

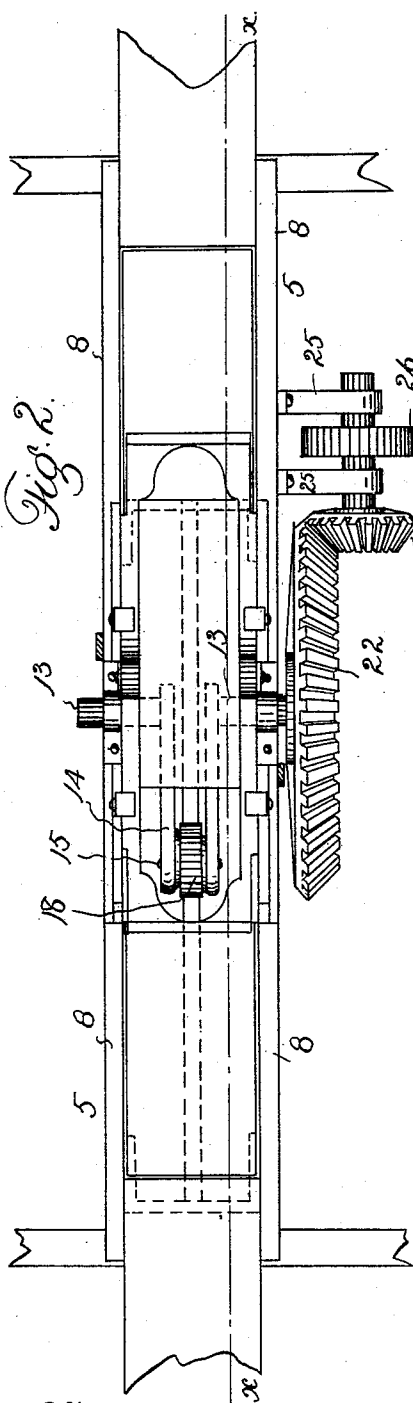
(No Model.)

3 Sheets—Sheet 1.

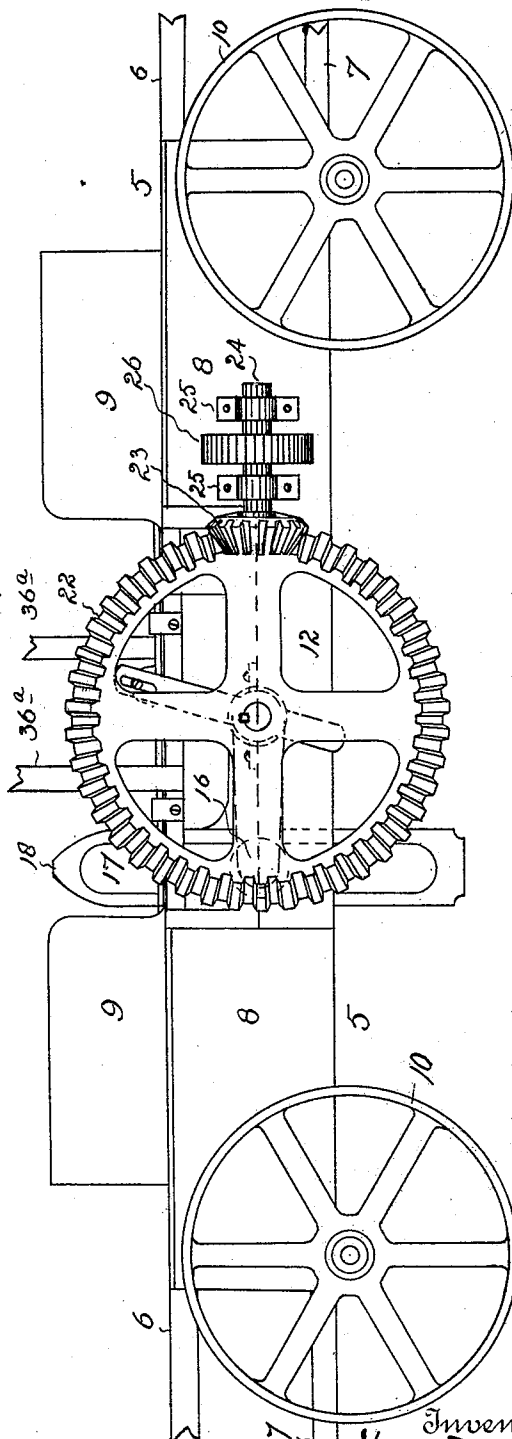
H. DEITZ.
BALING PRESS.

No. 482,303.

Patented Sept. 6, 1892.



Witnesses
G. J. Rollander
Wm. M. Connell



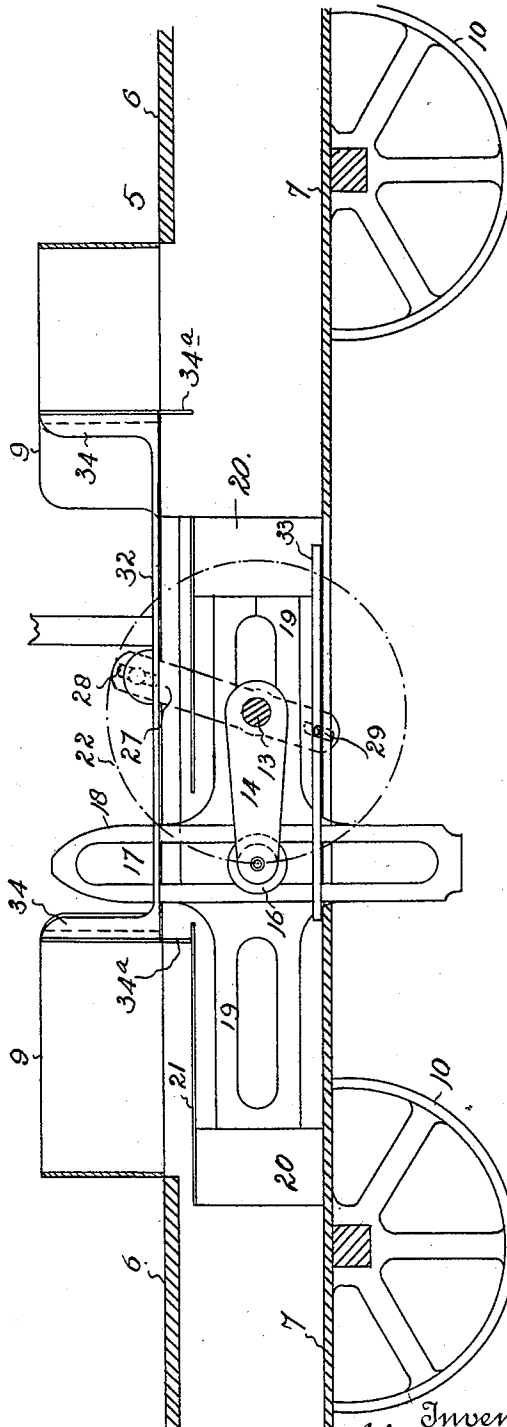
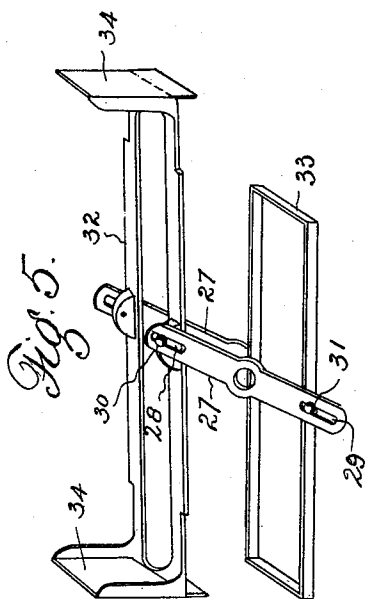
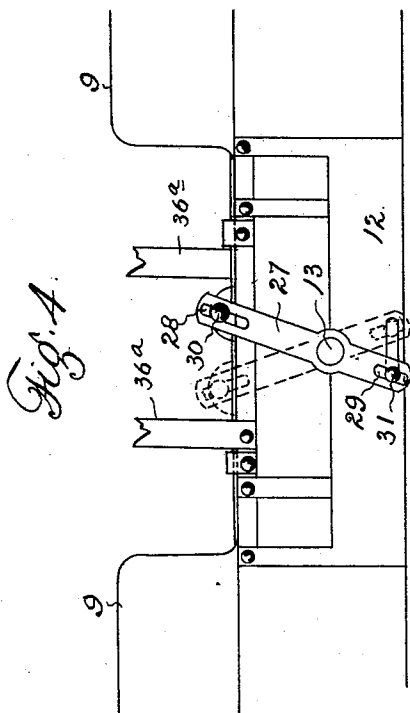
By *his* Attorney

Inventor
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UNITED STATES PATENT OFFICE.

HENRY DEITZ, OF DENVER, COLORADO.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 482,303, dated September 6, 1892.

Application filed November 25, 1891. Serial No. 413,135. (No model.)

To all whom it may concern:

Be it known that I, HENRY DEITZ, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Baling-Presses; and I do 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 drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in baling-presses; and it consists of the features, arrangements, and combinations hereinafter described and claimed.

The object of the invention is to provide a machine of great capacity and one which may be constructed and operated at small cost as compared with the work accomplished.

To these ends the invention consists of the features, arrangements, and combinations hereinafter described and claimed.

In the accompanying drawings is illustrated an embodiment of my improved baling-press.

In the drawings, Figure 1 is a side elevation of the machine without the feed mechanism. Fig. 2 is a top or plan view of the same. Fig. 3 is a longitudinal vertical section taken on line *x x*, Fig. 2. Fig. 4 is a side view of the mechanism for compressing the material to be baled preparatory to forcing it into the baling-chambers. Fig. 5 is a perspective view in detail of the operating parts of the same. Fig. 6 is a side elevation of the machine provided with the automatic force-feed mechanism. Fig. 7 is a fragmentary top view in detail of the feed-levers. Fig. 8 is a vertical section taken on the line *y y*, Fig. 6. Fig. 9 is an enlarged view in detail showing the antifrictional projection which engages the cam. In this view the arm carrying the bearing is shown in vertical section.

Similar reference characters indicate corresponding parts or elements of the mechanism in the several views.

Let the numeral 5 designate a framework composed of the longitudinal top and bottom plates 6 and 7, respectively. These plates of the framework are connected on each side of

the power mechanism by the side plates 8, forming the two baling-chambers. Above each of these chambers the top plate is cut away, forming openings, through which the material to be baled is fed to the chambers. Surrounding these openings are the hoppers 9. This framework is mounted on wheels 10, which raise the framework sufficiently above the ground to permit the working of the power, as hereinafter described.

Centrally mounted upon the stirrup-shaped supporting-plates 12, located between plates 8 on each side of the machine, is the rotating shaft 13, carrying a crank 14, rigidly secured thereto. Shaft 13 and its crank are each preferably composed of two members, in order to give great strength, durability, and efficiency to the operating parts. Each member of the shaft is provided at its inner extremity with a member or arm of the crank. These twin arms of the crank are connected at their free extremities by a pin or spindle 15, carrying an antifrictional crank-pin 16, located in the vertical slot 17 of the reciprocating yoke 18. This yoke is provided at its vertical center on each side with a plunger-arm 19, formed integral therewith or rigidly secured thereto. Each arm 19 is provided at its outer or free extremity with a plunger-head 20, to which is made fast the top plate 21. As shaft 13 rotates a reciprocating movement is imparted to the yoke 18 and its plungers. Hence when one plunger is at its forward limit of movement the other is at its backward limit, and vice versa. Power may be applied to the shaft 13 in any suitable manner and from any desired source. As shown in the drawings, the outer extremity of one member of the shaft 13 is provided with a bevel gear-wheel 22, engaged by a corresponding pinion 23, carried by a short shaft 24, journaled upon the framework by the use of suitable boxes 25. Shaft 24 is provided with a pulley 26, which may be connected by means of a suitable belt with the source of power.

Located outside of the framework and loosely mounted upon each member of the shaft 13, which forms its fulcrum, is a lever 27, the arms of which are respectively provided with slots 28 and 29, in which are located the pins or wrists 30 and 31, respectively, made fast to the movable rectangular

frames 32 and 33, respectively. The upper frame 32 is provided with vertical flanges 34 of about the same height as the hoppers 9, in which these flanges are adapted to move.

5 Flanges 34 are provided with depending projections 34^a, adapted to engage plates 21, carried by the plungers. Frames 32 and 33 are slidingly supported upon the upper and lower plates of the framework, which plates are interiorly cut away between the two baling-chambers, leaving only the side bars, upon which these frames slide. Frame 32, with its flanges, forms the condenser, whereby the contents of the hoppers are compressed before

10 being forced into the baling-chamber by the feed mechanism. This condenser is actuated by the yoke 18, which as it moves forward engages the frame 33, moves levers 27 upon their fulcrums, and drives the condenser in

20 the direction opposite to that in which the yoke is moving. Hence when one plunger is at its forward limit of movement the corresponding flange 34 of the condenser is at its backward limit, and vice versa.

25 The material to be baled is automatically forced into the baling-chamber by two levers 35, fulcrumed upon an upright frame composed of two members 36, one member being secured to each side of the framework of the machine,

30 and each consisting of two legs 36^a, united at the top by a part 36^b. The two members of the frame 36 are connected at the top by transverse rods or bolts 37, which form the fulcrums of levers 35. Levers 35 are actuated

35 by two eccentric cams 38 38, rigidly secured to the members 13 of the shaft, one cam being located on one side of the machine and each cam being interiorly grooved, forming a way 39 for the reception of an antifrictional pin 40, mounted upon a vertically-movable arm 41, provided

40 with a slot 42, permitting the arm to move upon shaft 13. The inner extremity of each lever 35 is slotted to receive a projection 43, located upon the upper portion of each arm

45 41. The cams 38 are oppositely disposed upon their respective members 13 of the shaft, and each cam actuates one of the levers 35, the arrangement being such that when one lever is up the other is down, and vice versa. Each

50 lever 35 is provided at its outer extremity with a downwardly-projecting arm 35^a, terminating at its bottom in arms 35^c of any desired number and of any required length, depending upon the size of the hopper or the

55 area which the arms are required to cover.

From the foregoing description the operation of the mechanism will be readily understood. Power being applied to rotate shaft 13, a reciprocating movement is imparted to

60 yoke 18, and consequently to the plungers connected therewith, one plunger being at its forward limit of movement when the other is at its backward limit, as described. Again, the forward movement of the yoke engages

65 frame 33, actuates levers 27, and drives the condenser in the opposite direction, one of the flanges 34 acting upon the material in the

hopper toward which the condenser moves. One of the arms 35 of the feed mechanism now engages the compressed material in this

70 hopper and forces it down into the corresponding baling-chamber in time to be ready to receive the stroke of the plunger as it moves into the chamber. The position of the cam 38 (shown in full lines in Fig. 6) corresponds with the downward position of the

75 lever 35 which it controls, the corresponding arm 41 being at its upward limit of movement. The other feed-lever 35 is now upraised, its arm 41 being at the downward limit of move-

80 ment, as shown in Fig. 6 and indicated by the position of the cam shown in dotted lines in the same figure.

Having thus described my invention, what I claim is—

85 1. In a baling-press, the combination, with a supporting-frame, of a shaft journaled therein, a slotted yoke, crank mechanism made fast to the shaft and engaging the yoke, a lever fulcrumed on the shaft, two movable frames

90 slidingly supported on the stationary frame and on opposite sides of the main shaft, the movable frames being respectively connected with two arms of the lever, one of these frames being flanged and the other lying in the path

95 of the yoke, suitable hoppers supported upon the stationary frame and in line with the flanged movable frames, and means for rotating the shaft, whereby a reciprocating movement is imparted to the yoke and the flanged

100 movable frame, substantially as described.

2. The combination, in a baling-press, of a stationary frame provided with a chamber and corresponding hopper, a rotating shaft, a cam mounted thereon, a feeding-lever fulcrumed upon the frame, and a vertically-mov-

105 able arm connected with the cam at one extremity and with the lever at the opposite extremity, whereby as the shaft rotates the lever is actuated, substantially as and for the pur-

110 pose set forth.

3. The combination, in a baling-press, of a stationary frame provided with baling-chambers and corresponding hoppers, a condenser consisting of a flanged movable frame slidingly supported in line with the hoppers, a

115 rotating shaft journaled in the frame, a yoke, plungers secured thereto in line with the baling-chambers, crank mechanism connecting the shaft with the yoke, a lever centrally

120 fulcrumed on the stationary frame and having its upper arm connected with the condenser, and a horizontally-sliding frame lying in the path of the yoke and connected with the

125 lower arm of the lever, whereby as the shaft rotates a reciprocating movement is imparted to the yoke, the plunger, and the condenser, the condenser and the yoke moving simultaneously in opposite directions, substantially

130 as and for the purpose set forth.

4. The combination, in a baling-press, of a stationary frame provided with baling-chambers and corresponding hoppers, a condenser slidingly supported upon the frame in line

with the hoppers, a shaft, a yoke carrying plungers and connected with the shaft by crank mechanism, a lever fulcrumed on the frame and having slotted arms, a pin connected with the condenser and engaging the slot in one arm of the lever, a horizontally-sliding frame lying in the path of the yoke and provided with a projection engaging the slot in the other arm of the lever, and means for rotating the shaft, whereby a reciprocating movement is imparted to the condenser and the plunger simultaneously in opposite directions, substantially as and for the purpose set forth.

5. In a baling-press, the combination, with a supporting-frame provided with baling-chambers and corresponding hoppers, of a shaft journaled in said frame, feeding-levers fulcrumed on the frame and having their inner arms slotted and their outer arms fashioned to engage the material in the hopper, grooved cams oppositely disposed on the shaft, vertically-reciprocating arms provided with pins engaging the grooves in the cams and the slots in the inner arms of the lever, and means for rotating the shaft, whereby the feeding-arms are actuated, substantially as described.

6. The combination, in a baling-press, of a stationary frame, a shaft centrally journaled therein, a baling-chamber and a corresponding hopper located on each side of the shaft, a slotted yoke carrying two plungers, moving in line with the chambers, crank mechanism connecting the yoke with the shaft and provided with an antifrictional bearing located in the slot of the yoke, a condenser supported upon the frame in line with the hoppers, levers connecting the condenser with the yoke, and automatic feed mechanism consisting of two levers fulcrumed on the frame, cams oppositely disposed on the main shaft, and ver-

tically-movable slotted arms connected with the levers and actuated by the cams, substantially as described.

7. The combination, in a baling-press, of a frame, a shaft journaled therein, and automatic feed mechanism consisting of a lever fulcrumed on the frame, a cam rigidly secured to the main shaft, and a vertically-movable slotted arm mounted on the shaft and connected with the feeding-lever and actuated by the cam as the shaft rotates, substantially as described.

8. In a double baling-press, the combination of the supporting-frame, a shaft journaled therein, two chambers, one on either side of the shaft, and automatic feed mechanism consisting of two levers, one for each chamber, these levers being fulcrumed on the frame, cams rigidly secured to the main shaft and oppositely disposed thereon, and vertically-movable slotted arms mounted on the shaft, connected with the feeding-levers, and actuated by the cams, substantially as described.

9. In a baling-press, the combination, with a supporting-frame, of the shaft, a reciprocating yoke and plungers, and condensing mechanism consisting of horizontally-movable heads, a lever centrally fulcrumed on the shaft and having slotted extremities, a pin attached to the condenser and engaging the upper slot in the lever, and a horizontally-movable frame lying in the path of the yoke and provided with a projection engaging the lower slot in the lever, substantially as described.

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

HENRY DEITZ.

Witnesses:

WM. MCCONNELL,
G. J. ROLLANDET.