J. A. MARX.

BALING PRESS.

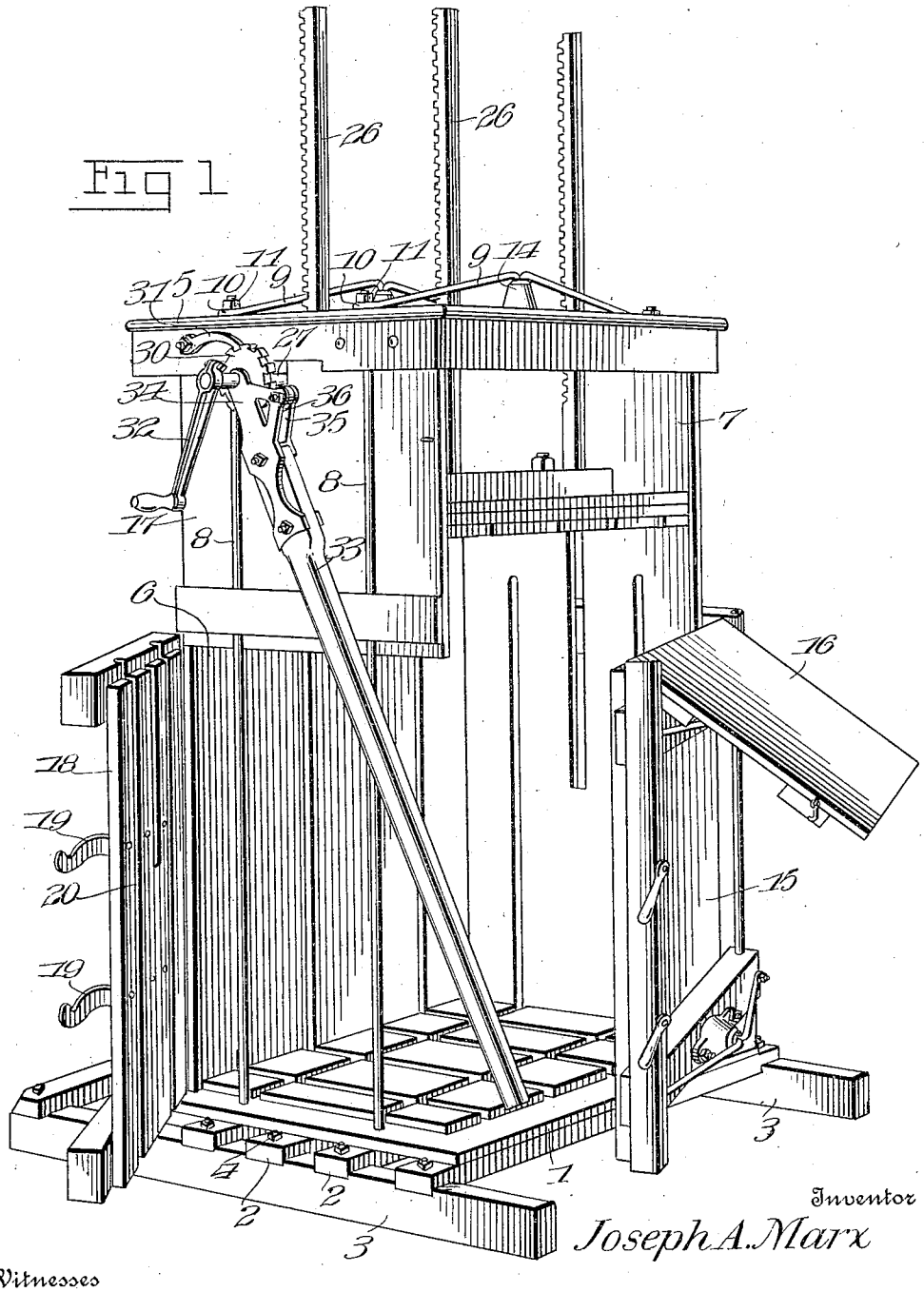
APPLICATION FILED APR. 16, 1912.

1,049,889.

Patented Jan. 7, 1913.

3 SHEETS—SHEET 1.

Fig 1.



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3 SHEETS—SHEET 2.

Fig 2

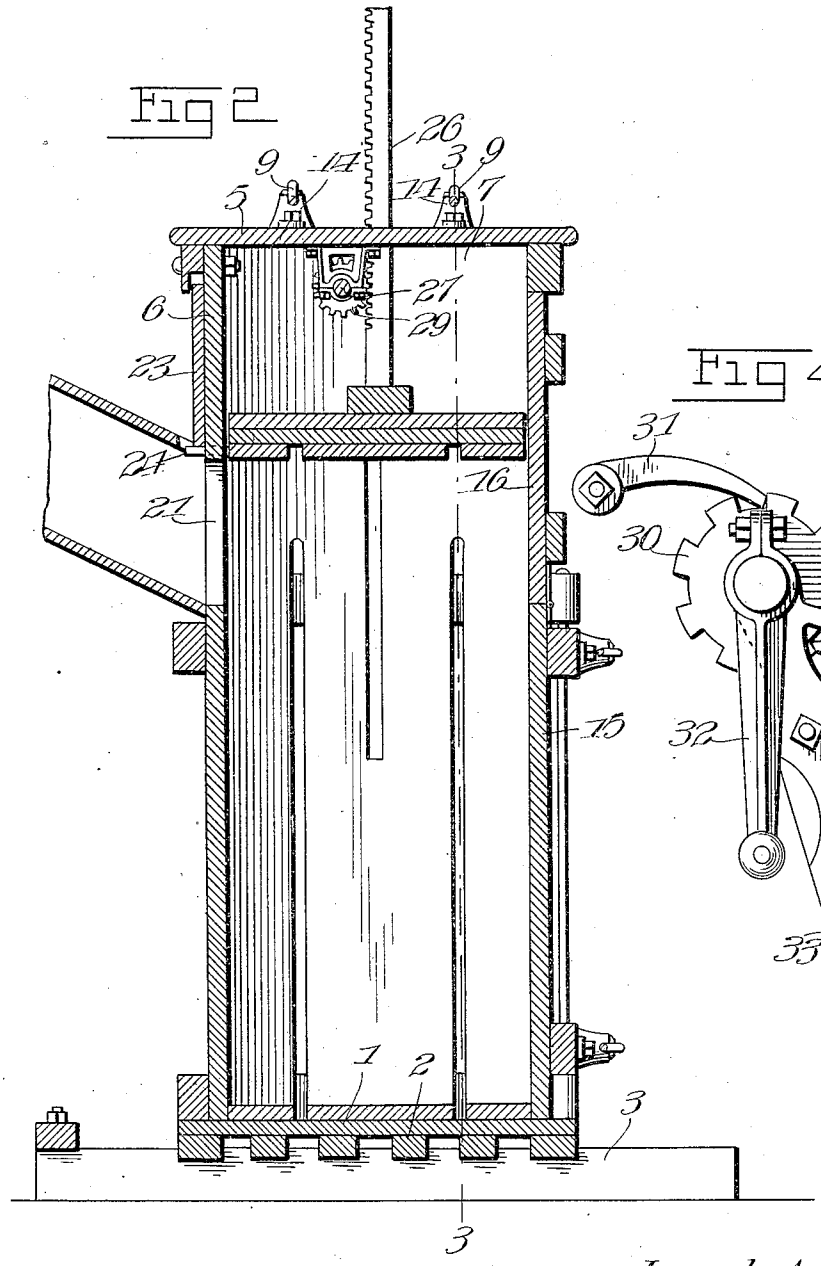

Fig 4

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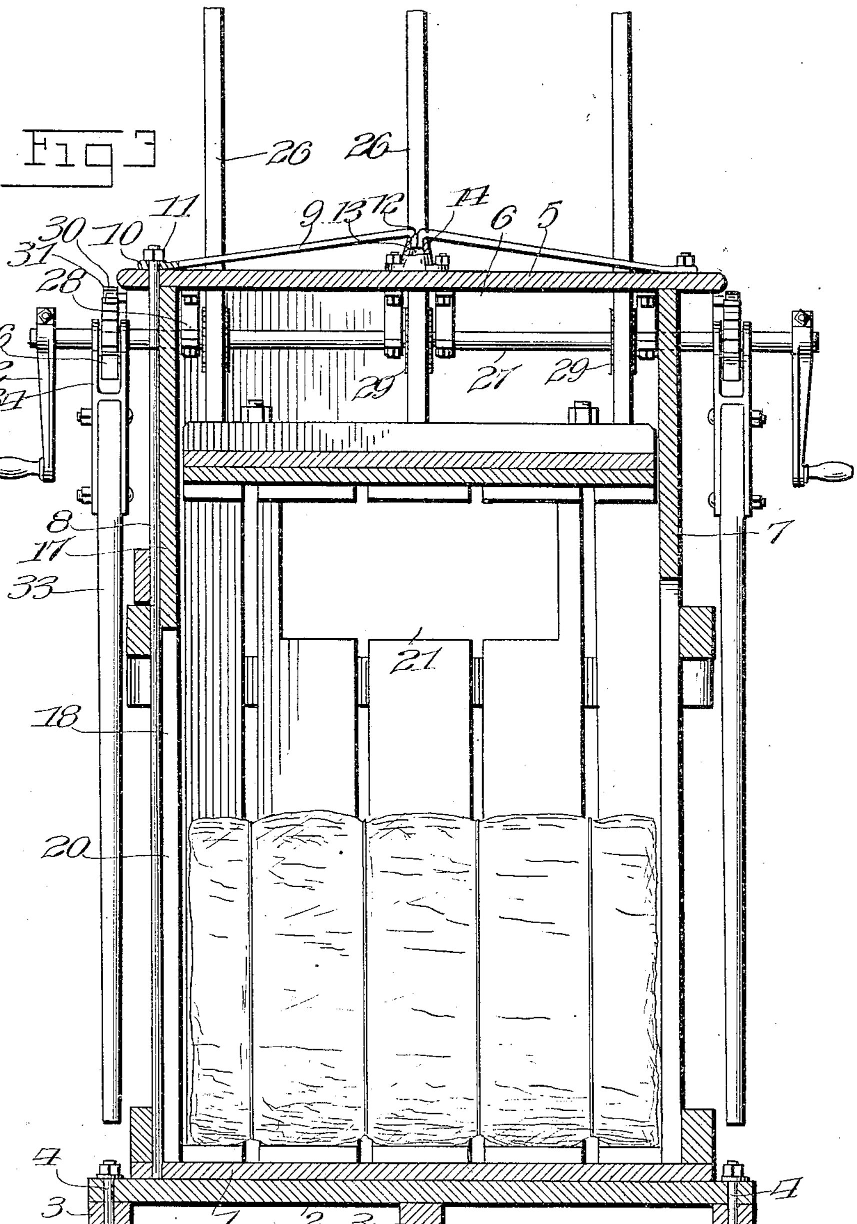
3 SHEETS—SHEET 3.

Fig 3



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UNITED STATES PATENT OFFICE.

JOSEPH A. MARX, OF SAGINAW, MICHIGAN, ASSIGNOR TO THE BUSINESS MEN'S PAPER PRESS CO., OF WAYLAND, MICHIGAN, A COPARTNERSHIP.

BALING-PRESS.

1,049,889. Specification of Letters Patent. Patented Jan. 7, 1913.

Application filed April 16, 1912. Serial No. 691,081.

To all whom it may concern:

Be it known that I, JOSEPH A. MARX, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to baling presses, and it has particular reference to that class of presses in which a plunger or follower is supported for movement in a vertical press box.

One object of the invention is to simplify and improve the construction of the press box and to so construct the said box as to enable it to resist great vertical strain.

A further object of the invention is to provide vertical reinforcing rods and to so position said rods as not to interfere with the closing of the press doors and yet in such a manner as to leave a clearance between the said rods and the finished bale to enable the latter to be conveniently removed.

A further object of the invention is to provide the press box with an improved feed spout or chute and with a closure for the feed opening, said closure being so connected with the follower as to be capable of moving with the latter to an obstructing position to prevent material from being fed into the press box on top of the follower.

A further object of the invention is to provide simple and improved means for operating the follower, for returning the latter quickly from a lowered to a raised or retracted position and for sustaining said follower in a raised or retracted position while material is being conveyed into the press box.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

In the accompanying drawings,—Figure 1 is a perspective view of a baling press constructed in accordance with the invention, with the doors open. Fig. 2 is a vertical sectional view with the doors closed. Fig. 3 is a vertical transverse sectional view taken on the line 3—3 in Fig. 2, and showing a bale in position after being compressed and tied. Fig. 4 is a detail view in elevation, enlarged, showing means for operating the follower of the press.

Corresponding parts in the several figures are denoted by like characters of reference.

The bottom 1 of the press box rests on cross pieces 2, 2 which in turn are supported on sills 3, 3 with which said cross pieces are firmly connected by bolts 4 or in some other convenient manner. The top 5 of the press box is supported by the rear wall 6 and by one side wall 7 which extends vertically between the bottom and the top. The latter is connected with the cross bars 2 of the base by means of rods 8 which serve to take up the strain when the press is in operation. Extending transversely across the top 5 are trusses consisting of rods 9 provided at their outer ends with eyes 10 that engage the upper ends of the rods 8 and are secured by means of the nuts 11 on said rods; the inner ends of the rods 9 are provided with hooks 12 engaging sockets or recesses 13 in the struts 14. The front wall of the press box is formed by a door 15 hingedly connected with the side wall 7, and said door 15 includes an upper folding section 16. The second side wall of the press box is made up of a stationary upper portion 17 and a door 18, which latter is hingedly connected with the back wall 6. The free edges of the doors 15 and 18 are adapted to be securely connected together, when closed, by means of hasps 19 or other suitable devices. The brace rods 8 are guided outside of the side wall 7 and likewise outside of the upper portion 17 of the opposite side wall. The door 18 is constructed with vertical slots or grooves 20 wherein the lower portions of the brace rods 8 at that side of the press box will be accommodated, said brace rods being thus completely offset from the inner portion of the press box proper so as not to obstruct the bale while in process of formation or the removal of the bale from the press box after it has been compressed and tied, as

will be clearly seen by reference to Fig. 3 of the drawings.

The press box is constructed in the customary manner with slots in the walls thereof to admit the wires tying the bale, and the walls and doors of the press box may be braced and reinforced in any suitable and convenient manner to insure strength and stability.

The back wall 6 of the press box has a feed opening 21 adjacent to which a feed chute or hopper is supported. The feed opening 21 may be obstructed by a vertically movable closure 23 which is suitably guided and adapted to rest upon projections 24 extending from the follower 25 through slots in the back wall 6, so that when the follower is raised or retracted, the closure 23 will be moved thereby to a non-obstructing position. When, on the other hand, the follower is projected in a downward direction, the closure, after moving by gravity to an obstructing position with reference to the feed opening, will remain supported upon the bottom of the feed chute, while the follower continues its movement in a downward direction.

The follower 25 is provided with rack bars 26 that extend upwardly through the top of the press box. Three such rack bars have been shown, but the number may be varied at will. A shaft 27, which extends transversely through the press box and is supported in suitable bearings 28 upon the side wall 7 and upon the stationary member 17 of the opposite side wall, is provided with pinions 29 meshing with rack bars 26. The shaft 27 carries a toothed wheel 30 which is engaged by a pawl 31 pivoted on the press box and whereby the rotation of the shaft in one direction is obstructed. The shaft may be rotated by means of a crank 32 which is fixed thereon, said crank, however, being utilized only for the purpose of retracting the follower. For the purpose of projecting the follower in the act of pressing a bale, a lever 33 is provided, said lever being provided with a bifurcated head or casting 34 straddling the toothed wheel 30 and pivoted on the shaft 27. The head or casting 34 is also provided wth brackets 35 supporting a pivoted V-shaped pawl 36 which may be swung upon its pivotal axis so as to engage the teeth of the wheel 30 when turning in either direction. Thus, when the pawl 36 is in one position, as seen in Fig. 4, the operation of the lever 33 will cause the shaft 27 to be turned in the proper direction to project the follower in a downward direction for the purpose of compressing the contents of the press box, rotation of the shaft in a reverse direction being prevented by the pawl or dog 31. After the bale has been compressed and tied, the pawl 36 may be reversed and the dog 31 be disengaged from the toothed wheel 30, after which the follower may be quickly retracted by rotating the shaft 27 by means of the crank 32, and the pawl 36 will now serve to support the follower in a raised or retracted position, as will be readily understood.

The operating mechanism including the toothed wheel 30, pawl 31, crank 32 and the lever 33, and related parts, may be duplicated at the opposite end of the press box and has been so shown in Fig. 3 of the drawings, and this is desirable when the press is a large one. In a small press, the operating mechanism may be arranged at one side of the press only. It will also be understood that in a smaller press, the construction may be simplified by the omission of some of the rack bars associated with the follower and also that the construction may be simplified by the omission of some of the bracing and reinforcing means and the like.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains.

The press box constructed as herein described will be found to be extremely strong and durable and capable of resisting heavy pressure, thereby enabling a bale to be compressed into very compact form. The lever means whereby the follower is actuated are of such a nature as to enable extremely heavy pressure to be exerted. The press box may be fed, when the follower is retracted, to a raised position, through the feed aperture which is arranged wholly below the follower, and as the latter starts on its downward movement, the portion of the feed aperture above the follower will be obstructed so as to preclude the possibility of material being fed on top of the follower where it might accumulate and interfere with the subsequent operation of the press. The general construction is simple, inexpensive and thoroughly efficient for the purposes for which it is provided.

Having thus described the invention, what is claimed as new, is:—

1. In a baling press, a press box including a base, a top, brace rods connecting the base with the top, a stationary back wall, a stationary side wall, a swinging door constituting a front wall and including a hingedly supported top member, and a side wall including a hingedly supported door having slots within which the brace rods on that side of the press box are offset.

2. In a baling press, a press box including a base, a top, brace rods connecting the base with the top, side walls one of which includes a door having vertical slots within which the brace rods on that side of the press box are offset, truss members extending across the top of the box and including rods

provided at their outer ends with eyes engaging the upper ends of the brace rods and at their inner ends with hooks, and struts supported on top of the press box and having recesses wherein the hooks of the truss rods are accommodated.

3. In a baling press, a press box including a stationary wall member having a feed aperture, a follower movable vertically in the press box, a closure supported for vertical movement to obstruct the feed aperture, means associated with the follower and extending through the wall of the press box to support the closure in a non-obstructing position, and a feed chute supported adjacent to the feed aperture and adapted to support the closure in an obstructing position.

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

JOSEPH A. MARX.

Witnesses:
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