the chest and clamped to place. Power being now applied to the driving-wheel R, the shaft M revolves and winds the ropes or cables O O', which draw the toggle-levers, composed of beams J K, inward and upward, each of course being controlled at its center of motion, and they in turn carry the follower upward to press the hay against the cover or abutment B until the bale is formed. Slats or strips having been

placed longitudinally on the top of follower, corresponding strips are also placed on the top of the hay before the power is applied. Wire or other binding-cords are now run

5 through the spaces of the cover B and follower H and firmly secured around the bale, the doors on one or both sides of the chest being previously opened to facilitate the operation of tying.

10 The press is run by horse or other power connected to the pulley T by belting, which is changed to a loose pulley, T', and returned to same by a shifting device, which may be described as follows: At the foot of the chest I

15 have arranged a sliding bar, a^4 , which is longer than the depth of the chest and extends outside of the same on each side. This bar slides in ways or guides, which allow to it a vertical motion about equal to the depth of a lug, c , which, in normal position, rests against a stop-

20 block, b^2 . On one end of this sliding bar is a weight, d , and on the opposite end is a forked bar, e , which rises, with its forks, within reach of the belt which connects the band-wheel of

25 the power with the pulley T. At the base of the press is a frame, f , which is properly secured, provided with small pulleys g g' . A cord is attached to the sliding bar a^4 and passes over pulleys g g' g^3 , and terminates with a

30 weight, i , which swings free. To the sliding bar a^4 is attached a wire, j , which extends upward and is attached to a lever, k , pivoted in the side of the chest above the upper floor. To the follower H is secured a lug, l , which,

35 when said follower reaches a certain point in its upward movement, comes in contact with said lever k and lifts it and clears the lug c of the stop b^2 , which had been previously held to normal position by the weight d . The weight

40 i now draws the sliding and forked bars laterally to throw the belt from the fixed pulley T to the loose pulley T' and stop the movement of the follower. It is understood, of course,

that the lug l is so fixed that it will not trip the lever k until the hay has been sufficiently 45 pressed. After wires have been applied to the bale a rope, m , secured to the pawl Q, is lifted to release the ratchet-wheel S to relieve the bale from pressure. The bale may now be with-

50 drawn, while the follower gravitates downward by its own weight to receive a new supply of hay for another bale. When it has reach its downward limit the pawl is dropped to lock it again for work. A rope, n , which passes

55 over pulley p and is attached to the sliding bar a^4 after the chest is again filled with loose hay, is drawn upward to bring the belt back onto the fixed pulley, where it is locked by the lug

60 c , which is brought to position against the stop b by the weight d . It is obvious that by this belt-shifting arrangement the whole operation of baling may be managed with great economy from the upper floor without it being neces-

65 sary to check the movement of the power for an instant.

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

1. The combination, with the levers, the follower, the pulleys, and the windlass-shaft, of the gear-wheels and the ratchet device, as and for the purpose set forth. 70

2. The combination, with a hay-press adapted to press hay by an upward movement of the follower, of the belt-shifting device composed 75 of the bar a^4 , rod e , provided with lug c and weights i d , cords h and n , the lug l , connected to the moving follower, the lever k , and the wire connecting the sliding bar with said lever, substantially as and for the purpose set forth. 80

In testimony whereof I affix my signature in presence of two witnesses.

JAMES B. BROWN.

Witnesses:

EDW. W. DONN,
O. S. B. WALL.