

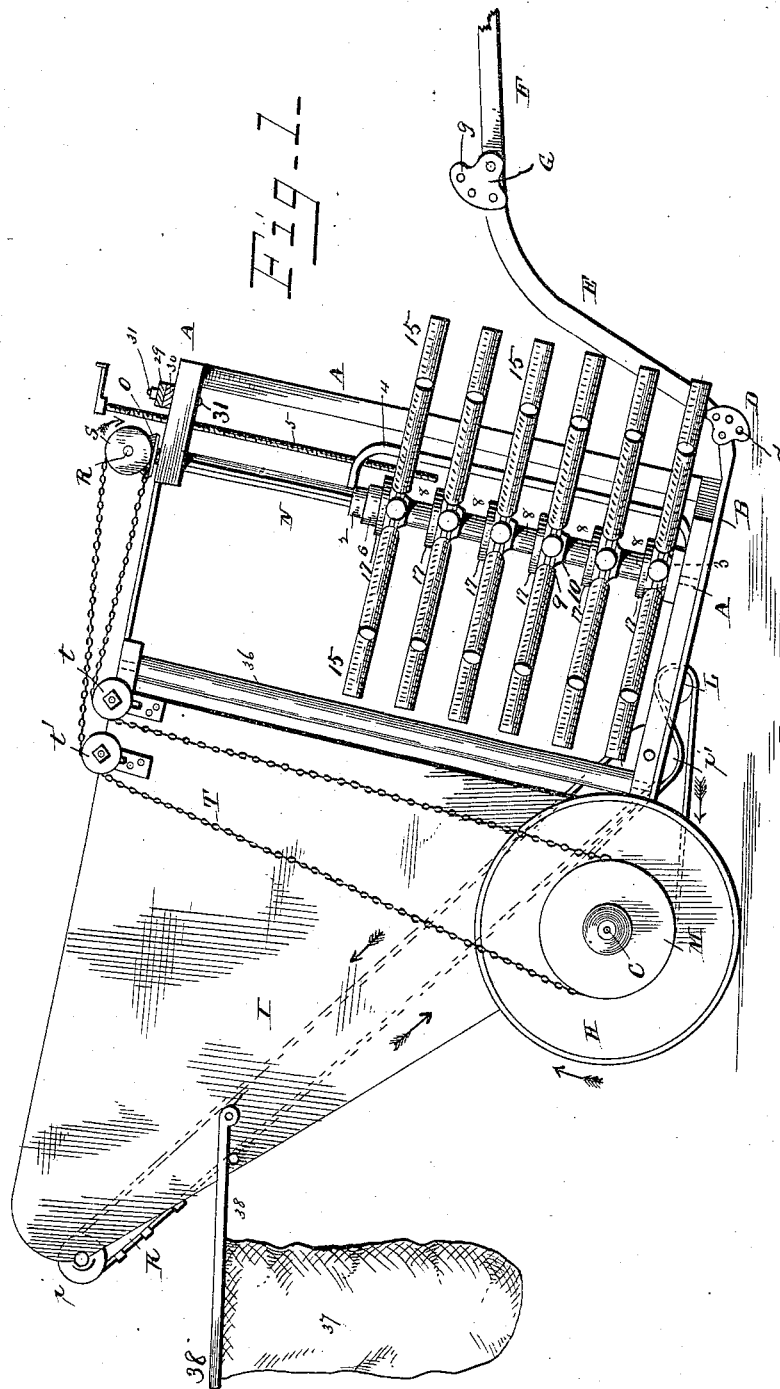
(No Model.)

3 Sheets—Sheet 1.

D. B. HASELTON.
COTTON HARVESTER.

No. 319,710.

Patented June 9, 1885.



WITNESSES

Edwin L. Yewell.
Jas. L. Falley.

INVENTOR

D. B. Haselton

A. F. Funnis Attorney

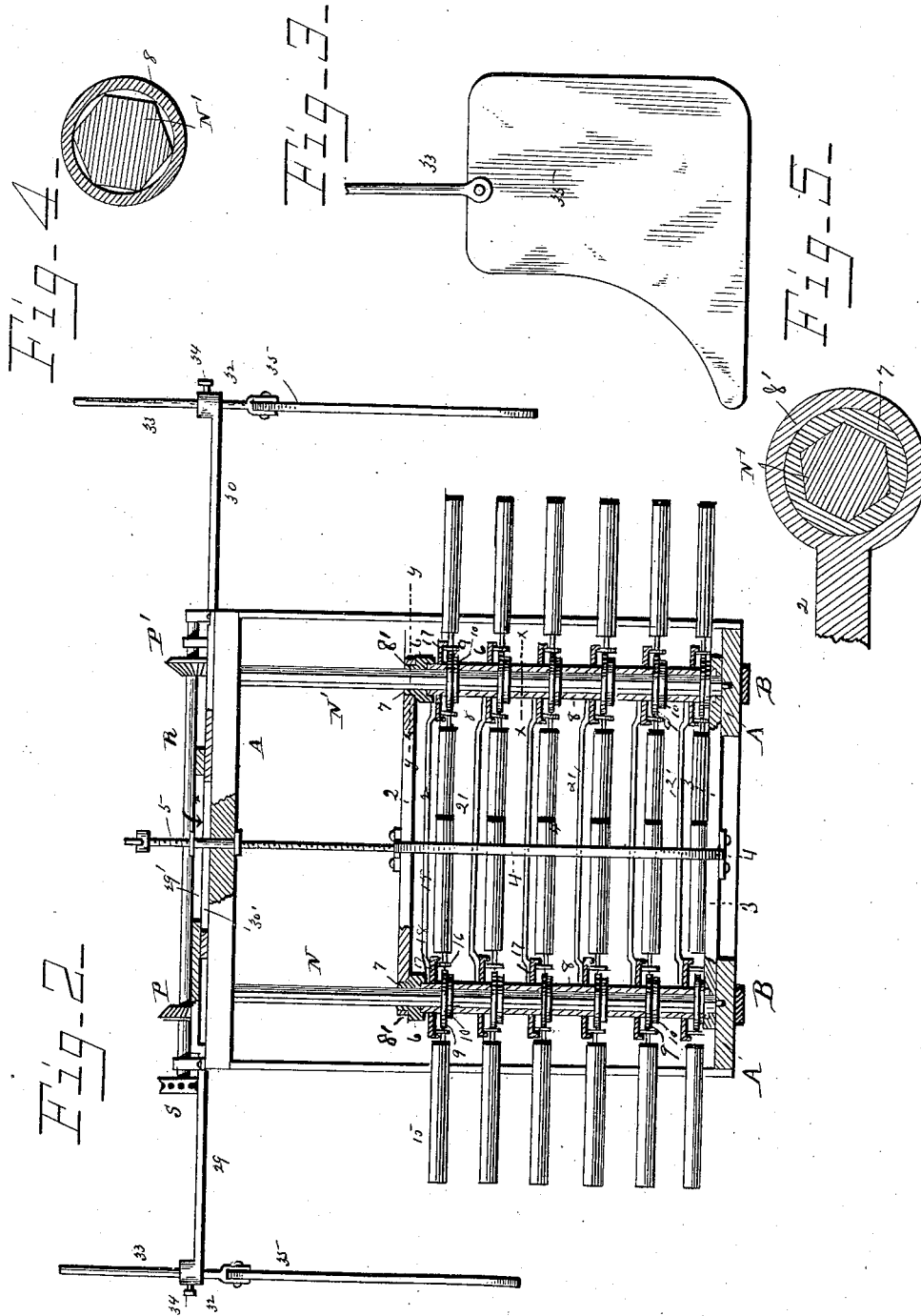
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Edwin L. Jewell
Jas. L. Halvey

INVENTOR

D. B. Haselton

H. P. Smith Attorney

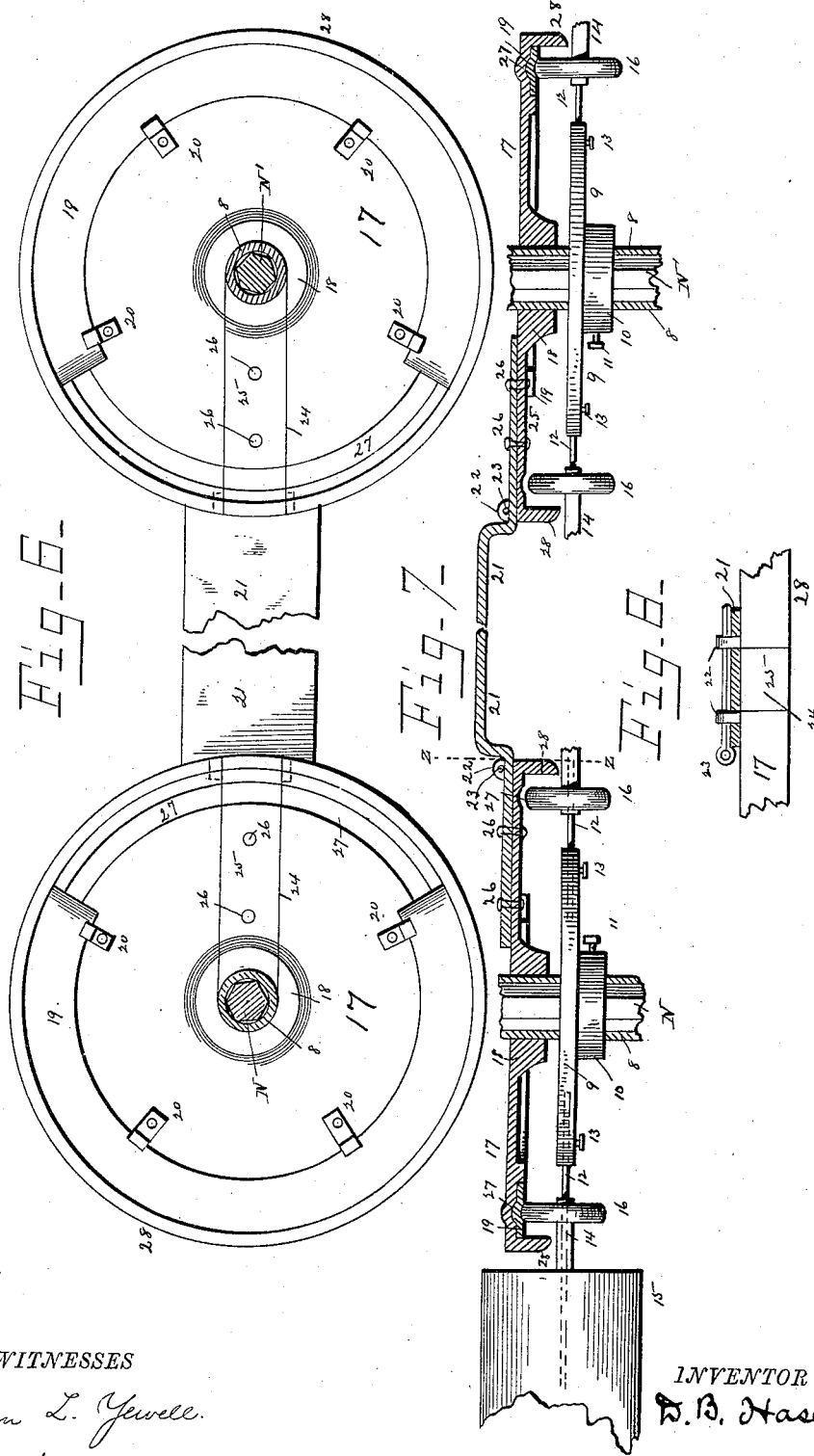
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Edwin L. Jewell.
Jas. L. Falvey

INVENTOR

D. B. Haselton

H. J. Davis Attorney

UNITED STATES PATENT OFFICE.

DANIEL B. HASELTON, OF CHARLESTON, SOUTH CAROLINA, ASSIGNOR TO
THE SOUTHERN COTTON PICKING COMPANY, OF SAME PLACE.

COTTON-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 319,710, dated June 9, 1885.

Application filed April 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, DANIEL B. HASELTON, a citizen of the United States, residing at Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Cotton-Harvesters, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation to cotton-harvesters, and its object is to provide a machine that will be drawn by horse through the field and gather the ripe cotton from the plants; and to that end the novelty consists in the construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings the same letters of reference indicate the same parts of the invention.

Figure 1 represents a side elevation of my improved cotton-harvester. Fig. 2 is a front elevation of the machine, partly in section. Fig. 3 is a side view of one of the adjustable side guards. Fig. 4 is a cross-section on the line *x x*, Fig. 2. Fig. 5 is a cross-section on the line *y y*, Fig. 2. Fig. 6 is a bottom plan view of the stationary friction driving-plates. Fig. 7 is a vertical cross-section of the same as they appear on the driving-shafts. Fig. 8 is a cross-section on the line *z z* of Fig. 7.

A A A is the frame-work of the machine.

B B are the draw-bars upon which the frame rests, and each of said draw-bars extends from the axle C to the plate D, which is rigid with the forward end of the draw-bar.

E is the connecting-bar, which extends upward and forward, and is connected to one of the thills F. This thill has a rigid plate, G, and by means of the pin *g* the thill may be rigidly adjusted with reference to the bar E. So, also, the lower end of the bar E may be adjusted by means of the pin *d* and plate D to correspond to the position of the thills.

The axle C is journaled in bearings in the rear ends of the draw-bars B, and said axle is provided with a pair of carrying-wheels, one of which is shown in Fig. 1, and upon these wheels the machine rests.

I is the elevator-box, and K is the elevator-belt, mounted upon the rollers *i i'*. L is a pulley, around which a belt passes from a pulley (not shown) on the axle C, which belt passes under the roller *i'*, so as to give the elevator-belt K the proper motion, as indicated by the arrows.

N N' are approximately vertical shafts journaled in the forward end of the frame A A. The upper ends of these shafts are provided with bevel-gears O, which mesh with similar gears, P P', on the horizontal shaft R, extending across the top of the front end of the machine. The outer end of this shaft R is provided with a chain-pulley, S, around which passes an endless chain, T, which passes over the adjustable guide-pulleys *t t*, and around the pulley M. It will thus be observed that as the machine moves forward the endless chain gives motion to the shaft R, and it in turn gives motion to the shafts N N', from the front outward—that is, as the machine travels forward between two rows of cotton-plants the right-hand shaft, N, turns to the right and the left-hand one, N', turns to the left.

2 is the top rail, 3 the bottom rail, and 4 a vertical tie or brace, which together form a frame sliding upon the shafts N N'.

5 is a regulating-screw, by means of which the said frame may be raised, lowered, or held in any desired position.

6 is a cap upon the upper end of the tube 8, which fits over the shaft N or N', and the outside of the upper part, 7, of said cap 6 is journaled in the bearing 8' on the top rail, 2, while the inside of the part 7 of said cap is hexagonal to correspond to the shaft N or N'. This construction allows the shaft to drive the tube 8, and the tubes being journaled in the rails 2 and 3, so as to be raised or lowered, it follows that the tubes may be rotated with equal facility in any position in which they may be adjusted.

Upon the tube 8 are mounted collars 9, each provided with a hub, 10, having a set-screw, 11, by means of which the collar is adjustably secured to the tube.

12 12 are spindles removably secured to each of said collars by set-screws 13, and upon each

spindle is mounted, so as to revolve freely, a tube, 14, to which are secured the toothed picker-cylinders 15, while to the inner end of said tube is secured a convex-faced friction-roller, 16.

17 is a friction driving-plate, having a central perforated base, 18, through which the tube 8 passes, so as to rotate freely therein. The under side of this plate is provided with a rubber track, 19, secured in place by clips 20. This track extends about two-thirds of the distance around said plate, so that the roller 16 is operated so as to revolve the picker-cylinder 15 only while it is in contact with the track, and in the space between the ends of the track 19, the roller not being operated, the cylinder is left free upon the spindle.

From this construction it will be seen that the collar 9, being secured to the tube 8, which is driven by the hexagonal shaft inclosed therein, is rotated therewith, and consequently the spindles radiating from said collar are rotated in a plane at right angles to the axis of said tube 8, and, the picker-cylinders 15 being loosely mounted on said spindles, when the friction-rollers 16 are in contact with the rubber track the said cylinders are rotated upon their own axes in addition to their common revolution about the axis of their shaft N.

The plates 17 are constructed in pairs, and those in each pair are connected by a yoke, 21, secured to said plates by perforated lugs 22 on the latter passing through corresponding slots in the yoke and held in place by a split spring-key, 23, so that if the key be withdrawn the parts may be separated.

Each driving-plate 17 has a radial slot, 24, in width corresponding to the tube 8, and 25 is a corresponding section of the plate, which fits into the slot 24, so that when it is in place the plate presents an unbroken surface. The section 25 is secured by rivets 26 to the yoke 21. If it becomes necessary to remove the plate 17, the key 23 is removed and the plate withdrawn from the coupling-yoke. Free access may then be had to the spindles and picker-cylinders.

Upon the face of the plate 17, underneath the rubber track, is a concave groove, 27, corresponding in form to the face of the roller 16. This allows the rubber to conform more evenly to the face of the roller and insure a regular and uniform frictional contact.

28 is a depending flange extending around the plate 17, which prevents the roller 16 slipping outwardly, should there be any tendency to do so. Each pair of the plates 17 being connected by a yoke, all are kept uniform and rest evenly by gravity upon the rollers 16, and consequently a very regular operation of the picker-cylinders is obtained.

29 30 are two arms, adjustably secured to the top of the frame by a bolt, 31, passing through slots 29' 30' in said arms, whereby they may be laterally moved in or out. The extremity of each arm has a perforated boss, 32, through

which passes a rod, 33, adjustably secured in place by a set-screw, 34. The lower end of this rod has secured to it a guard, 35, which serves to press the plant against the picking-cylinders or prevent the plant from springing away from them.

The machine is driven between the rows of plants, and the picking-cylinders extend into them on each side, while the side guards, 35, pass on the opposite sides of the plants and prevent them from springing away from the cylinders. As the branches of the plants are released by the cylinders they are prevented from being damaged by the sides or forward end of the elevator-box and by the rollers 36, which are loosely mounted in the frame in the rear of the picker-cylinders.

After the picker-cylinders have gathered the ripe cotton and carried it inside the frame, the fiber is removed from the teeth of the cylinders in any suitable manner, and it falls upon the elevator-belt, whence it is carried upward and discharged into the bag 37, secured to the rear platform, 38. In some cases it may be desirable to dispense with the bag and secure a sheet to the platform, so that when full its four corners may be gathered up, tied, and the bundle removed, and a new one placed in position.

A very important feature of my machine is inclining the shafts N N' forward, because this position allows the lower series of picker-cylinders to reach under the lowest branches of the plant, even though they be bent to touch the ground, and then gently lift them, so as to have access to all parts thereof. After the first blow is picked the picker-cylinders are raised by means of the regulating-screw 5 and the middle blow harvested. The pickers may then be farther elevated, or the forward part of the whole machine elevated by means of the plates D and G, so as to bring the picker-cylinders in line with the last or top blow, which is harvested with equal facility. By these means of adjusting the pickers a very wide field of adjustment is obtained with a machine comparatively small and limited in its dimensions, and it will also be observed that no part of the plant is operated upon except that portion which is in full blow and ready for harvesting.

In the present case I have not particularly described the construction of the picker-cylinders or the means of removing the picked cotton therefrom, as they are the subject-matter of another application—to wit, Serial No. 112,290, filed November 20, 1883.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. In a cotton-harvester, a series of picker-stems independently mounted upon radially-projecting spindles attached to a forwardly-inclined shaft, in combination with mechanism, substantially as described, whereby said

picker-stems will be operated by the forward motion of the machine, as and for the purpose set forth.

2. In a cotton-harvester, the combination of an inclined rotating shaft, a series of revolving pickers independently mounted on radially-projecting spindles on and rotating with said shaft in their own plane, and means, substantially as described, whereby said picker-stems may be raised or lowered, as and for the purpose set forth.

3. In a cotton-harvester, a series of picker-cylinders radially mounted upon a forwardly-inclined shaft journaled in the frame, in combination with means, substantially as described, whereby the inclination of the shaft and frame may be varied, as set forth.

4. The combination, with the shaft R, having gear-wheels P P', and the shafts N N', having gears O, of the rails 2 and 3, brace 4, and the regulating-screws 5, as and for the purpose set forth.

5. The combination of the shaft R, inclined polygonal shafts N N', the rails 2 and 3, tubes 8 8, having caps 6, journaled in said rails, and the regulating-screws, as set forth.

6. The combination of the tube 8, the collar 9, adjustably secured thereto and provided

with removable radial spindles 12, the picker-cylinders 15, having friction-rollers 16, and the non-rotating friction driving-plate 17, supported on said rollers, as and for the purpose set forth.

7. The combination of the tube 8, the collar 9, provided with spindles 12, the picker-cylinders 15, rotating on said spindles and having the rollers 16, and the non-rotating driving-plate 17, provided with an annular groove, 27, and rubber track 19, as and for the purposes set forth.

8. The combination, with the driving-plate 17, having the mutilated track 19, of the collar 9, having spindles 12, and the picker-cylinders 15, having friction-rollers 16, as and for the purposes set forth.

9. The combination, with the frame, picker-cylinders, and their operating mechanism, of the adjustable side guards, 35, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL B. HASELTON.

Witnesses:

C. H. SHEEN,
H. J. ENNIS.