No. 674,836.

Patented May 21, 1901.

W. L. B. CARTER.

HAY PRESS.

(Application filed Mar. 11, 1901.)

(No Model.)

2 Sheets—Sheet 1.

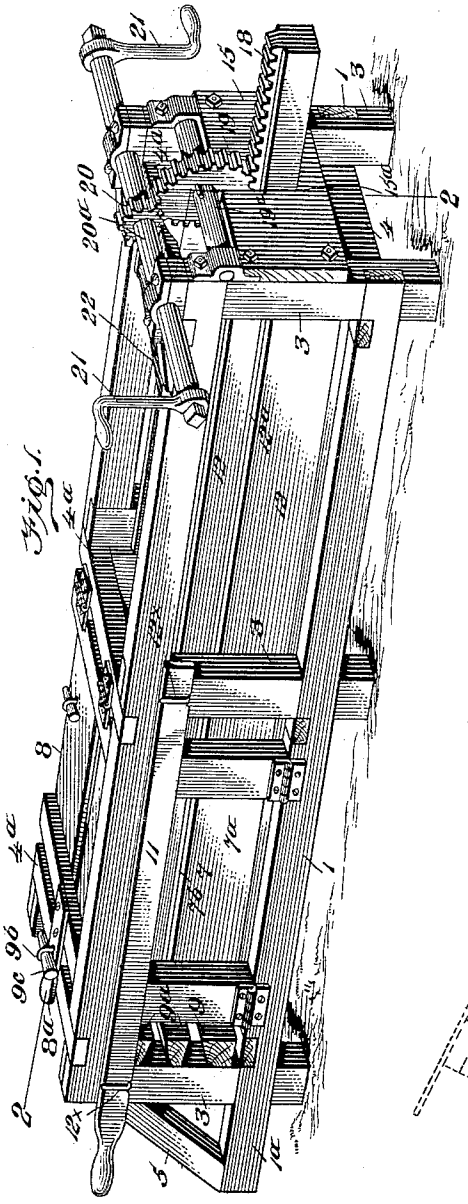

Fig. 1.

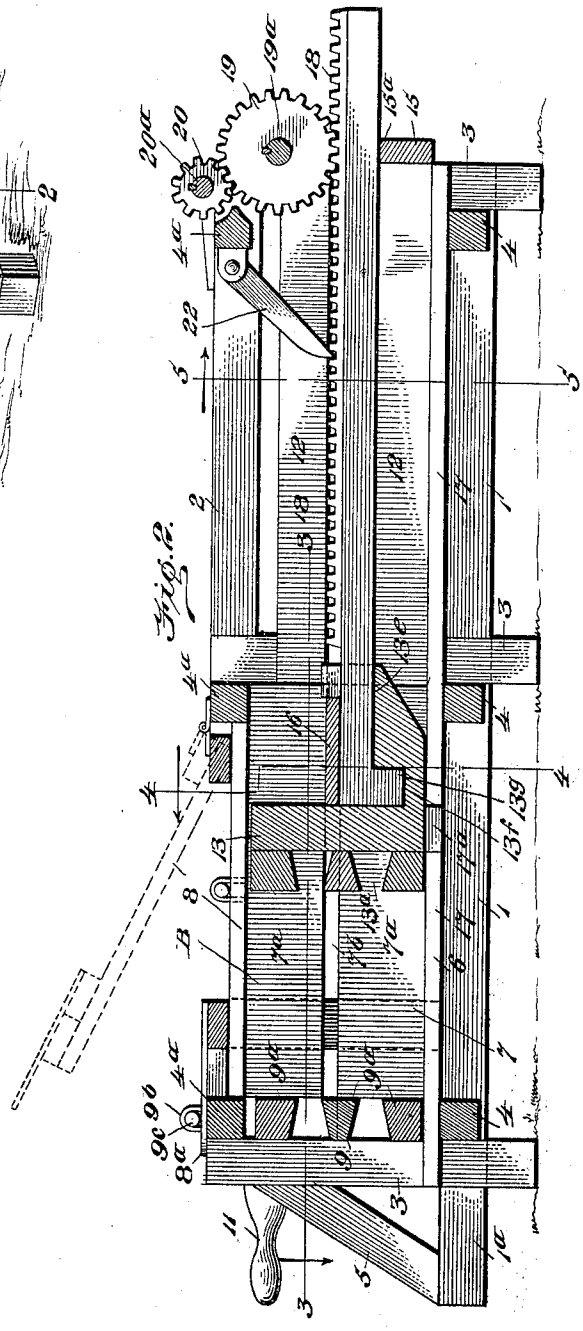

Fig. 2.

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Fig. 3.

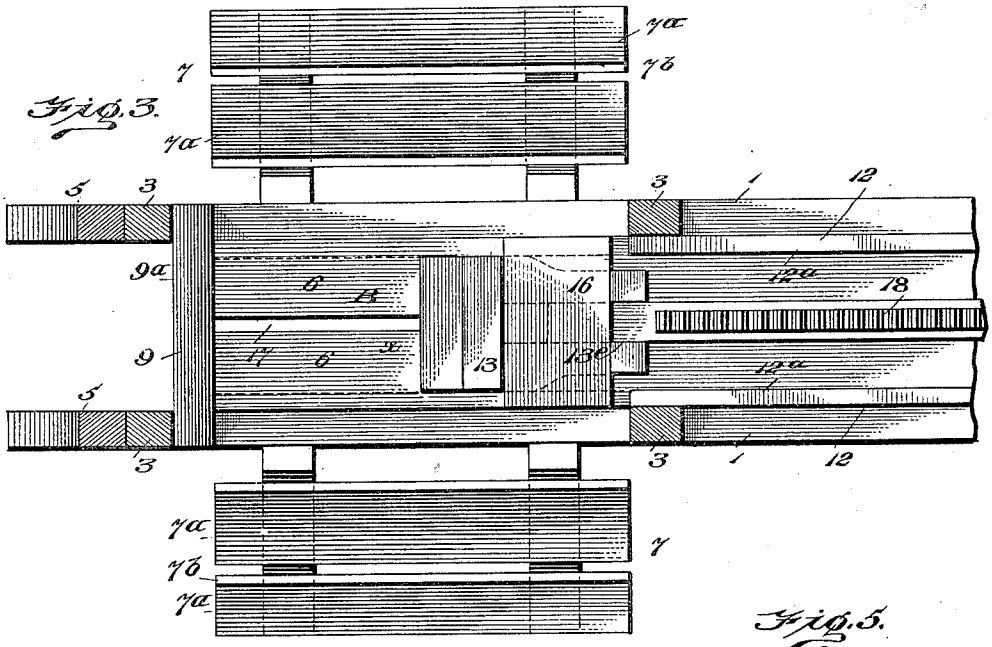


Fig. 4.

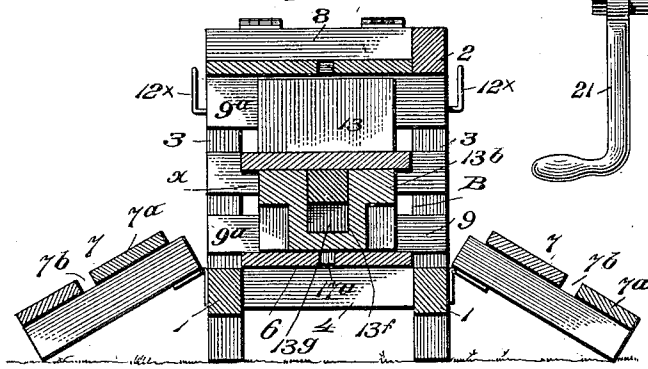
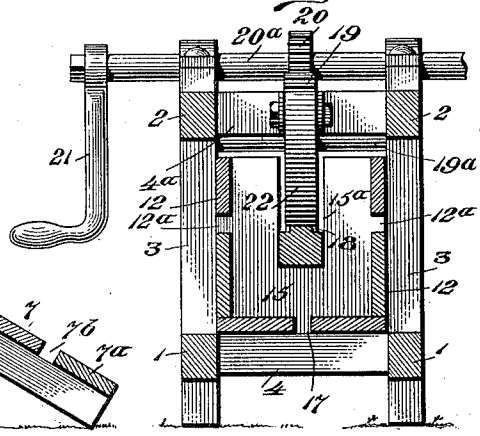


Fig. 5.



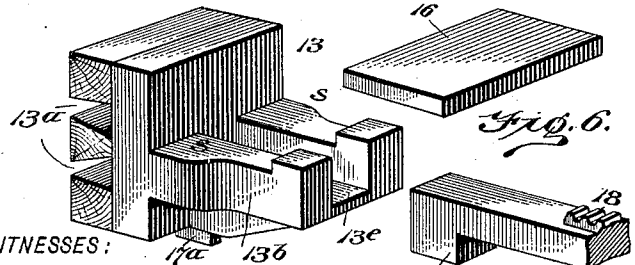


Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM L. B. CARTER, OF CORINTH, MISSISSIPPI, ASSIGNOR OF ONE-HALF TO E. F. ROMINES, OF SAME PLACE.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 674,836, dated May 21, 1901.

Application filed March 11, 1901. Serial No. 50,643. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. B. CARTER, residing at Corinth, in the county of Alcorn and State of Mississippi, have invented certain new and useful Improvements in Hay-Presses, of which the following is a specification.

This invention relates to improvements in that class of presses having a reciprocating follower or plunger worked by power and having coöperatively connected therewith a rack-and-cog mechanism; and the said invention seeks to provide a press of this character of a very few parts, economically constructed, capable of being easily manipulated, and adapted to effectively serve for its intended purposes.

The invention comprehends certain novel features of construction and peculiar combination of parts, all of which will hereinafter be described in detail and particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved press. Fig. 2 is a longitudinal section of the same, taken substantially on the line 2 2 of Fig. 1. Fig. 3 is a horizontal section of the same, the plunger being at its forward movement, the bale-doors being open for the discharge of the bale. Fig. 4 is a transverse section on the line 4 4 of Fig. 2. Fig. 5 is a similar view on the line 5 5 of Fig. 2, and Fig. 6 is a view illustrating the manner in which the plunger or follower head is detachably joined with the rack-bar.

Referring to the accompanying drawings, in which like characters indicate like parts in all the figures, 1 1 designate a pair of longitudinal bottom sills; 2 2, a pair of top sills, which are joined with the bottom sills by the vertical members 3 3, the upper ends of which lie flush with the top of sills 2 and the lower ends extend below the bottom sills 1 and form the supporting-legs. Cross-sills 4 connect the bottom sills, and like sills 4^a connect the top sills, and at the back end the bottom sills 1 1 are extended, as at 1^a, and braced by the angle-beams 5 5, as clearly shown in Fig. 1, such end bracing being provided to add increased strength to that end of the press having the power mechanism mounted thereon.

At the forward end the frame has a baling-chamber B, formed with a solid bottom 6, hinged sides 7, a hinged top 8, and a head 9, consisting of the cross-timbers 9^a, made fast to the inside of the end timbers 3 3.

The doors 7 and 8 are made up of open timbers suitably braced, as shown, and the said doors 7 7 are hinged to the bottom sills 1 to open outward and downward, the door 8 being hinged to the middle cross-bar 4^a to swing upward and backward, and the said door 8 has a projecting cleat 8^a, slotted to fit over a bail 9 on the forward cross-bar 4^a for conveniently locking the door 8 to its closed position by the key or pin 9^a, as shown in Fig. 1.

The inner faces of the timbers constituting the sides, bottom, and top of the baling-chamber when the several parts are in their closed position lie in a plane with the outer edges of the plunger 10, presently described in detail, and the central horizontally-extending timbers 7^a of the doors 7 have guide-recesses 7^b extending their length, the reason for which will presently be explained.

The doors 7 when closed are held from being pressed outward by the expansive force of the contents of the baling-chamber by means of bars 11 of suitable length adapted to be seated in keepers $12^\times$ $12^\times$ on the posts 3 3, as best shown in Fig. 1, such bars being detachably held and formed with handle portions, whereby they can be quickly removed or placed in position.

The rear end of the press has an open top and has its side beams 12 arranged to practically form continuations of the side walls of the baling-chamber, the inner faces of said beams 12 being in a plane with the inner faces of the doors 7 when closed in, and the said beams 12 having horizontal recesses 12^a extending their length, which register with the recesses 7^a in the doors, as best shown in Fig. 3.

13 designates the plunger or follower head, having a shape in cross-section to snugly fit and reciprocate within the baling-chamber and the follower-receiving end *x* of the press, and 14 designates the plunger-bar, held to re-

ciprocate in the end *x* of the press. The front end of the bar is detachably connected with the follower, the rear end being guided and held to move freely in a guide-slot 15ª in the cross-timber 15 on the rear end of the press-frame. The plunger 13 has the usual cross-grooves 13ª for the bale-ties, and in the present case it has a rearwardly-extending hub 13ᵇ, provided with a longitudinal socket 13ᵉ, open at the top and provided with a pendent portion 13ᶠ at its inner end to receive the heel end 13ᵍ of the plunger-bar. In practice the end of the bar is fitted in the socket 13ᵉ, with its heel 13ᵍ seated in the part 13ᶠ. Said end is firmly held locked in engagement with the plunger by a cap-plate 16, the ends of which fit in seats *s* in the upper face of the hub 13ᵇ. It will be noticed by reference to Fig. 4 that the plate 16 has its ends projected laterally into the horizontal guide-recesses 12ª. This arrangement serves a twofold function: First, it provides a simple means for properly guiding the plunger and holding it from creeping or inclining in an upwardly direction, and, secondly, it positively holds the plate 16 down at the hub of the plunger and holds the plunger-rod in a locked engagement with the plunger during the operation of baling, such locking and guiding action being also maintained when the plunger enters the baling-chamber by reason of the laterally-extending edges of the plate 16 riding in the recesses 7ª in the doors 7.

To hold the plunger from lateral shifting, a guide-slot 17 extends lengthwise of the entire bottom of the press, with which a tongue 17ª on the plunger engages.

So far as described it will be readily apparent a simple and effective means for joining the plunger-head and the bar is provided, which admits of readily detaching and assembling the two parts. To connect the two parts, the plunger can be inserted through one of the side doors of the baling-chamber, the end of the plunger-bar seated in the hub-socket thereof, and the plate 16, fitted thereover, it being understood that when drawn back the edges of the plate 16 will engage the recess 12ª.

The plunger-bar has an upper rack-face 18 for engaging the large cog-gear 19 on a shaft 19ª, mounted on the rear end of the frame and held to mesh with a smaller cog-gear 20 on a shaft 20ª, mounted on the top of the frame, the ends of which have cranks 21, as shown.

22 designates a gravity dog or pawl hinged at its upper end to the front side of the rear cross-bar 4ª, its front end being formed to engage the rack 18 and hold it from back thrust.

In operation power being applied to the crank-shaft it is transmitted through the gears to the rack-bar and plunger, the plunger being held up to its pressure thrust by the pawl 22. The bale after being compressed to the size desired is tied and removed by throwing back the doors 7.

I am aware that rack-bar-equipped plunger mechanisms and drive-gear devices are old, and I make no claim for such construction. My invention differentiates, so far as I know, from what has heretofore been provided in the class of presses before referred to in the detailed construction of parts, especially the correlation of the plunger-receiving and baling chambers and the novel manner in which the plunger and plunger-bar join and their co-operative arrangement with the aforesaid receiving and baling chambers.

I therefore claim and desire to secure by Letters Patent—

1. In a baling-press of the character described, the combination with the baling and plunger-receiving chambers, said chambers having recesses 7ᵇ and 12ª in alinement of the plunger, the plunger-bar detachably connected therewith, and means for locking the meeting ends of the plunger and its bar, said means having projecting members adapted to engage the recesses 7ᵇ and 12ª, substantially as shown and for the purposes described.

2. In a baling-press of the character described, the combination with the baling-chamber and the plunger-receiving chamber; of a plunger mechanism consisting of a plunger-head having a rearwardly-extending hub portion, provided with a socket, a plunger-bar having its front end formed to engage the hub-socket, and a detachably-held plate for holding the bar to its locked position with the plunger-hub, for the purposes specified.

3. The combination in a baling-press of the character described, with the baling-chamber having side doors, and a plunger-receiving chamber, said chambers having horizontally-disposed recesses 7ᵇ and 12ª; of a plunger-head having a rearwardly-extending hub having a socket open at the top and a depressed seat, the upper face of the hub having transverse seats, the plunger-rod having a heel-piece adapted to engage the depression in the socket, and the plate 16, said plate being adapted to seat on the hub in the transverse seats thereof, and having its ends extended to fit the recesses 7ᵇ and 12ª, all being arranged substantially as shown and described.

WILLIAM L. B. CARTER.

Witnesses:
W. W. JOBE,
A. B. VOYLES.