

July 10, 1923.

W. D. WILSON ET AL

1,461,639

COTTON TRAMPER

Original Filed Aug. 16, 1919

4 Sheets-Sheet 1

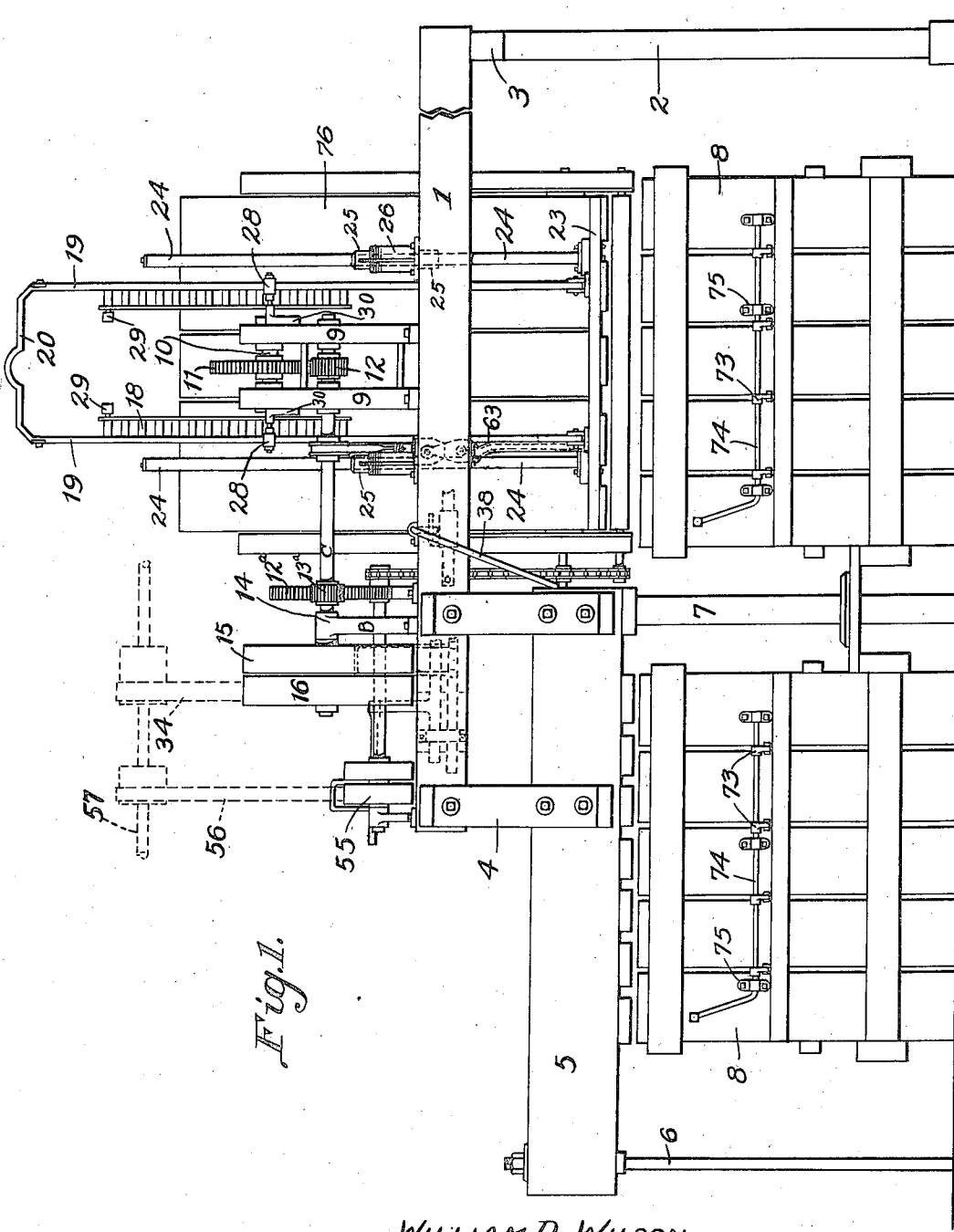


Fig. 1.

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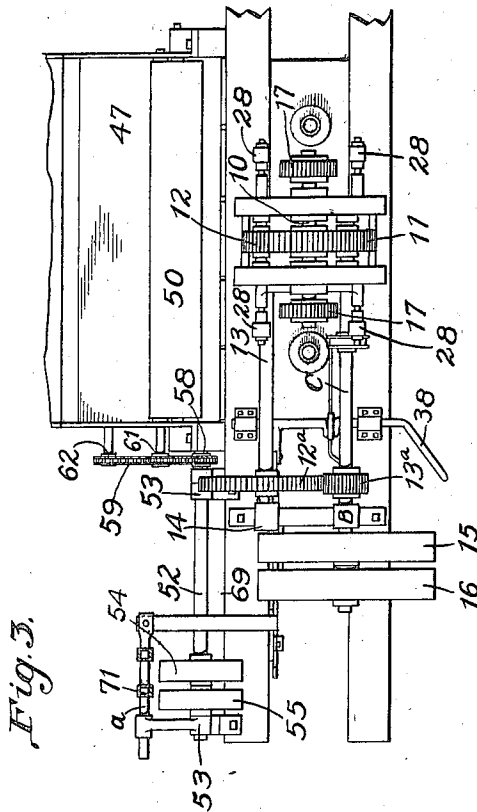
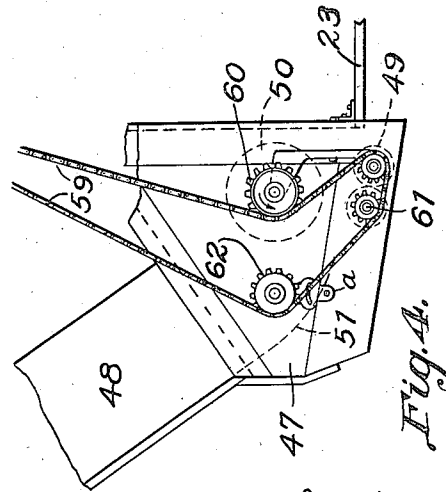
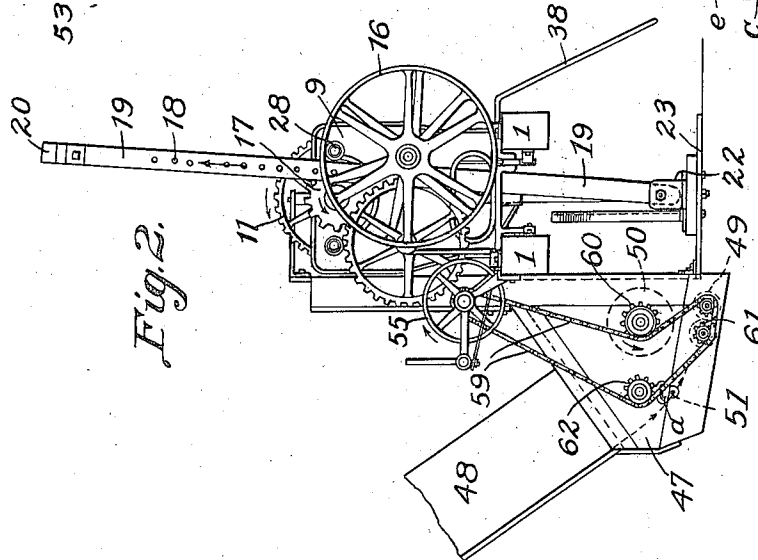
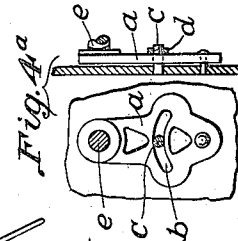
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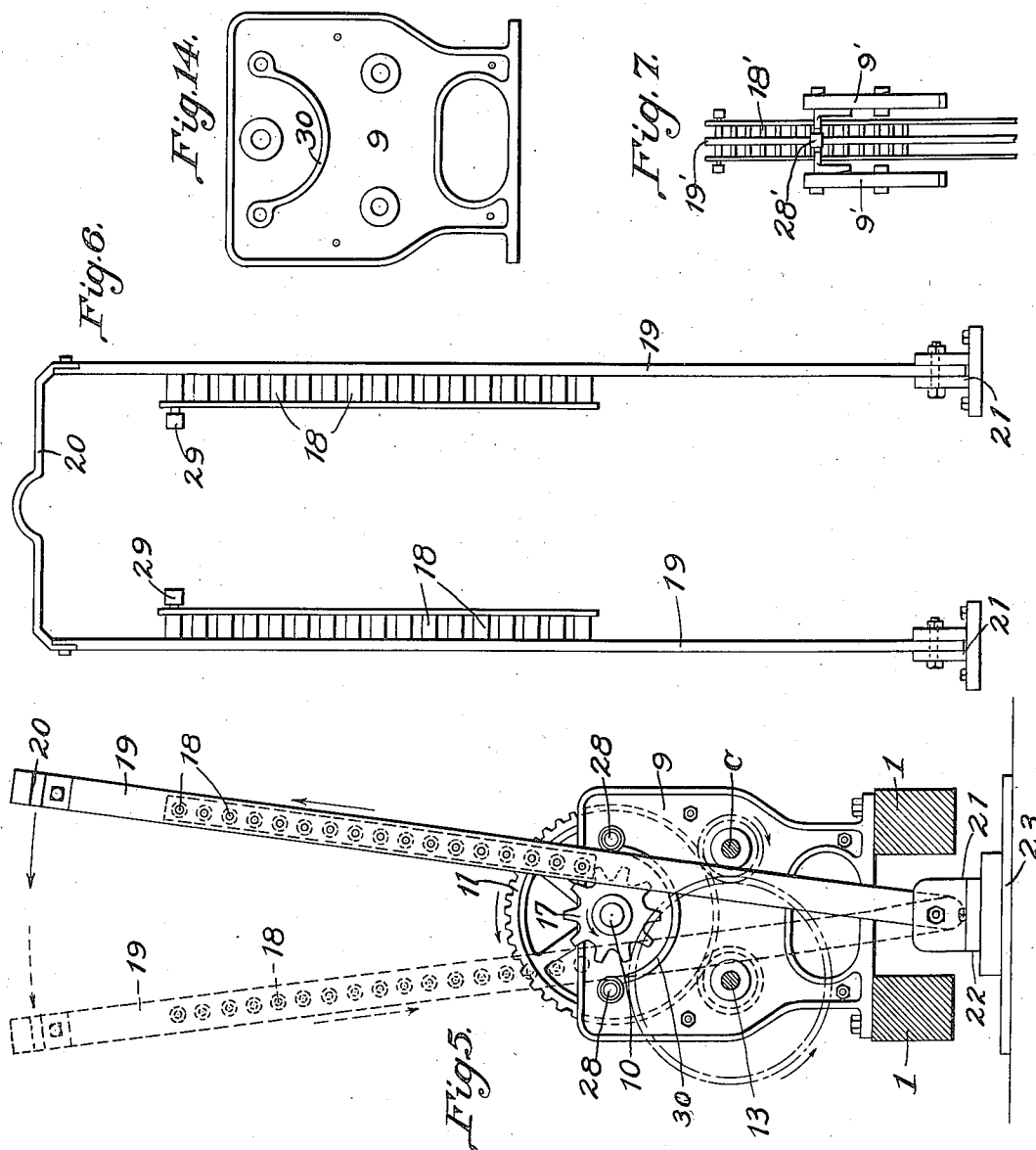
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COTTON TRAMPER

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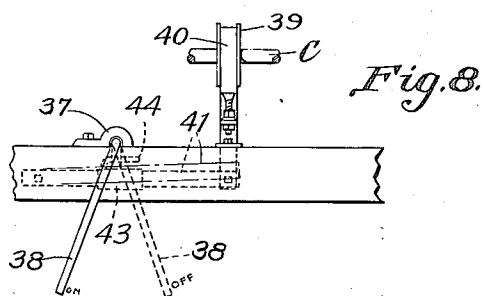
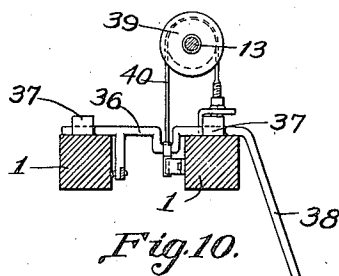
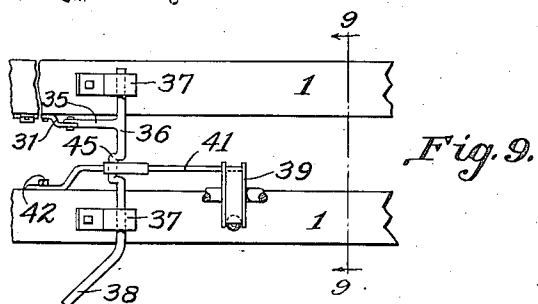
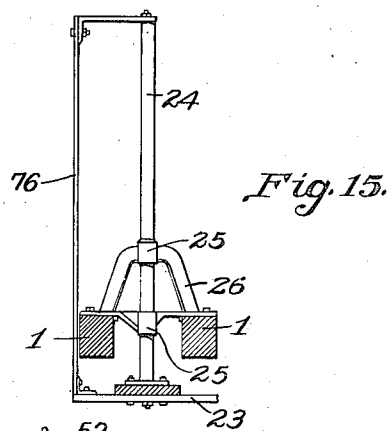
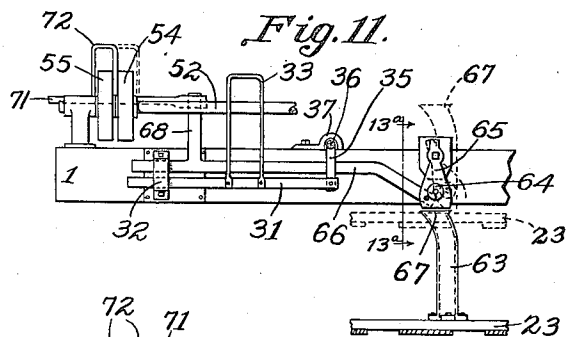
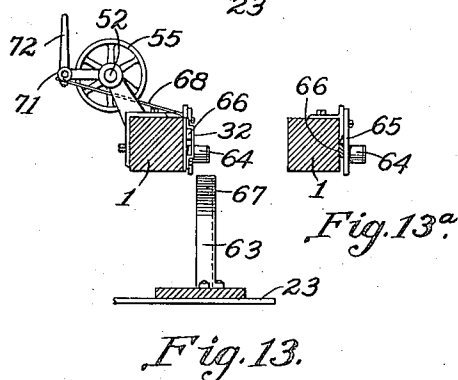
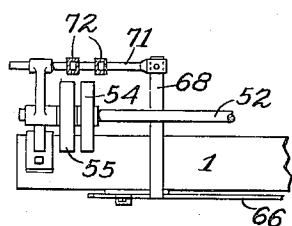
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COTTON TRAMPER

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Patented July 10, 1923.

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UNITED STATES PATENT OFFICE.

WILLIAM D. WILSON AND ADOLPH CULLANDER, OF BELZONI, MISSISSIPPI, ASSIGNORS
OF ONE-THIRD TO ENOCH HAGA, OF BELZONI, MISSISSIPPI.

COTTON TRAMPER.

Continuation of application Serial No. 318,020, filed August 16, 1919. This application filed January 13, 1921. Serial No. 436,997.

To all whom it may concern:

Be it known that we, WILLIAM D. WILSON and ADOLPH CULLANDER, citizens of the United States, residing at Belzoni, in the county of Humphrey and State of Mississippi, have invented certain new and useful Improvements in Cotton Trampers; and we 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.

This invention relates to new and useful improvements in cotton trampers, and more particularly to a continuation of our application filed August 16, 1919, Serial No. 318020. The main object of the present invention is the provision of a cotton trampler which can be quickly and easily mounted for operation, is extremely simple in construction and can be readily placed in position to be used with any well known form of ginning machinery.

Another object of this improved trampler is to reduce the attendance required for cotton trampers in use at the present time and to provide improved feeding mechanism whereby the cotton will be fed into the trampler in an even layer or bat and thus improve the cotton bale and sample.

Another object of the present invention is the provision of a trampler having improved means whereby the movement of the trampler block can be readily stopped in any desired position without stopping the main driving mechanism.

A further object of the invention is the provision of novel feeding means whereby an even bat is formed so that the cotton is deposited within the bale box in an even layer and additional means operated through the reciprocation of the trampler head whereby the feeding mechanism is positively operated upon the upward and downward stroke of the trampler so that the bat formed by the feeding mechanism will be positively fed into the baling box beneath the trampler head upon the upward stroke and initial downward stroke of the trampler head, thus doing away with any coiled springs or the like which are used in trampers of the present type and to assure positive operation of the feeding mechanism.

With the above and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts hereinafter more fully set forth, pointed out in the claims and shown in the accompanying drawings in which:

Figure 1 is a front elevation of a cotton trampler constructed in accordance with my invention.

Fig. 2 is a side elevation, the guide rods being removed.

Fig. 3 is a plan view, the racks and guides being removed.

Fig. 4 is an enlarged side elevation of the feeding mechanism.

Fig. 4^a is a detail view illustrating the adjustable mounting of one of the two sprockets in the feeding mechanism.

Fig. 5 is an enlarged side elevation of the rack and pitmans which operate the trampler head.

Fig. 6 is a front elevation of the pitman.

Fig. 7 is a front elevation of a slightly modified form of the pitman.

Fig. 8 is a detail elevation illustrating the manner of operating the braking mechanism.

Fig. 9 is a top plan view of Fig. 8.

Fig. 10 is a transverse sectional view on the line 9—9 of Fig. 9.

Fig. 11 is a detail front elevation illustrating a portion of the trampler head in two positions showing how the belt shifting mechanism is operated for controlling the feeding mechanism.

Fig. 12 is a detail plan of Fig. 11.

Fig. 13 is an end elevation of the disclosure in Fig. 11.

Fig. 13^a is a transverse sectional view taken on the line 13^a—13^a of Fig. 11.

Fig. 14 is a side elevation of one of the bearing members.

Fig. 15 is a detail side elevation of the guide rods on the trampler head and the supporting and guiding means for the same.

In the general construction of our improved trampler we provide suitable means for mounting and retaining the same in its general operative position, said mounting including the longitudinally disposed sills 1 supported at one end by means of the posts 2 which are connected by the transverse beam 3 while the other ends are retained in position by means of the upright

beams 4 connected to the press sills 5. These press sills 5 are supported at one end by means of the posts 6 while the other end is supported by the central standard 7 which operates the usual turn table upon which the baling boxes 8 are mounted.

Mounted upon the sills 1 are the spaced bearing plates 9 which are adapted to support the rack driving shaft 10, said shaft having mounted upon its central portion a gear 11 which is disposed between the bearing plates 9 and adapted to mesh with the gear 12. The gear 12 is mounted upon the driving shaft 13, one end of which is mounted within suitable bearings in the plates 9 while the other end is supported by means of a bearing 14. Mounted upon the end of the shaft 13 opposite the gear 12 is a gear 12^a which is adapted to mesh with a pinion 13^a on the shaft C. The shaft C is the main driving shaft for operating the tramper head and suitably supported above the sills 1 by means of the bearing B at one end while the other end is mounted in one of the spaced bearings 9. The driving pulley 15 is mounted upon this shaft C and arranged adjacent the driving pulley is an idle pulley 16 over which the belt from the main driving source operates in order to impart movement to the tramper head. The shaft 10 has upon its outer ends the pinions 17 which are adapted to coast with the rack 18 carried by the spaced bars 19. These bars 19 are connected at their outer ends by a cross piece 20 while the lower ends thereof are mounted between the spaced ears 21 formed upon the plate 22, which is secured to the tramper head 23. From this it will be apparent that when the racks 18 reach the limit of their upward movement, they will pass from the position illustrated in full lines in Fig. 5 over to the position illustrated in dotted lines in Fig. 5, following the direction of the pinion 17 so that when the bars are disposed in the dotted line position they will be moved downwardly again the length of the racks 18, then swung to the side illustrated in full lines and begin their upward travel. This movement is due to the engagement of the pinion 17 with the racks 18, the racks following the movement of the pinions.

In order to prevent lateral movement of the tramper head upon its upper and downward stroke, suitable guide rods 24 are provided which are adapted to reciprocate within the guide sleeves 25. These sleeves 25 are retained in their respective position by means of the brace members 26 which are connected to the sleeves and the sills 1 and while we have shown this particular form of mounting it will be understood that other suitable means may be utilized for retaining these guides in their respective positions.

In order to limit the lateral swinging movement of the racks 18, suitable guide rollers 28 are arranged upon opposite sides of the plates 9 and in a position to be engaged by the bars 19 upon their upward and downward movement with respect to the pinions 17, said guide rollers being arranged in pairs upon the outer faces of the plates 9 as clearly illustrated in Fig. 5 and arranged upon opposite sides of the pinion 17 and suitably spaced from the pinion so that upon the upward and downward stroke of the bars 19 the racks 18 will be retained in engagement with the pinion 17 at all times. In order to retain the racks 18 in their respective engaging positions with the pinions 17 during their passage from one side of the pinions to the other, the guide rollers 29 are attached to the inner faces of the racks 18 at their upper ends and are adapted to ride within an arcuate track 30 which is formed upon the outer face of each of the brackets 9. From this it will be apparent that the racks 18 are retained at all times in positive engagement with the pinions 17.

In order to impart movement to the tramper head through the medium of the gears 17 and racks 18, the main operating belt is shifted from the pulley 16 onto the pulley 15 by means of suitable hand operated mechanism which includes in its construction a reciprocating bar 31 mounted for movement within the guide 32 and carrying a loop 33 through which the belt 34 operates so that when the bar 31 is reciprocated the belt 34 will be readily shifted from one pulley to the other. One end of the bar 31 is connected to an arm 35 which is carried by the transverse shaft 36. This transverse shaft 36 is suitably mounted upon the sills 1 within bearings 37 and has formed upon one end a hand lever 38 which is preferably arranged at the front of the tramper where it is readily accessible to the operator so that the belt 34 can be readily shifted from pulley 16 to pulley 15 or vice versa.

In order to provide for immediate stopping of the mechanism when the belt is shifted from the pulley 15 to the idle pulley 16 a suitable brake is provided which includes a brake wheel 39 mounted upon the shaft C and engaged by means of a brake band 40 one end of said brake band being attached to one of the sills 1 while the other end is attached to a movable bar 41. The end of the bar 41 opposite its connection with the brake band 40 is pivotally connected to the inner face of one of the sills as shown at 42. The main body of the bar 41 is spaced from the sill and mounted thereon is a sleeve 43 carrying a hook member 44 arranged in parallel relation with the sleeve 43. The transverse shaft 36 is provided with a crank 45 adapted to engage beneath the hook portion 44 whereby upon rotation

of the shaft 36 the crank 45 will operate within the hook 44 to raise and lower the bar 41 which in turn will actuate the brake band 40. From this it will be apparent that
 5 when the handle member 38 is actuated to rotate the shaft 36 and move the belt 34 from the pulley 15 to the pulley 16, the crank 45 will be actuated within the hook 44 to move the bar 41 downwardly and
 10 bring the brake band 40 into frictional engagement with the brake wheel 39 and thus quickly retard the movement of the shaft C.

Our main feeding mechanism which feeds the cotton from the gin into the press box
 15 8 includes a housing 47 having communication with the chute 48, said housing having its front face arranged adjacent the upper end of one of the baling boxes 8 so that the cotton from the gin, which passes down
 20 through the chute 48 can be readily conveyed from the housing 47 into the baling boxes 8. Heretofore the cotton which is delivered from the gin has been passed into the baling box 8 in such quantities and a man-
 25 ner that the cotton has not been evenly distributed throughout the baling box and has required the use of an attendant to spread this cotton out evenly within the box so as to provide for an even bale. In order to
 30 evenly distribute the cotton within the baling box 8 and provide an even bat throughout, our improved feeding mechanism includes a pair of rollers generally indicated by the numeral 49 arranged within the hous-
 35 ing 47 and directly beneath a larger roller 50. The cotton which is delivered down the chute 48 falls upon an inclined bottom 51 and is carried downwardly between the rollers 49 and the main pressing roller 50.
 40 From this it will be noted that when the tramper head 23 is completing its downward stroke within the baling box 8 and upon its initial upward stroke the cotton from the chute 48 is collecting within the housing 47
 45 as the feeding mechanism is at a standstill during this operation, but when the tramper head 23 is completing its upward stroke and on its initial downward stroke the rollers 49 and 50 are in operation and the cotton which
 50 has previously collected within the housing 47 is passed between the rollers 49 and 50 into the baling box 8 and it will be apparent that by having the cotton pass between these two sets of rollers 49 and 50 it will be
 55 pressed to a certain extent into a bat and evenly fed within the baling press so that when the tramper head 23 moves downwardly to engage the discharge of cotton it will contact with an even supply of cotton
 60 throughout the baling box 8 and press the same downwardly and continue this operation throughout the pressing of the entire bale.

65 In order to operate the feeding mechanism a drive shaft 52 is mounted within

suitable bearings 53 upon one of the sills 1, said shaft supporting a drive pulley 54 and an idle pulley 55, the idle pulley 55 being connected by means of a belt 56 to the main
 70 operating shaft 57. The inner end of the shaft 52 supports a pinion 58 over which the sprocket chain 59 operates, said sprocket chain extending downwardly around the sprocket 60 which is mounted upon the shaft
 75 that supports the roller 50 around the sprockets 61 which are mounted upon the shafts that support the rollers 49 and thence upwardly and around a sprocket 62 and continuing on back over the pinion 58 so
 80 that when the shaft 52 is rotated, the chain 59 will operate over the several sprockets and impart movement to the rollers 49 and 50 when it is desired to discharge the cotton from the housing 47 into the baling
 85 box 8. In order to take up any slack movement in the sprocket chain 59, the sprocket wheel 62 is mounted for adjustment by means of the plate *a* which is pivotally supported upon one side of the housing 47
 90 and provided with an arcuate slot *b* through which the adjusting bolt *c* extends, said bolt having a nut *d* upon its outer end adapted to be tightened against the plate *a* to retain the same in various adjusted positions.
 95 It will be noted that the sprocket 62 is mounted upon the stub shaft *e* carried by the upper end of the plate *a* and from this it will be apparent that the sprocket chain 59 can be readily adjusted to obtain slack
 100 or take up any slack desired.

It is to be understood that our improved feeding mechanism is automatically operated upon the completion of the upward stroke of the tramper head 23 and the initial
 105 downward stroke. This automatic feeding is carried out by having the open face channel member 63 mounted upon the tramper head 23 and engaging a roller 64 carried by the pivoted plate 65 mounted upon one side of the sills 1, said plate having pivotal con-
 110 nection with the inner end of the bar 66 whereby movement of the plate will impart a reciprocating movement to the bar. The bar 66 is mounted for sliding movement within the guide 32 and connected thereto
 115 is an arm 68. It will be noted that the upper end of the channel iron 63 is curved outwardly as shown at 67 so that when the tramper head 23 moves upwardly the roller 64 will engage within the upper end of the
 120 channel iron so that continued upward movement of the tramper head will move the roller 64 into the main upright portion of the channel 63 and reciprocate the bar 66 to the position illustrated in dotted lines in
 125 Fig. 11.

The end of the arm 68 is connected to a bar 71 supporting a loop 72 which is adapted to embrace the belt 56 whereby to shift
 130 the same from the idle pulley 55 to the drive

pulley 54 to impart movement to the feeding mechanism. From this it will be apparent that the feeding mechanism is operated during the time the tramper head is completing its upward stroke and making its initial downward stroke so that the cotton which has previously accumulated within the housing 47 will be readily fed into the baling box beneath the tramper head 23 to be compressed upon the downward stroke of the tramper head. We wish to call particular attention to the fact that by having the U-shaped channel member 63 attached to the tramper head 23 and engaging the roller 64 to reciprocate the bar 66 and operate the belt shifting mechanism for imparting movement to the feeder, the operation of the feeding mechanism is positive so that when the tramper head is completing its upward stroke and upon its initial downward stroke the cotton is being fed into the baling box and upon the downward stroke of the tramper head 23 the channel member 63 will return the bar 66 to its normal position so that the belt 56 will be positively shifted back onto the idle pulley 55.

In order to prevent the compressed cotton from moving upwardly within the baling box 8 after the tramper head 23 has completed its downward stroke and is upon its upward stroke a number of retaining dogs 73 are loosely mounted upon a shaft 74 supported upon the exterior of the baling box 8 by means of the bearing box 75. The inner ends of these retaining dogs are extended through suitable slots in the baling box and are disposed horizontally to engage the cotton after the tramper head has moved upwardly away from the same in order to prevent further upward movement of the cotton. It will be noted that the outer ends of the retaining dogs are suspended below the shaft 74 and it is preferred to have them of sufficient weight to overcome the weight of the inner end of the dogs so that after the tramper head has moved upwardly the retaining dogs will assume a position to engage the cotton.

In order to retain the cotton within the housing 47 during the time the tramper head 23 is moving within the baling box 8, a suitable gate 76 is attached to the rear edge of the tramper head 23 as clearly illustrated in Fig. 15, said gate extending entirely across the outlet portion of the housing 47 so that none of the cotton accumulating within the housing 47 during the completion of the downward stroke of the tramper head and the initial upward stroke of the same, can escape from the housing.

In Figure 7 we have illustrated a slightly modified form of the invention wherein the rack members 18' are disposed upon opposite sides of a central track 19' for engagement with the pinions 17 which can be ar-

ranged between the bearing plates 9 instead of on the outer sides thereof as shown in Fig. 3. This arrangement would necessitate of guide rollers 28' being arranged centrally between the bearing plates 9' for engagement by the central track 19' to retain the racks 18' in their respective positions relative to the pinions.

From the foregoing description taken in connection with the accompanying drawings it will be readily apparent that we have provided a cotton tramper whereby the cotton from the gin will be fed into the baling box in an even bat, this bat being formed by compressing the accumulated cotton between the two sets of rollers 49 and 50 so that when the same passes into the baling box it will be in a nearly even layer. Thus when the tramper head 23 moves downwardly to engage the cotton to compress the same within the baling box, it eliminates the necessity of having an attendant distribute the cotton evenly within the baling box as is generally the case with trampers in use at the present time and by having the cotton evenly distributed throughout the bale it will improve the sample of cotton which is withdrawn for sampling the bale prior to marketing. It will also be noted that our improved feeding mechanism is positively operated through the engagement of the channel member 63 with the roller 64 and thus not have to depend on coiled springs or the like for returning the belt shifting mechanism to its normal position on the downward stroke of the tramper head.

We claim as our invention:

1. In a cotton tramper, a tramper block, a press box, a conveyor feed to said press box, means for reciprocating said block, means for operating said conveyor, said conveyor operating means being automatically operated by the tramper block, said automatic means including a reciprocating bar disposed above the press box, a roller member upon one end of the bar, a channel iron on the tramper block and engaging said roller, said channel iron having its upper end curved whereby the upward movement of the tramper block will reciprocate the bar and operate a belt shifter, said belt shifter operable in relation to fast and loose pulleys on a drive shaft for said conveyor.

2. In a cotton tramper, a tramper block, a press box, a conveyor feed to said box, means for reciprocating said block, means for operating said conveyor, a reciprocating bar above the press box, a roller at one end of said bar, a channel member carried by the tramper block, said channel member having a curved upper end whereby to engage the roller upon the upward stroke of the tramper block to reciprocate the bar in one direction and reciprocate the bar in the opposite direction upon the downward stroke of the

tramper block whereby to positively operate
a belt shifter connected with the opposite
end of the bar, said belt shifter operable in
relation to fast and loose pulleys on a drive
5 shaft for said conveyor.

cent said track way opposed to each other
diametrically of the track and rollers on said
abutments.

In testimony whereof we affix our signa-
tures.

10

3. In a cotton tramper, a standard having
an arcuate track way and abutments adja-

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