

A. L. TREESE.

COTTON PRESS.

APPLICATION FILED JULY 2, 1910.

980,706.

Patented Jan. 3, 1911.

3 SHEETS-SHEET 1.

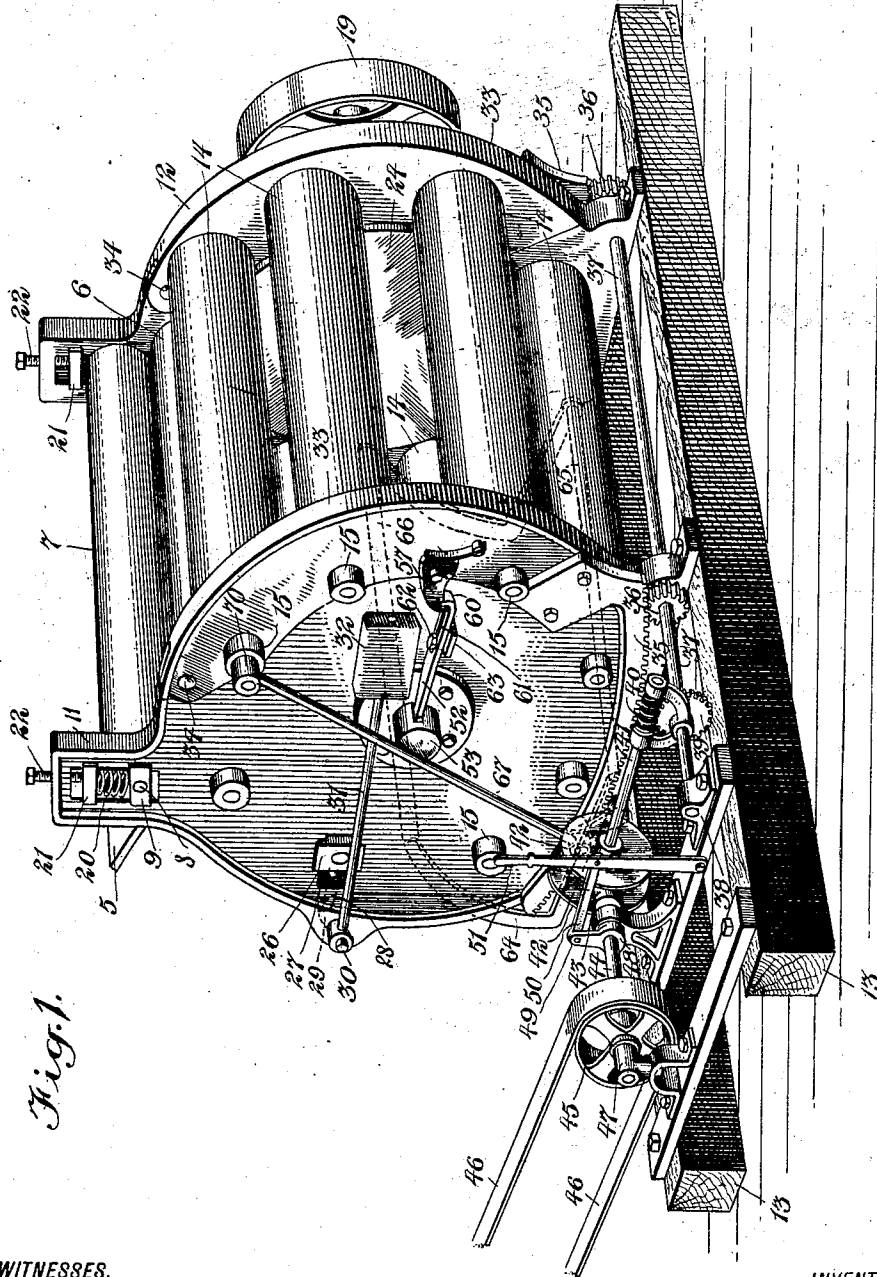


Fig. 1.

WITNESSES.

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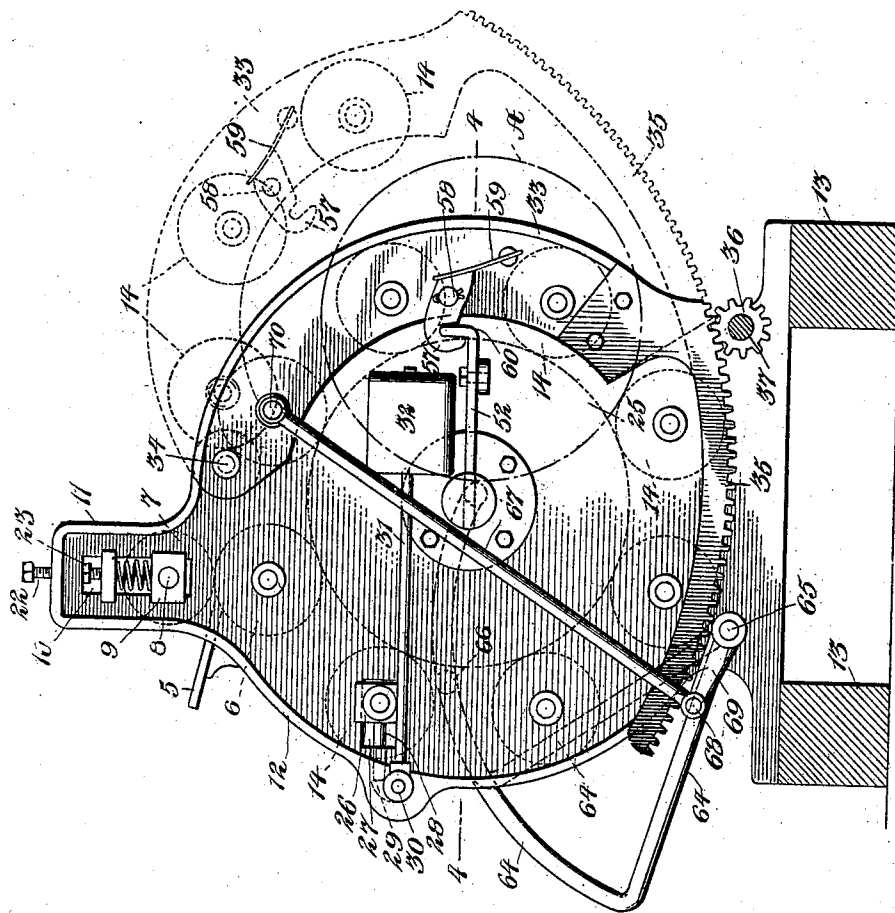
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3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS-SHEET 3.

Fig. 4.

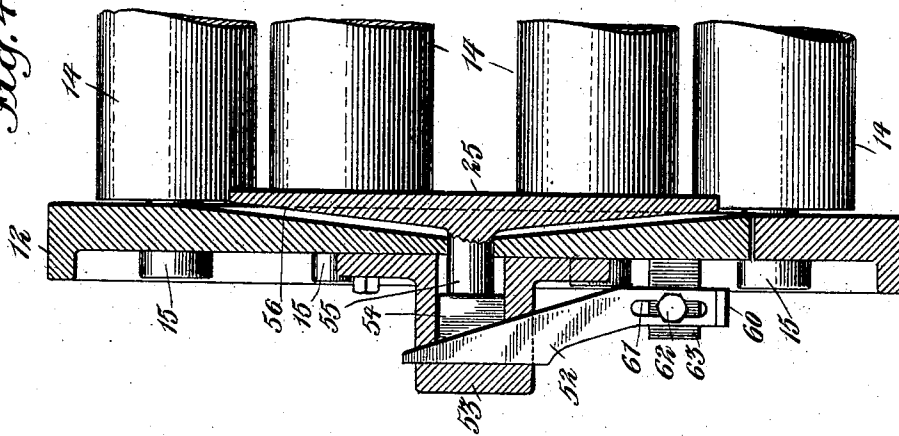
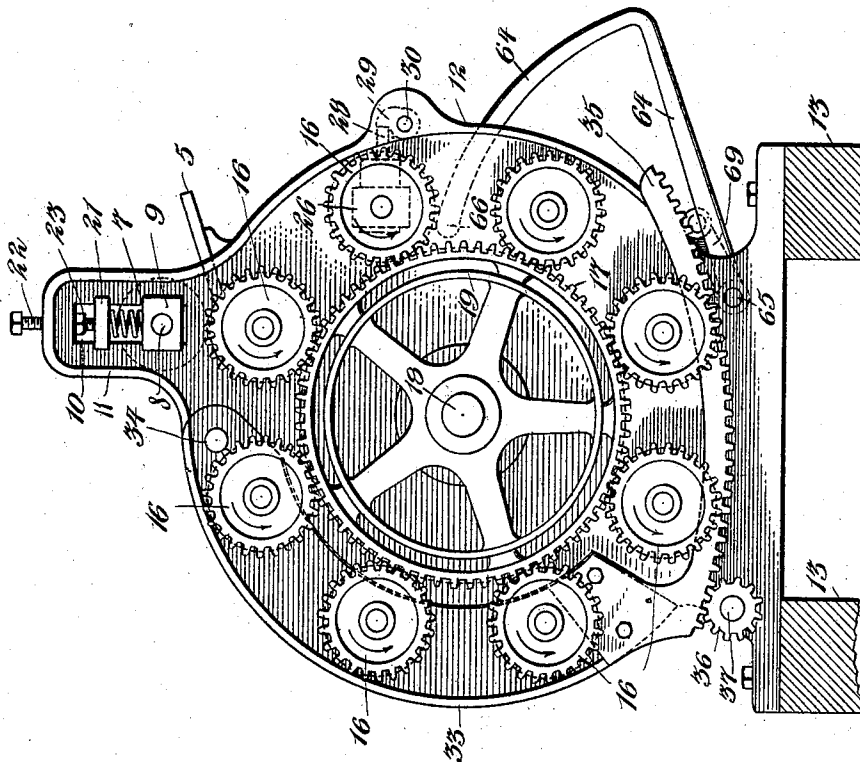


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALBERT LEROY TREESE, OF JENNINGS, OKLAHOMA, ASSIGNOR TO WILLIAM L. CLAYTON, BENJAMIN CLAYTON, AND MONROE D. ANDERSON, ALL OF OKLAHOMA, OKLAHOMA.

COTTON-PRESS.

980,706.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed July 2, 1910. Serial No. 570,184.

To all whom it may concern:

Be it known that I, ALBERT LEROY TREESE, a citizen of the United States, and a resident of Jennings, in the county of Pawnee and State of Oklahoma, have invented a new and Improved Cotton-Press, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a press to roll loose cotton into a sheet and the sheet into a roll or bale shaped under a uniform pressure; to provide means for delivering from the press the bale when rolled; to provide means for ascertaining when the desired pressure is exerted upon the bale; to provide means whereby any pressure is removed from the bale automatically; and to provide a mechanism the construction and arrangement of which is simple, durable and efficient.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a perspective view of a press constructed and arranged in accordance with the present invention; Fig. 2 is an end elevation of the same; Fig. 3 is an elevation of the end of the machine opposite that shown in Fig. 2; and Fig. 4 is an enlarged detail view in horizontal section taken on the line 4—4 in Fig. 2.

The present invention is an improvement upon a cotton press for which Patent No. 653,191 was granted to me on July 3, 1900. The method of forming the bale in the present machine is substantially identical with that shown and described in the patent above mentioned. In both machines the cotton in its loose state is fed over a table 5 between feed rollers 6 and 7. The feed roller 7 is an idler, and is provided with bearing gudgeons 8 mounted in bearings formed in boxes 9. The boxes 9 are slidably mounted in a slot 10 formed in vertical extensions 11, 11 of the cheek pieces 12, 12.

The cheek pieces 12, 12 are suitably mounted on framing sills 13, 13 and are tied in mutual relation by any suitable well known devices. Between the cheek pieces 12, 12, and having bearings therein, are

rollers 14, 14. The rollers 14, 14 are provided with suitable gudgeon bearings mounted in boxes 15, 15. The rollers 14, 14 and the roller 6 are of the same construction. Each of the rollers is provided at one end thereof with gear wheels 16, 16 fixedly mounted thereon. The gear wheels 16, 16 are tooth engaged with a large gear wheel 17 fixedly mounted on a short shaft 18, on which is fixedly mounted a driven pulley 19. This construction is best seen in Fig. 3 of the drawings. By means of this connection it will be noted that the driving mechanism whereby the rollers 14, 14 and 6 are rotated imparts the same rotary direction to each of the said rollers. The object and purpose of this is that when the bale is formed within the rollers it is moved to rotate on its own axis by the frictional contact with said rollers, the operation whereof serves to roll the bale constantly in one direction, as set forth in the patent above referred to. It will be noticed that whereas in the above mentioned patent the rollers are held in close approximation, in the present disclosure the rollers are separated. It has been found that it is not necessary that the rollers should be held in nested relation, by reason of the fact that the sheet of cotton is transferred from roller to roller in the separated as well as in the closely approximated position. The separation of the rollers 14, 14 simplifies the construction whereby the narrow gear wheel 17 is substituted for the wide faced gear wheel used in the construction shown in the former patent.

As above stated, the roller 7 is an idler and is rotated by frictional contact with the wheel 6 and the interposed cotton when the same is introduced between the said rollers 6 and 7. The roller 7 is held in contact with the roller 6 under spring pressure, the pressure being imparted by spiral springs 20, 20. The springs 20, 20 are interposed between the boxes 9 and movable blocks 21, 21. The blocks 21, 21 rest upon and are controlled by screw bolts 22, 22. By manipulating the screw bolts 22 to depress or permit the rise of the said blocks 21, 21, the pressure on the bearing boxes 9, 9 and the roller 7 is varied. When the proper adjustment is arrived at the bolts 22, 22 are held in position by lock nuts 23.

It will be understood that in the operation of a machine thus constructed, the driven pulley 19 being constantly operated, the rollers 14, 14 and 6 are rotated in unison therewith. When the loose cotton is fed upon the table 5 and passed through the rollers 6 and 7, it is matted into a sheet, the thickness whereof depends upon the pressure of the springs 20, 20 and the quantity of loose cotton being fed. The sheet of cotton thus formed is carried by the roller 6 into the circular space between the rollers 14, 14 and 6, and between the disks 24 and 25. The disks 24 and 25 fill substantially the entire space between the face of the rollers 6 and 14, 14 and form headers for the bale under construction. The loose material is fed over the table 5 so that a continuous sheet is introduced into the circular space between the adjacent rollers, which gradually forms the sheet thus delivered into a loosely wrapped but continuously increasing roll or bundle. When the bundle has completely filled the circle between the inner peripheries of the rollers 6 and 14, 14, the bale begins to receive the compression. The compression is applied by an increase of the sheet of material being fed over the table 5. It is obvious that the material thus added, in time results in the compression of a substantially solid bale or cylinder of compressed cotton rotating in unison with the rollers 14, 14 and 6 on its own center within the space between the disks 24 and 25. The disks 24 and 25, it will be understood, are rotatively mounted and are rotated with the bale during its formation.

One of the rollers 14 is mounted in movable bearing boxes 26. The boxes 26 are slidably mounted in slots 27 formed in each of the cheek pieces 12, 12 to form guides for the movement of the said boxes 26. Extended in guided relation from the outer face of the boxes 26 are thrust pins 28 which bear against the vertical faces of projections 29 fixedly connected with and set out from a shaft 30. The shaft 30 is mounted in suitable bearings in the cheek pieces 12, 12, and is provided at one end thereof with a rod 31, which is fixedly connected to the said shaft 30. The rod 31 is provided to support a dead weight 32, which is adjustably and fixedly mounted upon the said rod. The weight 32 operates through the rod 31, shaft 30, projections 29 and pins 28, to maintain the bearing boxes 26 in the advanced position where the periphery of the roller 14 mounted in the said boxes aligns in the circular path of the rollers 14, 14 and 6. When, however, in the operation of forming the bale above described the resiliency of the bale becomes sufficient to force outward the roller 14 connected with the boxes 26, then the shaft 30 is rotated to

lift the weight 32. The attendant upon the machine is apprised by this action of the shaft 30 and the weight 32, that the bale formed within the machine has received the pressure desired. When the fact that the proper pressure has been applied to the bale is thus ascertained, the feed of the material is arrested and the machine is opened to deliver the bale therefrom.

For the purpose of delivering the bale I have provided front plate sections 33, 33 which are pivoted at 34, 34. The sections 33, 33 carry those rollers 14, 14 which are disposed across the face of the machine. Each of the sections 33, 33 is provided with a rack toothed extension 35, 35. The rack toothed extensions 35, 35 are formed concentrically with the pivots 34, 34, and are held in toothed engagement with small pinions 36, 36, which are fixedly mounted on a shaft 37. The shaft 37 is extended transversely across the machine and between the cheek pieces 12, 12, engaging the extensions 35, 35 on each side of the machine. The shaft 37 is extended beyond the machine and mounted in a bearing standard 38 disposed on one of the sills 13. On the extended portion of the shaft 37 is fixedly mounted a worm gear wheel 39, which is held in threaded engagement with a worm 40. The worm 40 is mounted upon a short counter-shaft 41, as seen particularly in Fig. 1 of the drawings. The counter-shaft 41 is suitably mounted between the sills 13, 13, and is provided with friction disks 42, 42. The disks 42, 42 are coned to properly engage the cone pulley 43. The pulley 43 is fixedly mounted on a shaft 44, which is suitably mounted in bearing standards supported by the sills 13, and is provided with a driven pulley 45, which is operated by a belt 46 from any suitable source of power. The outer bearing 47 for the shaft 44 is vertically pivoted, while the inner bearing for the said shaft is mounted in an eccentric sleeve 48. Connected with the eccentric sleeve 48 is an arm 49, to which a link 50 is pivotally connected. The link 50 is connected to a lever 51, which is pivotally mounted on the standing frame of the machine. By manipulating the lever 51 the sleeve 48 is rotated so that the shaft 44 is swung on the pivot of the bearing 47 which causes the pulley 43 to impinge upon one or the other of the disks 42, 42, and alternately.

As one or the other of the disks 42, 42 is rotated by the pulley 43, the shaft 41 and the worm 40 are rotated in relatively opposite directions. The result of this rotation of the worm 40 is to impart to the shaft 37 and the pinions 36, 36 thereon opposite rotatory movement. The rotation of the pinions 36, 36 in the one direction operates upon the

rack extensions 35, 35 to lift the sections 33, 33 to the position shown in dotted lines in Fig. 2 of the drawings, wherein the rollers 14, 14 are removed from the front of the machine and the bale A, as indicated by broken lines in Fig. 2 of the drawings, is at liberty to be ejected therefrom.

Prior to ejecting the bale as above described the same is wrapped or covered by burlap or similar material, a strip whereof is introduced between the rollers 14, 14 and the bale while the same is being rotated therein. The cover may be sewed or otherwise secured while the bale is held under pressure of the rollers 14, 14. When this is done it will be understood that the bale is prevented from outward spring or expansion when the front section of rollers is removed, and that the tension laterally of the bale against the disks 24 and 25 remains as prior to the lift of the sections 33, 33. It is to relieve this pressure and to facilitate the ejection of the bale, that I have provided the wedge-shaped member 52 to hold the disk 25 in its advanced or normal position. The wedge-shaped member 52 is extended through guide perforations in a hollow hub 53 to extend behind a block 54. The block 54 is a loose member and serves to receive the end thrust of a shaft 55 formed on the back of the disk 25. The disk 25 rotates in a bearing formed in the center of the cheek pieces 12, and when retracted fits within a recess 56 formed on the inner surface of the said cheek pieces, as seen particularly in Fig. 4 of the drawings.

The member 52 is both locked in and retracted from its advanced position by a latch 57. The latch 57 is pivoted at 58, and is held in operative position by a leaf spring 59. The hook end of the latch is extended over an upturned end 60 of the member 52. The latch 57 is so shaped that when the sections 33, 33 are drawn to close position, as shown in full lines in Fig. 2, the body of the said latch strikes upon the upturned end 60 of the member 52 and forces the said member 52 to its forward position behind the bearing block 54, forcing the said bearing block and disk 25 connected therewith into the forward or normal position of the disk 25 assumed by it when the bale is being formed. In the closed position of the sections 33, 33 thus mentioned, the hook end of the latch 57 is drawn down and over the upturned end 60 of the member 52. When now in the operation of the machine the sections 33, 33 are lifted to the delivery position of the machine, the latch 57 draws upon the upturned end 60 and withdraws the member 52 from behind the block 54, and permits the disk 25 to seat in the recess 56, thus relieving from pressure the bale contained within the machine. The member 52 is provided with an elongated slot 61, in

which is mounted a guide bolt 62, the bolt 62 being rigidly secured in a bracket 63 extended from the side of the cheek pieces 12.

It is to assist in the ejection of the bale when formed that I have provided the hook-shaped levers 64, 64. The levers 64, 64 are fixedly mounted upon a shaft 65 extending below the rollers 14, 14 and transversely under the machine, having bearings formed in the cheek pieces 12, 12. The free ends of the levers 64 are connected by a cross bar 66. The cross bar 66 is normally disposed as shown in Fig. 2 of the drawings, adjacent to the outer surface of the bale when formed between the rollers 14, 14 and 6. When in the course of operation the shaft 65 is rotated, the levers 64, 64 are extended upward and forward to impinge upon the completed bale to force the same over the bottom rollers 14 and through the space provided for the ejection of the said bale. The shaft 65 is rotated in the manner described by a connecting rod 67, which is pivotally connected at 68 to a crank arm 69, which is fixedly mounted on the said shaft 65. The rod 67 is pivotally connected at 70 with the sections 33, 33, and at a distance from the pivot 34 thereof approximately equal to the length of the crank arm 69. This adjustment of the rod 67 may be altered to suit the operation of the machine, it being intended only that the bar 66 connected with the levers 64 shall be moved forward sufficiently to roll the completed bale out of the machine.

It will be seen that by the employment of the levers 64, 64 and the rod 67 connected with the sections 33, 33, that when and as the sections 33 are opened, as shown in dotted lines in Fig. 2, by the operation of the shaft 37 and pinions 36, the levers 64 and the rod 66 carried thereby are rocked upward and inward to force the bale A from its position between the disks 24 and 25, the latter of which has been released from its engagement with the bale to deliver the said bale, as shown in Fig. 2 of the drawings. It will also be seen that the delivery of the bale has been controlled by the attendant manipulating the lever 51 to rotate the shaft 37, and after the lifting of the rod 31 has indicated to him that the proper pressure has been applied to the bale being formed. With the delivery of the bale it is obvious that the roller 14 mounted in the bearing boxes 26 and controlled by the weight 32 on the rod 31 is moved into its normal or advanced position.

With the delivery of the bale A the attendant reverses the lever 51, and by rocking the shaft 44 to cause the pulley 43 to engage the opposite disk 42, he reverses the rotation of the shaft 37 and gears 36 connected therewith, so that the sections 33 are closed again into the operative position. As

above stated, with the closure of the sections 33, the disk 25 is advanced to its normal position to receive the next formed bale.

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

1. A cotton press, comprising a plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; and a yielding member arranged to rest upon the surface of the bale as formed and to be moved outwardly thereby.

2. A cotton press, comprising a plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; a yielding member arranged to rest upon the surface of the bale as formed and to be moved outwardly thereby; and a pressure device connected with said yielding member to maintain the said member in position against the expansive force of said bale.

3. A cotton press, comprising a plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; movable bearing mountings for one of said rollers; a lever arranged to advance the said mountings to dispose the said roller in a circular arrangement with the other of said rollers; and a yielding device connected with said lever to move the said mountings toward the center of said cylindrical space.

4. A cotton press, comprising a plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; movable bearing mountings for one of said rollers; a lever arranged to advance the said mountings to dispose the said rollers in a circular arrangement with the other of said rollers, said lever being horizontally disposed; and a sliding weight adjustably mounted on said lever to maintain the said bearings in the advanced position.

5. A cotton press, comprising a supporting frame having disk-like cheek pieces, a plu-

65 rality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet 70 within the said cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the supporting frame of said press; and 75 means connected with said plates for lifting the same to permit the ejection of the bale from said cylindrical space.

6. A cotton press, comprising a supporting frame having disk-like cheek pieces, a 80 plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a 85 sheet and for introducing the sheet within the said cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the 90 supporting frame of said press; a rotary shaft transversely disposed in the said frame; a plurality of pinions fixedly mounted on said shaft; a plurality of rack bars connected with said plates and extended therefrom 95 in a curved line concentric with the pivots of said plates; and means for rotating said shaft.

7. A cotton press, comprising a supporting frame having disk-like cheek pieces, a 100 plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a 105 sheet and for introducing the sheet within the said cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the 110 supporting frame of said press; a rotary shaft transversely disposed in the said frame; a plurality of pinions fixedly mounted on said shaft; a plurality of rack bars connected with said plates and extended therefrom 115 in a curved line concentric with the pivots of said plates; and a power driven mechanism for rotating said shaft, embodying rotative reversing devices.

8. A cotton press, comprising a supporting frame having disk-like cheek pieces, a 120 plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; 125 means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; a plurality of

plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the supporting frame of said press; a rotary shaft transversely disposed in the said frame; a plurality of pinions fixedly mounted on said shaft; a plurality of rack bars connected with said plates and extended therefrom in a curved line concentric with the pivots of said plates; a power driven mechanism for rotating said shaft embodying a worm gear operatively connected with said shaft; a plurality of friction disks operatively connected with said worm gear; and a power driven shaft operatively connected with the source of power and having a friction pulley disposed in operative relation with and between said disks; and manually operative means for shifting the engagement between said pulley and said disks to reverse the rotation of the said worm gear.

9. A cotton press, comprising a supporting frame having disk-like cheek pieces, a plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the supporting frame of said press; means connected with said plates for lifting the same to permit the ejection of the bale from the said cylindrical space; and means arranged to be inserted between certain of said rollers from the side opposite said plates to impinge upon the bale to force the same outward from said cylindrical space.

10. A cotton press, comprising a supporting frame having disk-like cheek pieces, a plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the supporting frame of said press; means connected with said plates for lifting the same to permit the ejection of the bale from said cylindrical space; and means connected with said plates for discharging the bale from said cylindrical space as and when the said plates are raised.

11. A cotton press, comprising a supporting frame having disk-like cheek pieces, a plurality of rollers disposed in surrounding relation about an interior cylindrical space;

means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the supporting frame of said press; means connected with said plates for lifting the same to permit the ejection of the bale from said cylindrical space; a plurality of levers pivotally mounted in the frame of said press and having extensions adapted to pass into said cylindrical space and to impinge upon and eject the bale therefrom; and means for operatively connecting said levers and said plates to cause the said plates and said levers to operate in unison.

12. A cotton press, comprising a supporting frame having disk-like cheek pieces, a plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the supporting frame of said press; means connected with said plates for lifting the same to permit the ejection of the bale from said cylindrical space; means for operatively connecting said levers and said plates to cause the said plates and said levers to operate in unison; and a plurality of tie rods pivotally connected with said levers and said plates to cause the said plates and said levers to operate in unison.

13. A cotton press, comprising a supporting frame having disk-like cheek pieces, a plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the supporting frame of said press; means connected with said plates for lifting the same to permit the ejection of the bale from said cylindrical space; a plurality of disks disposed to form the ends of said cylindrical space and arranged to receive the thrust of the compressed bale; and means connected with said plates for releasing the said disks to permit the same to move laterally.

14. A cotton press, comprising a supporting frame having disk-like cheek pieces, a

plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the supporting frame of said press; means connected with said plates for lifting the same to permit the ejection of the bale from said cylindrical space; a plurality of disks disposed to form the ends of said cylindrical space and arranged to receive the thrust of the compressed bale; and a removable thrust bearing for one of said disks, said bearing being operatively connected with said plates to be moved to permit the said disk to yield to the end pressure of the bale.

15. A cotton press, comprising a supporting frame having disk-like cheek pieces, a plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the said cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the supporting frame of said press; means connected with said plates for lifting the same to permit the ejection of the bale from said cylindrical space; a plurality of disks disposed to form the ends of said cylindrical space and arranged to receive the thrust of the compressed bale; a movable thrust bearing block arranged to form a seat for the pivot of one of said disks; and a wedge-

shaped member disposed to the rear of said bearing block and operatively connected with said plates to be withdrawn from contact with the said block when and as the said plates are raised.

16. A cotton press, comprising a supporting frame having disk-like cheek pieces, a plurality of rollers disposed in surrounding relation about an interior cylindrical space; means for rotating said rollers at equal peripheral speeds in the same rotary direction; means for compressing loose cotton into a sheet and for introducing the sheet within the cylindrical space; a plurality of plate sections forming bearings for and supporting a series of said rollers, said plates being pivotally mounted near the top of the supporting frame of said press; means connected with said plates for lifting the same to permit the ejection of the bale from said cylindrical space; a plurality of disks disposed to form the ends of said cylindrical space and arranged to receive the thrust of the compressed bale; a movable thrust bearing block arranged to form a seat for the pivot of one of said disks; a wedge-shaped member disposed to the rear of said bearing block and operatively connected with said plates to be withdrawn from contact with the said block when and as the said plates are raised; and means connected with said plates for forcing the said wedge-shaped member into position in the rear of said block when and as the said plates are lowered.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ALBERT LÉROY TREESE.

Witnesses:

FRANK ADAMS,
FRED F. SMITH.