No. 747,230. PATENTED DEC. 15, 1903.

J. ROSS.

HAY PRESS.

APPLICATION FILED FEB. 13, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

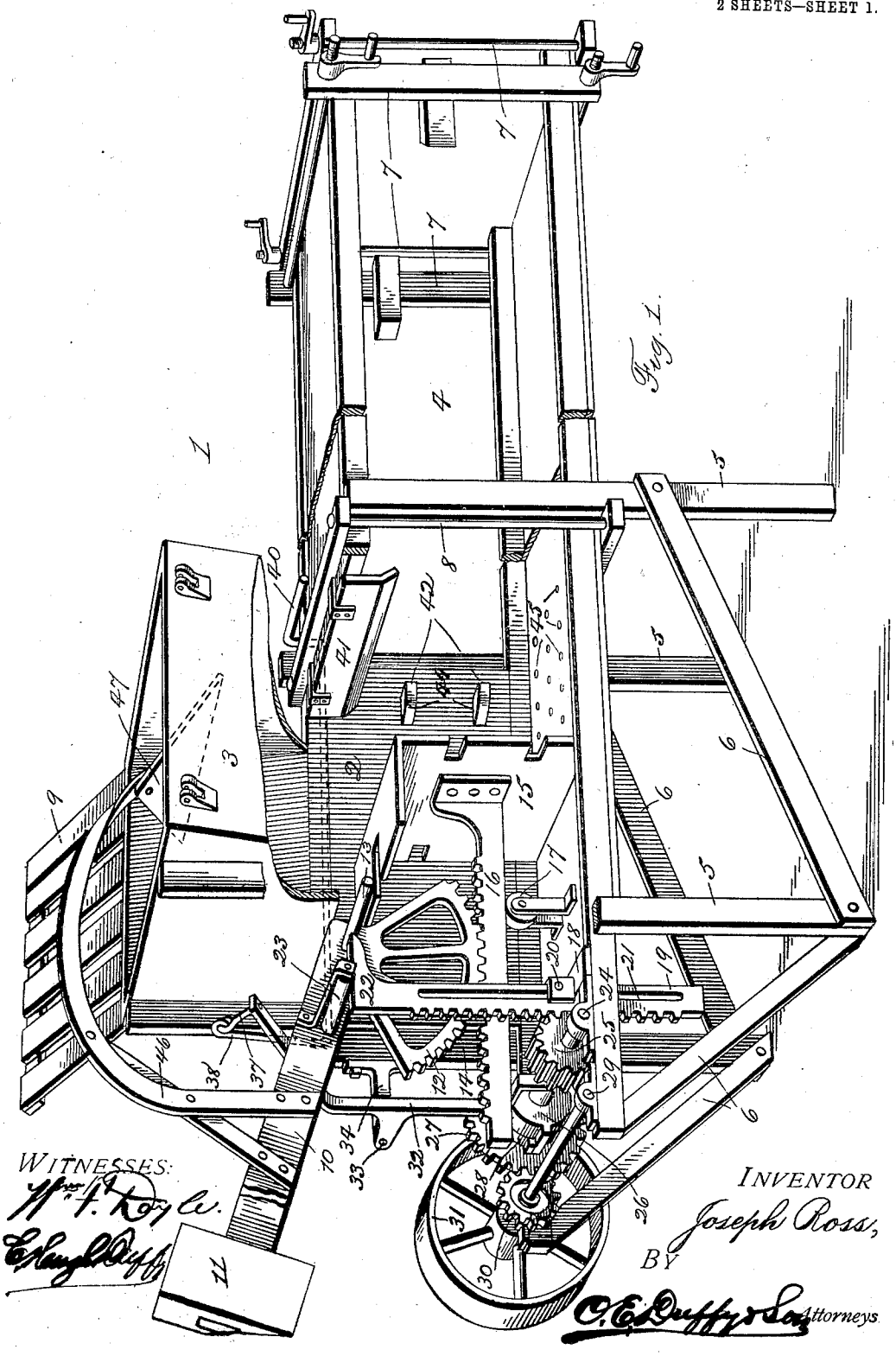


Fig. 1.

WITNESSES:

INVENTOR
Joseph Ross,
BY
C. E. Duffy & Son Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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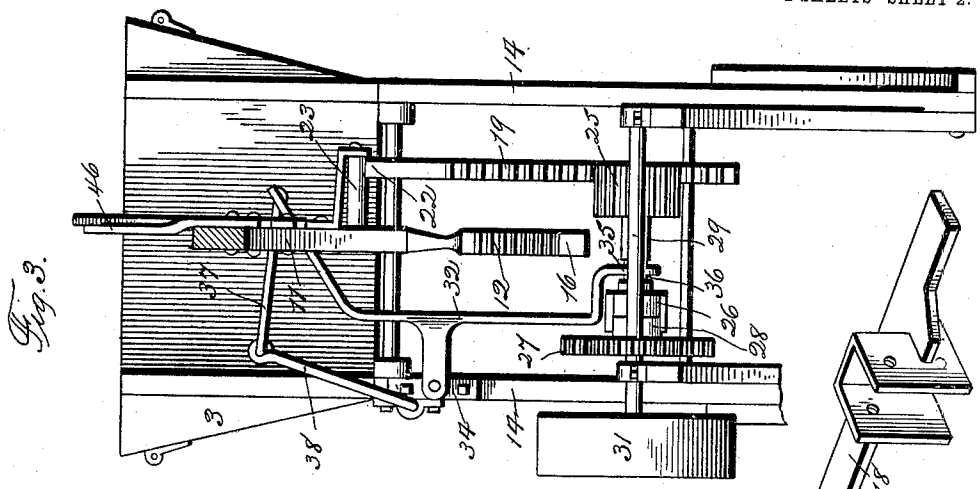


Fig. 3.

Fig. 4.

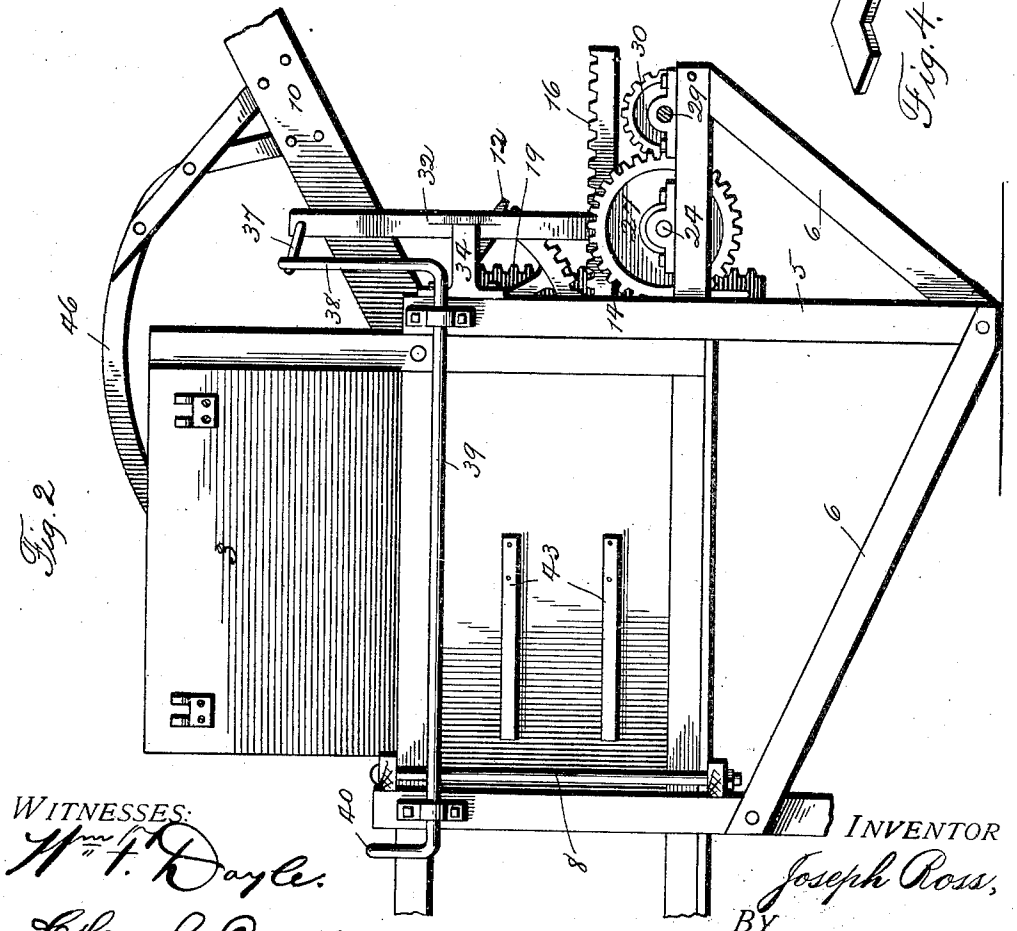


Fig. 2

WITNESSES:

Wm. F. Doyle.

C. Engholdt

INVENTOR

Joseph Ross,

BY

C. E. Duffy & Son Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 747,230. Patented December 15, 1903.

UNITED STATES PATENT OFFICE.

JOSEPH ROSS, OF VINCENNES, INDIANA, ASSIGNOR OF ONE-HALF TO ALICE J. BENNETT, OF VINCENNES, INDIANA.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 747,230, dated December 15, 1903.

Application filed February 13, 1903. Serial No. 143,194. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ROSS, a citizen of the United States, residing at Vincennes, in the county of Knox and State of Indiana, have invented certain new and useful Improvements in Hay-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 "hay-presses," and has for its object to provide a device of this class which is simple in construction and easy of operation.

A further object of my invention is to provide a press which is adapted to be operated by power, but which may be operated manually.

A further object of my invention is to provide a press wherein a weighted beam is employed to operate the plunger.

With all these objects in view my invention consists in the novel arrangement and construction of my press.

My invention also consists in the weighted beam with hay-packing attachment.

My invention also consists in the novel means of raising the weighted beam and in releasing the same.

My invention also consists in certain other novel features of construction and in combination of parts, which will be first fully described and afterward specifically pointed out in the appended claims.

Referring to the accompanying drawings, Figure 1 is a perspective view of the press, the pressing-chamber being broken away to show the interior. Fig. 2 is a side elevation of the pressing-chamber, the belt-pulley being removed. Fig. 3 is a front elevation of the press. Fig. 4 is a detailed perspective of the vertical rack-guide plate.

Like numerals of reference indicate the same parts throughout the several figures, in which—

1 is the press; 2, the pressing-chamber; 3, the hopper, and 4 the chute. The press is provided with suitable legs 5 and braces 6, and the chute is provided with suitable tension means 7 in order to contract the same, and the forward end of said chute is securely yoked at 8. Upon the hopper 3 I provide a platform or table 9, which may be secured to either side thereof, upon which the hay is pitched before entering the hopper.

10 indicates the weighted beam carrying the weight 11, and 12 is a toothed segment on the inner end thereof, which is securely pivoted on the shaft 13, secured to press-uprights 14.

15 indicates the plunger, to which is secured the horizontal rack-bar 16, meshing with the toothed segment 12 on the weighted beam. A roller 17 is suitably located beneath said rack-bar to support the same and hold said bar in mesh with the segment.

Secured at the forward edge of the press-floor is the vertical rack-bar guide-plate 18, which guides the vertical rack-bar 19. A bolt or pin 20 in said guide passes through the slot 21 in said rack-bar, securely holding the same in position. Said rack-bar is provided with a head 22, which engages a roller 23, secured to the side of the weighted beam.

24 indicates a shaft in front of said rack-bar, upon which is loosely journaled a pinion 25 of considerable width, and secured to said pinion or integral therewith is a clutch member 26. Keyed to said shaft 24 is a gear-wheel 27 and clutch member 28. Located in front of said shaft 24 is a shaft 29, carrying a pinion 30, which meshes with the gear-wheel 27 on shaft 24, and on the outer end of said shaft 29 is a belt-pulley 31.

32 indicates a lever fulcrumed at 33 to a bracket 34, secured to the press, the lower end of said lever forming a collar 35, carried in a groove 36 on the clutch member 26. The upper end of said lever 32 is bent inwardly above the weighted beam. Secured to the upper end of said lever is a link 37, connecting to the crank-arm 38 of the operating-rod 39, the rear end of which rod is bent upwardly and inwardly to form the handle 40.

41 indicates the hay-retainer, which is secured at the upper end of the chute and extends a short distance below inside of the

press. It will be noticed that said retainer is curved at its lower edge in order to allow the plunger to pass under by raising said retainer.

42 indicates the division-block retainers, which are located in both sides of the pressing-chamber. They are formed of a flat spring-piece 43, secured to the outer sides of the pressing-chamber, and an inwardly-projecting head 44, secured to the rear end thereof, which is so constructed that a division-block may pass beyond said retainers, but will be held from falling back into the pressing-chamber. It must be understood that I employ division-blocks in this connection which may be of any suitable form or material, but which form no part of my invention.

I provide the floor of the pressing-chamber with a series of perforations 45 for the purpose of allowing any dirt which may be in the hay to pass out. Secured to the weighted beam is a curved arm 46, which carries a block 47 of any suitable shape for the purpose of packing the hay within the pressing-chamber when the said weighted beam is in a raised position.

Having thus described the several parts of my invention, its operation is as follows: The hay to be pressed is pitched upon the table or platform 9 and thence into the pressing-chamber. The belt-pulley 31 being belted to an engine or motor of any form whatever or to any other power, said belt-pulley 31, shaft 29, and pinion 30 on said shaft are revolving. When there is a sufficient quantity of hay within the pressing-chamber, the handle 40 of the operating-rod 39 is pushed down into position shown in Fig. 1. This causes the crank-arm 38 of said rod, link 37, and upper end of the lever 32 to be moved inwardly, and throws the lower end of said lever and collar 35 to the left, which causes the clutch member 26 to pass into engagement with the clutch member 28, which is keyed to the shaft 24. As the gear-wheel 27 is in mesh with the pinion 30 on the shaft 29, said gear-wheel and shaft 24 are revolved, and as soon as the two clutch members are in engagement, as above described, said clutch member 26 and pinion 25, which is either integral with said clutch member or attached thereto, begin to revolve. The vertical rack-bar 19, which is always in engagement with said pinion 25, owing to the length or thickness of said pinion, is now raised by said pinion, and as the head 22 of said rack-bar is in engagement with the roller 23 on the weighted beam said beam is raised by the rack-bar. As said beam is raised the toothed segment thereon, which meshes with the plunger rack-bar 16, draws said rack-bar and plunger 15 forward. The weighted bar continues to be raised until it comes in contact with the inwardly-bent portion of the upper arm of the lever 32, and as said beam raises it pushes said upper arm of said lever 32 to the left, which throws the lower arm of said lever to the right and carries the clutch member 26 out of engagement with the clutch member 28. As said clutch member 26 and pinion 25 are loosely journaled on the shaft 24 they cease to be revolved, and as the weighted beam is now unsupported by the vertical rack-bar 19 said beam falls and drives the plunger 15 with great force into the pressing-chamber and against the hay. More hay is now thrown into the hopper, and the handle 40 of the operating-rod 39 is again pushed in, which throws the clutch members again into engagement, as before described. As the weighted beam is raised the packing-block 47 on the arm 46 enters the hopper and pushes the hay down into the pressing-chamber, so that when the plunger strikes none of the hay is in the hopper. At each stroke of the plunger the same passes beyond the hay-retainer 41, which by reason of its inclined lower edge is raised by said plunger. When said plunger is carried back out of the pressing-chamber, the hay-retainer 41 springs back into its normal position and engages the upper portion of the pressed hay, holding the same and tucking any loose hay into the bale. When a sufficient amount of the hay has been put into the pressing-chamber to make a bale, a division-block is placed in the pressing-chamber in front of the same, and as the plunger strikes it carries the hay and division-block beyond the division-block retainers 42 in the sides of the press, which retainers securely hold the said division-block in position, making ready for the next bale. The tension means 7 at the rear of the chute can be so regulated to contract the chute that the hay can be pressed as tightly as desired or the tension can be relaxed so that the bales will be loose.

It is evident that this press may be worked by hand, if desired, in which event the belt-pulley 31, shaft 29, and pinion 30 are removed and a ratchet-wheel secured to the end of shaft 24 and a pawl placed on press. A hand ratchet-lever of any desired construction is then secured to said shaft 24 to revolve the same.

Having thus described my invention, I do not wish to be understood as limiting myself to the exact construction herein set forth, as various slight changes may be made therein which would fall within the limit and scope of my invention, and I consider myself clearly entitled to all such changes and modifications.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a hay-press the combination with a pressing-chamber, of a plunger, a weighted beam adapted to operate said plunger, means for raising said weighted beam, and means operated by said weighted beam for causing said weighted beam to fall.

2. In a hay-press, the combination with a pressing-chamber, of a weighted beam, a plunger adapted to be operated thereby, pack-

ing means carried on said weighted beam for packing the hay within the pressing-chamber when said weighted beam is raised.

3. In a hay-press, the combination with the pressing-chamber, of a plunger, a rack secured thereto, a toothed segment adapted to mesh with said rack, a beam secured to said segment, a weight on the end of said beam, means for raising the beam and means for releasing the beam, whereby the said plunger is operated by the fall of said beam.

4. In a hay-press, the combination with the pressing-chamber of a plunger, a rack secured thereto, a toothed segment adapted to mesh with said rack, a weighted beam secured to said segment, a lifter adapted to raise said beam, and means adapted to raise said lifter through intermediate mechanism, and means for releasing said lifter.

5. In a hay-press, the combination with the pressing-chamber, of a plunger, a weighted beam adapted to operate said plunger, a lifter adapted to raise said beam, means adapted to raise said lifter through intermediate mechanism, and means for releasing said lifter.

6. In a hay-press, the combination with a pressing-chamber, of a chute formed thereon, a plunger in said pressing-chamber, a weighted beam adapted to operate said plunger, a shaft and means carried thereon for raising said beam, and means for revolving said shaft, and means for causing said raising means to fall.

7. In a hay-press, the combination with a pressing-chamber, and a plunger, of a weighted beam adapted to operate said plunger, a lifter adapted to raise said beam, means for raising said lifter, and means for releasing said lifter.

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

JOSEPH ROSS.

Witnesses:
JOHN VINCENT,
OLIVER PIERSON.