

No. 737,521.

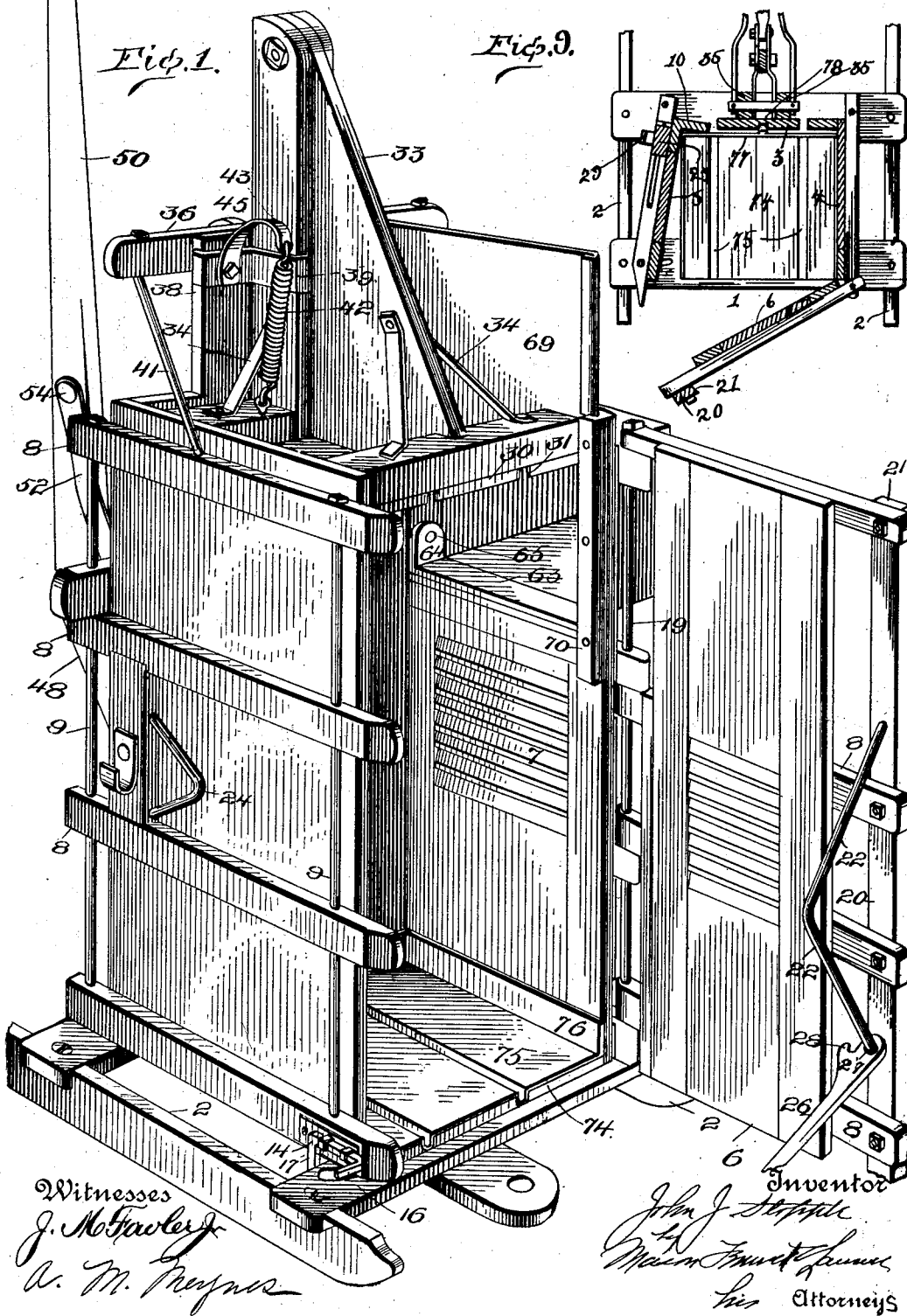
PATENTED AUG. 25, 1903.

J. J. STOPPLE.
BALING PRESS.

APPLICATION FILED DEC. 21, 1901.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses
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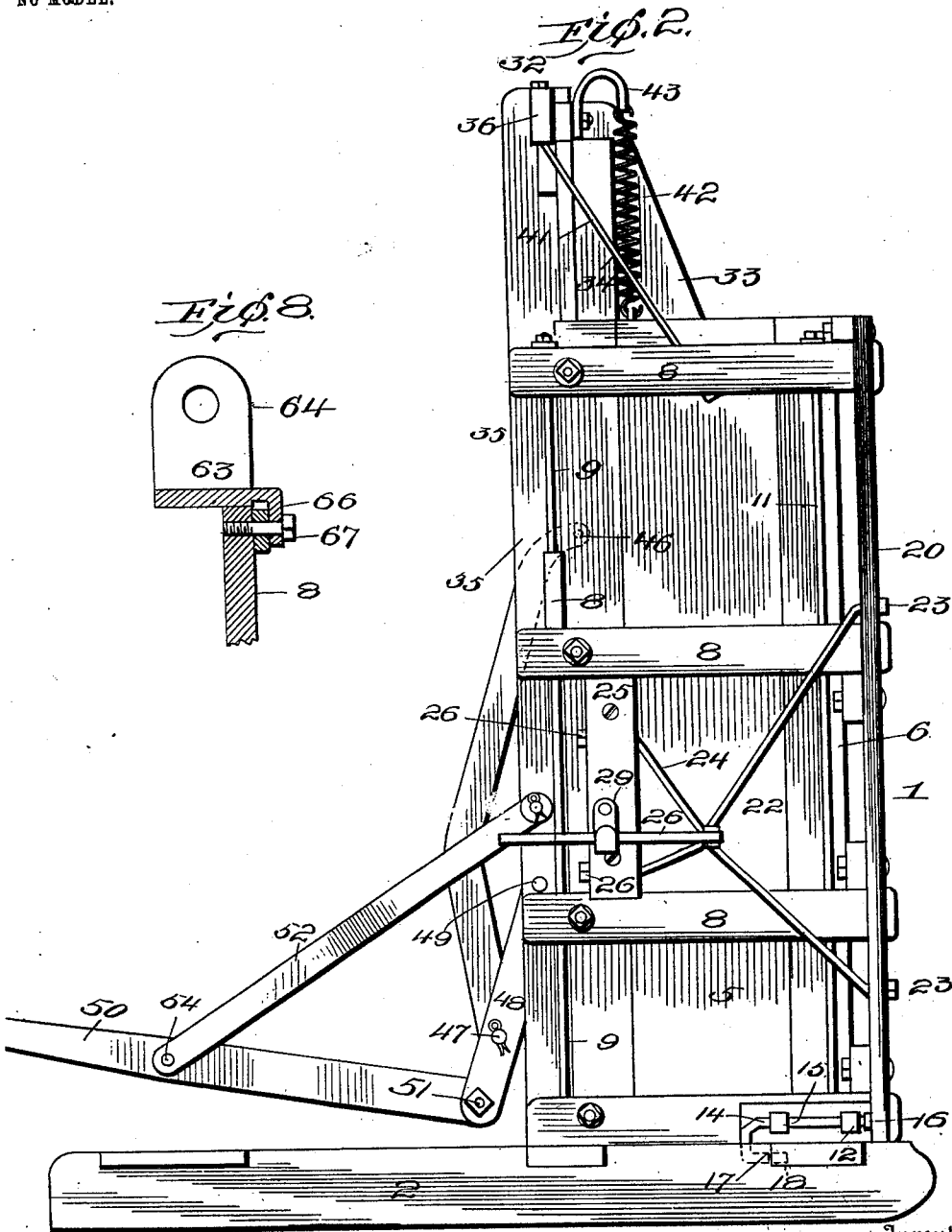
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NO MODEL.

4 SHEETS—SHEET 2.



Inventor

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By

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Witnesses

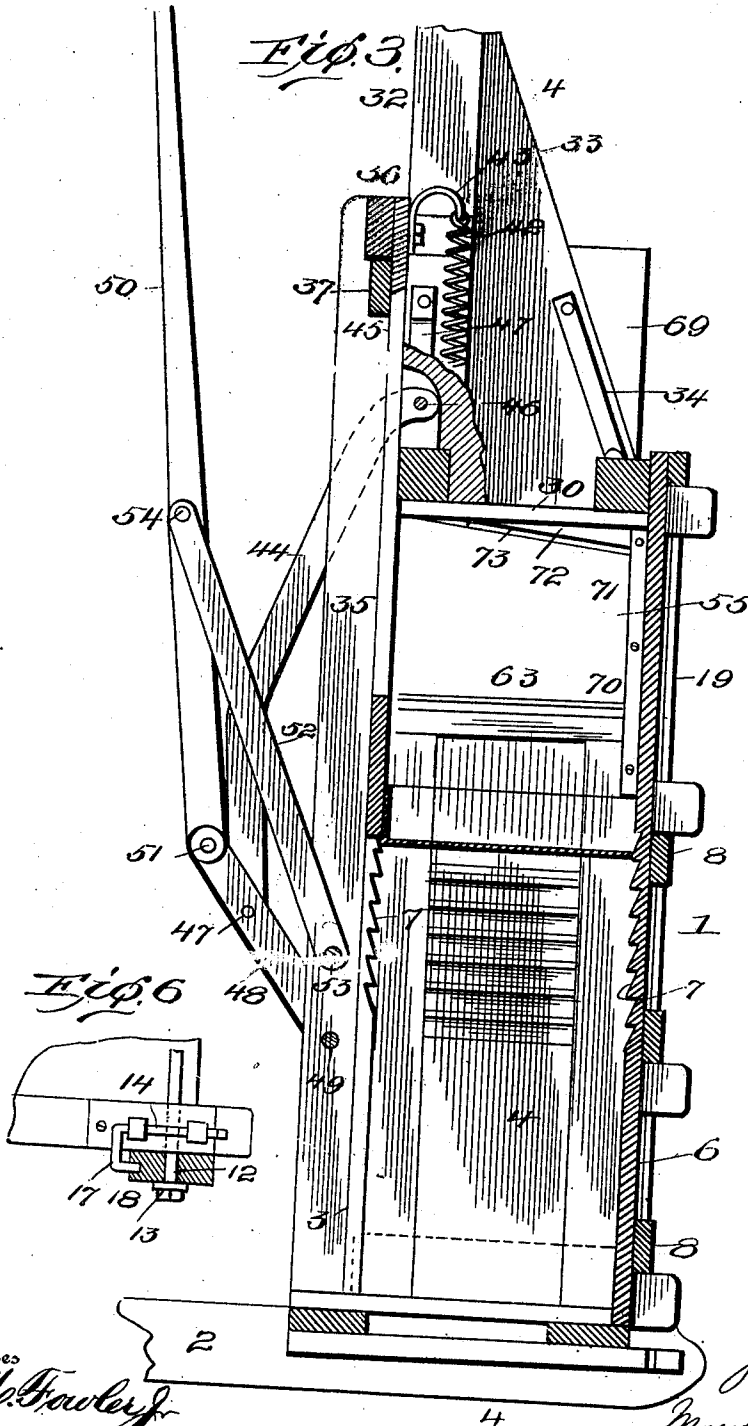
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NO MODEL.

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4 SHEETS—SHEET 3.



Witnesses
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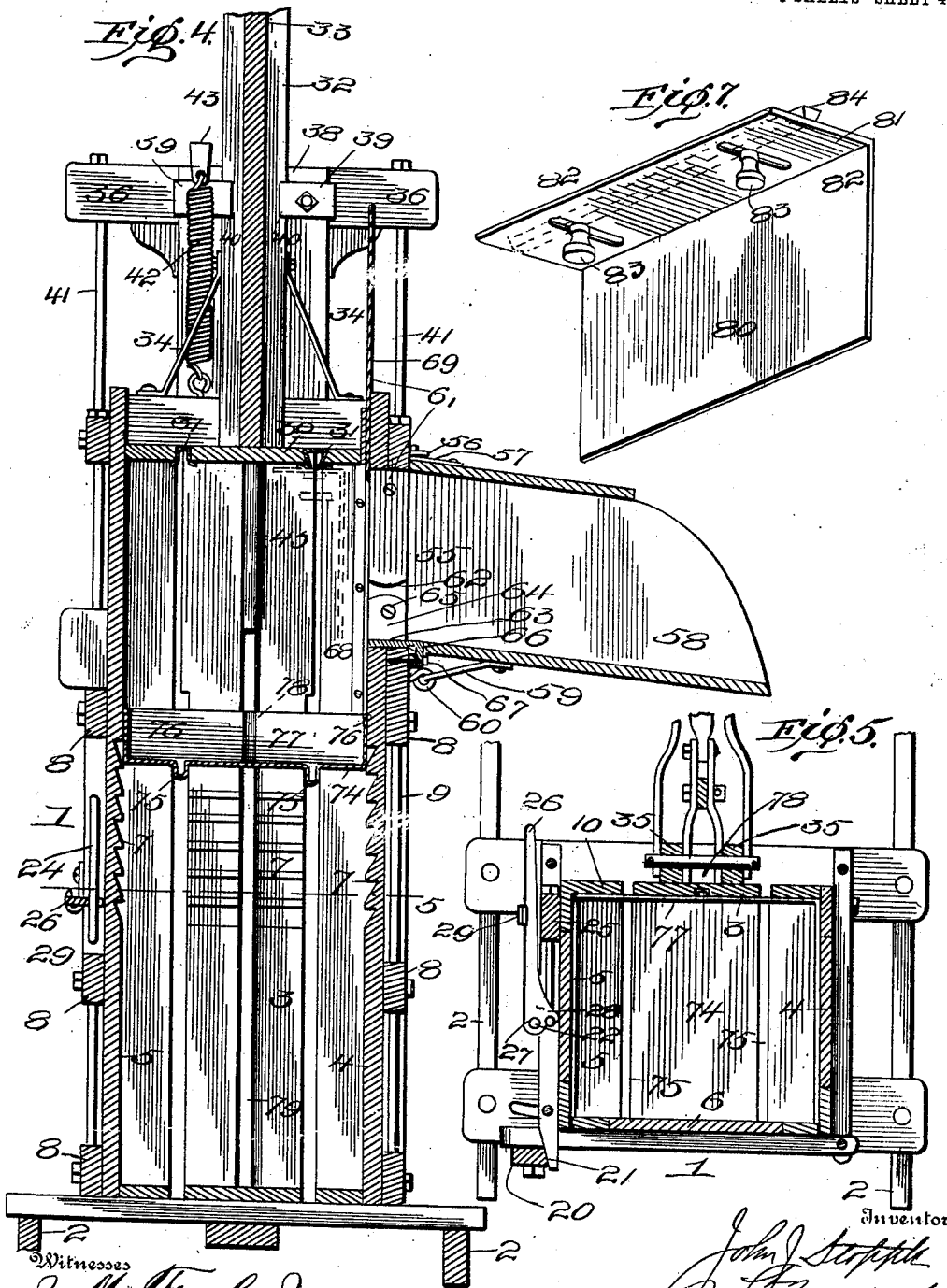
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4 SHEETS—SHEET 4.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN J. STOPPLE, OF GOLIAD, TEXAS.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 737,521, dated August 25, 1903.

Application filed December 21, 1901. Serial No. 86,817. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. STOPPLE, a citizen of the United States, residing at Goliad, in the county of Goliad and State of Texas, have invented certain new and useful Improvements in Baling-Presses; and I do hereby 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.

My invention relates to improvements in baling-presses, and more particularly to the type employed in baling hay.

The object in view is the production of a hand-operated baling-press capable of receiving a continuous feed and provided with means for acquiring a maximum of leverage for operating the press-plunger within a minimum space and with the employment of the smallest number of parts.

With this and other objects in view it consists of a box provided with a feed-opening in the side thereof, a plunger operating in said box, and a knife carried thereby and moving contiguous to said feed-opening for cutting the charge of hay as it is fed into the box.

It further consists, in combination with a suitable box, of a plunger movable therein, hand-operated means for moving said plunger, means for feeding hay within said box during the operation of said plunger, and means carried by the plunger for cutting off said feed.

It also consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a perspective view of a baling-press embodying the features of the present invention. Fig. 2 represents a view in side elevation of the same. Fig. 3 represents a vertical longitudinal central section through the press, the operating-lever being shown in elevation. Fig. 4 represents a similar view taken on the line 4 4 of Fig. 3. Fig. 5 represents a transverse horizontal section taken on the plane of line 5 5 of Fig. 4. Fig. 6 represents a fragmentary detail view of the catch mechanism for securing the hinged side of the box. Fig. 7 represents a detail perspective view of the feed-stopping shield. Fig. 8 represents a

fragmentary detail view of the cutter-bar and setting means therefor. Fig. 9 represents a similar view to Fig. 5, illustrating the pivoted side and hinged door out of contact.

Referring to the drawings by numerals, 1 indicates a suitable baling-box mounted, preferably, on a sled 2, the said box being formed with a rear wall 3, a fixed side wall 4, a hinged side wall 5, and a front closing door 6. Each of the said walls and the door are provided with suitable downwardly-disposed notches, as 7 7, on the inner face thereof, the walls and door being formed of suitable material and bound together by horizontal beams 8 8. The side wall 5 is secured in position by means of a rod 9, passed through the projecting ends of its beams 8 and also through the beam or beams 8 of the rear wall, whereby the said side wall is free to swing in a horizontal plane.

Formed integral with or secured to the side wall 5 is a laterally-projecting longitudinal bar, as 10, which when the said side is in its normal closed position lies in the same vertical plane with the rear wall 3, but when the side is swung outwardly moves to the position indicated in Fig. 9 within the box of the press for purposes hereinafter mentioned. A vertically-arranged rod, as 11, is preferably passed through the front projecting ends of the binding-beams 8 of side 5 and extends through a segmental slot, as 12, formed in the floor of sled 2, and carries any suitable head, as 13, beneath the said floor for retaining the side 5 against outward movement for a greater distance than the length of said segmental slot.

Slidably mounted on the lower binding-beam 8 of side 5 is a hook-shaped bolt, as 14, the body of said bolt being longitudinally slidable within laterally-projecting sleeves 15 15 and provided with a lug or other means, as 16, designed to contact with one of the sleeves 15 for preventing removal of the bolt, said lug also serving as an operating-handle. The hooked portion 17 of bolt 14 preferably extends downwardly and then forwardly in such manner as when the bolt is pressed to the full extent of its rearward movement to extend in an open space and permit the hinged movement of the side 5; but when the said bolt is pressed forwardly, the side 5 being in its closed position, the said parallel por-

tion of the hook will engage a suitable notch 18 in said sled-floor, whereby the said side 5 will be held in its closed position. The bolt 14 is so located and arranged as to be struck 5 by the door 6 as the same is swung inwardly, so as to release said bolt.

The binding-beams 8 of door 6 are pivotally secured at their projecting ends to the projecting ends of the similar beams of side 4 by 10 means of a vertical rod, as 19, passed, preferably, through all of said binding-beams. The opposite projecting ends of the beams 8 of door 6 carry a vertically-arranged bar, as 20, which bar is preferably beveled on its inner edge, 15 as at 21, designed to engage the beveled projecting ends of the beams 8 of side 5, whereby when said door is closed the said side and door are firmly clamped together. A bent rod, as 22, has its ends passed through the bar 20 at suitable points intermediate the length 20 of said bar, the end portion of the rod extending, preferably, at approximately a right angle to the said bar. Any suitable nuts, as 23 25, may be threaded on the ends of said bent rod 22 for retaining the same in position. A single rod, as 24, is secured to a vertical standard 25, carried by the side 5. The said rod 24 is bent similarly to rod 22 and has its ends passed through the standard 25 and 30 provided with nuts 26 26, threaded thereon. The rods 22 and 24 at the point of their bends lap slightly when the side 5 and the door 6 are in their closed positions. The rod 22 carries a locking-bar, as 26, which is provided 35 with a suitable eye 27, inclosing the said rod, and a laterally-extending hook, as 28, which hook in operation is designed to engage rod 24 when the locking-lever is placed within a hook, as 29, carried by the standard 25, the 40 said hook having somewhat of a segmental action, whereby the two rods are firmly locked together and the door 6 securely held in position. It will be apparent that all that is necessary to release the door is the removal 45 of bar 26 from engagement with hook 29.

Movable longitudinally within the box 1 is a suitable plunger formed of a head 30, provided with suitable tie-slots 31 31 and having secured in any suitable manner to its upper 50 face and at the rear edge thereof an operating-beam, as 32, formed of side beams, and a central web, as 33, clamped therebetween, said web preferably extending for the full width of said plunger head at its base and tapering 55 to the width of the side beams at the upper end. Any suitable lateral braces 34 34 may be secured in any preferred manner to plunger-head 30 and to the web 33 or the clamping side beams, as may be desired.

60 Secured to the rear wall 3 are two vertical parallel standards, as 35 35, which project a suitable distance above the upper edge of box 1 and carry a laterally-extending arm, as 36, supported and braced by a second laterally- 65 extending arm, as 37, the said arms extending on either side of the standards 35. A portion of the rear wall 3, as at 38, preferably extends

to the same horizontal plane as the upper edge of arm 36. Any suitable brackets, as 39 39, are preferably secured to the portion 38 of 70 back 3, each of the brackets being provided with a hooked portion, as 40, engaging the inner edge of its respective side beam of operating-beam 32, whereby the said plunger-beam will be guided in its vertical movement. 75 The outer ends of arm 36 are preferably rigidly retained in position by means of suitable brace-rods, as 41 41, passed through and secured to the respective upper binding-beams 8 of the sides 4 and 5. A suitable, preferably 80 coiled, spring, as 42, is carried by any preferred form of bracket 43, secured to the portion 38 of rear wall 3, and the lower end of said spring is attached to the plunger-head 30 for equalizing the weight of said plunger. 85

It will be noted that the standards 35 are spaced a suitable distance apart for permitting the passage therebetween of an operating-arm 44, the rear wall 3 being slotted longitudinally for a suitable distance, as at 45, also 90 for the passage of said arm. The arm 44 extends through slot 45 and is pivoted, as at 46, between suitable bearing-plates 47, carried by the plunger-beam 32, whereby vertical movement of arm 44 is designed to move plunger 95 30 longitudinally of the box 1. The arm 44 has its lower end pivoted, as at 47, between the bars 48 48, forming a link pivoted at its inner end, as at 49, between standards 35 and secured at its outer end to operating-lever 50 10 at the lower end thereof, the bars 48 preferably extending upon either side of the said lever 50 and being clamped thereto by a suitable bolt, as 51. It will be seen by the foregoing description that a movement of lever 50 105 in a vertical plane will move the plunger 30 correspondingly; but in order to increase the leverage and strengthen the parts I preferably pivotally secure to each of the standards 35 a rod 52 at its lower end, as at 53, the outer 110 end of each of said rods being pivotally secured to the lever 50 by means of a common bolt, as 54. It will be seen by reference to Fig. 2 that the link formed of bars 48 is pivoted at a sufficient height above sled 2 to permit the 115 same to swing downwardly to a vertical plane and lie snugly between the vertical standards 35, whereby the plunger 30 is positively locked in its lowered position and cannot be raised by any amount of pressure, the arm 44 lying 120 in approximately a vertical plane and being swung to a dead-center with respect to its two pivot-points.

The side wall 4 is preferably formed with a comparatively large aperture near the upper 125 end thereof, as at 55, and any suitable brackets, as 56, preferably extend outwardly from the said wall above said aperture and are designed to be engaged by suitable hooks 57, carried by charging-chute 58, which chute is 130 preferably of the same shape as aperture 55, the inner faces of the walls of the chute lying flush with the edges of the aperture when the said hooks 57 are in engagement with brack-

ets 56, such engagement being designed to retain the chute in its operative position, a hook, as 59, being pivotally carried by the under face of said chute for engaging an eye 5 60, secured to the wall 4, for serving as an auxiliary retaining means. The chute 58 may readily be removed from its operative position by simply disconnecting hook 59 from eye 60 and moving the outer end of the chute 10 upwardly, whereby the hooks 57 will be released from engagement with brackets 56. The edges of aperture 55 are preferably provided with a suitable casing 61, which is preferably cut at the side edges, as at 62, and a 15 cutter-bar, as 63, rests upon the lower edge of said aperture and is provided at either end with an upwardly-extending flange, as 64, each of which flanges is pivotally held in position by any desired securing means, as 65, 20 passed therethrough and into the wall 4, whereby the cutter-bar 63 completes the casing and is free to be moved laterally for purposes hereinafter described. In order to control the pivotal movement of the cutter-bar 25 63 and rigidly secure the same in a given adjusted position, I preferably provide lugs, as 66, formed integral with or attached to the outer edge of said bar and having its outer end curved downwardly and receiving a suitable set-screw, as 67, threaded therethrough and into the material of wall 4. The adjustment of the bar is preferably accomplished by loosening the screws 67 and placing between the downwardly-extending portions of 30 the lugs 66 and the wall 4 a block of the desired thickness and then again tightening the screws, whereby the cutter-bar 63 will be adjusted laterally to a given position and retained in such position until released by operation of said screws. 40

A suitable bar, as 68, is preferably secured in any preferred manner to rear wall 3, parallel with the inner face of side wall 4, which bar extends from a suitable point below cutter-bar 63 to the upper edge of box 1, a space 45 being left between the said bar 68 and wall 4 for receiving and guiding one edge of a shield, as 69, carried by the edge of plunger-head 30, contiguous aperture 55. The opposite edge of shield 69 is guided between wall 4 and a 50 vertically-arranged bar, as 70, which bar is secured to said wall and provided with a laterally-extending flange 71, which is spaced from the said wall, so as to form a longitudinal groove for guiding the last-mentioned edge 55 of said shield 69.

Secured to the edge of plunger-head 30, which carries shield 69, and lying in the same vertical plane is a knife, as 72, which knife 60 has its upper edge or back contacting with the lower horizontal edge of said shield, the knife being of any desired width and provided with a lower cutting edge 73, which edge is preferably formed on a slant, as clearly seen 65 in Fig. 3, whereby in operation when the knife is moved downwardly with the movement of the plunger the same will have some-

what of a draw cutting action, and material passed between the said edge and the cutter-bar 63 will be readily severed by the said 70 knife as the same moves downwardly into contact with the inner edge of said cutter-bar. It will be seen from the foregoing that the contact of the knife with the cutter-bar greatly facilitates the ready severance of the articles 75 passed therebetween, and in order to take up the wear between said parts the set-screws 67 may be adjusted, as before described, for moving the inner edge of said cutter-bar 63 the desired distance inwardly to compensate for 80 such wear. It will be apparent that the knife 72 is designed to move within the grooves formed by bars 68 and 70 for the full length thereof, whereby it will pass the desired distance below bar 63, and thereby obviate all 85 danger of failing to perform the desired cutting operation.

In operation, the side wall 5 and the door 6 being locked in their closed positions, hay is fed into chute 58 in the form of a continuous 90 charge, it usually requiring one or more persons to feed the hay into the press and another to operate the lever 50, the lever 50 being in its raised position at the beginning of the operation, so that the charge of hay may 95 pass through aperture 55 and into the box 1 until it strikes against the wall 5 thereof, when lever 50 is swung downwardly and the hay is severed by the knife 72, the shield 69 serving to prevent entrance of hay above the 100 plunger-head 30, the same closing said aperture as the plunger-head moves downwardly. This feeding operation is continued, the plunger being raised after each operation for permitting the entrance of a charge of hay 105 until the desired size of bale is formed within the box 1, the arm 44 being then moved to its locked position for retaining the plunger-head 30 at the lowest point of its movement while door 6 is swung open and the bale is tied in 110 the well-known manner. After the bale has been tied the plunger is raised, the bolt 14 being already disengaged from the floor of sled 4, and the side wall 5 is moved outwardly to the extent allowed by the length of segmental slot 115 12, the bar 10 being thereby moved laterally for a short distance into the box 1, as hereinbefore described, whereby the completed bale is slightly tilted outwardly and its ready removal greatly facilitated, as will be clearly apparent by reference to Fig. 9 of the drawings. 120

In the operation of the present device I find it desirable in order to produce a smooth bale to provide a false bottom, as 74, formed with 125 suitable tie-slots 75 75 and side walls 76 76 and a rear wall 77, the said side walls being preferably detached from the rear wall, and the bottom 74 and its walls are preferably formed of sheet metal or other suitable material comparatively rigid and yet slightly 130 flexible. The rear wall 77 of false bottom 74 is provided with a transversely-arranged laterally-projecting bead, as 78, which bead is designed in operation to engage a longitudinal

groove, as 79, arranged vertically in the rear wall 3. In operation the charge of hay being fed through chute 58 is severed by knife 72, the false bottom 74 being set within box 1 near the said chute and held in the position shown in full lines in Fig. 4 by frictional contact with the walls of said box, and the said charge of hay is packed or pressed down upon the said false bottom by the operation of plunger-head 30. As each additional charge of hay enters the box 1 the bottom 74 moves downwardly to accommodate the same, the walls 76 of the said bottom frictionally engaging the walls 4 and 5 of the box and resisting such downward movement and preventing further movement of the said false bottom than is absolutely required for the accommodation of the hay within the box. The successive charges of hay continue to move the bottom 74 downward, the same being guided in its movement by means of head 78 until it rests upon the floor of box 1, when the bale is complete and ready for tying, as hereinbefore mentioned. After the bale has been removed the said false bottom is also removed and replaced to the position shown in Fig. 4, ready for second operation.

Aside from the advantages attained by the employment of knife 72 in the baling of hay the same may be employed to advantage for chopping the hay into short lengths for purposes of being used as "chopped feed," and in order to utilize the said knife for cutting the hay in such manner I preferably employ a shield, as 80, provided with a lateral flange, as 81, carried by the upper edge thereof, which flange is formed with transverse slots, as 82 82. Suitable set-screws, as 83 83, are guided within said slots, said screws engaging a bar, as 84, extending longitudinally of flange 81 and formed wedge-shaped in transverse section. The tie-slot 31 in plunger-head 30 nearest knife 72 is preferably wedge-shaped in cross-section and designed to snugly inclose the bar 84 when it is desired to produce chopped feed. The said bar 84 is slid longitudinally into said groove 31, and thereby retains shield 80 contiguous knife 72, the said shield being capable of lateral adjustment through the operation of set-screws 83 in the slots 82, whereby the desired length of hay may be secured, the hay in operation being fed through chute 58 and limited in its inward movement by shield 80, whereby the knife 72 is designed to cut that length of hay equivalent to the distance between the knife and said shield 80. As the hay is cut into short lengths it drops down into the body portion of the box 1 and may be removed as desired.

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

1. In a baling-press the combination with a suitable box formed with a feeding-aperture in one side thereof, of a plunger movable longitudinally in said box, means carried by said plunger for severing a charge of hay fed

through said aperture, a cutter-bar arranged in said aperture and having its ends pivotally attached to the walls thereof, and means for adjusting said bar to a vertical plane approximately that of the movement of said severing means, substantially as described. 70

2. A baling-press comprising a suitable baling-box for receiving and holding hay while it is being pressed, a plunger movable therein, means for supplying hay to said box beneath the plunger, means carried by the plunger for severing the protruding ends of the hay upon the descent of the plunger, and a pivotal cutter-bar designed to be moved approximately into the path of movement of said severing means, substantially as described. 75 80

3. In a baling-press, the combination with a suitable box, having a pivoted side, of a door hinged to a fixed side of said box, means for locking the free edge of said door in contact with said pivoted side, means for compressing a bale within said box when the parts are in their locked condition, and means for tilting the bale toward said door when the same is opened. 85 90

4. A baling-press comprising a suitable box having a feed-aperture in one side thereof, a laterally-adjustable, pivotally-supported cutter-bar secured within said aperture, a plunger movable in said box, and a knife carried by said plunger and designed to move past said cutter-bar and contact therewith, whereby the charge of hay entering said aperture may be severed as the said plunger is moved to a compressing position, substantially as described. 95 100

5. A baling-press, comprising a box, a plunger moving therein, one of the walls of said box being formed with a feed-aperture, a laterally-adjustable cutter-bar secured in said aperture, means for locking the same in its adjusted positions, a knife carried by said plunger and positioned to move across said aperture in contact with said bar for severing charges of hay being fed into said box, and a shield carried by the plunger in the vertical plane of said knife for closing said aperture behind the same, substantially as described. 105 110 115

6. A baling-press comprising a suitable box having a feed-aperture in one of the walls thereof, a plunger movable in said box, a cutter-bar pivotally mounted in said aperture, means for adjusting said bar laterally on its pivots, and a knife carried by said plunger and positioned to move across said aperture with the movement of said plunger and to pass said cutter-bar in contact therewith, substantially as described. 120 125

7. A baling-press comprising a suitable box formed with a feed-aperture in one of the walls thereof, a plunger movable longitudinally within said box, a knife carried by said plunger on the side thereof contiguous said feed-aperture, whereby movement of said plunger is designed to pass said knife across said aperture, a cutter-bar swung in said aperture, the cutting edge of said knife being set at an 130

acute angle with respect to said cutter-bar, and means for adjusting and retaining said cutter-bar in approximately the vertical plane of movement of said knife, substantially as described.

8. A baling-press, comprising a suitable box, a plunger movable therein, a hinged door forming part of said box, one of the walls of said box being pivotally mounted, means for limiting the movement of said wall, and means controlled by said pivoted wall for ejecting the contents of said box, substantially as described.

9. In a baling-press, the combination with a box having a hinged door, and means for compressing hay within the box, of means for locking said door in a closed position, comprising a bent rod carried by said door, a second bent rod carried by one of the walls of said box, a locking-bar pivotally engaging the first-mentioned rod, a laterally-projecting hook formed upon said locking-bar and designed to engage the second-mentioned rod for causing the lapping of the two rods when the locking-bar is brought into contact with the wall of said box, and means for retaining said bar in its locking position, substantially as described.

10. In a baling-press, the combination with a suitable baling-box having a hinged door, of a lock therefor, comprising a rod bent to V shape and having its ends secured to said door, the body portion of the rod extending at right angles to the door, whereby when the door is closed the rod will normally lie in a plane parallel to one of the side walls of said box, a second rod bent to V shape and secured to said side wall so as to lie parallel thereto, a locking-bar provided with an eye and inclosing said first-mentioned rod and pivotally securing said bar thereto, a laterally-projecting hook formed on said bar near said eye, whereby said bar is designed in operation to have its eye engage the rod carrying the same at the point of its bend and the said hook engage the second-mentioned V-shaped rod at the point of its bend so that movement of said locking-bar in a horizontal plane into contact with the said wall of the box will cause the overlapping of said V-shaped rods and lock said door in a closed position, and means for retaining said locking-bar in such locking position, substantially as described.

11. A baling-press comprising a box provided with a hinged door and a pivotally-supported side, means for limiting the lateral movement of said side, and a laterally-projecting longitudinally-arranged bar carried by said pivoted side and registering with the plane of the rear wall of said box when the said side is in its closed position, whereby lateral movement of said side is designed to move said bar inwardly for tilting the contents of the box outwardly, substantially as described.

12. A baling-press comprising a suitable

box, a plunger movable therein, a hinged door forming part of said box, one of the walls of said box being pivotally supported, means for locking said wall against movement, means for limiting the movement of said wall, and means carried by said wall designed to press outwardly the contents of said box when the said wall is moved laterally upon its pivots, substantially as described.

13. A baling-press comprising a suitable box having a hinged door designed to permit the removal of bales, means movable within said box for compressing material introduced thereto, means pivotally supporting one side of said box, means for locking said door and pivoted side together in a closed position, and means carried by said pivoted side for pressing forward the bale formed within said box when the said side is moved upon its pivot, substantially as described.

14. In a baling-press, the combination with a suitable box, a plunger movable therein, and a plunger-beam carrying said plunger, of an arm pivotally secured to the said plunger-beam, a link pivotally secured to the lower end of said arm, the inner end of said link being pivotally secured to said box, above the base thereof at a height equal to the length of the link, and an operating-lever secured to the outer end of said link, the construction being such that the said link will lie in a vertical plane at the farthest point of its downward movement, whereby said arm will lie in an approximately vertical plane when at the lowest point of its movement and thereby lock the plunger against upward movement until said operating-lever is moved for releasing the same, substantially as described.

15. In a baling-press, the combination with a suitable box, a plunger movable therein, and a plunger-beam carrying the same, of an arm pivoted to said beam, a link pivoted to the lower end of said arm, said link being also pivoted to said box, an operating-lever secured to the outer end of said link, and an auxiliary link pivoted to the said box above the first-mentioned link and pivotally secured to the said operating-lever above the point at which the first-mentioned link is secured, substantially as described.

16. In a baling-press, the combination with a suitable box and means for compressing successive charges of material therein, of a false bottom therefor, formed of flexible material and provided with side flanges frictionally engaging the walls of said box, the said false bottom being designed to be positioned at the desired point intermediate the length of said box and to be moved longitudinally thereof to accommodate the successive charges of material, substantially as described.

17. In a baling-press, the combination with a suitable box formed with a vertically-arranged groove in the inner wall thereof, and

means for compressing successive charges of material in said box, of a false bottom provided with means for frictionally engaging the walls of said box for supporting said false
5 bottom movably within said box, and a vertically-disposed bead carried by said false bottom and engaging said groove for guiding said bottom, substantially as described.

10 18. In a baling-press, the combination with a suitable box having a vertical groove formed in the inner face of its rear wall, and means for compressing successive charges of material in the box, of a false bottom therefor, means contacting with the side walls of said
15 box for frictionally supporting said bottom, the said bottom being formed with a vertically-arranged flange, a bead secured transversely of said flange and designed to move within

said groove for guiding said false bottom, substantially as described. 20

19. In a baling-press, the combination with a suitable box, having a pivoted side, and means for compressing a bale within said box of a door hinged to said box and forming one
25 side thereof, means for locking the free end of said door to one edge of said pivoted side, and means carried by said pivoted side for tilting a bale formed in said box toward said door when the same is opened, substantially
30 as described.

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

JOHN J. STOPPLE.

Witnesses:

EDWARD T. FENWICK,
JOHN L. FLETCHER.