

(No Model.)

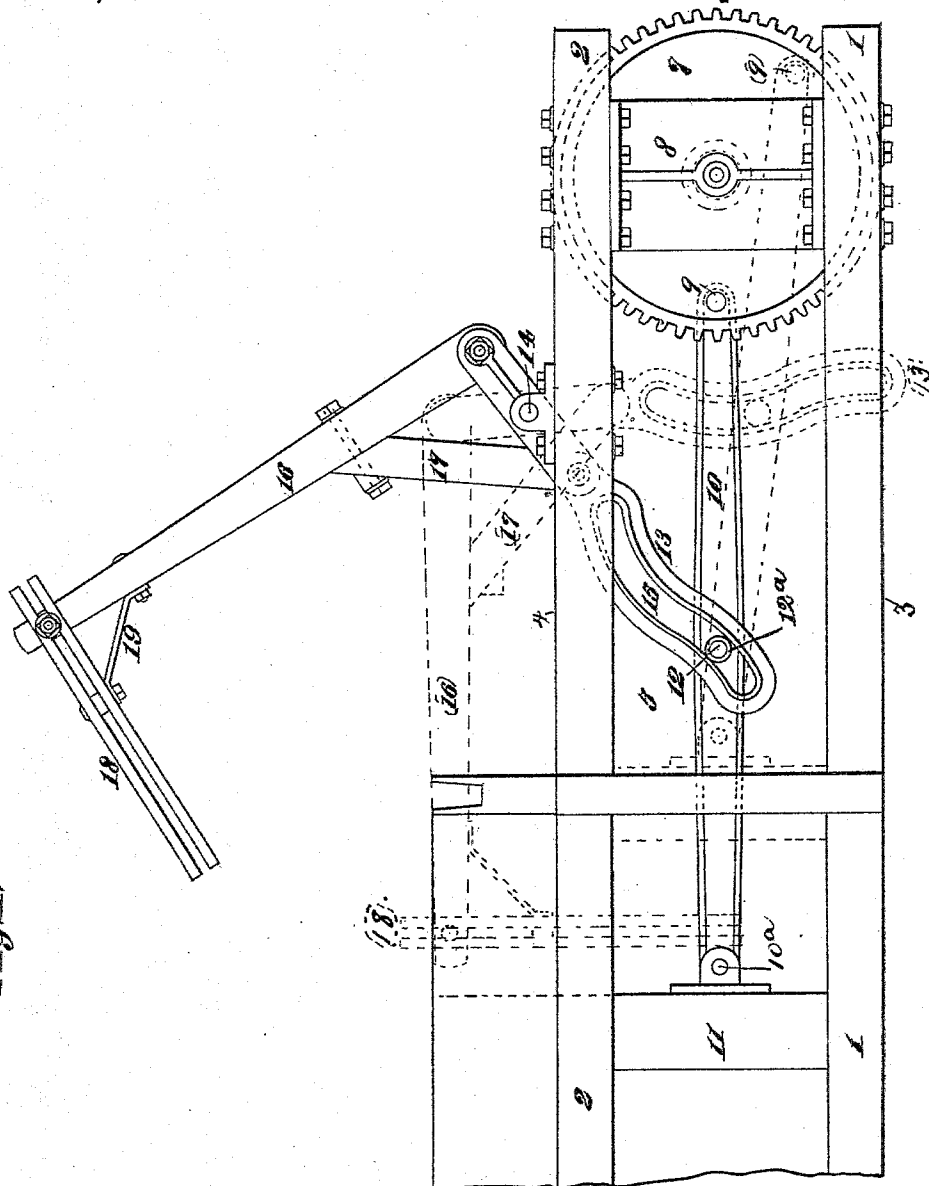
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BALING PRESS.

No. 494,915.

Patented Apr. 4, 1893.

Fig. 1.



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Fig. II.

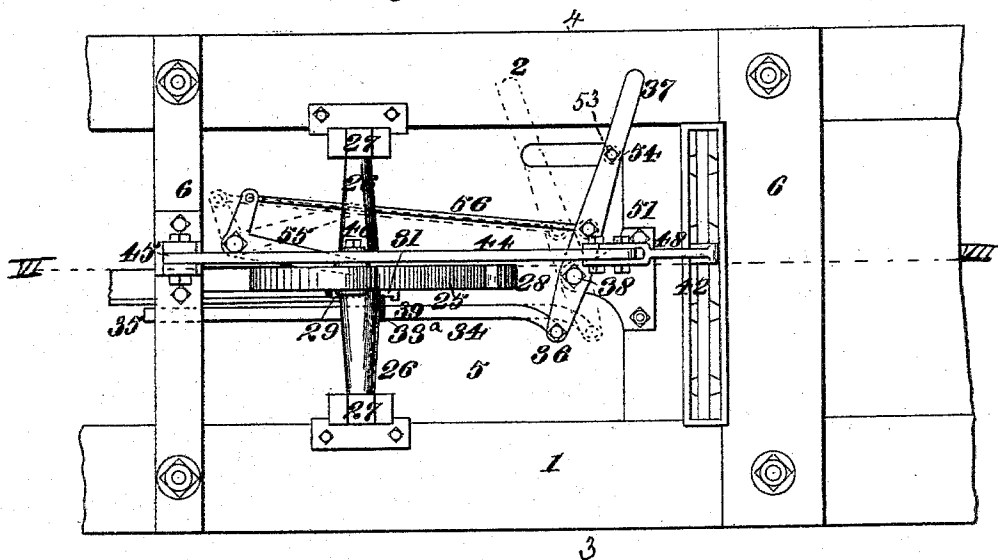


Fig. III.

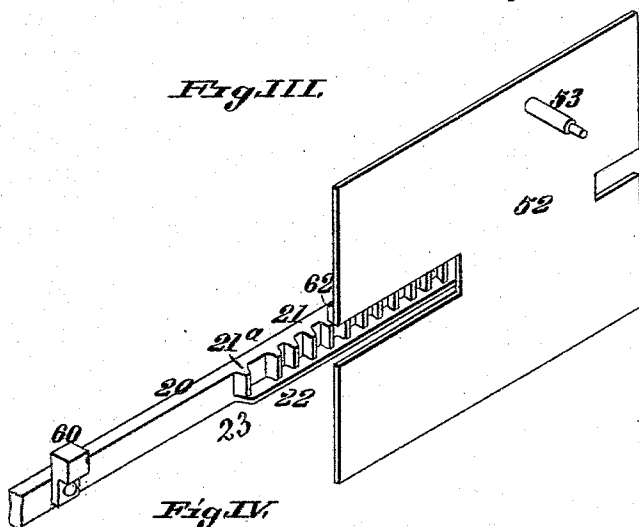


Fig. IV.

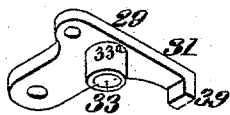


Fig. V.

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Fig. VI

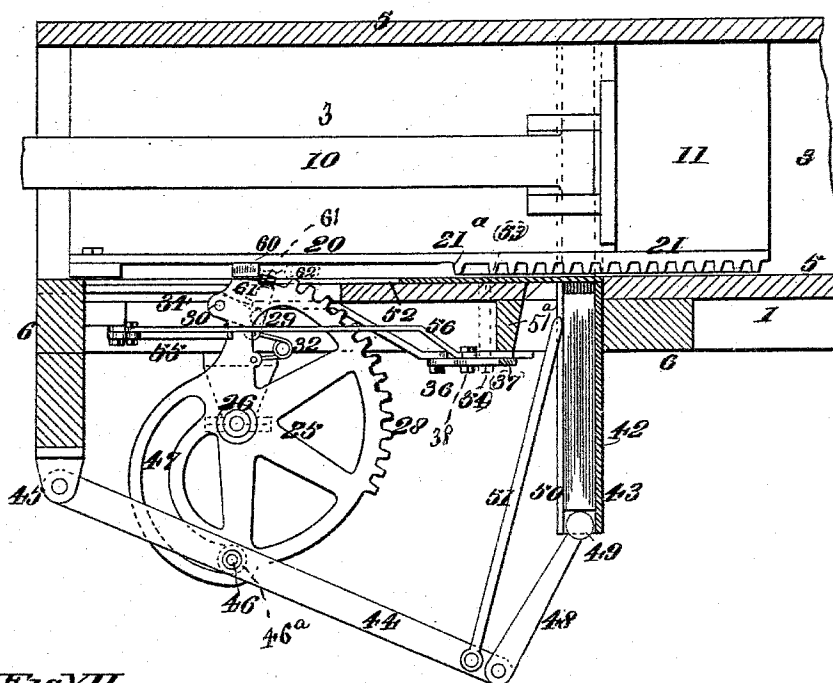
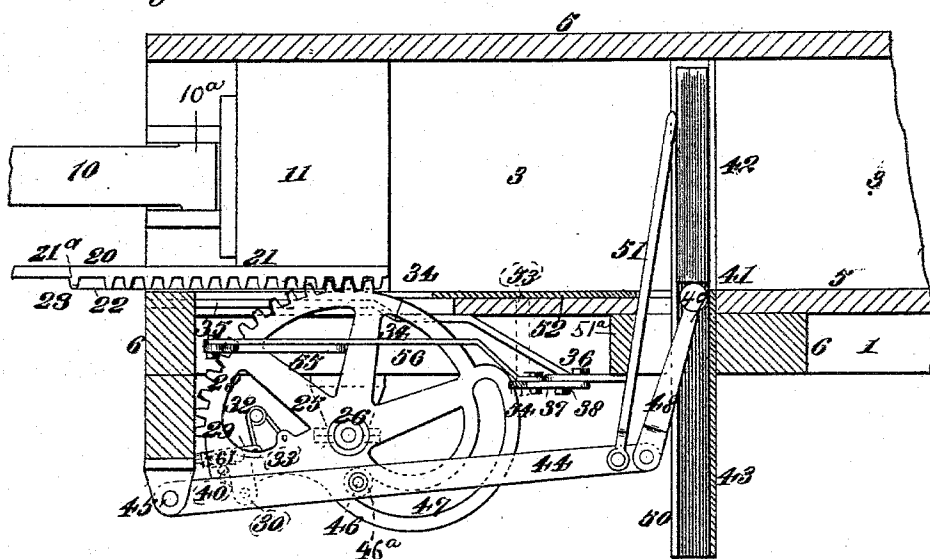


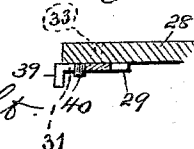
Fig. VII



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Fig. VIII



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UNITED STATES PATENT OFFICE.

JOHN W. BROWN AND ALBERT A. GEHRT, OF QUINCY, ILLINOIS, ASSIGNORS
TO THE COLLINS PLOW COMPANY, OF SAME PLACE.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 494,915, dated April 4, 1893.

Application filed June 26, 1891. Serial No. 397,627. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. BROWN and ALBERT A. GEHRT, both of Quincy, in the county of Adams and State of Illinois, have invented a certain new and useful Improvement in Baling-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This improvement relates to improved means for working the feeder by a connection with the pitman. Also to the described means for the insertion of the partition block.

The novel features of the invention are set forth in the claims.

Figure I is a side elevation of the feeder and part of the body of the press. Fig. II is a side elevation of a part of the press showing the mechanism for insertion of the partition blocks. Fig. III is a perspective view of the sliding door to the entrance opening for the partition-block. Fig. IV is a perspective view of the dog which is located upon the cog sector for engagement with the rack. Fig. V is a perspective view of the slide to throw the dog out of the path of the rack. Figs. VI and VII are horizontal sections, taken at VI—VII, Fig. II, showing the plunger and other parts in different positions. Fig. VIII is a detailed view of the stop 40 on the quadrant 28.

1 and 2 are the lower and upper main sills.

3 is the bottom, 4 the top and 5 the sides of the press-box.

6 are the upright girts connecting the upper and lower sills.

7 is the crank wheel driven by any suitable means. The wheel 7 has bearing in a metal frame or plate 8 firmly bolted to the sills.

9 is a wrist-pin or crank pin passing through the wheel 7. To the pin 9 is connected one end of the straight pitman 10, the other end being connected by a hinge joint 10^a to the plunger 11. The pitman is a rigid bar which reciprocates and oscillates between the main sills. Upon the sides of the pitman are cam-pins 12 armed with anti-friction rollers 12^a.

13 is a lever pivoted to the main frame at 14. The lever is preferably forked so as to embrace the pitman and has cam or doubly curved slots 15 to receive the roller-armed

pins 12 so that as the pitman moves forward and backward the lever 13 is made to oscillate on the pivot 14.

16 is a feeder firmly fixed to the upper end of the lever 13, and provided with a head 18, strengthened by a brace 19.

17 is a brace extending from lever 13 to the feeder 16. The head 18 descends into the feed opening of the press box as the plunger recedes to its rear position, forcing the bunch of hay or other material down into the box. The plunger is shown in its rear position by full lines in Fig. VII, and broken lines in Fig. I. The frame composed of the lever 13, and feeder 16, 18, is shown in its upper position by full lines in Fig. I and in its lower position by broken lines in the same figure. The descent of the head 18 takes place when the pin 9 is in the lower half of its revolution, so that it moves at a slower speed and greater force when descending than when ascending, as the pins 12 are at a greater distance from the fulcrum or pivot 14 when the head is on its descent, and the purchase, consequently, greater than on the upward movement of the head 18, when the pins 12 are nearer the fulcrum 14.

20 is a longitudinal bar fixed to the plunger and having upon it a rack 21 and at the bottom of the rack a horizontal flange 22 that extends flush with or somewhat in advance of the ends of the teeth, at the front end. This flange at the rear end extends only to the rear side of the rear tooth 21^a.

25 is a cam wheel fixed to a vertical shaft 26 having bearings at 27 in the main sills. The wheel 25 has a spur quadrant 28 adapted to engage the rack at 21 at certain times. Upon the cam-wheel is a dog 29 pivoted at 30 to the side of the wheel 25 and having a projection 31 adapted to engage the first tooth 21^a of the rack when the projection is thrown out by the outward turning of the dog on its pivot.

32 is a spring adapted to throw the dog in position to engage the tooth 21^a.

33 is a stud upon the dog armed with an anti-friction roller 33^a that bears against an incline 34, when the incline is in its normal position, as seen in Figs. II and VI. The incline is guided in its endwise movement by its extension 35 suitably supported in an open-

ing in one of the girts 6 and by connection at 36 to the lower end of a hand-lever 37. The lever 37 is fulcrumed at 38 to the body of the press. The projection 31 of the dog has a down-turned tooth 39, whose purpose is to prevent the engagement of the projection 31 with any tooth of the rack 21, except the first tooth 21^a, for it will be seen that the projection 39 would slip along the flange 22 and the projection 31 could not come into engagement with the teeth of the rack, even when the incline 34 is in its forward position. When, however, the incline 34 is in its forward position, as seen in Fig. VII, and the forward movement of the plunger has carried the tooth 21^a past the end of the projection 31, the projection swings into position behind the tooth 21^a and on the return or backward movement of the plunger the tooth 21^a comes in contact with the projection 31 and turns the cam wheel so that the quadrant 28 is engaged by the rack 21, and the cam wheel 25 is swung about one-fourth of a turn from the position seen in Fig. VI to that seen in Fig. VII. When the dog 29 is engaged by the tooth 21^a it bears against the stop 40 upon the quadrant 28. This movement of the cam-wheel takes place as the plunger is moving backward after the incline 34 has been thrown forward by the movement of the lever 37. The movement of the cam-wheel only takes place on the insertion of a partition-block, at other times the plunger moves backward and forward in packing and pressing the hay or other material without moving the cam-wheel as the dog is kept out of engagement with the tooth 21^a by the incline 34 acting on the stud 33. The press box has in the side an opening 41 for the entrance of a partition-block 42.

43 is an open topped guide-way for the partition-block secured to the side of the press-box. The partition-block is placed in the guide-way and is forced into the press-box by means that will now be described. 44 is a lever swinging on a pivot or hinge 45 and having a stud 46 armed with an anti-friction roller 46^a that enters a cam slot 47 of the cam-wheel. The construction is such that the described movement of the cam-wheel from the position seen in Fig. VI to that seen in Fig. VII will move the free end of the lever 44 toward the body of the press. To the free end of the lever 44 is hinged an arm 48, whose end 49 plays in the guide-way 43, the shank of the arm working in a horizontal slot 50 in the side of the guideway. The movement of the lever 44 is such as to carry the partition-block into the press. In order to prevent the block falling toward the plunger an arm 51 bears against the side of the partition block, said arm being hinged to the lever 44 near its free end and engaged and held by the beveled cross bar 51^a when thrust into its extreme inner or holding position. The two extreme positions of the

arm 51 are seen in Figs. VI and VII, the arm being withdrawn before the hay, as the plunger moves forward.

52 is a sliding door that closes the opening 41 except when a partition block is entering. This door has a stud 53 pivoted in the lever 37, at 54 so that when the upper end of the lever is moved backward, the door 52 is opened.

55 is a dog in the form of a bell-crank, its lower arm engaging the cam-wheel and preventing its movement until the dog is lifted. The upper arm of the dog is connected by a rod 56 with the lever 37. It will be seen from the foregoing that the sliding door is closed in its normal position, and that the lever 37 is normally in the position shown in Fig. II. When the lever 37 is moved backward into the position seen in Fig. II, shown in dotted lines, the sliding door is opened, the dog 55 lifted, and the incline 34 moved forward, allowing the spring 32 to throw the tooth 39 of the dog 29 against the rack 20. As the movement of the plunger brings the gap 23 to the tooth 39 the tooth enters the recess and the tooth 21^a engages the dog and moves the cam-wheel until the other teeth of the rack 21 engage the quadrant 28, and the cam-wheel is swung around forcing the partition-block, (which had been previously dropped into the guide way 43) into the press. The lever 37 can be then moved forward and the dog 29 is retracted as soon as the backward movement of the cam-wheel brings the stud 33 against the incline 34. In case the door has not been closed before the plunger makes its forward movement, it is closed automatically by the pressure of a projection 60 upon the rack bar 20, said projection coming in contact with the projection 62 upon the sliding door 52. It will be seen that the projection is above the level of the rack 21 and quadrant 28.

61 is a lug or projection on the upper side of the cam wheel, and extending beyond the periphery of said wheel, its position being such as the rack bar is moving forward the projection 60 comes in contact with it, and carries the cam wheel into its normal position, in case it may be slightly out of such position from any cause.

We claim as our invention—

1. In a baling press, in combination with a plunger-pitman, a crank-pin to which one end of the pitman is connected and by which it is driven, a plunger to which the other end of the pitman is connected and a feeder, a pivoted lever secured to the feeder and having a doubly curved slot 15, and a pin fitting in said slot and connecting the lever to the pitman, substantially as set forth.

2. In a baling-press, the combination of the reciprocating plunger 11, the rigid pitman 10, a crank-pin to which one end of the pitman is connected and by which it is driven a frame composed of the lever 13, and feeder 16, 18, and a connection between the pitman and le-

ver adapted to give the described ascending and descending motion to the feeder by the endwise motion of the pitman.

3. In a baling-press, the combination of the oscillatory feeder 16, 18, a lever 13 having a doubly curved slot 15, the pitman 10, having a side stud 12 having friction roller engaging in the doubly curved slot, a crank-pin to which one end of the pitman is connected and by which it is driven, and a plunger to which the other end of the pitman is connected substantially as and for the purpose set forth.

4. In a baling-press, the combination of the plunger 11, having a rectilinear motion, the pitman 10 connected to the plunger at one end, a wheel 7 having a crank-pin connected to the other end of the pitman, a stud 12 on the pitman, a feeder, and a slotted lever 13 engaged by the stud 12, so as to give a varying upward and downward motion to the feeder, substantially as and for the purpose set forth.

5. In a baling press, in combination with a plunger, a rack secured to the plunger and carried thereby, a support for partition boards, and a cam-wheel having spur-quadrant and a lever-mechanism adapted to be operated by said rack to move the partition boards along said support, substantially as set forth.

6. In a baling press, in combination with a plunger, a rack secured to the plunger and carried thereby, and having a tooth 21^a, a support for partition-boards, a quadrant having a dog for engaging said tooth, means for shifting said dog, and a lever provided with arms and having slot and pin connection with said quadrant, whereby the quadrant may, when desired, be moved by said rack, and the arms by the lever to move the partition boards along said support, as explained.

7. In a baling press, the combination of the plunger 11 having a rack 21, cam-wheel 25, having toothed quadrant 28 adapted to engage with the rack and a lever 44 having a stud engaging in a slot of the cam-wheel and adapted to push the partition block into the press, substantially as set forth.

8. In a baling-press, the combination of the press-box having an opening 41 in a side thereof, the guide-way 43, for the partition-block, leading to the opening and means for inserting the partition-block having the arm 51 for holding the partition-block in position; substantially as described.

9. In a baling-press, the combination of the press box having an opening in the side adapted for the passage of the partition block, a slide 43 at the side of the press box adapted

to receive the partition-block, the plunger 11 with rack 21, the cam wheel 25 engaged by the rack, and a lever 44 actuated by the cam-wheel and having an arm 48 jointed to it and adapted to press the partition block into the press box, substantially as set forth.

10. In a baling-press, the combination of the reciprocating plunger having a rack, the cam-wheel 25, provided with a spur-quadrant, and a cam-slot 47 and connected by the rack with the plunger, and a lever 44 having a pin engaging the cam-slot and provided with an arm 48; substantially as described.

11. In a baling-press, the combination of the plunger 11, provided with a rack 20 having teeth 21, 21^a, the cam-wheel 25 provided with a spring dog 29, adapted to engage the tooth 21^a, and a spur quadrant, the incline 34, adapted to engage the dog, the lever 44, having cam-slot and pin connection with the cam-wheel and the arm 48 hinged to the lever; substantially as described.

12. The combination of the press box having an opening 41 in the side to admit the partition-block, a sliding door adapted to close the opening, the dog 55 a lever connected to the door and to the dog, a cam wheel 25 engaged by the dog and carrying a cog quadrant 28, the lever 44 having cam connection with the cam wheel, arm 48 jointed to lever 44, and the plunger 11 having a rack 21, adapted to engage the quadrant, all substantially as set forth.

13. The described combination in a baling press of the cam wheel 25 adapted to be turned by gear connection with the plunger and the lever 44 having cam connection with the cam wheel and carrying arms 48 and 51 adapted to push the partition block into the press-block and to sustain it therein, substantially as and for the purpose set forth.

14. In a baling-press, the combination of the plunger 11, provided with a rack 20 having teeth 21, 21^a, and a flange 22, the incline 34, the cam-wheel 25 provided with a spur quadrant 28, the spring dog 29, located on the cam-wheel, having a stud 33, and a toothed projection 31, the lever 37 to which the incline is connected, the door 52 connected to the lever, and the lever 44 connected with the cam-wheel and having arms 48, and 51; substantially as described.

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In presence of—
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