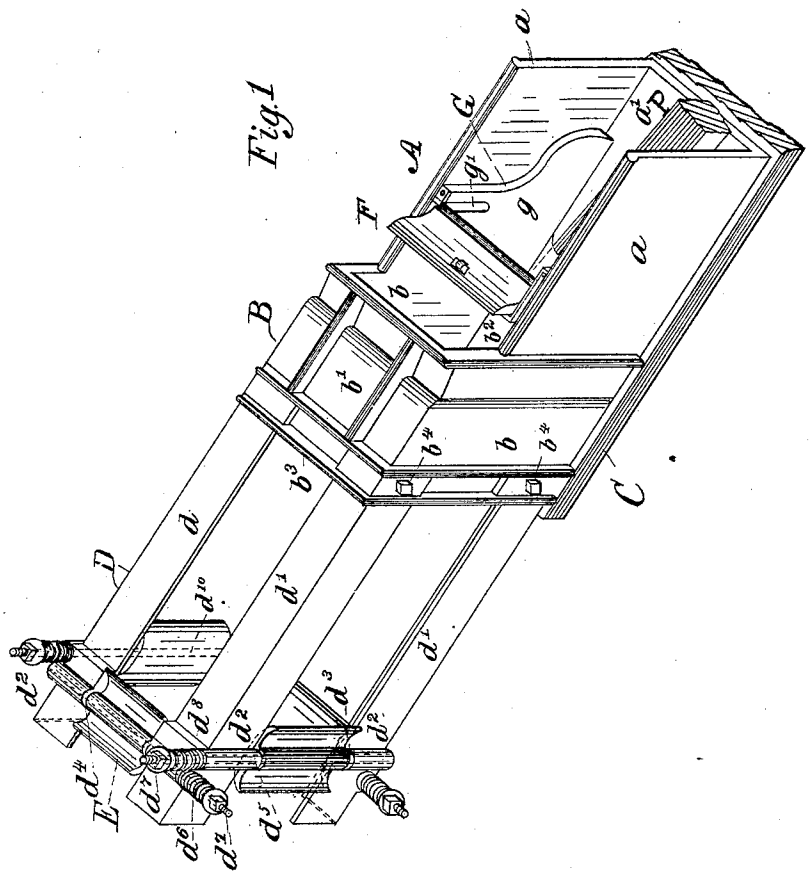
(No Model.) 2 Sheets—Sheet 1.

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BALING PRESS.

No. 358,898. Patented Mar. 8, 1887.

Fig. 1



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Fig. 3.

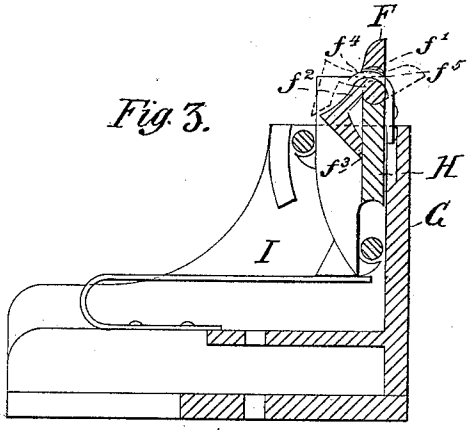


Fig. 2.

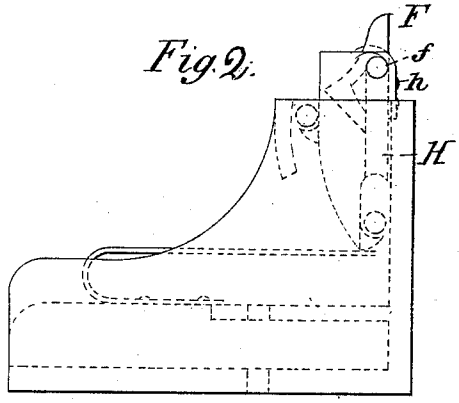


Fig. 5.

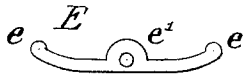
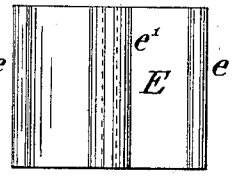


Fig. 4.



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UNITED STATES PATENT OFFICE.

EPHRAIM C. SOOY, OF KANSAS CITY, MISSOURI.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 358,898, dated March 8, 1887.

Application filed June 5, 1886. Serial No. 204,214. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM C. SOOY, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Baling-Presses; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of my invention is, first, to lessen the friction which ordinarily occurs by the intervention of the hay between the plunger and the baling-chamber in the retraction of the plunger and facilitate the crowding of the loose ends of the hay below the top of said plunger and within the said chamber; secondly, to enable the delivery end of the press to self-regulate the degree of expansion occasioned by the compressed bale and an easy delivery of the bale and division-blocks; and it consists in the novel construction and combination of parts, hereinafter fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my improved baling-press. Fig. 2 is a side view of the plunger, showing an expanding portion and the canting head pivoted thereto. Fig. 3 is a longitudinal sectional view of the plunger, showing the canting head and guide-rod extending through said cant head. Fig. 4 is a side view of the rocking plate. Fig. 5 is a top view of the rocking plate.

In the construction of my improved press I arrange the feed-receptacle A, which is open at the top and is provided with the vertical sides *a a* and bottom *a'*, and the baling-chamber B, which has the sides *b b*, top *b'*, and bottom b^2, upon a bed, C, of equal width with the said feed-receptacle and chamber, and preferably cast said portions of the press in one piece. The sides *a a* of the feed-receptacle are attached to the sides *b b* of the baling-chamber, which end is in open communication with said feed-receptacle. Attached to the opposite open end of the baling-chamber B, and extending a suitable distance in length from said chamber, is arranged the delivery portion D of the press. This latter portion I construct as follows: I cast for the top and bottom and opposite sides of said delivery portion of the press the longitudinal angle irons or plates *d d* and *d' d'*. These angle-irons are made to extend from the baling-chamber B the length desired, and are cast in one piece and extend in breadth a short distance over and inclose a portion of the top and sides of the said portion of the press sufficiently to conduct the bale and partition-boards to the end of the said portion of the press. One end of each of the respective angle-irons *d d d' d'* is pivoted to the baling-chamber B by the pivots b^4, so as to permit the expansion of the opposite ends and within and to the flange b^3 of the said chamber to which said pivots b^4 are attached, which flange b^3 extends around the end of and is of an increased height and width to that of the interior dimensions of the said baling-chamber B equal to the thickness of the said angle-irons, so that when the said angle-irons *d d d' d'* are attached by the pivots b^4 to said flange the inner surfaces of said plates will correspond in height and width to that of the said chamber B.

Thus it will seen that a longitudinal opening comparatively narrow in width is formed on all sides between the angle-irons, in which opening the hay expands, and is checked as the bale is compressed toward the end of the delivery portion, so as to prevent too rapid a delivery of the hay, as hereinafter described.

Upon the outer portion of each respective side, and at the ends of said angle-irons opposite to those connected to the chamber B, I cast the perforated lugs d^2 d^2, the perforations d^3 in said lugs upon the top and bottom angle-irons being made therein in a transverse relation to the press and upon the side plates in a vertical relation thereto. I then introduce through the said lugs upon the outer top portion of the angle-irons *d d'* a bolt, d^4, the head upon which at one end bears against the outer side of one of said lugs d^2, the opposite end of the bolt extending through a lug, d^2, upon an opposite outer top portion of the angle-iron *d'* and a suitable distance beyond the side of the delivery portion of the press, and upon said end of bolt I place a spiral spring, d^6, which bears against the outer end of the lug upon said plate *d'*, and fit the nut d^7 upon the end of said bolt, which is screw-threaded for the purpose, and which nut bears adjust-

ably against said spring. Upon the bottom angle-irons d d', and upon the under side of said irons, I cast lugs in a similar manner as described for the top plates, and a bolt arranged through the lugs, having a spring and nut upon the same relative side as spring d^6 and nut d^7, is shown. The lugs d^2 d^2 upon the side portion of the plates d' d' are placed slightly in rear of the position of the lugs upon the top portion of the said plates, and the bolt d^5 introduced from the under side of and through the lug d^2 upon the bottom plate d' and extending through the lug d^2 upon the side portion of the top plate d', and a spring, d^8, placed upon the end of said bolt, which extends vertically a suitable distance above the top portion of the plate d', and a nut, d^7, fitted upon the end of said bolt, which is provided with a screw-thread.

Upon the opposite side of the delivery portion of the press, and upon the side portion of the plates d d, is arranged in a similar manner the bolt d^{10}, lugs being cast therefor, and a spring and nut placed upon the said bolt to act, as heretofore described, upon the opposite side. Thus it will be seen that as the hay is pressed in a baled form through the delivery portion D of the press the end of the said portion of the press will expand in degrees and facilitate the passage of the bale, and this self-adjustment will be governed by the springs upon the bolts, the tension of which springs may be regulated by turning the nuts thereon.

To relieve the end of the press from any entanglement with coarse particles or bunches of hay, and also enable the hay to pass the bolts d^4 d^5 with entire freedom, I place horizontally between the top plates d d' the compressing-plate E. This plate E is made, as seen in Figs. 4 and 5, with upturned ends e e, which lie in the longitudinal direction of the press, and which ends avoid direct contact with the hay and have an independent rocking movement between the angle-irons. Upon the upper side, and between the opposite ends, is formed a transverse perforated pintle-box, e', through which passes the bolt d^4. The plates E E, I arrange between the opposite angle-irons and one upon each side of the press, so that the passage of the bale is facilitated thereby.

To facilitate the ready withdrawal of the plunger and remove the ends of the hay which collect upon the top portion as fed to the press without necessitating stopping the movement of the plunger, I make for the top portion of said plunger the canting head F. Said canting head is cast in one piece and extends vertically a suitable distance and in a longitudinal direction to within a short distance of the opposite sides g g of the plunger G, and upon opposite ends, at a point below the top edge to permit oscillation, are made the journals f f. The front portion, f', of the canting head F, toward the baling-chamber, is made with a smooth vertical surface to correspond with the like surface of the plunger below. The rear inclined portion, f^2, of the said canting head extends from a point on the journals and passes downwardly and in a tangential relation to said journals a short distance, and is then bent at f^3 at right angles toward the rear portion of the plunger, and when said canting head is erect it is retained by its weight and rests upon said rear portion of the plunger.

In my construction of plunger, I arrange in said plunger a vertical expanding portion, H, which extends across and between the sides g g of the plunger G and rests upon a spring, I, in the lower portion of said plunger. The opposite inner sides of the plunger G are provided with vertical grooves g', as seen in Fig. 1, in which the corresponding portion is permitted to play. In this arrangement the sides and ends of the plunger G are made less in height than that interiorily of the baling-chamber B, so that the expanding portion H of said plunger G may operate to close this space and adjust itself to the inequalities of pressure which is met in introducing and compressing the hay within the chamber. To the upper end, therefore, of this expanding portion H of the plunger I attach the canting head F, the said expanding portion being cut away sufficiently to give admission to the canting head within the chamber B under any compression, and also to leave at opposite ends the upright inclosing ends or U-shaped journal-sockets h, in which the journals f f upon canting head F are seated.

To prevent the canting block F from being ejected from place upon the expanding portion and out of the sockets h h, I make laterally through the canting head a curved perforation, f^4, and upon the front side of expanding portion H of the plunger toward the chamber B, I attach one end of a rod, f^5, the upper end of which I bend in a hooked form and introduce through the perforation f^4, so that the canting head may oscillate without friction. It will be readily seen that the canting head may be applied to any form of plunger with or without the expanding portion, as preferred. I then attach to the plunger G, in any convenient manner, one end of the pitman P.

As soon as the hay is compressed within the chamber B the canting head upon the plunger upon its withdrawal from said chamber is upset in that direction by the ends of the hay resting thereon, and the head drops down toward the bottom of the feed-receptacle. The weight of the rear end of the canting head is then sufficient to return the cant-head to its normal position to again compress the hay.

Having fully described my invention, what I now claim as new, and desire to secure by Letters Patent, is—

1. In a baling-press, the combination, with a suitable baling-chamber, of a delivery portion of said press pivoted at one end thereto, and an opposite expansible end, and adjusting-bolts in suitable lugs upon said expanding end

and nuts upon said bolts, and springs between said nuts and lugs, for the purpose described,

2. The combination, with the baling-chamber, of a reciprocating plunger and a canting head journaled thereon, as and for the purposes specified.

3. The combination, with the baling-chamber, of a reciprocating plunger and a canting head journaled in the upper portion of said plunger, having a rearwardly-inclined portion adapted to counterbalance said canting head, substantially as described.

4. The combination, with the baling-chamber, of a reciprocating plunger having a vertically-expansible portion and a canting head journaled upon said expanding portion, substantially as and for the purpose described.

5. The combination, with the reciprocating plunger, of a canting head journaled in sockets arranged upon opposite sides of said plunger, and provided with means for retaining said canting head in a normal position, and with a curved perforation through said canting head, and a bent rod attached to said plunger and extending through said curved perforation, as and for the purpose specified.

6. The combination, in a baling-press, with the delivery portion of said press having the longitudinal open sides, of compressing-plates pivotally attached to said sides and adapted to rock upon the bale, as shown and described.

EPHRAIM C. SOOY.

Witnesses:
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B. F. CHASE.