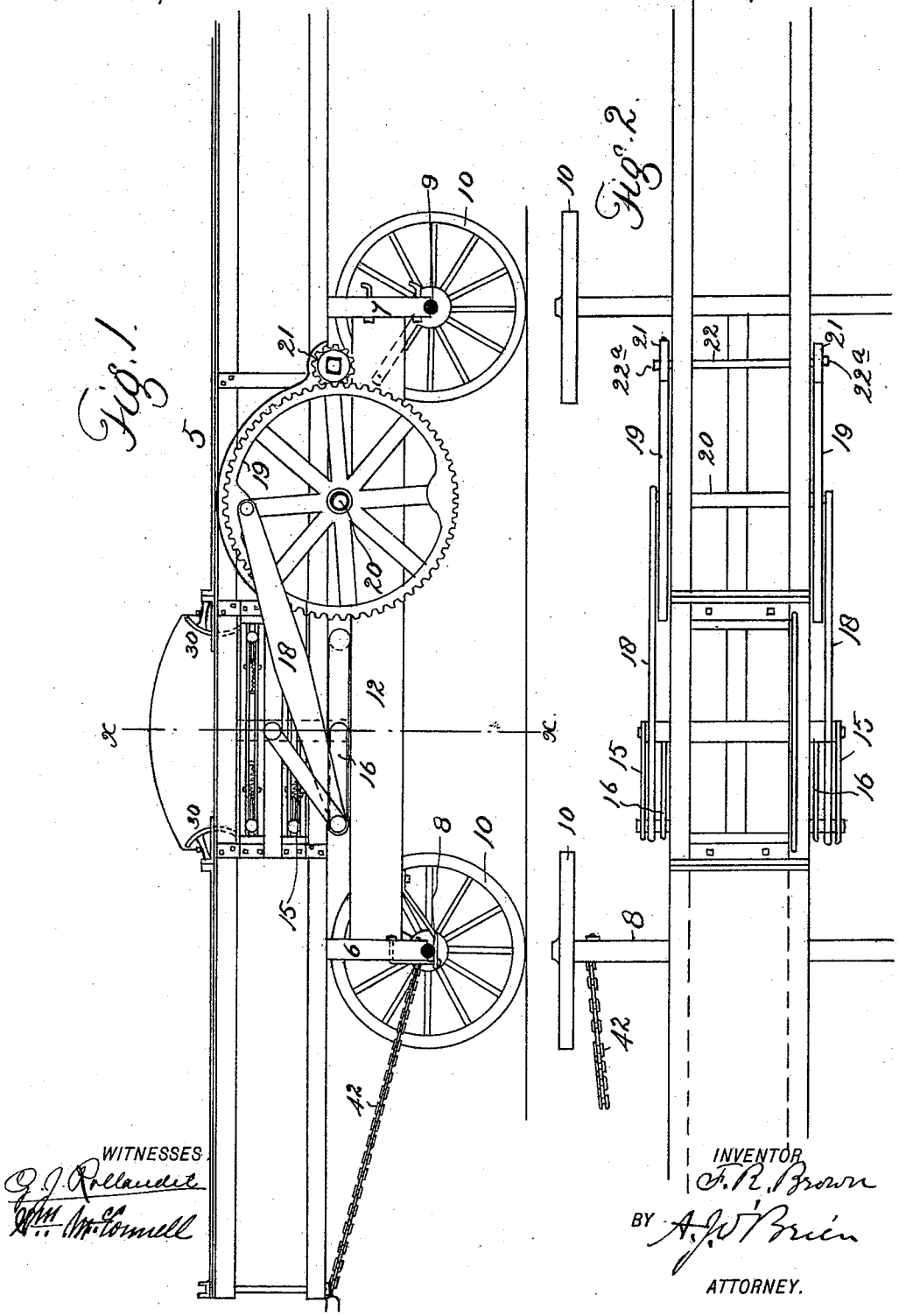
(No Model.) 3 Sheets—Sheet 1.

F. R. BROWN.

BALING PRESS.

No. 490,633. Patented Jan. 24, 1893.



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F. R. BROWN.

BALING PRESS.

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Fig. 3.

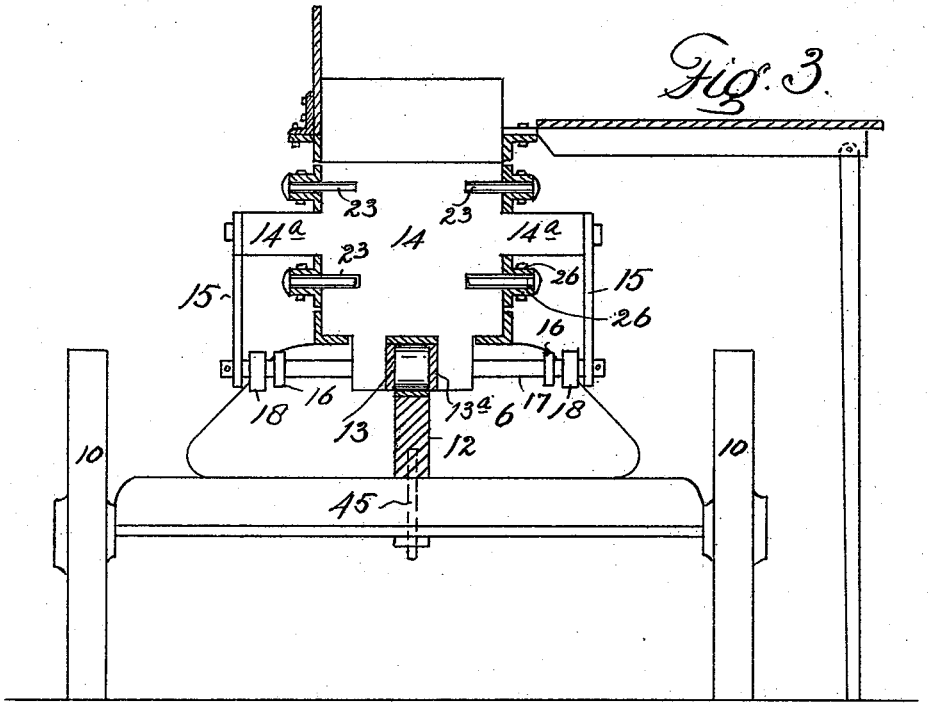


Fig. 5.

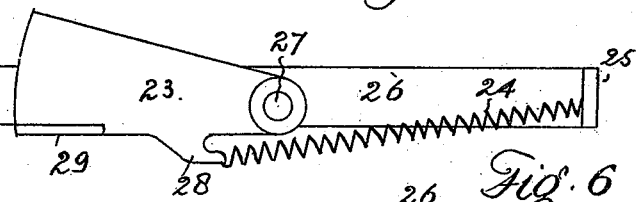


Fig. 4.

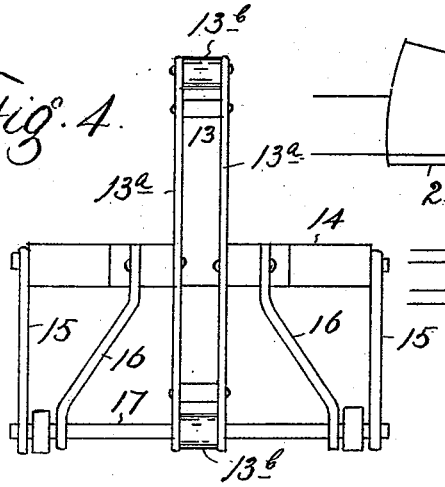
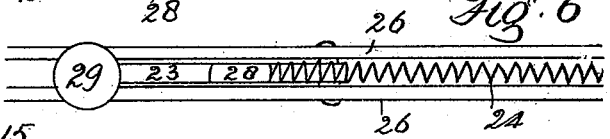


Fig. 6



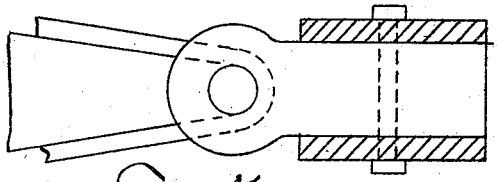


Fig. 7.

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Fig. 8.

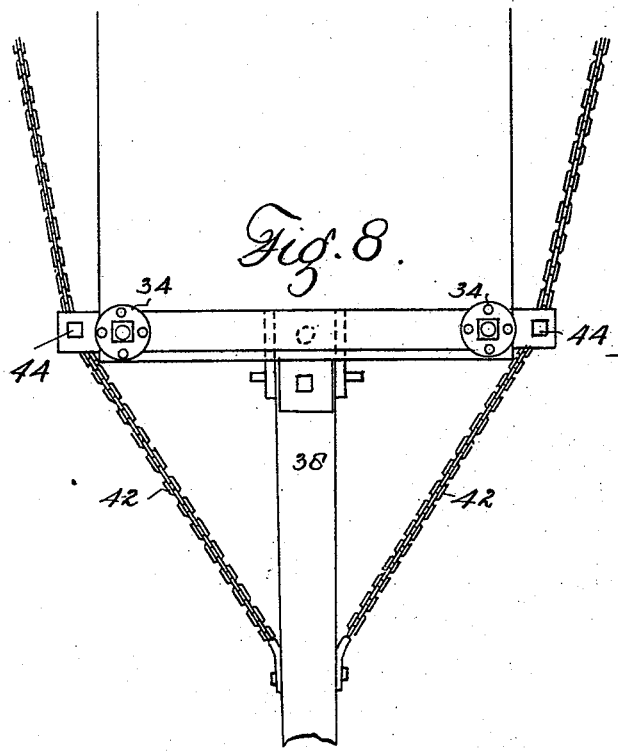


Fig. 10.

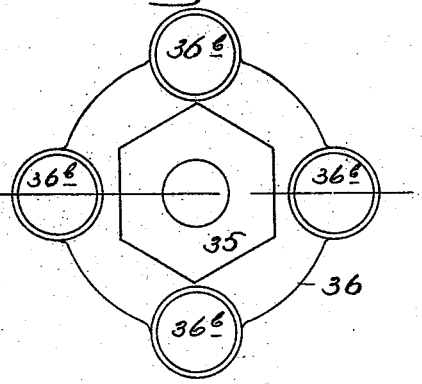


Fig. 11.

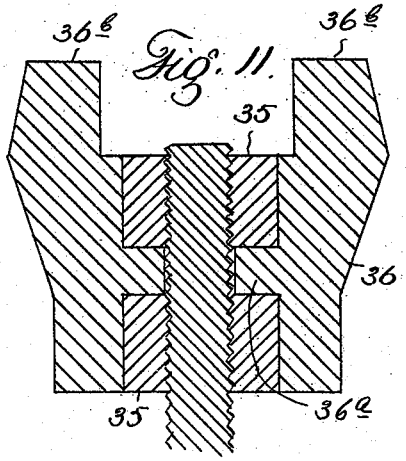
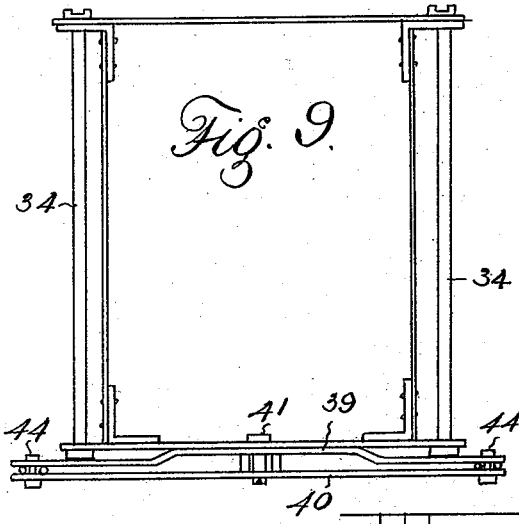


Fig. 9.



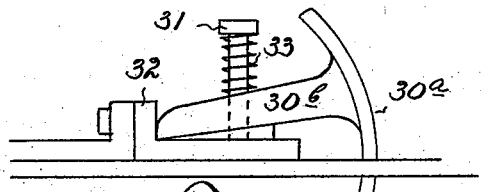
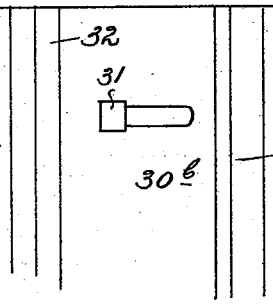


Fig. 12.

Fig. 13.



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UNITED STATES PATENT OFFICE.

FRANCIS R. BROWN, OF DENVER, COLORADO, ASSIGNOR TO THE GLOBE MANUFACTURING COMPANY, OF SAME PLACE.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 490,633, dated January 24, 1893.

Application filed February 8, 1892. Serial No. 420,805. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS R. BROWN, 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in baling presses and the object of the improvement is to provide a machine of the class stated which shall be, of great capacity, simple in construction, economical in cost as compared with the work accomplished, continuous in operation, since it bales on both sides of the reciprocating plunger, reliable, durable and efficient in use.

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 the invention.

Figure 1 is a side elevation of my improved baling press. Fig. 2 is a top or plan view of the same. Fig. 3 is a vertical transverse section taken through the press. Fig. 4 is a top view of the plunger and its carriage. Figs. 5 and 6 are top and side views respectively showing the retainers in detail. Fig. 7 is a top view of the rear extremity of the tongue. Fig. 8 is a top view of the forward extremity of the baling chamber. Fig. 9 is a front view of the same. Fig. 10 is a top view on an enlarged scale showing means for adjusting the tension of the compression chamber. Fig. 11 is a vertical section taken through the center of the same. Fig. 12 is a side view of the folder. Fig. 13 is a top or plan view of the same.

Similar reference characters indicating corresponding parts or elements of the mechanism, let the numeral 5 designate the baling chamber supported upon the front and rear bolsters 6 and 7. These bolsters rest upon the corresponding axles 8 and 9 which are in turn mounted upon the wheels 10. The two bolsters are connected by the central longitudinal beam 12 which forms the track for the carriage 13 of the reciprocating plunger 14. The carriage consists of two bars 13^a having their extremities connected by two rollers 13^b. The plunger proper is centrally secured to this carriage and provided with braces 15 and 16 which are bolted to the plunger head at one extremity and connected at the opposite extremity with a transverse rod 17 secured to one extremity of the carriage and extending equally on both sides thereof.

Pivoted upon the rod 17 between the braces 15 and 16, are the plunger arms 18 on either side, located outside of the baling chamber and having their opposite extremities pivoted upon the wheels 19 near their peripheries or at a suitable distance from the center to give the required length of stroke. These wheels are mounted upon a suitable shaft 20 and their peripheries are cogged to engage the correspondingly cogged pinions 21 rigidly secured to shaft 22. Shafts 20 and 22 are suitably journaled in the frame work of the baling chamber. Shaft 22 is of angular shape and projects sufficiently from its pinions to permit the attachment of a knuckle joint whereby power may be communicated from any suitable motor. Hence by applying power to this shaft wheels 19 will be rotated and a reciprocating movement imparted to the plunger head through the medium of arms 18. The plunger head is provided with projections or wrists 14^a which travel in slots formed in the sides of the baling chamber. Braces 15 are attached to the extremities of the wrists.

Pivoted in suitable slots formed in the sides of the baling chamber are the retainers 23 actuated by the coil springs 24, one extremity of said springs engaging a suitable stop 25 located between the exteriorly projecting plates 26, through which passes the pivot bolt 27 of the retainers. The opposite extremities of springs 24 engage the exteriorly projecting lugs 28 formed integral with the body of the retainers, which are also provided with heads 29 which act as stops to prevent them from passing too far into the baling chamber.

Located at opposite extremities of the mouth of the baling chamber are the spring actuated folders 30 provided with curved faces 30^a and the rearwardly projecting shank plates 30^b, slotted to receive the bolts 31 which are made fast to an angle plate 32 secured to the top of the frame work. The rear extremity of the plate 30^b engages the vertical flange of angle plate 32, the bearing extremity being rounded to allow the folder to move up and down in the performance of its function, forming in effect a hinge joint. Bolt 31 is provided with a coil spring 33 surrounding the bolt above plate 30^b, one extremity thereof bearing against said plate and the other against the bolt head which forms a stop therefor.

The curved face of the folder extends entirely across the baling chamber and normally projects into the path of the plunger, and is forced upward as the charge of hay or other material is thrust forward. Then as the plunger retreats the folder drops into place and folds down the ragged portion of the inner extremity of the charge, so that when the next charge is thrust forward it engages the folded portion of the preceding charge, thus forming a neat, smooth and compact body. It must be understood that the plunger never passes the folder. The plunger when at its forward limit of movement may pass underneath the folder, that is, the lower edge of the folder face may engage the upper edge of the plunger head, but the latter must never pass forward far enough to allow the folder face to drop behind the plunger head, since if this should occur the plunger could not pass back without breaking the mechanism.

The extremities of the compression chamber are provided with tension bolts 34 connecting the top and bottom plates thereof. Upon the threaded extremities of these bolts are screwed the nuts 35 sufficiently separated to receive between them the interiorly projecting lugs 36^a of the wrench head 36 which is of angular shape to correspond with the shape of the nuts. The top of this wrench head is provided with four upwardly projecting lugs 36^b which are sufficiently separated to receive a lever arm between them, whereby the wrench head may be rotated and the nuts 35 adjusted to suit the purpose.

The press is moved from place to place by the use of horses and for this purpose a tongue 38 is provided. The extremity of this tongue is secured between two cross bars 39 and 40 pivoted to the bottom of the press by means of a bolt 41. This tongue is connected with the front axle by means of chains 42 intermediately connected with the extremities of plates 39 and 40 by bolts 44. The forward bolster 6 is pivoted on the corresponding axle by the use of a sort of king bolt 45 shown in Fig. 3. This construction taken in connection with the tongue attached to the baling press as described gives the press all the advantages of an ordinary four wheeled vehicle for all purposes of traction transportation.

From the foregoing description it is believed the operation of my improved baling press will be readily understood. The power is applied by connecting the pinion shaft 22 through the medium of a knuckle joint, with any suitable motor. This attachment is made by applying the joint directly to one of the angular projecting extremities 22^a of said shaft. This causes the pinions 21 and the engaging wheels 19 to rotate, imparting a reciprocating movement to the plunger on the toggle joint principle, thus getting the greatest power just before the plunger reaches its forward limit of movement. The hay is fed into the baling chamber from a suitable table 50 hinged to the framework and supported by a standard 51. The opposite side of the chamber is provided with a vertical plate 52 adapted to form a stop for the material fed from the table, and guide it down into the chamber. This material is fed into the chamber on both sides of the reciprocating plunger. That is, when the plunger is moving toward one extremity of the chamber and acting on the material therein, another charge is thrust thereinto on the opposite side or behind the plunger so to speak. Again when it moves in the opposite direction and acts on that charge another charge is fed and so on, the feeding always being done on the side opposite from that toward which the plunger is moving, while the plunger head is always acting on a charge of material and moves in a suitable continuous chamber.

Having thus described my invention what I claim is:—

1. In a baling press the combination of a suitable framework mounted upon wheels, power wheels mounted upon a shaft journaled within the frame, a plunger and carriage, the carriage being composed of bars provided with antifrictional bearings engaging a support forming a part of the frame, the plunger being rigidly secured to the carriage which is provided at one extremity with transverse rods 17, bars connecting the plunger head with rods 17, and pitman rods pivoted to the rods 17 at one extremity and to the power wheels at the opposite extremity whereby as said wheels are rotated a reciprocating movement is imparted to the carriage and plunger, substantially as described.

2. In a baling press the combination of a baling chamber, a folder located at each end of the chamber and consisting of a curved plate projecting into the path of the plunger and a rearwardly projecting shank-plate, its rear edge engaging a suitable stop, the plate being provided with slots through which pass bolts extending into the framework of the chamber, the bolts being surrounded by springs engaging the bolt heads at one ex-

tremity and the shank plate at the opposite extremity, substantially as described.

3. In a baling press the combination with the baling chamber of the tension rods connecting the top and bottom plates, the threaded extremities of the bolts being provided with separated nuts and an angular socket fashioned to fit the nuts and provided with a ledge or ridge extending into the space between the nuts, and lugs on its upper extremity adapted to receive a lever arm whereby the nuts may be adjusted at pleasure, substantially as described.

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

FRANCIS R. BROWN.

Witnesses:
WM. MCCONNELL,
ZETELLA EBERT.