

A. E. BEALL.

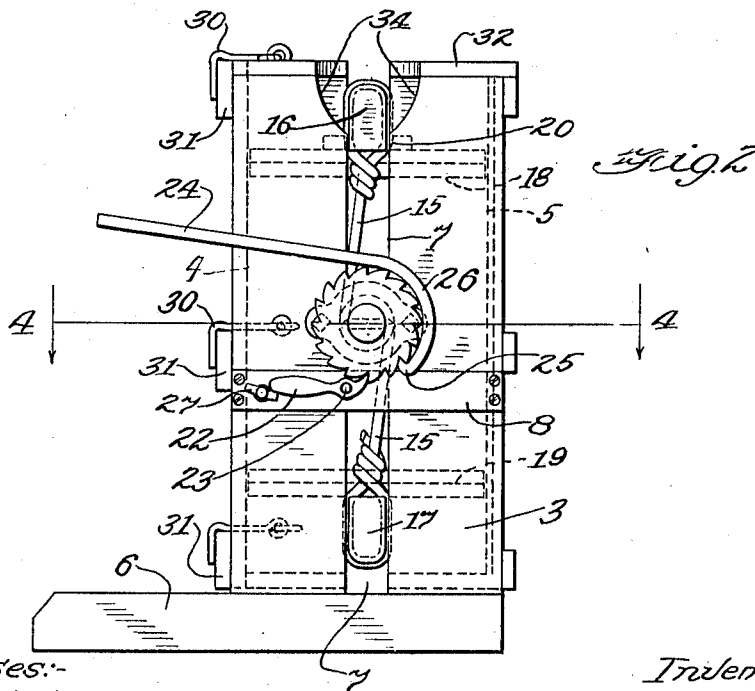
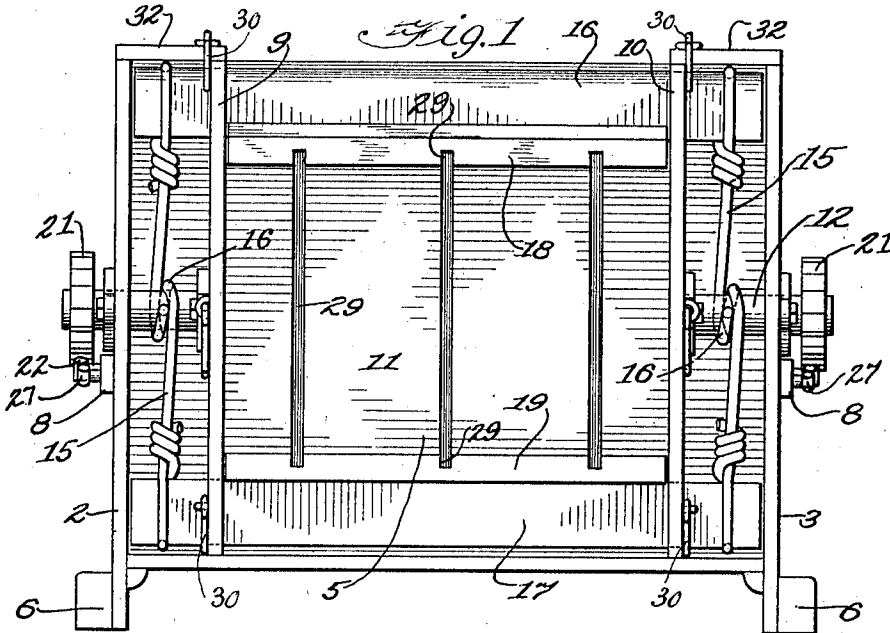
PAPER BALER.

APPLICATION FILED AUG. 11, 1910.

Patented Sept. 24, 1912.

2 SHEETS-SHEET 1.

1,039,244.



Witnesses:-

Wm. H. Yagle

A. G. Thomas

Inventor:-

Albert E. Beall.

by Walter R. Lane

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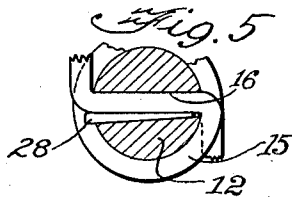
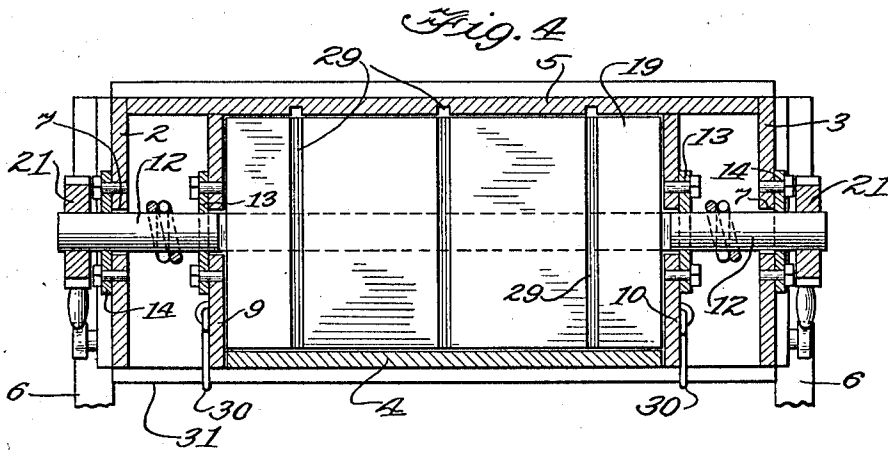
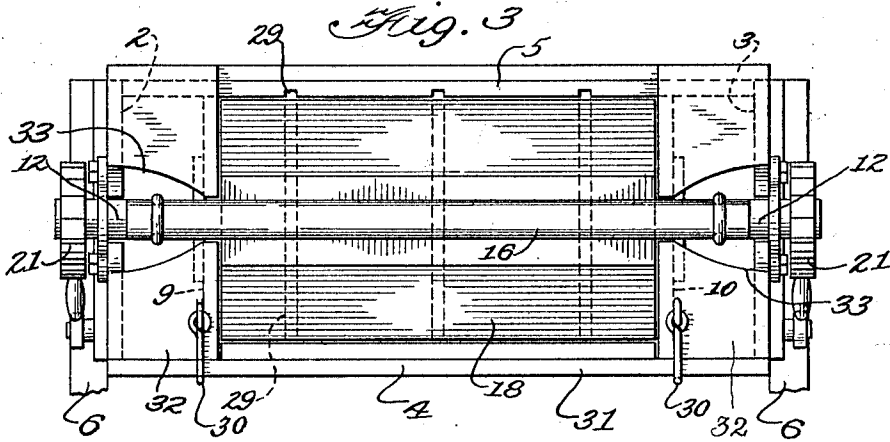
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UNITED STATES PATENT OFFICE.

ALBERT E. BEALL, OF CLINTON, IOWA, ASSIGNOR TO R. N. HOWES AND H. U. CROCKETT.

PAPER-BALER.

1,039,244.

Specification of Letters Patent. Patented Sept. 24, 1912.

Application filed August 11, 1910. Serial No. 576,684.

To all whom it may concern:

Be it known that I, ALBERT E. BEALL, a citizen of the United States, residing at Clinton, county of Clinton, and State of Iowa, have invented a new and useful Improvement in Paper-Balers, of which the following is a specification.

My invention relates to paper balers and has for its object the construction of a baler in which two movable followers are used for compressing the material in the baling chamber. I have also provided simple and efficient means for simultaneously moving the followers toward each other during the baling operation.

The various advantages of my invention will become apparent from the detailed description of the accompanying drawings, in which—

Figure 1 is a side view of my invention, showing the interior of the baler; Fig. 2 is an end view of the baler; Fig. 3 is a top view; Fig. 4 is a sectional view taken on line 4—4 of Fig. 2, and Fig. 5 is a fragmental detail view showing how the cable is clamped to the actuating shaft.

The casing or frame-work of the baler, comprises a pair of end pieces 2 and 3, a removable front piece 4 and a back piece 5. The end pieces are provided with foot members 6 for firmly holding the frame-work in an upright position. As shown in Fig. 2, the end pieces consist each of two members separated by the vertical slot 7. A cross-bar 8 serves to hold the members of the end pieces in firm relation to each other. Partitions 9 and 10 form the end walls of the baling chamber 11. In each of the end chambers, formed between the partitions and the end pieces, is located a short shaft 12. This shaft is journaled in bearings 13 and 14 carried by the associated partition and members, as most clearly shown in Fig. 4. As the mechanisms located in the two end chambers are alike, a description of one will be sufficient for both. A cord or cable 15 passes at a point intermediate between its ends through a transverse opening 16 in the shaft 12. At its opposite free ends this cable is adapted to be connected with one end of the upper bar 16 and the lower bar 17. In the particular form shown in the drawings, the opposite ends of the cables are shown in the form of loops which are slipped

over the ends of the bars 16 and 17. It is obvious, however, that any suitable means may be adopted for attaching the cables to the bars. These bars extend longitudinally across the top and bottom of the baling chamber and into the end chambers. Associated with the upper bar 16 is a compression member 18 and associated with the lower bar 17 is a compression member 19. These compression members are loosely associated with their respective actuating bars, and are provided with the grooves 20 on their upper surface to accommodate the actuating bars. The bars 16 and 17, with their associated compression members 18 and 19, constitute the upper and lower followers. If desired, the followers may be made in one piece instead of in two pieces, but I prefer to make them in two pieces because the parts are in that way more readily disassembled. The shafts 12 extend beyond the frame-work at their outer ends where they are each provided with a ratchet wheel 21. The pawl 22 pivoted to the cross-bar 8 at 23, normally engages the teeth of the ratchet wheel 21 and permits the latter to be turned only in the direction in which the shaft 12 will cause the followers to move together. The hook-shaped lever 24 affords ready means for operating the ratchet wheel. As seen from Fig. 2 this lever has at its outer end an inwardly turned hook-portion 25, which is adapted to engage the teeth of the ratchet wheel. The lever is curved at 26 so as to follow the curvature of the ratchet wheel. In this way a fulcrum is provided for the lever, and by simply pressing down on the outer end of the same, the ratchet wheels will be rotated in a counter-clockwise direction, as viewed in Fig. 2. Because of the connection between the actuating bars 16 and 17 and the shaft 12, it is obvious that when the ratchet wheels are operated by the lever, the cables will be simultaneously wound up at both ends and the followers will be moved together. When it is desired to release the followers the pawls 22 are moved out of engagement with the ratchet wheels. To hold the pawls in this their inoperative position, I have provided a latch 27 which engages the free or weighted end of the pawl to hold said weighted end in a raised position.

To prevent slipping of the cable in the

opening in the shaft 12 a wedge 28 is inserted in the opening, as shown in Fig. 5. The back piece 5 and the opposing surface of the followers, are provided with grooves 29 for accommodating the baling wires. As I have stated, the front of the frame-work is removable. For securing this front in place I have provided a number of hinged latch members 30, which hook down over the cross-bars 31 of the front 4, as best shown in Fig. 2. In order to permit ready access to the upper ends of the two cables I provide the top pieces 32 with cutaway portions 33, as best indicated in Fig. 3. The end pieces have cutaway portions 34 which register with the cutaway portions 33 of the top members 32. In this way the hand can be readily inserted into the framework to slip the looped ends of the cables from the upper bar 16—as when it is desired to remove the upper follower.

The operation of my improved baler will now be readily understood from the above description. The material to be compressed is thrust into the baling chamber from the top. After a sufficient quantity has been put in, the upper follower is inserted through the open top and connected with the operating cables. By means of the hooked lever the ratchet wheels are then given each a turn whereby the two followers are brought together sufficiently to compress the material in the baling chamber. Usually, it will not be necessary to give the ratchet wheels each more than a single turn in order to effect the desired degree of compression. It will thus be seen that I have provided a baler which is simple in construction and highly efficient in operation. Although primarily intended for the baling of paper, it is obvious that other material, as, for instance hay, may be compressed into bales in my improved form of baler.

While I have shown and described one specific form of my invention, I would have it understood that various changes and modifications may be made by those skilled in the art without departing from the scope of the invention, as defined in the appended claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. A baler comprising, in combination, a frame-work having side walls and end walls, an intermediate wall associated with each end wall to form therewith an end chamber said intermediate walls having vertical openings, a baling chamber between said end chambers, a pair of followers adapted to operate in said baling chamber to compress the material between them, said followers comprising each a compression member and an actuating bar, said bars extending from one end chamber to the other

across said baling chamber, a rotatable shaft mounted in each end chamber and provided with a transverse opening, said shafts extending longitudinally of the frame-work in axial alinement with each other, a cable passing through said opening and engaging the shaft at a point midway of the cable, whereby rotation of the shaft causes both ends of the associated cable to be wound upon the shaft or unwound therefrom, the free ends of each cable being adapted for attachment to said bars, a ratchet wheel secured to each shaft, a hook-shaped hand lever for engaging said ratchet wheels to actuate the same, so that the followers are simultaneously moved toward each other, and means for preventing reverse rotation of said shafts.

2. A baler comprising in combination, a frame-work having side walls and end walls, an intermediate wall having vertical openings in its upper and lower portions associated with each end wall to form therewith an end chamber, said intermediate wall forming the end walls of the baling chamber, a pair of followers adapted to operate in said baling chamber to compress the material between them, a rotatable shaft journaled in each end wall and the associated intermediate wall substantially midway of the end chambers, said shafts extending longitudinally of the frame-work in axial alinement with each other, connections in said end chambers between said shafts and said followers, so that rotation of said shafts causes the followers to move toward each other simultaneously, and means on the outside of said end chambers for operating said shafts.

3. A baler comprising in combination, a frame-work having side walls and end walls, an intermediate wall having vertical openings in its upper and lower portions associated with each end wall to form therewith an end chamber, said intermediate walls forming the end walls of the baling chamber, a pair of followers adapted to operate in said baling chamber to compress the material between them a rotatable shaft journaled in each end wall and the associated intermediate wall substantially midway of the end chambers, said shafts extending longitudinally of the frame-work in axial alinement with each other, the outer ends of said shafts projecting beyond the end walls of the frame-work, connections in said end chambers between said shafts and said followers, so that rotation of the shafts causes the followers to move simultaneously toward each other, a lever wheel fixed to the outer end of each shaft on the outside of said end chambers, and a hand lever having a curved portion adapted to engage the periphery of the ratchet wheels when applied thereto, said curved portion terminating in a hook to en-

gage the teeth of the ratchet wheels for actuating said shafts, and means for preventing reverse rotation of said shafts.

4. A baler comprising, in combination a
5 frame-work having side walls and end walls,
an intermediate wall associated with each
end wall to form therewith an end chamber,
said intermediate walls having vertical open-
ings said intermediate walls forming the
10 end walls of the baling chamber, a follower
adapted to operate in said chamber to com-
press the material therein, a rotatable shaft
journaled in each end wall and the associ-
ated intermediate wall substantially midway
15 of the end chambers, said shafts extending
longitudinally of the frame-work in axial
alignment with each other, connections in
said end chambers between said shafts and
said follower, so that rotation of the shafts
20 lowers the follower, and means outside of
said end chambers for operating said shafts.

5. In a baler, a frame-work having end
walls and side walls, a pair of end chambers
and a central baling chamber arranged be-
25 tween said end walls and having vertical
side openings, a follower movable in said
baling chamber to compress the material
therein, a shaft journaled in each end cham-
ber longitudinally of the frame-work, oper-
ative connections housed in said end cham-
30 bers between said followers and said shafts,
and means on the outside of said end cham-
bers for operating said shafts.

6. In a baler, a frame-work having end
35 walls and side walls, a pair of end chambers
and a central baling chamber arranged be-
tween said end walls said central chamber
having vertical side openings, a pair of fol-

lowers movable in said baling chamber to
compress the material between them, a shaft 40
journaled in each end chamber longitudi-
nally of the frame-work, operative connec-
tions housed in said end chambers between
said followers and said shafts, means out-
side of said end chamber for operating said 45
shafts, and means for preventing reverse
rotation of said shafts.

7. A baler comprising, in combination, a
frame-work having side walls and end walls,
an intermediate wall associated with each 50
end wall to form therewith an end chamber,
said intermediate walls each having vertical
openings and forming the end walls of the
baling chamber, a follower adapted to op-
erate in said baling chamber to compress the 55
material therein, a bearing plate secured to
each end wall and each intermediate wall,
said four bearing plates being in axial aline-
ment with each other, a shaft journaled in
each pair of plates, the outer ends of said 60
shafts projecting, beyond the end walls of
the frame-work, connections housed in said
end chambers between said shafts and said
follower for moving the latter downwardly
when the shafts are rotated, a ratchet wheel 65
fixed to the outer end of each shaft, outside
of said end chambers, a retaining pawl asso-
ciated with each ratchet wheel to prevent
reverse rotation of the shafts, and a hand
70 lever for actuating said ratchet wheels to
lower the follower.

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Witnesses:

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