

J. PRICE.
BALING PRESS.

No. 302,355.

Patented July 22, 1884.

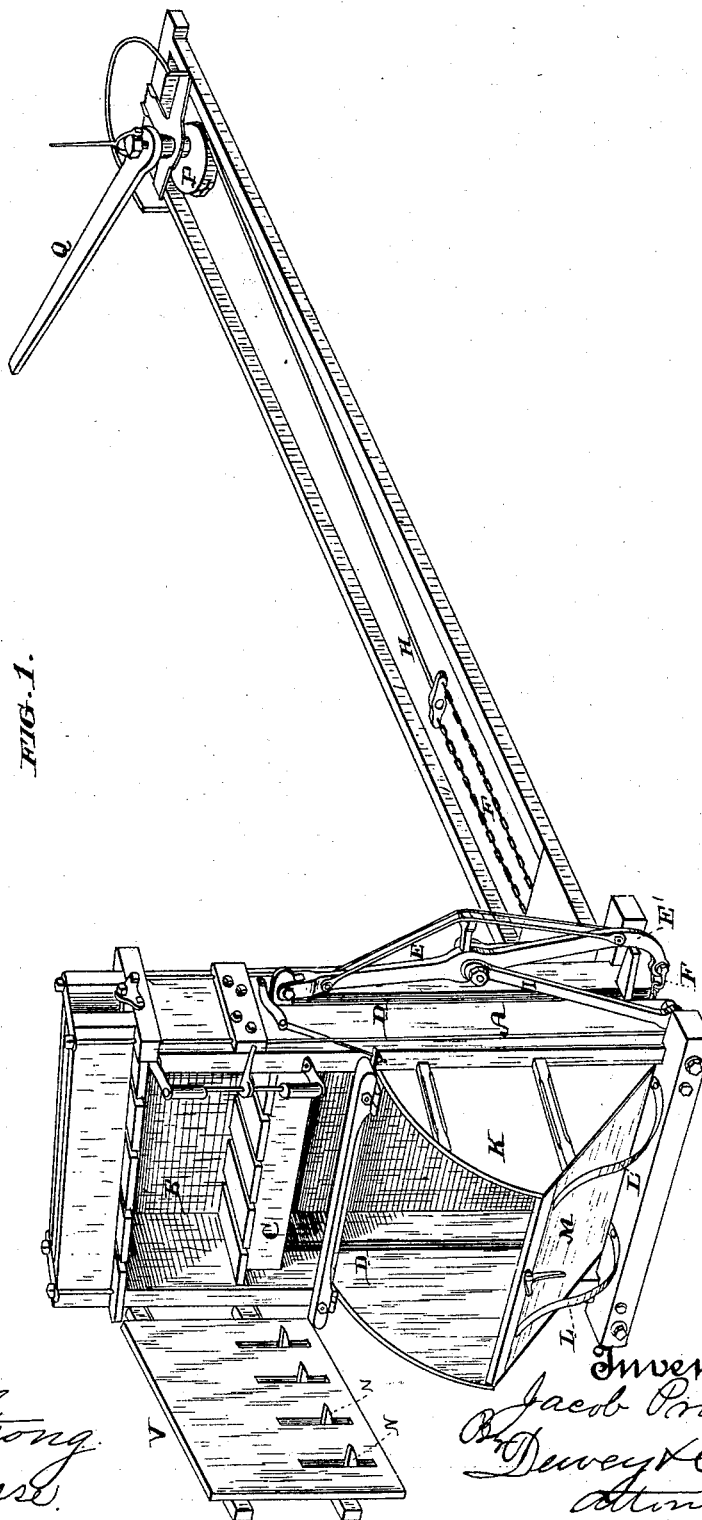


FIG. 1.

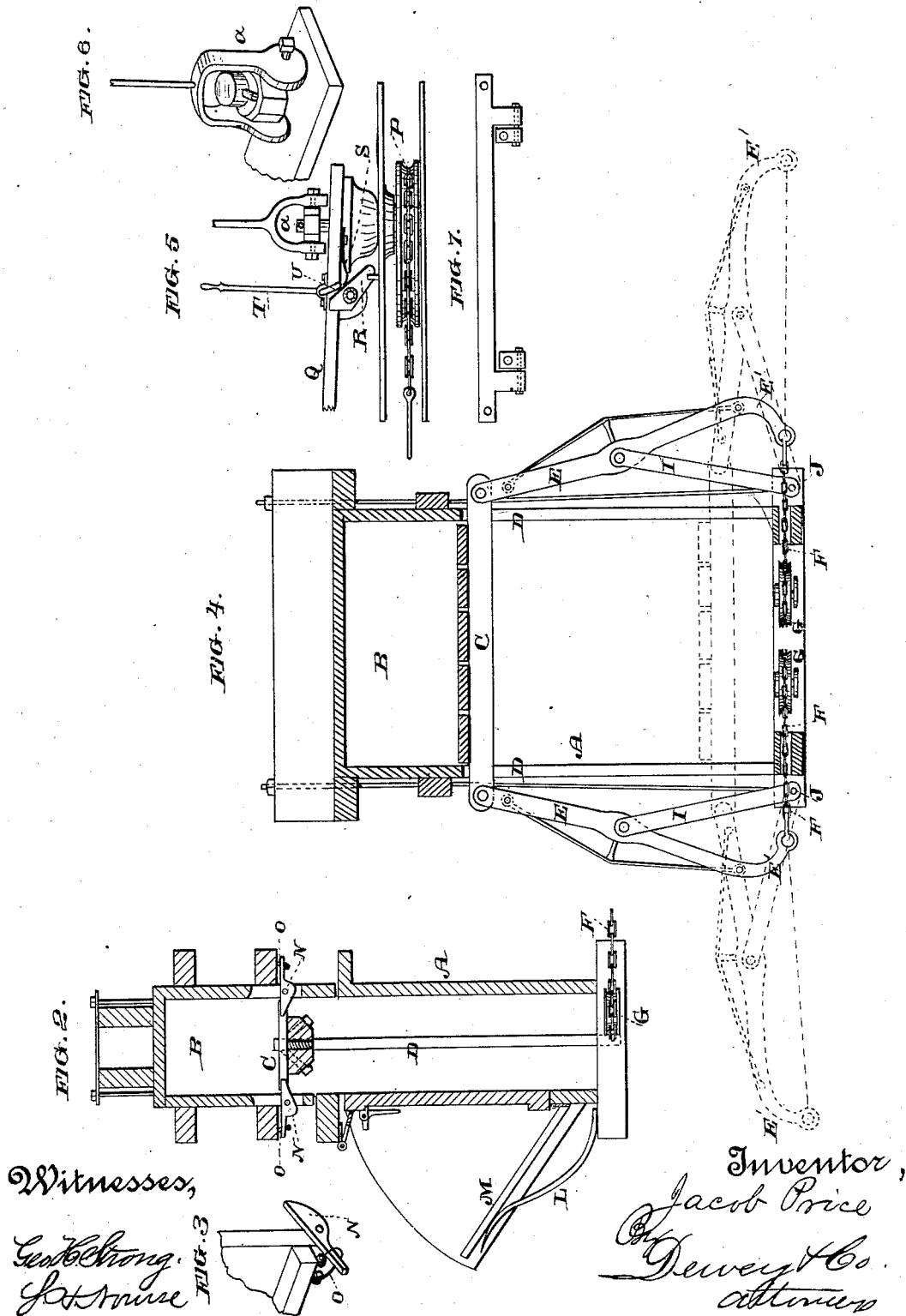
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UNITED STATES PATENT OFFICE.

JACOB PRICE, OF SAN LEANDRO, CALIFORNIA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 302,355, dated July 22, 1884.

Application filed May 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, JACOB PRICE, of San Leandro, county of Alameda, and State of California, have invented an Improvement in Baling-Presses; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a baling press.

It consists of an upright press, the bale being formed in a chamber at the top by a succession of charges which enter through an inclined feed throat or hopper at the bottom of the press, into which the material to be baled is placed, and the hopper closed after each charge is received until it has been forced into the baling-chamber by a vertically-moving follower.

It also consists in a mechanism for operating the follower, an eccentric of variable power, by which this mechanism may be operated, retainers by which each charge is held in place while the follower descends for a new charge, and the means by which the horse-power lever may be disconnected from the mechanism by which the follower is moved, so that the latter may descend without stopping the horse or changing the direction of his movement.

It also consists in certain details of construction, which will be more fully described by reference to the accompanying drawings.

Figure 1, Sheet 1, is a perspective view showing my press with the feed-hopper and the door of the upper chamber open, the follower raised, and the horse-power and mechanism by which it is operated. Fig. 2, Sheet 2, is a vertical transverse section of the press. Fig. 3 is an enlarged view showing one retainer. Fig. 4 is a longitudinal vertical section of the press, showing the follower raised, and the connecting toggle-levers; also showing the same parts depressed in dotted lines. Fig. 5 is an enlarged view of the horse-power lever, eccentric, chain, wheel, and connecting-button. Fig. 6 is a detached view of an eccentric brake-lever upon the top of the horse-lever. Fig. 7 is a view of the hinged bar for securing the door in a vertical position.

A is the body of my press, which is an upright one, having a chamber, B, at the top, within which the bale is formed.

C is a follower, the central iron bar of which

passes through slots D in the side of the press, in the manner usual to vertically-moving followers, and it is connected with one end of lever-arms E. The opposite ends of these arms are connected with the chains F, which pass beneath the ends of the press toward the center and around direction-pulleys G, from which the chains are led at right angles from the first direction, or directly away from the side of the press. The chains are connected, by the long rods H, with the mechanism of the horse-power, which will be hereinafter described. From a point at or about midway of the lever E the arm I extends to the bottom of the press, where it is pivoted at J. It will be seen by this construction that the levers E and I form toggle-levers, the power being applied to the lower ends of the levers E by means of the chains, and the follower C is raised up, the power gradually increasing until levers E and I are nearly in a straight line, when the follower reaches its highest point. The outer ends of the levers are curved, as shown at E', so that when they are fully extended and the follower at its lowest, the chains will pass far enough below the ends of the levers E, which are attached to the follower, to give sufficient power for the commencement of its upward movement, this power rapidly increasing as the follower moves up.

In order to supply the charges of hay or other material to be baled in sufficient quantity, I provide a feed throat or hopper. This consists of two triangular stationary sides, K, extending outward from the front of the press, parallel with each other, and having a feed-door, M, which is hinged at the bottom, so that its upper end may swing outward to form the front side of the hopper when the charge is to be introduced, and which may be closed and secured by any convenient or suitable latching device, so as to form the front of this portion of the press while the charge is being forced upward by the follower. Springs L are so fixed at the front of the press as to receive the hopper or front door, M, when it falls outward, and hold it until the charge has been introduced. After a charge (which may be one or two forkfuls when the material is hay) has been put into the hopper, the front door,

M, is closed and secured. The follower is then forced up by the action of the toggle-levers E and I, as before described, until the charge that was introduced above it has been forced up into the baling-chamber B. As the material is forced upward the retainers N are turned up, so as to allow it to pass by them. When the followers again come down, these retainers swing out so as to project below the hay and prevent it from going down along with the follower. The retainers are metal arms, four or five in number, upon each side of the lower part of the baling-chamber, and pivot upon rods which extend through the plank forming the side of the chamber. Springs O act against the outer portion of the retainers to keep them in a horizontal position, with their inner ends projecting into the baling-chamber. The elasticity of these springs allows the inner ends of these retainers to be pushed up while the hay is passing, and spring down again to prevent it from coming down when the follower leaves it. As these retainers stand opposite the slots or grooves in the follower in which the baling-wire passes, it will be seen that they will not interfere with the movement of the follower.

In order to move the follower rapidly in the first part of its upward progress when comparatively little power is necessary, I employ an eccentric, P, fixed to the vertical shaft, upon the top of which the lever Q is fitted to turn loosely. A chain at the end of the rod H, before described, passes around this eccentric P. The horse is attached to the end of the lever Q, and travels around in a circle, and when the lever Q is connected so as to move the eccentric the chain is wound up rapidly by passing around its largest circumference or that part which has the greatest throw. When the follower is nearly at the upper part of its stroke, the chain will be wound upon that portion of the eccentric which is nearest the shaft, and the power will thereby be increased proportionally by the greater pressure which is brought upon the follower. This eccentric, together with the toggle-levers E and I, before described, produce a most powerful combination for operating the follower, and compressing hay or other material.

In order to allow the horse to travel continuously, and at the same time to allow the eccentric to be reversed, so that the chain will unwind and allow the follower to be depressed, the lever Q turns loosely upon the vertical shaft, which carries the eccentric. A crank-arm is fixed to the eccentric, or the eccentric shaft, and has a lug or button, R, bolted to its side, with a spring, S, pressing upon it, so that its upper end will be at such a height that the side of the lever will press against it, and thus cause the eccentric to be revolved by the action of the lever to which the horse is attached.

Upon the top of the lever Q is the handle-ver T, having the arm U projecting from its lower end, so that when the lever T is moved back this arm will force the lug or button R

downward until the lever can pass over it. This allows the crank and eccentric chain-wheel to revolve backward and unwind the chain, the toggle-levers moving outward and allowing the follower to drop to the bottom of the press, when the door M is again opened, ready to receive a new charge. An eccentric-lever, a, has horizontal fulcrum-pins connecting it with the vertical shaft of the horse-lever above the latter, so that the lever may act to press the lever down upon the top of the crank-arm below, and by its friction act as a brake to prevent the follower descending too rapidly after the button has been released. When as many charges have been forced into the baling-chamber as desired, the ropes or wires are secured around the bale, and door V is thrown open and the bale discharged. By this construction I am enabled to employ a feeding throat or hopper the full length of the bale, which is from three feet four inches to four feet, and the vertical size of the opening is also very great, being from three to four feet, so that the operator can put in as large forkfuls of hay as he can lift. This enables me to work the press much more rapidly than if the material were introduced through a small opening or at the end. The bale is pressed sidewise, and is tied and discharged in about the same manner as with ordinary vertical presses. By introducing and pressing the hay in large forkfuls the hay looks plump and fresh, and does not have the appearance upon the outside of being crushed or chafed.

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

1. An upright baling-press having a vertically-reciprocating follower and baling-chamber at the top, and a feeding hopper or throat at one side of the bottom, and a door hinged so as to swing outward and form the front of the hopper, or be closed to form the side of the press, as herein described.

2. An upright baling-press with a baling-chamber at the top and a vertically-reciprocating follower, a feeding throat or hopper with its front swinging so as to open upward and outward from the bottom, and springs or supports L, upon which it rests when opened, as herein described.

3. An upright press with a baling-chamber at the top, a vertically-reciprocating follower, a feeding throat or hopper with its front opening upward and outward from the side of the press, and a locking mechanism by which this front is held in a vertical position to form the side of the press when closed, as herein described.

4. An upright press having a baling-chamber in its upper part, a feeding throat or hopper opening upward and outward from the bottom of one side, a hinged swinging front to said hopper, which may be closed and locked to form the side of the press, a vertically-reciprocating follower upon which the material is placed, and by which it may be

forced upward into the baling-chamber, and retainers N, by which the material may be held in the chamber, substantially as herein described.

5 5. In an upright baling-press having a bale-chamber at the top, a feeding throat or hopper at the bottom, and a vertically-reciprocating follower, as shown, the hinged swinging retainers N, projecting into the lower part
10 of the bale-chamber, and the springs O, acting upon them, substantially as herein described.

15 6. An upright baling-press having a baling-chamber at the top, a feeding throat or hopper at the bottom of one side, and a vertically-reciprocating follower, by which the material is carried upward from the hopper to the bale-chamber, together with the toggle-levers E and I, connected with the followers
20 and the chains F, substantially as herein described.

25 7. An upright baling-press having a baling-chamber at the top, a feeding throat or hopper at the bottom of one side, and a vertically-reciprocating follower, by which the material is carried upward from the hopper to the bale-chamber, together with the toggle-levers E and I, connected with the followers, and the chains F and direction-pulleys G, by
30 which they are led out, so as to draw together from one side, substantially as herein described.

8. An upright press having a baling-cham-

ber at the upper end, a feeding throat or hopper at the bottom of one side, a vertically-reciprocating follower, by which the material is
35 carried from the feed-throat to the bale-chamber, toggle-levers by which the follower is operated, and chains leading from these levers and connecting with an eccentric or cam, substantially as herein described. 40

9. The toggle-levers E and I, with the chains F connected with the eccentric or cam, acting upon the chains to produce variable speed of the follower, together with the lever Q, by
45 which power is applied to rotate the eccentric, as herein described.

10. An eccentric, P, connected with the toggle-levers and follower of the press, as shown, a power-lever, Q, turning loosely upon
50 the eccentric-shaft, the buttons or lugs R, by which motion is communicated from it to the eccentric, and the disengaging-levers T U, substantially as herein described.

11. The eccentric P, connected with the
55 toggle-levers and follower of the press, as shown, the power-lever Q, the buttons or lugs R, and disengaging-lever, and the eccentric brake-lever a, to retard the descent of the follower, as described. 60

In witness whereof I have hereunto set my hand.

JACOB PRICE.

Witnesses:

S. H. NOURSE,
C. D. COLE.