

P. K. RICHARDSON.
COTTON PACKING OR BALING DEVICE.
APPLICATION FILED NOV. 5, 1914.

1,154,655.

Patented Sept. 28, 1915.

2 SHEETS—SHEET 1.

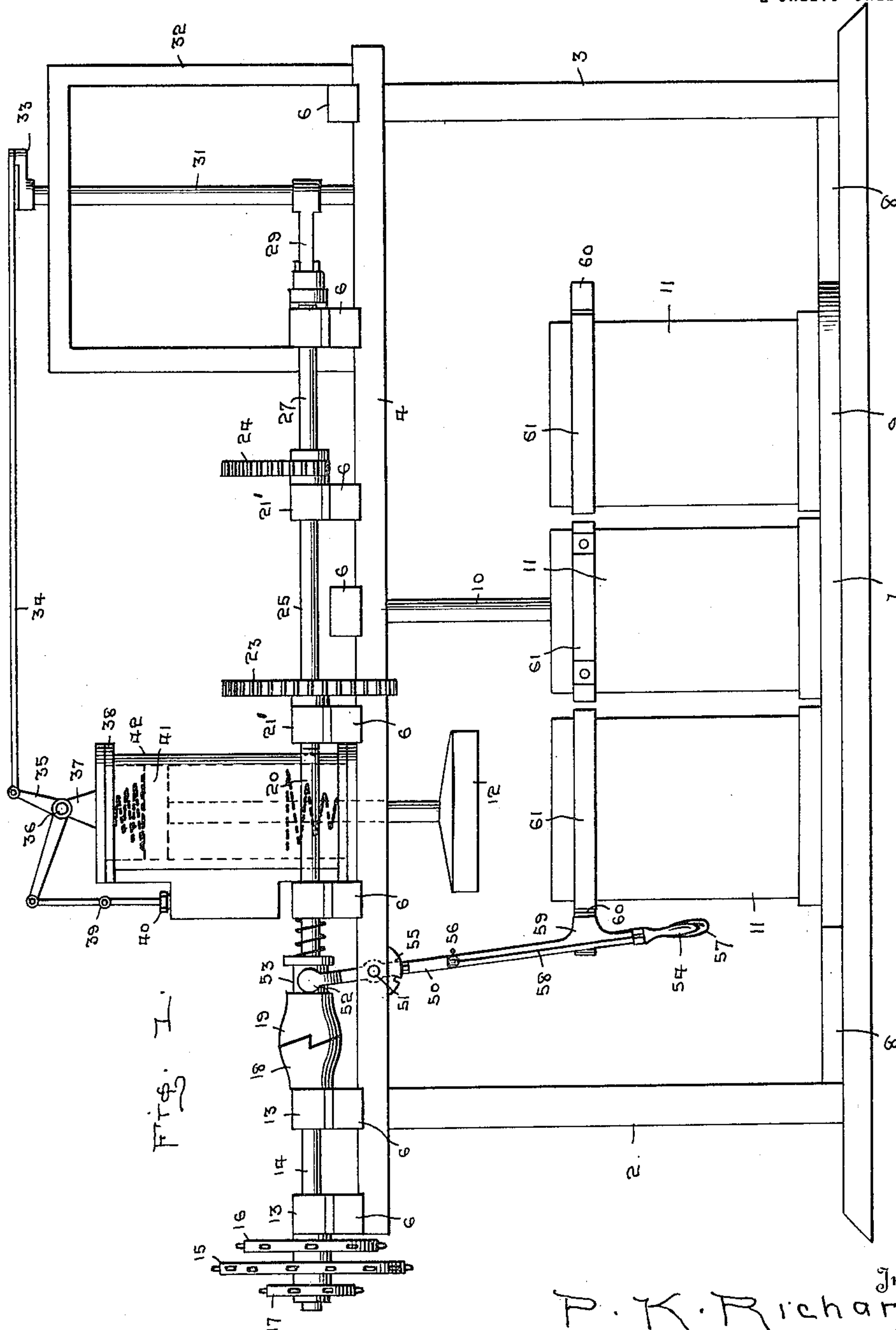


Fig. 1.

Witnesses

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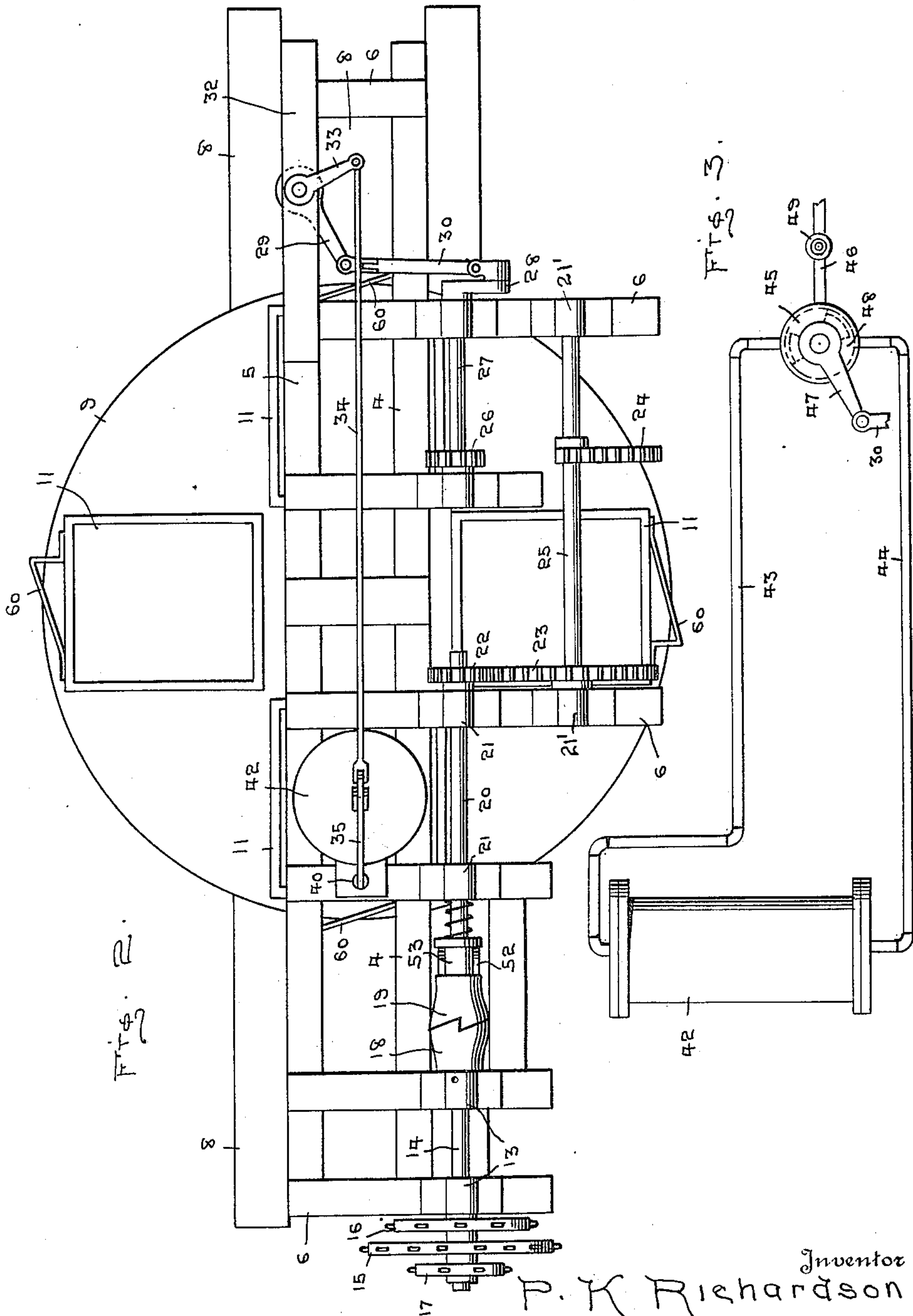
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UNITED STATES PATENT OFFICE.

PALEY KNOX RICHARDSON, OF MANGUM, OKLAHOMA.

COTTON PACKING OR BALING DEVICE.

Specification of Letters Patent. Patented Sept. 28, 1915.

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Application filed November 5, 1914. Serial No. 870,358.

To all whom it may concern:

Be it known that I, PALEY KNOX RICHARDSON, a citizen of the United States, residing at Mangum, in the county of Greer and State of Oklahoma, have invented certain new and useful Improvements in Cotton Packing or Baling Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to means for packing cotton in receptacles and my object is to provide a combined automatically and manually operated stop mechanism for the packing device.

A further object of this invention is to provide means to dispose packing boxes below and in registration with the packing mechanism, one at a time.

A still further object of this invention is to provide an arrangement whereby damp bolls of cotton or dry bolls of cotton or picked cotton can be conveniently packed in this device.

Other objects of this invention will be hereinafter set forth in the specifications and pointed out in the claims.

Similar characters of reference refer to similar parts throughout the specifications and drawings, in which,

Figure 1 is a side elevation of this device in assembled formation showing one form of valve operation to drive the piston down and up, Fig. 2 is a top plan view thereof, and Fig. 3 is an elevation of a modified form of valve operating mechanism.

In Fig. 1 of the drawings, 1 is the base of the frame work having vertical standards 2 and 3 rising at each end thereof and supporting the horizontal beams 4 and 5 which in turn are united by cross beams 6. The sub-flooring 8 is secured to the base 1, providing a circular depression in which is rotatively mounted the table 9, said table being pivoted on the vertically mounted shaft 10 which is mounted in one of the cross beams 6. A plurality of packing boxes 11 of any preferred form of construction are so positioned upon this rotating table that they will be successively brought beneath the plunger 12 as the table is rotated, said plunger being adapted to descend and pack the cotton within the boxes. A plurality of shaft bearings 13 are mounted upon a portion of

the cross beams 6 in which is rotatably mounted a driving shaft 14, said driving shaft being operated from any one of a plurality of sprocket wheels, the large sprocket wheel 15 being used to operate the device when packing damp bolls, the second size sprocket 16 for dry bolls, and the small sprocket 17 to pack picked cotton, in accordance with the speed that is necessary to conveniently operate the packing plunger according to the various conditions of the cotton. The female clutch member 18 is mounted on the inner end of the driving shaft 14 and is adapted to receive the male member 19 of a clutch device to drive the operating shaft 20 mounted in suitable bearings 21 upon another portion of the cross beams 6. A cog wheel 22 is mounted upon the end of the operating shaft 20 and is adapted to mesh with the cog gear 23 carried by a shaft 25, which shaft is rotatably mounted in bearings 21' which are in turn mounted upon the extension of two of the cross beams 6, as plainly shown in Fig. 2 of the drawings. A segmental rack gear 24 is mounted upon the shaft 25 adjacent the end opposite to that upon which the cog gear 23 is mounted and which is operated by said shaft. The segmental gear 24 is adapted to mesh with the pinion 26 mounted upon a shafting 27, said shafting having at one end thereof a pitman arm 28 which is connected to and adapted to operate a lever 29 by means of a pivoted link connection 30. The lever 29 is mounted upon a shaft 31 vertically positioned within the frame work 32 carried by two of the beams 6, said shaft having at its opposite end a second lever arm 33 connected to a reach rod 34. The opposite end of the reach rod 34 is connected to one arm of a bell crank lever 35 suitably pivoted as at 36 to the projection 37 rising from the top of the cylinder head 38. The opposite arm of the bell crank lever 35 is connected to the pivoted link 39 which operates a slide valve 40 to alternately allow the passage of steam above and below the piston head 41 operating within the cylinder 42 to drive or raise the packing plunger 12, previously noted.

Under certain circumstances of construction, the valve arrangement shown in Fig. 3 is necessary, said arrangement comprising the feed pipe 43 communicating with the top portion of the cylinder 42 and the feed pipe 44 connected with the bottom portion

of the cylinder, said feed pipes running from a rotary valve 45 which receives steam from a suitable supply pipe 46. In this instance an operating lever 47 is connected to the link 5 30 previously noted, to operate a two-way valve 48 and alternately supply steam to either the pipe 43 or 44 to raise or lower the packing plunger 12. In this arrangement when it is desired to stop the operation of the engine, a suitable cut-off valve 49 is positioned in the supply pipe 46. A suitable lever 50 is pivoted at 51 to the cross beam 4, the upper end of which is formed into a yoke member 52 which yoke is adapted to engage the channel 53 formed in the male member 19 of the clutch. The opposite end of the lever 50 has a suitable handle 54 which may be grasped to swing the lever upon its pivot to move the clutch member 20 19 into or out of engagement with the clutch member 18 to start or stop the driving operation of the piston head, and said lever is adapted to be locked in open position by means of a segmental rack 55 having a notch therein to receive the end of the locking bolt 56 mounted upon the lever 50 and operated by means of a suitable latch 57 connected thereto by means of a rod 58 said latch being pivotally attached to the handle 30 54. An inclined extension 59 is formed upon one portion of the lever 50 and is adapted to contact with an inclined projection 60 suitably mounted as at 61 to the top of each of the packing boxes 11 so that should the operator fail to manually operate the lever 50 to disengage the clutch 19 from the clutch 18, the inclined projection 60 will engage the inclined extension 59 of the lever and swing the lever to disengage the clutch 40 automatically when the table is rotated to position the next succeeding packing box below the plunger.

In operation power is applied to one of the sprockets 15, 16 or 17, as previously described, depending upon the class and grade of cotton being packed in the boxes which operates the driving shaft 14 and the operating shaft 20 by means of the clutch arrangement 18 and 19. This rotates the gear 50 wheel 23 which in turn rotates the shaft 25 carrying the segmental gear 24. The continued rotation of the shaft 25 and segmental gear 24 brings the same into mesh with the pinion 26 and rotates said pinion one complete revolution, this action operating the valve to alternately feed steam to either the top or the lower portion of the cylinder 42 to lower or raise the piston to the packing plunger 12. After the cotton 55 has been suitably packed within the packing boxes 11, the lever 50 is operated to throw out the clutch to stop the operation of the device pending the transfer of a fresh packing box beneath the packing plunger 12, the 60 table 9 carrying the packing boxes being ro-

tated either by hand or by suitable machinery, as desired.

Should the operator fail to swing the lever 50 until the locking bolt 56 is engaged with the notch in the segmental rack 55 previous 70 to rotating the table 9, the rotation of said table will engage the inclined projection on the packing boxes with the inclined extension on the lever, the continued rotation of the table causing the lever to swing until the 75 locking bolt is engaged with the notch in the rack, thus disengaging the clutch 19 from the clutch 18 and stopping the operation of the plunger 12 until such time as the next succeeding packing box is properly positioned below the plunger. 80

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

1. A cotton packing device comprising a 85 frame, a rotating table mounted in said frame, a plurality of packing boxes carried by the table, a plunger to pack cotton within said boxes, a cylinder, a piston in the cylinder to operate said packing plunger, a plurality of shafts, cooperating gears carried by the shafts, and means operated by certain of said gears to feed steam to the upper or lower part of the cylinder to operate said plunger and combined manual and auto- 95 matic means adapted to stop the plunger operating means.

2. A cotton packing device comprising a rotating table, a plurality of packing boxes thereon, each packing box having a lever 100 operating attachment, a packing plunger to successively pack cotton in said packing boxes, an operating cylinder for said plunger, a valve mechanism to alternately feed steam to the upper and lower parts of the 105 cylinder to operate said packing plunger, driving mechanism connected to said valve means, and a lever connected to said driving mechanism adapted to be operated by said attachments on said packing boxes to automatically stop said packing mechanism. 110

3. A cotton packing device comprising a frame, a two part driving shaft mounted on the upper portion of said frame, a clutch mechanism cooperating therewith, a plurality of variable sized sprockets carried by one of said parts to provide a variable speed for said shaft, a gear on the other of said parts, a second shaft, a gear thereon meshing with the gear of the first shaft, a segmental gear on said second shaft, a third shaft, a cog wheel thereon adapted to be intermittently rotated by said segmental gear, a packing plunger, an operating cylinder for said plunger, and means connected 125 to said third shaft to introduce steam alternately into the ends of said cylinder to raise and lower said plunger.

4. A cotton packing device comprising the combination with a rotating table, a plu- 130

5 rality of packing boxes carried thereby, a
plunger to pack cotton into said boxes, an
operating cylinder for the plunger, and a
valve mechanism intermittently admitting
10 steam to the upper and lower end of the
cylinder, of a two part shaft, a clutch mechanism connecting said parts, a throw off
lever for said clutch, means carried by the
packing boxes to operate said lever when the
15 table is rotated, means coöperating with said

shaft for intermittently operating said
valve mechanism and a plurality of variable
sized driving sprockets on said shaft.

In testimony whereof I have signed my
name to this specification in the presence of 15
two subscribing witnesses.

PALEY KNOX RICHARDSON.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."