

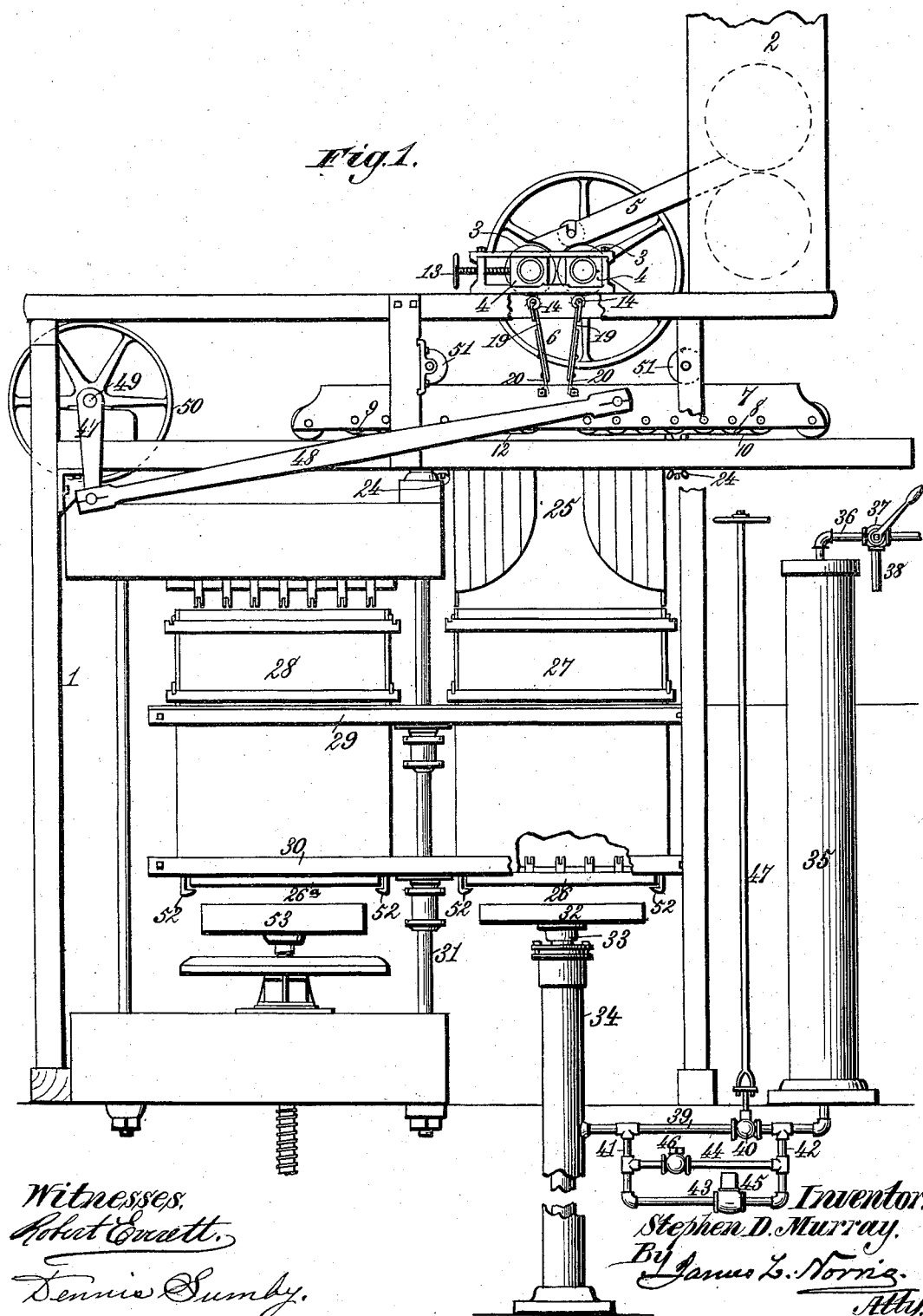
(No Model.)

3 Sheets—Sheet 1.

S. D. MURRAY.
COTTON PRESS.

No. 532,386.

Patented Jan. 8, 1895.



Witnesses,
Robert Enatt.
Lennie Sundry.

Inventor,
Stephen D. Murray.
By *James L. Norris.*
Atty.

(No Model.)

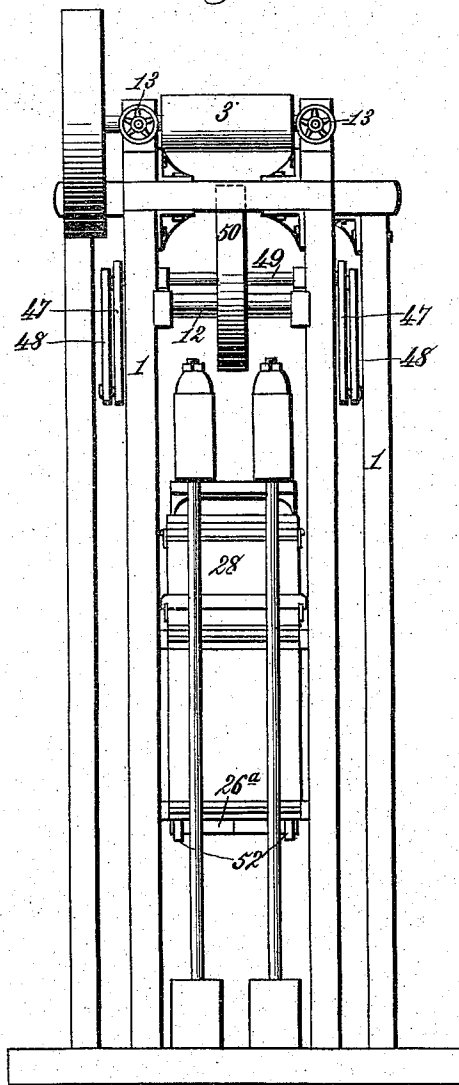
3 Sheets—Sheet 2.

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Fig. 2.



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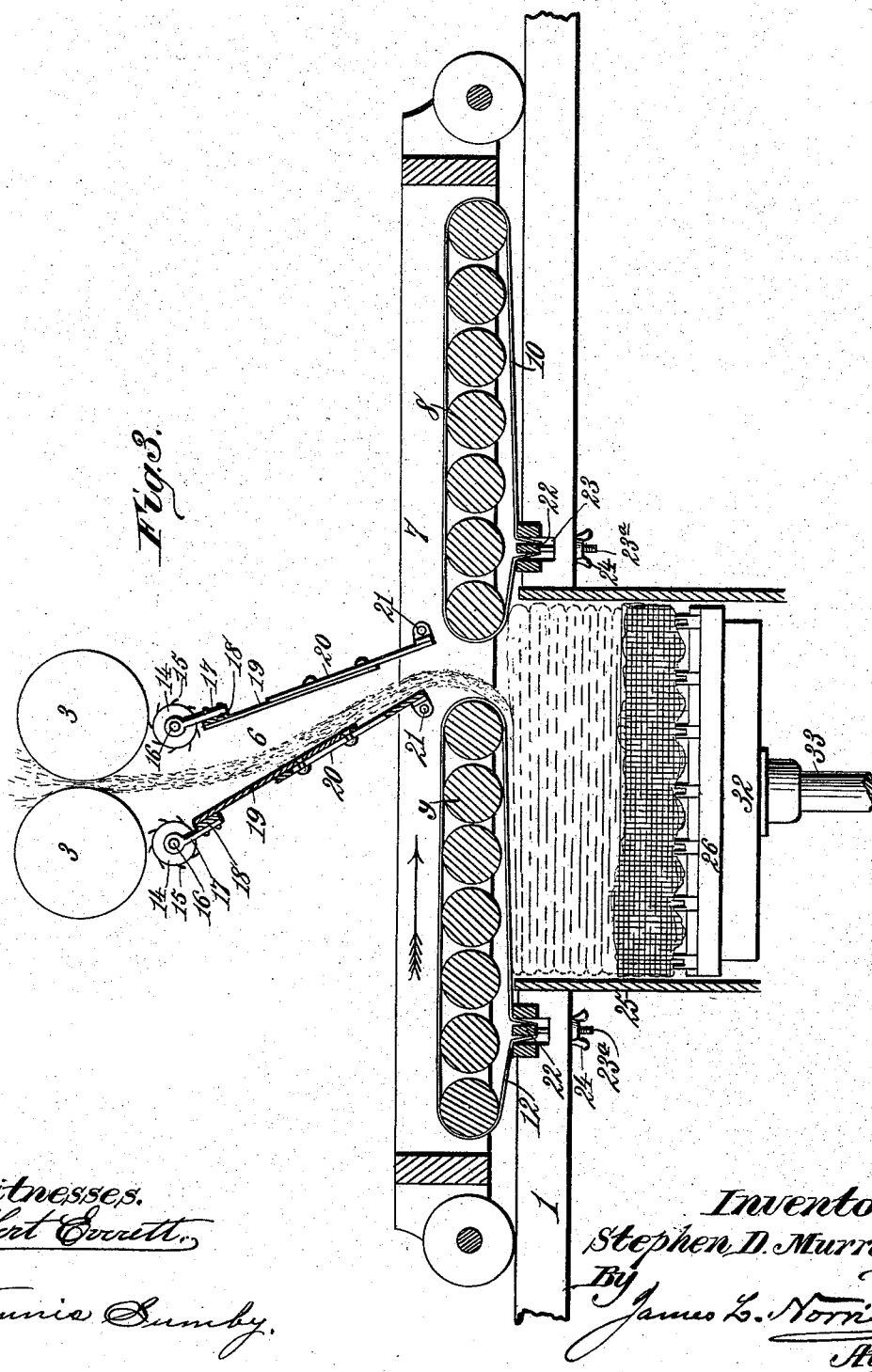
(No Model.)

S. D. MURRAY.
COTTON PRESS.

3 Sheets—Sheet 3.

No. 532,386.

Patented Jan. 8, 1895.



UNITED STATES PATENT OFFICE.

STEPHEN D. MURRAY, OF DALLAS, ASSIGNOR TO THE REMBERT ROLLER COMPRESS COMPANY, OF GALVESTON, TEXAS.

COTTON-PRESS.

SPECIFICATION forming part of Letters Patent No. 532,386, dated January 8, 1895.

Application filed June 16, 1894. Serial No. 514,788. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN D. MURRAY, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented new and useful Improvements in Apparatus for Compressing and Baling Cotton, of which the following is a specification.

This invention relates to that type of apparatus adapted for continuously compressing and baling cotton in juxtaposition to the ginning machinery, by conducting cotton from the condenser to compressing rolls operating to progressively compress the fluffy mass into a compact bat or sheet which is laid in folds or laps and subsequently moved or transferred to a suitable baling press and subjected to final pressure to expel the air from between the folds or laps and enable the bale or package to be tied while under pressure, particularly as described in Letters Patent No. 441,022, issued November 18, 1890, to the Rembert Roller Compress Company.

The chief object of the present invention is to simplify apparatus of the general character alluded to, and render the same more effective, rapid, and desirable in practicable operation, for producing greater density and weight in proportion to the size of the bale or package.

The invention also has for its objects to distribute the cotton equally and uniformly in folds or laps in a folding chamber and then carry the same into a press box or chamber adapted to move or travel at the proper time for transferring the folded or lapped cotton bat or sheet to another point for the application of the final pressure to expel the air; to effectually prevent the folds or laps of the bat or sheet from expanding in the folding chamber during the folding operation, whereby a high degree of density and great weight are obtained in a bale of comparatively small dimensions or size; to provide more efficient, practicable and useful means whereby it is possible to rapidly transfer the folded or lapped portions of the bat or sheet to a baling press for final pressure and the application of the ties, without interfering with or interrupting the continuity of action of the ginning machinery; to provide new and improved

means for preventing the cotton adhering or sticking to the compressing rolls which reduce the cotton to a compact bat or sheet preparatory to disposing or laying the latter in folds or laps; to provide a new and improved chute or conductor for guiding the bat or sheet in transit from the compressing rolls to the fold-laying mechanism; to provide a new and improved continuously operating apparatus wherein the bat or sheet can be laid in folds or laps, held against expansion while being folded, and deposited in one press-box or chamber, while a previously lapped or folded portion in another press-box or chamber is being subjected to final pressure to expel the air; and to provide novel and efficient pressing and folding mechanism.

The general characteristic features of my invention concisely stated reside in conducting the cotton from a condenser to a compressing mechanism by which the cotton is powerfully compressed into a comparatively compact bat or sheet and delivered in folds or laps into a folding chamber in which the folds or laps are held against expansion by a pressure folder and a platen which automatically recedes in the same vertical plane when the pressure reaches or exceeds a pre-determined limit, the construction being such that when the requisite number of folds or laps have accumulated, they can be quickly deposited into a movable press-box or chamber for transferring the bale or package to another point for the final pressure which expels the air, and for the application of the ties while the bale or package is held under pressure in the press-box or chamber.

My invention involves the combinations or arrangements of parts and the mode of operation hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a broken side elevation of a cotton compressing and baling apparatus embodying my invention, Fig. 2 is a detail end elevation of the same; and Fig. 3 is a detail vertical sectional view, showing the compressing rolls, the fold-laying mechanism, the folding chamber, and the platen in its elevated position within the folding chamber.

In order to enable those skilled in the art

to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates a main frame or supporting frame-work of any construction suitable for the purpose in hand, but which, in the present example, is composed of upright and horizontal timbers connected together in any proper manner.

The ginning machinery may be of any known or suitable type, and therefore I do not deem it necessary to illustrate the same, but simply indicate by the numeral 2 a condenser, which may be constructed in any proper manner and constitute a part of or be arranged in suitable relation to the gin or gins.

The compressing rolls 3, mounted in boxes 4, are designed to run in superficial contact, and the fluffy cotton delivered thereto from the condenser through the medium of a suitable conduit 5 is powerfully compressed into a compact bat or sheet, which is delivered by a chute 6 to a pressure folder, or pressure and fold-laying mechanism, comprising a reciprocating carriage or frame 7, carrying two separated sets or gangs of pressure rollers 8 and 9, and endless or other appropriate belts 10 and 12 made of canvas or other material and passing respectively around the two sets or gangs of rollers, as best shown in Fig. 3. The compressing action of the rolls 3 may be regulated by means of adjusting screws, as at 13, Fig. 1, and these rolls may be rotated by a suitable pulley or wheel, mounted on the shaft of one of the rolls; but as any suitable belting or gearing can be employed for rotating the rolls further description and illustration are deemed unnecessary.

In ordinary roller compresses, as the cotton commences to pass down between the rolls, it is very liable to adhere or stick to one or the other compressing roll and wrap around the same, which is an objectionable feature that I entirely avoid by providing a wiper-roller 14 in operative connection with each compressing-roll, as shown in Fig. 1. The wiper-rollers may be of any suitable construction, but, as here shown, they are provided with free flaps 15 of any suitable material which operate to wipe the compressing rollers, prevent the bat or sheet adhering or sticking to either roll, and start the bat or sheet on its proper course into the chute 6 to the pressure-folder or pressure and fold-laying mechanism.

The wiper-rollers are rotated in any suitable manner in a direction the reverse of the direction of rotation of the compressing rolls, and these rollers are mounted on shafts 16, from which are suspended hangers 17, carrying cross-bars 18, sustaining the chute 6. This chute is extensible and retractible, and is suitably connected at its lower end with the side bars of the reciprocating carriage or frame 7, so that the chute is oscillated by the carriage or frame. The chute is made of two separate walls, each composed of two plates or sections 19 and 20, adapted to slide verti-

cally one upon the other in any suitable manner, whereby the chute is extensible and retractible.

The chute walls are suspended independent of each other and at their lower ends are connected with the side bars of the reciprocating carriage or frame through the medium of slip-bolts 21, which serve as hinge-joints during the reciprocating motion of the carriage or frame, and the oscillating movements of the chute. The slip-bolts are removable and replaceable, so that it is possible to readily gain access to the parts by removing the bolts and swinging back the walls of the chute. In the reciprocating movements of the carriage or frame the extensible and retractible construction of the chute is an important element.

The belts 10 and 12 which pass around the two sets or gangs of pressure rollers 8 and 9 are secured to tightener-bars 22, adapted to move vertically in suitable recesses 23 in the main frame, and so arranged that the edges of these recesses bear against portions of the belts, in such manner that by moving the bars downward, the belts are tightened for the purpose of presenting a smooth and even surface at all times to the cotton, and for compelling the outermost rollers to rotate as the carriage or frame is reciprocated. The tightener-bars are adjusted by means of screws 23^a, secured thereto and having thumb-nuts 24 adapted to bear against portions of the main frame, in such manner that by screwing up the nuts, the tightener-bars will be depressed and tighten the endless belts. The tightener-bars are very desirable features, in connection with the rollers journaled on the reciprocating carriage or frame, in that they render it possible to maintain proper tension on the belts and force the pressure-rollers to rotate during the operation of the carriage or frame. The tightener-bars are stationary as regards the reciprocating movements of the carriage or frame, and therefore it is possible to adjust the tightener-bars while the carriage is in motion, which is very advantageous.

In operative connection with the pressure folder is arranged a folding chamber 25, Figs. 1 and 3, which may be of any suitable construction so long as it is adapted to receive the compacted bat or sheet, and also receive a platen 26 or 26^a, as hereinafter explained. The folding chamber is a walled in space partially or wholly closed at all sides to properly confine or retain the folded bat or sheet of cotton.

The folding-chamber 25 is arranged directly beneath the pressure-folder, and in a plane below the folding-chamber is arranged a series of connected press-boxes or chambers, one of which is adapted to be brought directly beneath the folding chamber, so that the platen 26 can be elevated therethrough, and caused to enter the folding chamber and lie in juxtaposition to the reciprocating carriage or frame. As the carriage or frame 7

of the pressure folder reciprocates, the bat or sheet passing down between the two adjacent rollers of the sets of rollers 8 and 9, is continuously folded or lapped back and forth on the bagging previously laid on the platen, and the endless belts 10 and 12 are held by the bars 22, in such manner that the belts force the rollers to rotate and flatten and press down the folds or laps.

In the present example I have illustrated a duplex or double press-box composed of two boxes or chambers 27 and 28, suitably connected with upper and lower timbers 29 and 30 which are journaled centrally between their extremities on a perpendicular shaft 31, so that the press-boxes or chambers can rotate in a horizontal plane to place either press-box under a folding chamber with its platen 26, or 26^a, directly over the head 32 of a plunger 33, movable vertically in a hydraulic cylinder 34. The hydraulic cylinder is supported in any manner suitable for the conditions required, and it communicates with an upright receiver or reservoir 35, composed of a cylinder or stand-pipe of proper dimensions, all in a manner similar to a hydrostatic press.

The receiver or reservoir is designed to contain a body or column of water, or other liquid, and into the upper end of this receiver or reservoir extends a steam or other fluid pressure-pipe 36 having a three-way cock or valve 37, and an exhaust or waste-pipe 38, in such manner that in one position of the cock or valve, the steam or other fluid can enter the receiver or reservoir 35 above the body of water or liquid therein, while in another position of the cock or valve the steam or other fluid will pass off through the exhaust or waste-pipe 38.

The communication between the cylinder 34 and the receiver or reservoir 35 is established through the medium of a pipe connection 39 having a cock 40, and from opposite sides of the cock 40 depend pipes 41 and 42, connected at their lower and upper portions by approximately horizontal pipes 43 and 44. The pipe 43 is provided with a suitable pressure regulator 45, and the pipe 44 is supplied with a suitable check-valve 46. The cock 40 is designed to be operated through the medium of a vertical stem or rod 47 extending to a point in proximity to the three-way cock or valve 37, so that both can be conveniently manipulated by the attendant as occasion demands.

The carriage or frame 7 is designed to be reciprocated by any suitable mechanism, but preferably through the medium of cranks 47 and rods 48 connected at one end with the cranks and at the other end with the sides of the carriage or frame. The cranks 47 are mounted on a shaft 49 carrying a suitable wheel or pulley 50 adapted to be rotated in any suitable manner for rotating the cranks and imparting motion to the carriage or frame.

In the practical operation of the improved apparatus, the compacted bat or sheet passes

through the extensible and retractible chute to a point between the two sets or gangs of rollers 8 and 9, and, owing to the reciprocating motion of the carriage or frame, and the oscillatory motion of the chute, the bat or sheet of cotton is laid in folds or laps upon one of the platens 26 or 26^a, which has previously been elevated to the required position.

For the purpose of elevating the platen the three-way cock or valve 37 is operated to admit steam or other fluid under pressure, into the receiver or reservoir 35, which, as before stated, stands full or approximately full of water, or liquid, and the steam acting upon the column of water or liquid presses the latter downward and drives it through the check-valve 46 into the hydraulic cylinder 34. The hydraulic pressure in cylinder 34 drives the plunger 33 and head 32 upwardly and elevates the platen, as for example platen 26, into the folding-chamber 25, in juxtaposition to the reciprocating carriage or frame, and after the platen has been raised to the position mentioned, the three-way cock or valve is manipulated to cut off the steam from the receiver or reservoir, and the steam contained in the latter is permitted to escape through the exhaust side of the cock or valve, while the check-valve 46 holds the water in the hydraulic cylinder and prevents the plunger 33 and head 32 from descending.

The bat or sheet of cotton, laid by the pressure folder in folds or laps upon the platen, as hereinbefore explained, causes the pressure-folder to be forced upward against the roller bearings or wheels 51 which are journaled on the main frame directly above the side bars of the carriage or frame 7. These roller-bearings or wheels hold the carriage or frame from further upward motion, and as the folds of cotton accumulate, the pressure on the platen increases until such pressure reaches the point at which the pressure-regulator 45 has been set to open and permit some of the water to escape from the hydraulic cylinder into the receiver.

It is proper to here state that the pressure-regulator may be of any ordinary valved construction which will automatically open at a pre-determined pressure, for which reason I do not deem it necessary to further describe or illustrate the same in detail. In the practical operation of the pressure-regulator, if it requires, for example, one hundred pounds pressure to the square inch to open the pressure-regulator, the plunger and head of the hydrostatic press will not recede until the pressure on the folds of cotton reaches or exceeds one hundred pounds, whereupon the plunger and its head, and the platen, will automatically recede, whereby the pressure on the folds remains uniform and from the beginning to the end of the folding operation above referred to the platen will be automatically, gradually, and uniformly lowered as the cotton is folded under the pressure exerted by the pressure-folder.

When a sufficient quantity of cotton to form a bale of the desired weight—say five hundred pounds or more—is folded on the platen in the folding-chamber, the cock 40 is opened 5 by the attendant, and the water can then rapidly escape from the hydraulic cylinder 34 through pipe 39, into the receiver or reservoir 35, whereby the plunger 33 is caused to drop or quickly descend until the platen rests 10 upon and is supported by the hooks, shoulders, or supports 52, Fig. 1, in which position the folded cotton lies wholly within the press-box or chamber, as for example the press-box or chamber 28. The press-boxes are now rotated 15 horizontally for the purpose of placing the loaded box 28 over the screw or other baling press 53, and the empty press-box or chamber 27 beneath the folding chamber 25. The press 53 is then operated to exert the 20 final pressure to expel the air from between the folds, after which the ties are applied, so that a beautiful bale is obtained having a density equal to, or greater than that required in a compressed bale of cotton, such density 25 being, at least, twenty-two and one-half ($22\frac{1}{2}$) pounds to each cubic foot in the bale. The flooring around the press-boxes or chambers rotates therewith, and the small quantity of cotton dropping from the pressure-folder, or 30 fold-laying mechanism, while the press-boxes or chambers are being rotated, is picked up and laid upon the receiving platen as the latter rises, as hereinbefore explained.

When the press-boxes or chambers have 35 been rotated, as above explained, to place the loaded box or chamber 28 over the screw-press 53, and the empty box or chamber 27 beneath the folding chamber 25, the three-way cock or valve 37 is operated by the attendant to permit steam to enter the receiver 40 or reservoir 35, when the operations hereinbefore described are repeated.

The operation of lowering the receiving platen with the folded cotton thereupon and 45 rotating the press-boxes or chambers can be accomplished very easily and quickly, and does not interfere with the continuous operation of the fold or lap-laying mechanism, or in fact with any other part of the apparatus.

When the press-boxes or chambers are 50 turned or rotated, as above mentioned, and while the cotton is being folded on the receiving platen, the screw or other baling-press is operated to raise it against the loaded platen, and thus expel the air from between the folds 55 or laps of cotton which have been previously compressed, for the purpose of reducing the folds or laps to the required density, and to enable the ties to be applied while the bale 60 is held under pressure.

The screw-press illustrated is a simple type of press suitable for the purpose in hand, but it is obvious that in order to impart this final pressure to the folded cotton, any ordinary 65 or desired construction of press can be employed without affecting the spirit of my invention.

In the operation of the apparatus, as above explained, the folded bat or sheet of cotton is transferred to the screw or other press, while 70 it is contained in one of the movable press-boxes or chambers, and this is important, in that it materially facilitates the transfer of the folded cotton from beneath the pressure-folder or fold-laying mechanism to the point 75 where it is to receive the final pressure and be tied.

In my invention the folding chamber and the platen are disconnected from the pressure-folder, and do not reciprocate with the 80 latter, while the platen always moves in the same vertical plane until the folded cotton is transferred. For this reason I am enabled to employ a hydrostatic press in the manner and for the purposes hereinbefore explained. 85

The compressing rolls act upon the cotton fibers progressively as they are delivered thereto from the condenser, the operation being such that while individual portions of the bat or sheet are powerfully compressed the 90 fibers are not injured and the commercial value of the article is not diminished.

I have only described my invention for compressing and baling cotton, but obviously the improved apparatus may be used for com- 95 pressing and baling other materials.

It has heretofore been proposed to use in baling apparatus a reciprocating carriage having a series of pressure-rollers journaled therein and adapted to take the cotton from 100 the ginning machinery and deposit it in folds on a bed adapted to recede and between which and the carriage the folds or layers are pressed, the ties being applied prior to removing the pressed bale from between the carriage and bed. The prior apparatus is not 105 practicable for effective and rapid work, and is objectionable for many reasons, chiefly, however, because the ginning machinery must cease action, or the supply of cotton to 110 the carriage be discontinued or interrupted while the ties are being applied, and because the density of the bale is dependent entirely on the pressure exerted by the carriage, no provision being made for greater pressure 115 than is placed upon the cotton by said carriage during the fold-laying operation.

My invention is clearly distinguished from prior apparatus as above stated, in that as a folding chamber is arranged above a movable 120 press-box, it is unnecessary to discontinue or interrupt the action of the ginning machinery, the continuity of action of the fold or laying mechanism need not be interfered with, a strong and uniform pressure in the 125 folding chamber is preserved from start to finish to hold the folds from expanding, the fluffy bat or mass from the ginning machinery is first subjected to a great preliminary pressure between suitable rolls, so that every part 130 of the cotton is compressed uniformly and in detail, and the bat or sheet is placed in the proper and best condition to facilitate the subsequent manipulation by the pressure-

folder and secure high density and great weight in proportion to the dimensions or size of the bale. The operation of lowering the receiving platen with the folded cotton thereon and moving the press-boxes can all be accomplished quickly, easily, and conveniently without interfering in any manner with the operation of the pressure-folder, or other parts of the apparatus.

10 Having thus described my invention, what I claim is—

15 1. The combination of a reciprocating pressure-folder, and a folding-chamber below the latter, with a series of rotatable press-boxes or chambers, movable successively into operative connection with the pressure-folder for receiving and transferring the bale from the pressure-folder to another position for the application of final pressure to expel the air, substantially as described.

20 2. The combination of a pressure-folder, and a folding-chamber arranged below the latter, with a series of press-boxes or chambers, movable successively into operative connection with the folding-chamber for receiving and transferring the bale to another position for the application of final pressure to expel the air, substantially as described.

25 3. The combination of a reciprocating pressure-folder and a folding-chamber below the latter, with a series of press-boxes or chambers, one of which is movable from beneath the pressure-folder while another moves into operative connection therewith, substantially as described.

30 4. The combination of a pressure-folder, and a folding-chamber arranged beneath the same, with a series of rotatable press-boxes or chambers, one of which moves from beneath the pressure-folder to a pressing mechanism while another moves into position beneath the pressure-folder, substantially as described.

35 5. The combination of a reciprocating pressure-folder and a folding-chamber below the latter, with a two-box rotary press for transferring the bale from the pressure-folder to a position where other mechanism may exert final pressure to expel the air, substantially as described.

40 6. The combination of a pressure-folder, with a vertically movable platen, a hydrostatic press for raising the platen in juxtaposition to the pressure-folder, and means for automatically releasing the fluid pressure to gradually lower the plunger of the press when the pressure on the platen reaches a predetermined limit, substantially as described.

45 7. The combination of a pressure-folder, with a platen supported in operative connection with the pressure-folder by a hydrostatic column, and means for partially releasing the fluid pressure and permitting the platen to recede from the pressure-folder when the pressure on the cotton reaches a certain point, substantially as described.

8. The combination of a pressure-folder,

with a platen movable vertically in juxtaposition to the pressure-folder, a hydrostatic press for supporting the platen, and an automatic pressure-regulator for partially releasing the fluid pressure and permitting the plunger of the press to automatically recede during the operation of the pressure-folder, substantially as described.

75 9. The combination of a pressure-folder, with a series of press-boxes or chambers, one of which is movable from beneath the pressure-folder while another moves into operative connection therewith, a platen movable vertically through each press-box or chamber in juxtaposition to the pressure-folder when its press-box is brought into operative connection with the latter, and mechanism operating to permit the platen to automatically recede and to hold the cotton under a uniform predetermined pressure from the upper to the lower portion of the press-box during the operation of the pressure folder, substantially as described.

80 10. The combination of a pressure-folder, with a series of press-boxes or chambers, one of which moves from beneath the pressure folder while another moves into operative connection therewith, a platen movable vertically through each press-box or chamber in juxtaposition to the pressure-folder when its press-box is brought into operative connection with the latter, a hydrostatic press for supporting the platen, and means connected therewith for causing the press-plunger to automatically recede during the action of the pressure-folder, substantially as described.

85 11. The combination of a pressure-folder, with a series of press-boxes or chambers, one of which is movable from beneath the pressure-folder while another moves into operative connection therewith, a platen movable vertically through each press-box or chamber in juxtaposition to the pressure-folder when its press box is brought into operative connection with the latter, a hydrostatic press for supporting the platen, and a pressure regulator for partially releasing the fluid pressure, and permitting the press-plunger to automatically recede during the operation of the pressure-folder, substantially as described.

90 12. The combination of a pressure-folder, with a platen, steam and hydraulic apparatus for supporting the platen, and an automatically operated valve for partially releasing the fluid-pressure whereby the platen automatically recedes during the folding and pressing operation, substantially as described.

95 13. The combination of a pressure-folder, with a platen, a steam and hydraulic apparatus for supporting the platen, and an automatic pressure-regulator, whereby the platen automatically recedes during the operation of the pressure-folder, substantially as described.

100 14. The combination of a pressure-folder, with rotatable press-boxes or chambers, a platen movable through each press-box or chamber, steam and hydraulic apparatus for

raising and supporting the platen, and an automatically operated valve for partially releasing the fluid-pressure whereby the platen automatically recedes during the operation of the pressure-folder, substantially as described.

15. The combination of a pressure-folder, with a two-box-revolving press, a platen movable through each press-box in juxtaposition to the pressure-folder, steam and hydraulic apparatus for supporting the platen in operative connection with the pressure-folder when its press-box is brought into operative connection with the latter, and an automatically operated valve for partially releasing the fluid pressure, whereby the platen automatically recedes during the operation of the pressure-folder, substantially as described.

16. The combination of a pressure-folder, with a folding chamber arranged below the same a press-box beneath the folding chamber, a platen movable vertically through the folding-chamber into operative connection with the pressure-folder, a hydrostatic press for raising and supporting the platen, and means whereby the platen automatically recedes during the operation of the pressure-folder, substantially as described.

17. The combination of a pressure-folder, with a platen movable into operative connection therewith to receive the folds therefrom, a plunger and fluid cylinder to raise and support the platen, and means for partially releasing the fluid pressure in the cylinder and permitting the plunger and platen to recede during the operation of the pressure-folder, substantially as described.

18. The combination of a pressure-folder, with a folding-chamber arranged beneath the pressure-folder, and a horizontally movable press-box or chamber which receives the folded material from the folding-chamber and transfers the same to another point for final pressure and the application of the bale ties, substantially as described.

19. The combination of a suitable baling-press, with a pressure-folder, a folding-chamber arranged beneath the pressure-folder, and a press-box or chamber movable into and out of operative connection with the folding-chamber for transferring the folded material from said folding-chamber to the baling press for the application of final pressure, substantially as described.

20. The combination of baling-press devices, a hydrostatic press in relation thereto, a series of movable press-boxes, one of which is movable over the hydrostatic press while another is movable into connection with the baling-press devices, a pressure-folder, platens which are each raised and supported by the hydrostatic press in turn, and a pressure-regulator for permitting the hydrostatic press-plunger and platen supported thereby to automatically recede during the operation of the pressure-folder when the pressure on the platen

reaches a pre-determined limit, substantially as described.

21. The combination of baling-press devices, a hydrostatic press, a series of rotary press-boxes, one of which is movable over the hydrostatic press while another is movable into connection with the baling-press devices, a pressure-folder above the hydrostatic press, platens which are each raised and supported by the hydrostatic press in turn, and a pressure-regulator for permitting the hydrostatic plunger and platen supported thereby to automatically recede during the operation of the pressure-folder when the pressure on the platen reaches a pre-determined limit substantially as described.

22. The combination with compressing devices for compacting cotton into a bat or sheet, of a pressure-folder, and press-boxes successively into operative connection with the pressure-folder for receiving the folded bat or sheet, and transferring it to another point for final pressure, substantially as described.

23. The combination with compressing-rolls for compacting cotton into a bat or sheet, and a folding-chamber below the compressing-rolls, of a pressure-folder between the compressing rolls and the folding-chamber, and press-boxes arranged below the folding-chamber and movable successively into operative connection with the folding-chamber for receiving the folded bat or sheet and transferring it to another point for final pressure, substantially as described.

24. The combination with the two compressing-rolls, of wiper-rollers mounted respectively in juxtaposition to the said compressing-rolls for preventing the bat or sheet adhering thereto and between which the bat or sheet travels to folding devices, substantially as described.

25. The combination with the compressing-rolls for compacting cotton into a bat or sheet, and folding mechanism, of wiper-rollers mounted in juxtaposition to the compressing-rolls for preventing the bat or sheet adhering to the compressing-rolls and between which the bat or sheet travels to the folding mechanism, substantially as described.

26. The combination with the compressing-rolls for compacting cotton into a bat or sheet, and a reciprocating folding mechanism, of a chute interposed between the compressing-rolls and the folding mechanism, and wiper-rollers arranged at the upper end of the chute in juxtaposition to the compressing-rolls for preventing the bat or sheet adhering to the compressing-rolls and between which the bat or sheet travels into the chute, substantially as described.

27. The combination with the compressing-rolls for compacting cotton into a bat or sheet, and reciprocating folding mechanism, of an extensible and retractible chute interposed between the compressing-rolls and folding

mechanism and pivotally connected with the latter, and wiper-rollers mounted at the upper end of the chute in juxtaposition to the compressing-rolls for preventing the bat or sheet adhering thereto and directing the same into the chute, substantially as described.

28. The combination with compressing devices for compacting cotton into a bat or sheet, and a reciprocating folding mechanism adapted to move horizontally, of an extensible and retractible chute interposed between the compressing-rolls and folding mechanism and pivotally connected with the latter, substantially as described.

29. The combination with compressing devices for compacting cotton into a bat or sheet, and reciprocating folding mechanism, of an extensible and retractible chute interposed between the compressing devices and folding mechanism and connected with the latter, substantially as described.

30. The combination with compressing devices for compacting cotton into a bat or sheet, of reciprocating folding mechanism, and an extensible and retractible chute pivotally connected with and oscillated by the folding mechanism, substantially as described.

31. The combination with compressing devices for compacting cotton into a bat or sheet, and reciprocating folding mechanism, of a pivotally mounted chute composed of oppositely arranged extensible and retractible walls and interposed between the compressing devices and the folding mechanism, and con-

nections between the chute and the folding mechanism whereby the chute is oscillated thereby, substantially as described.

32. The combination with compressing devices for compacting cotton into a bat or sheet, a reciprocating carriage provided with sets or gangs of rollers, and belts extending around the rollers, of tightener-bars connected respectively with the belts and held against horizontal movement by engagement with the frame of the machine, and devices for vertically adjusting the tightener-bars to tighten the belts on the rollers, substantially as described.

33. The combination with compressing devices for compacting cotton into a bat or sheet, a folding chamber, and a reciprocating carriage arranged between the compressing devices and the folding-chamber, and provided with sets of rollers and belts extending around the rollers, of adjustable tightener-bars connected with the belts and held against horizontal movement by engagement with the frame of the machine, and screw-adjusting devices for vertically adjusting the tightener-bars to tighten the belts on the rollers, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

STEPHEN D. MURRAY. [L. s.]

Witnesses:

R. L. BARLOW,
B. L. BARTLETT.