

No. 636,557.

Patented Nov. 7, 1899.

O. L. REEVES.
COTTON ELEVATOR AND CLEANER.

(Application filed July 10, 1899.)

(No Model.)

2 Sheets—Sheet 1.

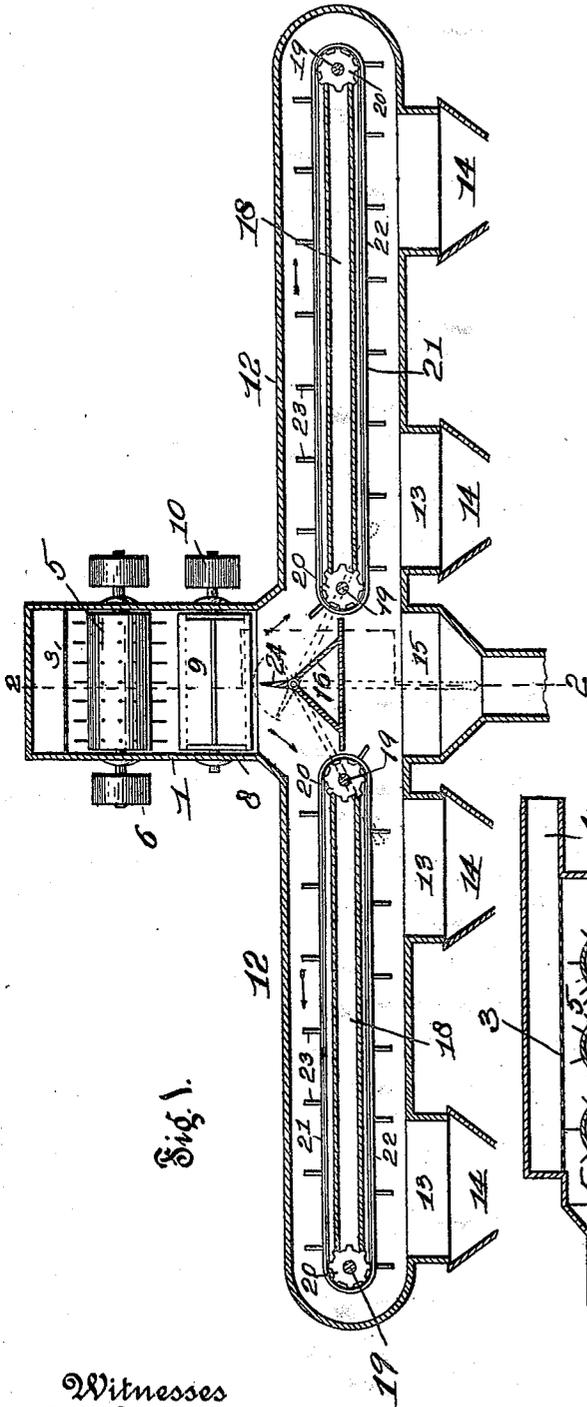


Fig. 1.

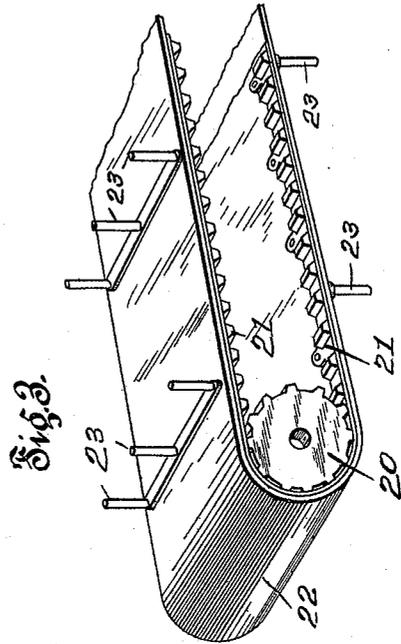


Fig. 3.

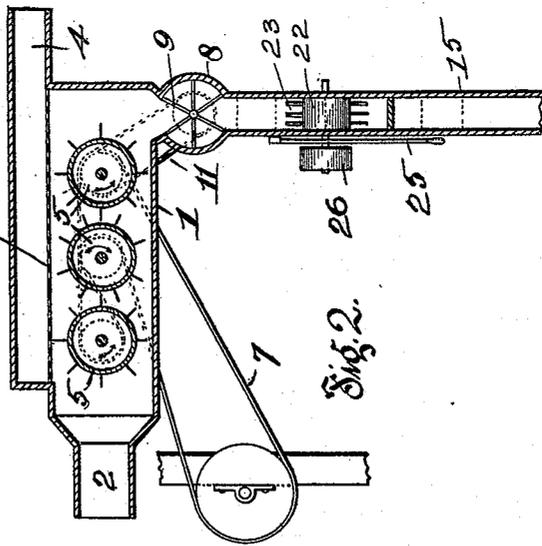


Fig. 2.

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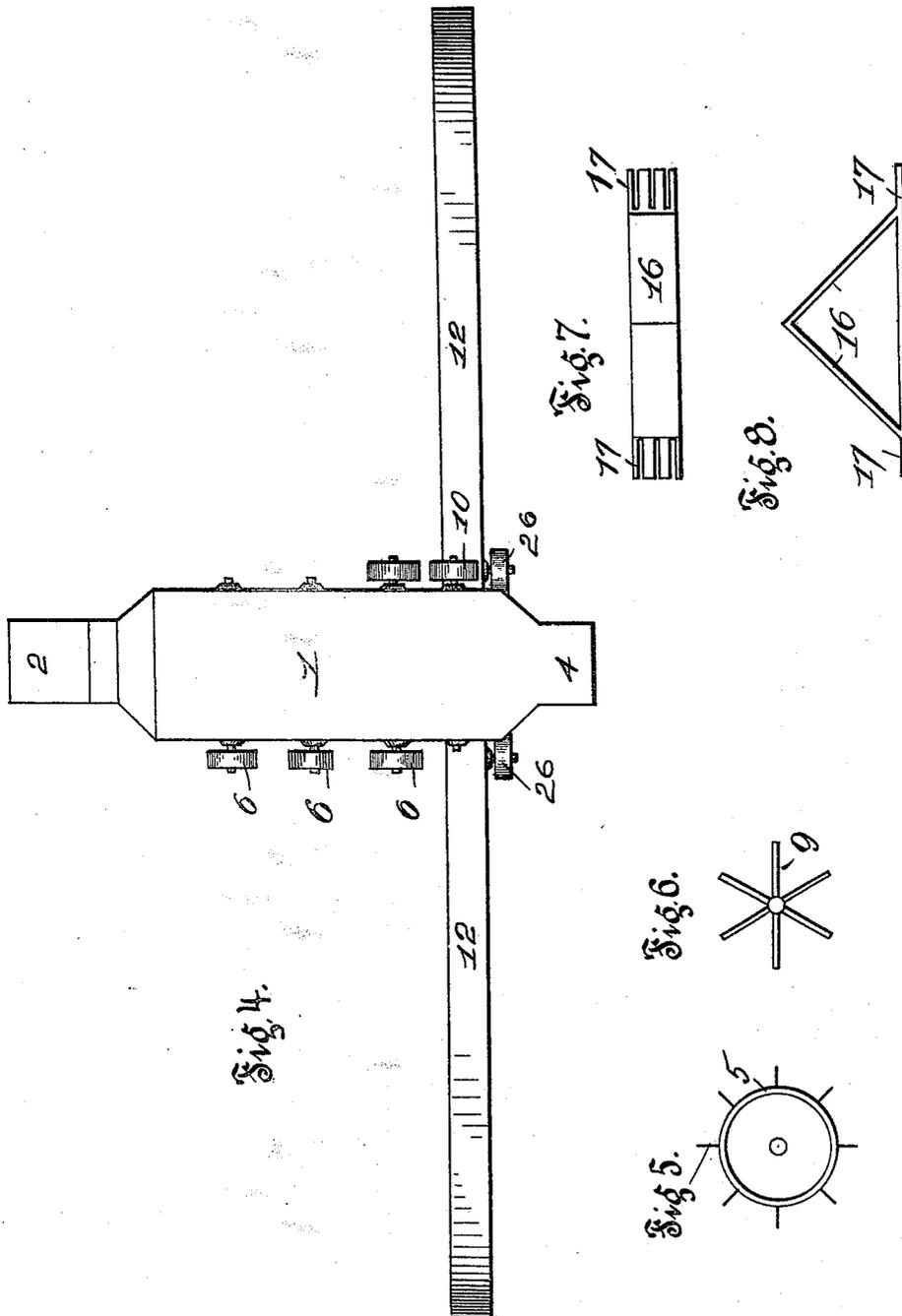
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UNITED STATES PATENT OFFICE.

OSCAR L. REEVES, OF CHECOTAH, INDIAN TERRITORY, ASSIGNOR OF ONE-HALF TO ROBERT B. HUTCHINSON, OF SAME PLACE.

COTTON ELEVATOR AND CLEANER.

SPECIFICATION forming part of Letters Patent No. 636,557, dated November 7, 1899.

Application filed July 10, 1899. Serial No. 723,465. (No model.)

To all whom it may concern:

Be it known that I, OSCAR L. REEVES, of the city of Checotah, Creek Nation, Indian Territory, have invented certain new and useful Improvements in Cotton Elevators and Cleaners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to cotton elevators and cleaners; and it consists of the novel construction, combination, and arrangement of parts hereinafter described and claimed.

Figure 1 is a longitudinal sectional view taken on a vertical line through the center of the distributing portion of my invention. Fig. 2 is a vertical sectional view taken approximately on the line 2 2 of Fig. 1. Fig. 3 is a view in perspective of a portion of one of the endless carriers made use of in carrying out my invention. Fig. 4 is a plan view of the complete elevator and cleaner. Fig. 5 is an end view of one of the picker-rolls. Fig. 6 is an end elevation of the pocketed feed-wheel. Fig. 7 is a plan view of the deflector made use of between the endless carriers of the elevator and cleaner. Fig. 8 is a side elevation of this deflector.

In the construction of my improved elevator and cleaner I employ a rectangular box-like structure 1, having an open end 2, which is the cotton-inlet, and horizontally arranged in the upper portion of the box-like structure 1 is a screen 3, there being an outlet 4 above this screen at the end of the box opposite from the inlet 2, and a suction-fan (not shown) is suitably located and arranged so that it will create a suction through the screen in the box 1 and through the outlet 4.

Rotatably arranged in the box 1 are the picker-rolls 5, there being preferably three of said rolls, each comprising a cylinder of suitable size, from the periphery of which project numerous pins or fingers, and upon the shafts of these picker-rolls, outside the box 1, are located the belt-wheels 6, the center one of which is somewhat smaller than the outside ones in order to cause the center one of the picker-rolls to rotate faster than the outer pair of rolls, and the driving-belt 7, which passes around said belt-wheels to drive the

same, is so arranged that the center one of said rolls rotates in a direction opposite to that in which the outer pair of rolls rotate.

Immediately below the forward end of the box 1 is a circular casing 8, in which is rotatably arranged the pocketed feed-wheel 9, said pocketed feed-wheel comprising a shaft from which radiates a plurality of blades, the edges of which engage during their rotation against the inner sides of the casing 8, and upon the shaft of this wheel, outside the casing 8, is arranged a belt-wheel 10, around which passes a belt 11, the same being driven from the forward one of the picker-wheels 5. Immediately below the casing 8 and leading in opposite directions are the distributing chutes or casings 12, the same being of some length, and formed in the bottom of said casings are the outlets 13, which discharge directly onto the gin-feeders 14.

Leading downwardly from the center or from a point between the distributing-casings 12 is the overflow-chute 15, and immediately above said overflow-chute and in the center of the casing 12 is an A-shaped deflector 16, the same being arranged directly beneath the center of the feed-wheel 9, which deflector is provided with flanges 17, the same being longitudinally slotted. Horizontally arranged within each of the distributing-casings 12 and extending longitudinally therein are the partitions 18, at each end of which is horizontally arranged a shaft 19, upon which, adjacent the inner faces of the distributing-casings 12, are fixed the sprocket-wheels 20, and around which pair of sprocket-wheels at each side of the casings 12 pass the endless chains 21, to which chains are riveted or fixed in any suitable manner the edges of the endless belts 22. Fixed at regular intervals upon each one of these endless belts 22 is a transverse row of vertically-arranged fingers or pins 23.

Carried by a shaft at the apex of the deflector 16 is a gate or wing 24, which is for the purpose of regulating the feed of the cotton onto the distributor belts or carriers, and carried by the shaft of this gate outside the casing is a hand-lever 25 for manipulating said gate.

Located upon the ends of the center pair

of the shafts 19 are belt-wheels 26, over which driving-belts (not shown) pass.

When my improved elevator and cleaner is in operation, the belt 7 is driven in any suitable manner, and as a result thereof rotary motion is imparted to the picker-rolls, the same rotating in the direction indicated by the arrows in Fig. 2, and simultaneous with the rotation of said picker-rolls the pocketed feed-wheel 9 is rotated. The endless carriers, comprising the belts 22 and fingers 23, are driven in opposite directions, as indicated by the arrows in Fig. 1, and when the suction-fan is in operation the cotton will be drawn through the inlet 2 and will at once be caught by the rapidly-rotating picker-rolls, and the fingers or pins carried by said picker-rolls will pick and pull the cotton apart, very thoroughly loosening and separating the same, and all the dust in said cotton will be drawn through the screen 3 and will pass from thence outwardly through the outlet 4 to and past the suction-fan. The cotton, after thus passing through the picker-rolls and having been cleaned and separated thereby, will drop into the end of the casing 1, immediately above the pocketed feed-wheel 9, and by said wheel it will be very evenly discharged onto and over the deflector 16, and from thence it will be carried in each direction by the endless carriers. Said endless carriers will finally distribute and discharge the cleaned cotton through the outlets 13 into the gin-feeders 14, and should there be an excess of cotton delivered onto the endless carriers it will pass into the overflow 15.

By providing two of the endless carriers or distributing-belts and operating the same in opposite directions the cotton can be very evenly distributed to the gins and a large amount of cotton can be easily and quickly handled. The fingers or pins 23 are preferably riveted to bars carried by the belts 22, and where this construction is carried out the danger of any of said pins or fingers losing off and dropping into the gin is precluded. By riveting or securing the endless belts directly to the endless chains the use of belt-tighteners is dispensed with and the expansion and contraction of the belts are overcome, and friction resulting from the operation of tight belts is also dispensed with. The working strain of the endless carriers and the strain upon the canvas belts are taken up by the sprocket-chains.

In an apparatus of my improved construc-

tion the cotton is cleaned while it is being elevated, thereby dispensing with the necessity of handling the cotton twice or passing it through two different machines and operations.

My improved elevator and cleaner very effectually separates the cotton, all of the dust is removed from said cotton, and said elevator and cleaner is very simple in operation and construction and will separate and clean and deliver to the gin-feeders a large amount of cotton in a given space of time.

I claim—

1. In a cotton elevator and cleaner, a rectangular casing, in the opposite ends of which are formed an inlet and an outlet, a plurality of picker-rolls rotatably arranged in said casing between said inlet and outlet, means whereby one of said picker-rolls rotates faster than the remaining rolls, a screen arranged above said picker-rolls, there being an outlet formed in the casing above said screen, and means whereby the cotton after passing through the cotton-outlet is distributed to the gins, substantially as specified.

2. In a cotton elevator and cleaner, a distributing-casing provided in its under side with outlets, an overflow-chute at the center of the under side of said casing, endless carriers operating in each side of said casing, and means whereby the cleaned cotton is delivered onto the inner ends of said endless carriers, substantially as specified.

3. In a cotton elevator and cleaner, a casing, in the opposite ends of which are formed a cotton inlet and an outlet, a plurality of picker-rolls rotatably arranged in said casing between said inlet and outlet, a screen arranged above said picker-rolls, there being an outlet formed in the casing above said screen, a casing immediately beneath the cotton-outlet, a pocketed feed-wheel rotatably arranged in said casing, a distributor-casing horizontally arranged below said last-mentioned casing, in the bottom of which distributor-casing is formed a plurality of outlets, endless carriers operating in said distributor-casing, and means whereby the feed of the cotton onto said carriers is regulated, substantially as specified.

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

OSCAR L. REEVES.

Witnesses:

J. B. MORROW,
R. P. RUTHERFORD.