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Patented Sept. 3, 1901.

H. REMBERT.

BAT COMPRESSING AND FEEDING MECHANISM FOR COTTON PRESSES.

(Application filed Apr. 30, 1898. Renewed July 31, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

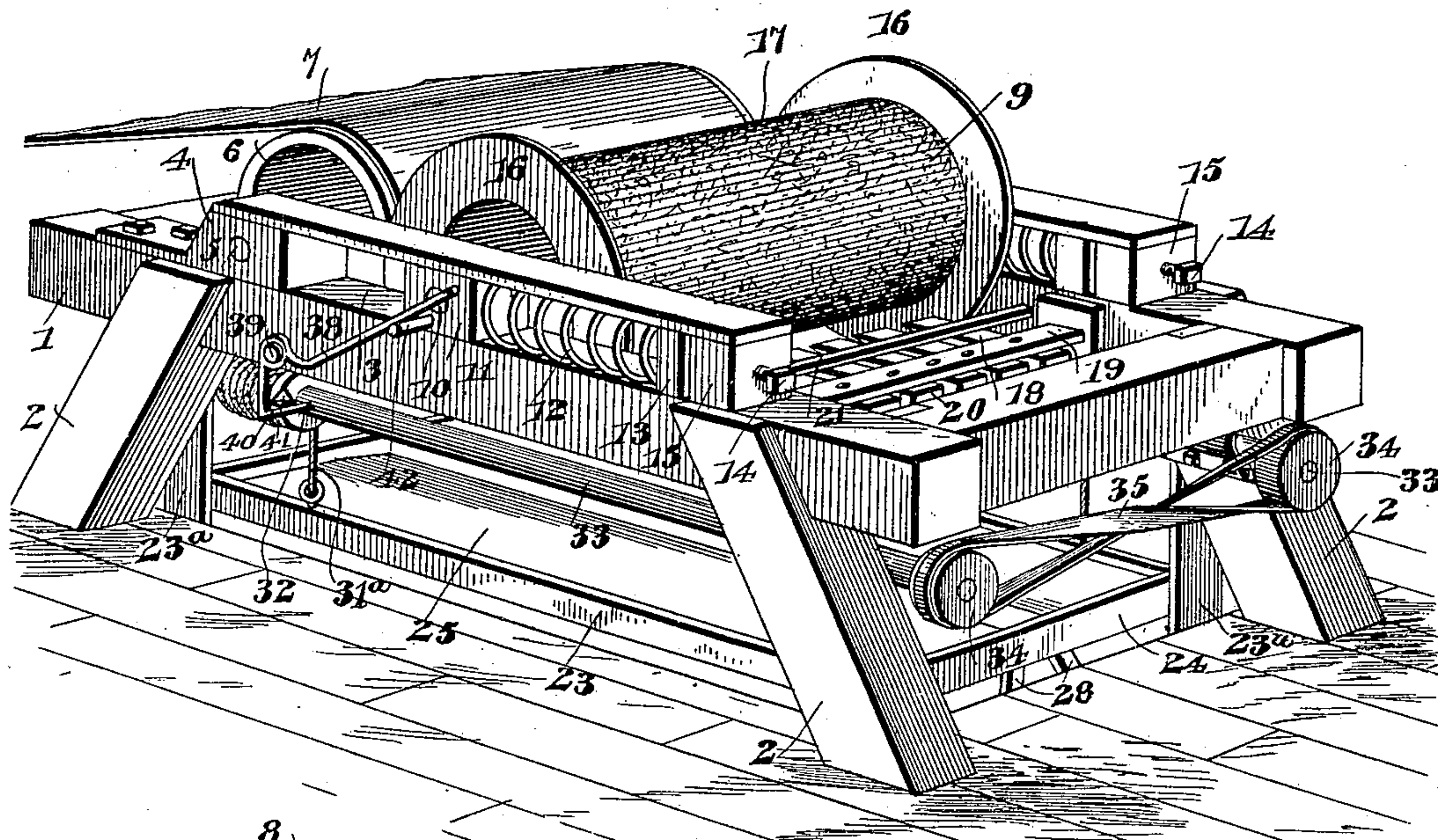
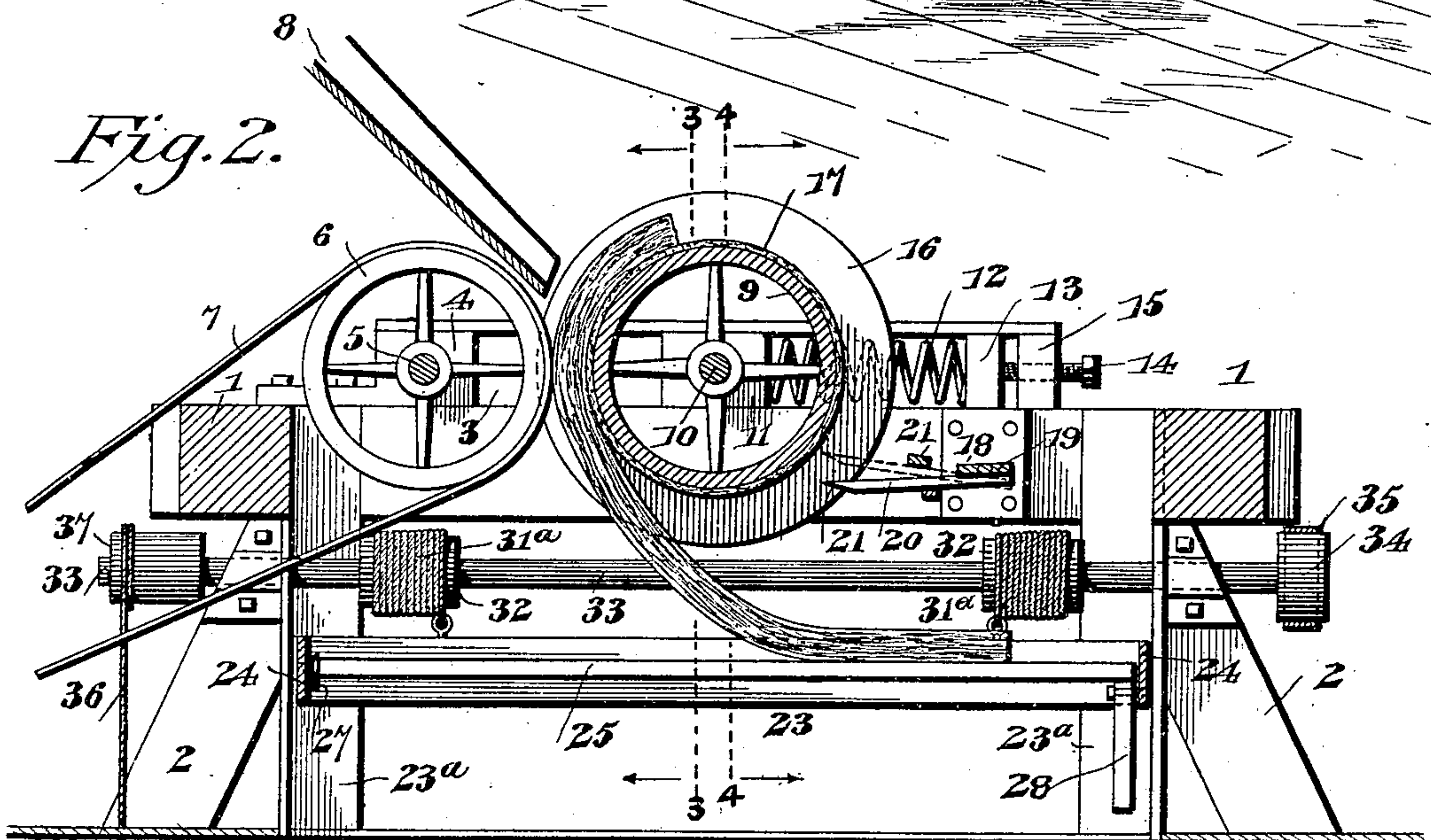


Fig. 2.



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## BAT COMPRESSING AND FEEDING MECHANISM FOR COTTON PRESSES.

(Application filed Apr. 30, 1898. Renewed July 31, 1901.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.

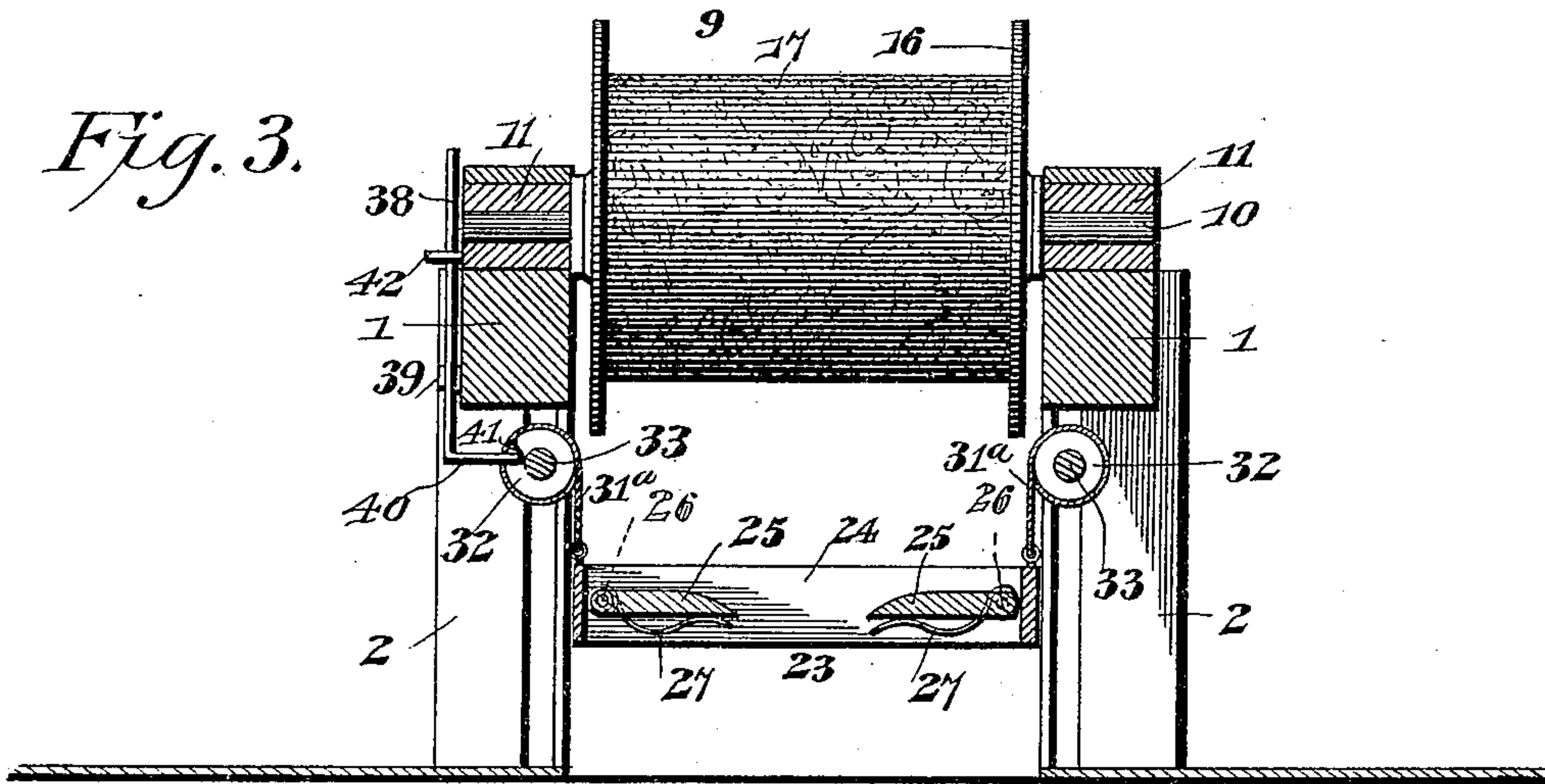


Fig. 4.

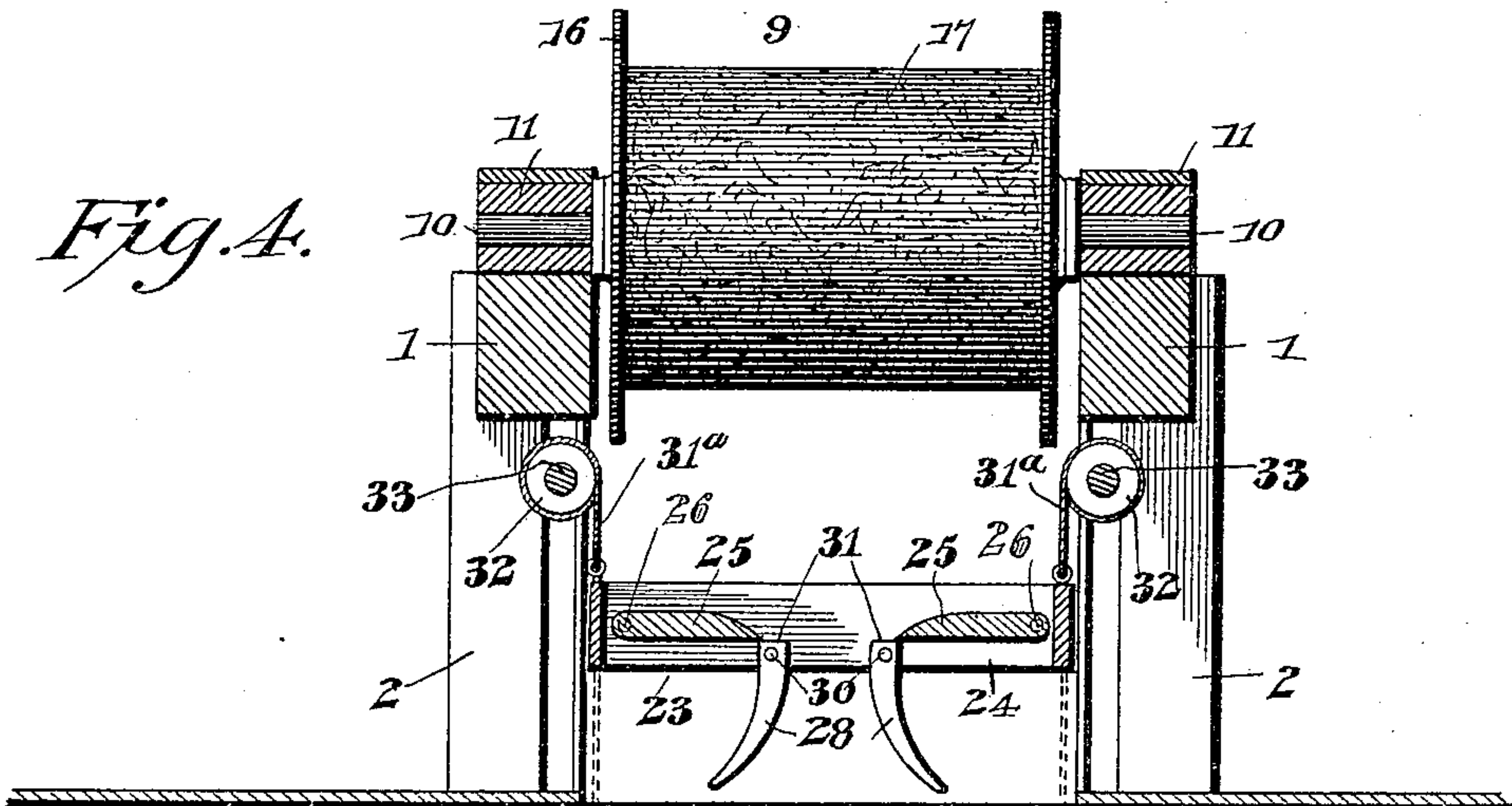
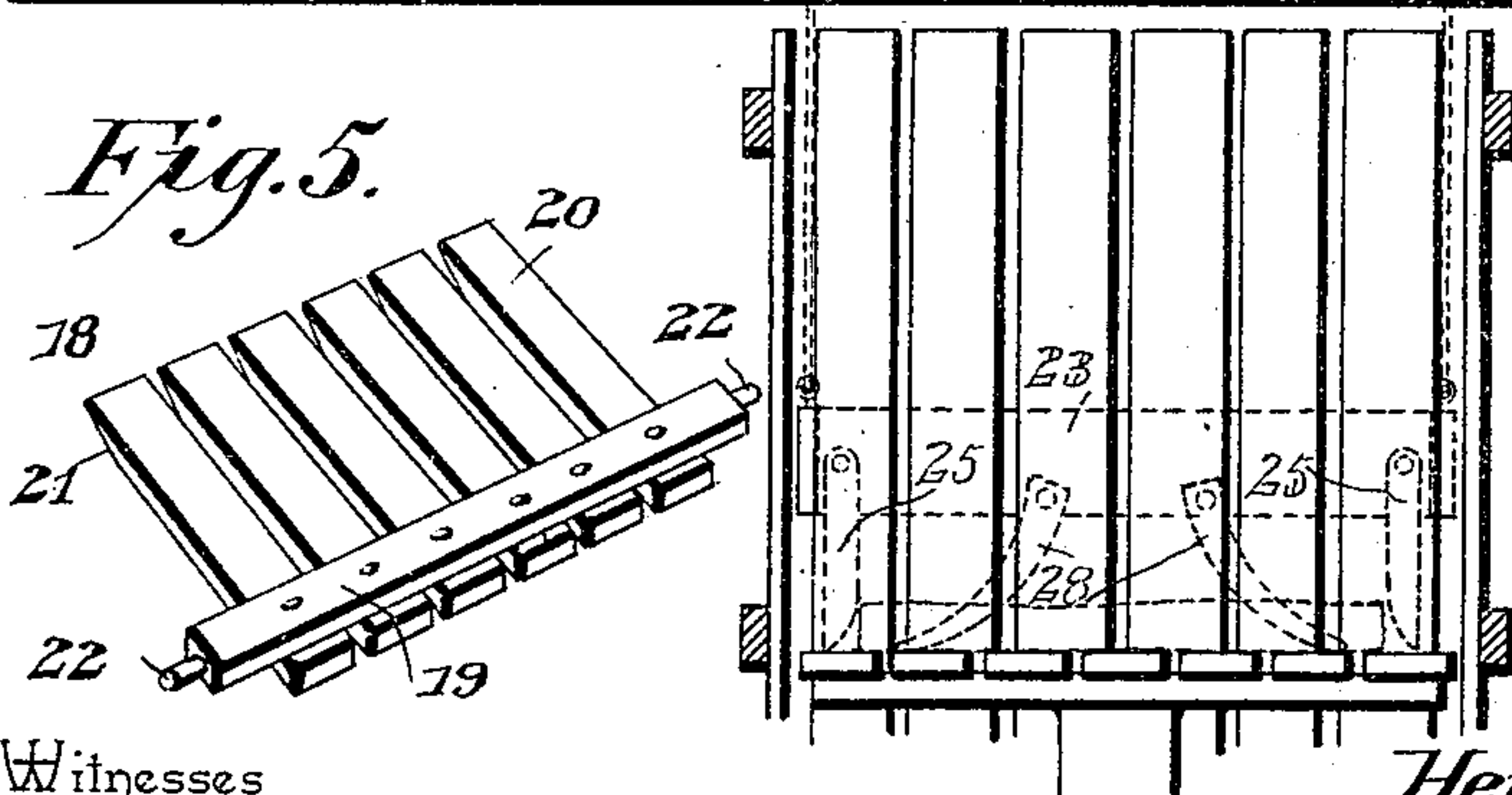


Fig. 5.



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# UNITED STATES PATENT OFFICE.

HENRY REMBERT, OF GALVESTON, TEXAS, ASSIGNOR OF ONE-THIRD TO  
N. WEEKES, ED. MCCARTHY, AND H. REIDEL, OF SAME PLACE.

BAT COMPRESSING AND FEEDING MECHANISM FOR COTTON-PRESSES.

SPECIFICATION forming part of Letters Patent No. 681,928, dated September 3, 1901.

Application filed April 30, 1898. Renewed July 31, 1901. Serial No. 70,422. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY REMBERT, a citizen of the United States, residing at Galveston, in the county of Galveston and State of Texas, have invented a new and useful Bat Compressing and Feeding Mechanism for Cotton-Presses, of which the following is a specification.

This invention relates to an improved bat compressing and feeding mechanism designed to compress a bat of cotton into a number of individual sheets or laminae and to automatically feed the same after being compressed into the baling-box of an ordinary cotton-press for forming cubical or square bales of cotton.

To this end the main and primary object of the present invention is to provide a compressing mechanism having means for tightly compressing a bat of cotton before the same is baled in order that a bale of the desired density can readily be formed, while at the same time providing simple and efficient means for automatically feeding the separate sheets or laminae of the bale into the baling-box ready to be pressed or packed together into the form of a complete bale.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, which will hereinafter be more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a perspective view of a bat compressing and feeding mechanism constructed in accordance with this invention. Fig. 2 is a central vertical longitudinal sectional view thereof, showing a layer or lamina of cotton being delivered from the movable compressing-roll onto the traveling feed-platen. Fig. 3 is a vertical transverse sectional view on the line 3 3 of Fig. 2. Fig. 4 is a similar view on the line 4 4 of Fig. 2, showing the two positions of the segmental latch-arms for the pivotal leaves of the feed-platen. Fig. 5 is a detail perspective of the pivotal separating-knife.

Referring to the accompanying drawings, the numeral 1 designates a horizontal supporting-frame of rectangular form, which may be conveniently supported on the legs 2 directly above the baling-box of an ordinary

cotton-press of a type designed to form cubical or square bales of cotton. The rectangular supporting-frame 1 is provided at the opposite sides thereof with the longitudinal guideways 3, at one end of which are arranged the oppositely-located fixed bearing-boxes 4, in which are journaled the spindle extremities 5 of a horizontal fixed rotating compressing-roll 6. The compressing-roll 6 is of a length equaling the width of the rectangular supporting-frame 1 and receives thereover a drive-belt 7, which belt is of a width equaling the length of the compressing-roll 6, so as to cover the entire surface of the latter and form a cushion for the bat of cotton, which is delivered at one side of the roll 6 from the inclined feed board or chute 8, which serves to direct the bat of cotton from the condenser or other bat-supply between the adjacent surfaces of the fixed roll 6 and the movable rotatable compressing-roll 9. Both of these rolls are of a light skeleton construction. The movable rotating compressing-roll 9 is arranged horizontally within the frame 1 parallel with the roll 6 and has its spindle extremities 10 journaled in the sliding bearing-boxes 11, slidably mounted within the longitudinal slotted guideways 3 at the opposite sides of the supporting-frame. Suitable pressure mechanism or devices are connected with the slidable bearing-boxes 11 for the movable compressing-roll to provide for normally moving the same toward the fixed roll 6 and to resist the tendency of said movable roll to move away from the fixed roll as the layer or lamina of cotton increases in thickness. While any suitable pressure device may be employed to secure this result, I have illustrated in the drawings pressure-springs 12, arranged within the longitudinal guideways 3 of the supporting-frame and bearing at one end against the sliding bearing-boxes 11 and at their other ends against the follower-blocks 13, also slidably mounted in the guideways 3 and engaged by the tension-screws 14, mounted for adjustment in blocks 15, arranged at the ends of the guideways 3 opposite the location of the fixed bearing-box 4 for the fixed compressing-roll. Through the medium of the screws 14 the tension of the springs 12 may be regulated according to the degree of density it is desired to compress the bat of cotton between the two compressing-rolls. The



movable compressing-roll 9 is of a length equaling the exact width of the square or cubical bale of cotton to be formed, while the circumference of the said roll is equal to the exact length of the bale of cotton in order that the compressed layers or laminae of cotton will be in the proper size to form the complete square bale. The said compressing-roll 9 is provided at its ends with the peripheral guard-flanges 16, which serve to build up the ends of the layers perfectly straight, and the entire exterior surface or periphery of the roll 9 is provided with a covering 17, of cloth or equivalent material, which will form an adhesive surface for the movable roll, so that the first wrap or layer of cotton-batting will adhere thereto, it being readily understood that fine carding, woolen cloth, or similar material would secure the desired result without interfering with the ready separation of the layer of compressed cotton from the movable roll when a sufficient quantity has been accumulated or compressed thereon. To provide for the separation of the compressed layer of cotton from the surface of the movable compressing-roll 9, a pivotal separating-knife 18 is employed. The separating-knife 18 is arranged transversely within the frame 1 beyond one side of the roll 9 and below the axis of rotation of the latter, and said knife essentially comprises a horizontal oscillatory supporting-bar 19 and a plurality of straight parallel knife-blades 20, secured fast at one end to the bar 19 and provided with chisel-points 21 at their other ends, so as to readily penetrate the layer of cotton on the movable roll 9. The opposite extremities of the oscillatory supporting-bar 19 are journaled, as at 22, at opposite inner sides of the supporting-frame 1 to permit a free oscillation of the knife, which is limited in its upward movement by a stop-bar 21, arranged within the supporting-frame, said stop being arranged in such a position as to provide for interrupting the continued upward movement of the knife when the chisel-points of the knife-blades have reached the adhesive surface of the movable roll 9 and separated one end of the compressed layer of cotton therefrom. After having secured this result and the compressing-roll 9 starts to return to its initial position the oscillatory knife will drop to its normal inactive position, as clearly illustrated in the drawings. In the operation of the two compressing-rolls it will be understood that the bat of cotton which is delivered between these rolls will by reason of the pressure devices 12 be subjected to strong compression and will adhere to the adhesive surface of the roll 9 and wrap around such roll. As the bat of cotton accumulates on the roll 9 such roll will necessarily move away from the fixed roll 6 against the tension of the springs 12, and when the proper predetermined amount of cotton has been compressed on the movable roll 9 said roll will have reached a position where the layer or

wrappings of cotton thereon will engage the chisel-points of the knife-blades 20 and swing the knife in an upward direction against the stop thereof, which movement necessarily causes the knife-blades to penetrate the layer of cotton on the roll 9, and thereby completely sever the same. At the same time one of the severed ends of the compressed layer of cotton will be separated from the roll and caused to fall down onto the horizontal traveling feed-platen 23, arranged beneath the compressing-rolls. The traveling feed-platen 23 is of length and width corresponding to the length and width of the layer or section of cotton that is deposited thereon from the movable roll 9, and said platen is designed to have the corners thereof move in the vertical guides 23<sup>a</sup>, arranged within the supporting-frame 1, at the corners thereof, and extending below the plane of the compressing-rolls to provide for properly guiding the platen into the baling-box of the press, arranged immediately below the supporting-frame for the compressing mechanism. The said platen 23 essentially comprises a rectangular frame 24 and a pair of pivotal leaves 25, arranged longitudinally within said frame and pivotally supported at their outer corners, as at 26, to the end bars of said frame. The pivotal leaves 25 extend longitudinally from end to end of the platen-frame 24 and form a drop-bottom therefor to provide for depositing or dropping the layers of cotton into the baling-box of the cotton-press. The said pivotal or swinging platen-leaves 25 have connected therewith, preferably at one end, the return-springs 27, of a sufficient strength to provide for swinging the leaves back to a horizontal position after having been relieved of the load thereon, and said leaves are normally sustained in a horizontal position to provide the floor or bottom of the platen for holding the layers of cotton by means of a pair of segmental latch-arms 28. The segmental latch-arms 28 are pivoted near one end, as at 30, to one of the end bars of the platen-frame 24 and have their lower curved portions below the pivots thereof extended in opposite directions, while the upper ends of said arms are squared to form engaging shoulders 31, which normally engage beneath the free edges of the leaves 25 and prevent the same from swinging downward on their pivots when the compressed layer of cotton is being deposited on the platen from the roll 9 and lowered into the baling-box of the press. When the traveling platen 23 has been lowered into the baling-box of the press, the lower ends of the reversely-arranged latch-arms 28 come in contact with the bottom of the baling-box or with the compressed layer of cotton previously deposited therein and are caused to move on their pivots so as to carry the engaging shoulders 31 from beneath the free edges of the leaves 25. When thus released, the weight of the compressed layer of cotton on the platen-leaves will cause such leaves to open downward and deposit the cot-



ton within the baling-box. When relieved of the load of cotton, the return-springs 27 for the leaves will return the same to a position which permits the latch-arms 28 to swing into engagement again with the free edges of the leaves in the manner already explained. To provide for automatically raising and lowering the traveling platen 23, opposite pairs of suspension-cables 31<sup>a</sup> are employed, which cables are connected at their lower ends to the opposite sides of the platen-frame 24 and wind and unwind at their upper ends on the winding-drums 32, fitted to the supporting-shafts 33. The supporting-shafts 33 are journaled in suitable bearings at opposite sides of the supporting-frame 1 and extend longitudinally of said frame, both of said shafts 33 being provided at one end with pulleys 34, connected by a belt 35, which insures a simultaneous movement of the shafts in unison, thereby preserving the horizontal position of the platen while the same is being raised and lowered. The combined weight of the platen and the load of cotton thereon is sufficient to automatically lower the platen into the baling-box of the press; but when the platen is relieved of its load of cotton the same is automatically returned to its normal position beneath the two compressing-rolls 6 and 9 by means of a weighted cable 36 winding and unwinding at its upper end on a weight-drum 37, preferably fitted to one of the shafts 33 at one end of the latter. The traveling platen is locked in its elevated position by means of a latch-lever 38, pivoted, as at 39, to one side of the supporting-frame 1 and provided at its lower end with an angled catch-arm 40, adapted to engage with a ratchet-notch 41, preferably formed in one end of one of the winding-drums 32. The upper inclined portion of the lever 39 normally rests by gravity on a releasing-stud 42, projected from one of the sliding bearing-boxes 11 for the movable compressing-roll, so that when the said compressing-roll is forced back to its initial position the catch-arm 40 will be disengaged from the notch 41, and thereby release the platen to permit the same to descend into the baling-box.

It will be understood that the platen is locked in its elevated position during the period that a compressed layer of cotton is being severed and delivered to the platen from the movable compressing-roll 9; but when such compressing-roll has spread the compressed layer of cotton onto the platen the same will be quickly forced back to a position against the fixed roll 6, ready to take up a fresh supply of cotton to form another compressed layer, and this movement of the movable compressing-roll serves to release the platen in the manner described. The platen ascends during the compression and wrapping of the bat on the movable roll 9 and the notch 41 automatically rides into engagement with the catch-arm 40, as will be readily understood.

It will be understood that the movable compressing-roll 9 may be made in suitable sizes, according to the number of compressed layers of cotton which it is desired to use to form the square bale of cotton, and it will also be understood that any changes in the form and proportion of parts and in the minor details of construction may be made without departing from the spirit or sacrificing any of the advantages of this invention.

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

1. In combination with the baling-chamber of a press, of pressing mechanism having means for accumulating a single bat of cotton and compressing the same into an endless layer of predetermined size, means for automatically cutting said compressed layer into a single sheet, and separate means for carrying the sheet singly in a flat spread-out condition into the baling-chamber of the press and depositing the same therein.

2. In a machine of the class described, the combination with the baling-chamber of a press, of pressing mechanism having means for accumulating a single bat of cotton and compressing the same into an endless layer of predetermined size, means for automatically cutting said compressed layer into a single sheet, and means, operating below, and within the vertical plane of said compressing mechanism, for receiving the sheet in a flat spread-out condition, carrying the same singly in such condition within the said baling-chamber of the press, and automatically depositing the same therein upon the previously-deposited sheet, substantially as described.

3. In a machine of the class described, compressing mechanism having a pair of compressing-rolls, one of which is movable automatically toward and away from the other roll, and is provided with an adhesive surface for taking up a bat of cotton and accumulating the same into a compressed layer of predetermined size, means for severing the compressed layer on the roll to form a single cut sheet, and means for feeding said cut sheet singly in a spread-out condition to the baling-box of a press, substantially as set forth.

4. In a machine of the class described, compressing mechanism having a pair of horizontal rotating compressing-rolls, one of which is movable and provided with an adhesive surface, an automatically-operating knife arranged beyond the movable roll within the plane of its movement, and set into action by the cotton layer when it reaches a predetermined thickness, and a feeding device for carrying the cut compressed sheet to the baling-box of a press, substantially as set forth.

5. In a machine of the class described, the frame, a fixed rotating compressing-roll mounted in said frame, a movable rotating compressing-roll arranged within the frame at one side of the fixed roll and having an ad-



hesive surface, a drive-belt passing over and covering the entire surface of the fixed compressing-roll to form a cushion for the bat of cotton, means for severing the compressed layer of cotton on the movable roll, and means for feeding the compressed layer in a flat condition to the baling-box of a press, substantially as specified.

6. In a machine of the class described, the frame, a fixed rotating compressing-roll mounted in the frame, a movable rotating compressing-roll supported in sliding bearing-boxes and provided with peripheral guard-flanges at its ends, and with an adhesive surface, pressure devices connected with the sliding bearing-boxes for the movable roll to provide for normally pressing the same in a direction toward the fixed roll, an automatically-operating knife arranged beyond one side of the movable roll and set into action by the engagement of the cotton therewith, and a feeding device for carrying the compressed layer of cotton in a flat condition to the baling-box of a press, substantially as specified.

7. In a machine of the class described, the frame, a pair of horizontal rotating compressing-rolls mounted in the frame, one of said rolls being movable and provided with an adhesive surface, an automatically-movable separating-knife arranged within the frame beyond one side of the roll, and below the axis of rotation of the latter, said knife having a horizontal oscillatory supporting-bar pivotally supported at its ends, and a plurality of knife-blades projected from one side of said bar and provided with chisel-points adapted to be engaged by the cotton on the movable roll and lifted to a plane for penetrating the entire layer on the roll, and a feeding device for carrying the compressed layer of cotton in a flat condition to the baling-box of a press, substantially as specified.

8. In a machine of the class described, compressing mechanism having a pair of compressing-rolls, one of which is automatically movable toward and away from the other roll and provided with an adhesive surface for taking up the bat of cotton, means for severing the compressed layer of cotton on said movable roll, and for separating the same therefrom, a traveling platen arranged for vertical movement below the movable compressing-roll and adapted to receive thereover the compressed layer of cotton in a flat condition, and means for automatically raising and lowering said platen, substantially as specified.

9. In a machine of the class described, compressing mechanism having means for accumulating a single bat of cotton and compressing the same into a layer of predetermined size, a vertically-traveling platen arranged to work below the compressing mechanism and into the baling-box of the press, said platen having a drop-bottom, and means for severing the compressed layer of cotton and deliv-

ering the same in a spread-out condition onto the platen beneath the compressing mechanism, substantially as described.

10. In a machine of the class described, compressing mechanism having means for compressing a bat of cotton into a layer of predetermined size, a traveling platen arranged to work below the compressing mechanism and having a pair of pivotal leaves forming a drop-bottom, automatically-operating latches for supporting said leaves in a position for receiving and holding the bat of cotton, means for automatically raising and lowering the platen, and means for severing the compressed layer of cotton and delivering the same in a flat condition on the platen, substantially as specified.

11. In a machine of the class described, compressing mechanism having means for compressing a bat of cotton into a layer of predetermined size, a traveling platen arranged to work below the compressing mechanism, and comprising a rectangular frame, a pair of pivotal leaves mounted within said frame and pivotally supported at their outer corners, return-springs engaging the said leaves to normally elevate the same, and a pair of segmental latch-arms reversely arranged to each other and pivoted near one end to one of the end bars of the platen-frame, the ends of said latches adjacent to their pivots being adapted to engage beneath the free edges of said leaves, means for automatically raising and lowering the platen, and means for severing the compressed layer of cotton and delivering the same in a flat condition on the platen, substantially as specified.

12. In a machine of the class described, the frame, a pair of compressing-rolls mounted in the frame, one of said rolls being movable and adapted to have compressed thereon a layer of cotton, a traveling platen arranged to work below the compressing-rolls and having a drop-bottom, a pair of oppositely-located supporting-shafts, having a belt connection and arranged longitudinally of the frame at opposite sides thereof, said shafts having winding-drums, one of which is provided with a ratchet-notch, suspension-cables winding on said drums and connected with the platen, a weighted drum connection with one of said shafts, a latch-lever pivotally supported at one side of the frame, and having a catch-arm adapted to engage with said ratchet-notch, said latch-lever having the upper portion thereof engaged by a projection carried with the movable roll, and means for severing the layer of cotton and delivering the same in a flat condition on the platen, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY REMBERT.

Witnesses:

C. A. HALL, Jr.,  
THOS. EVANS.