

June 15, 1926.

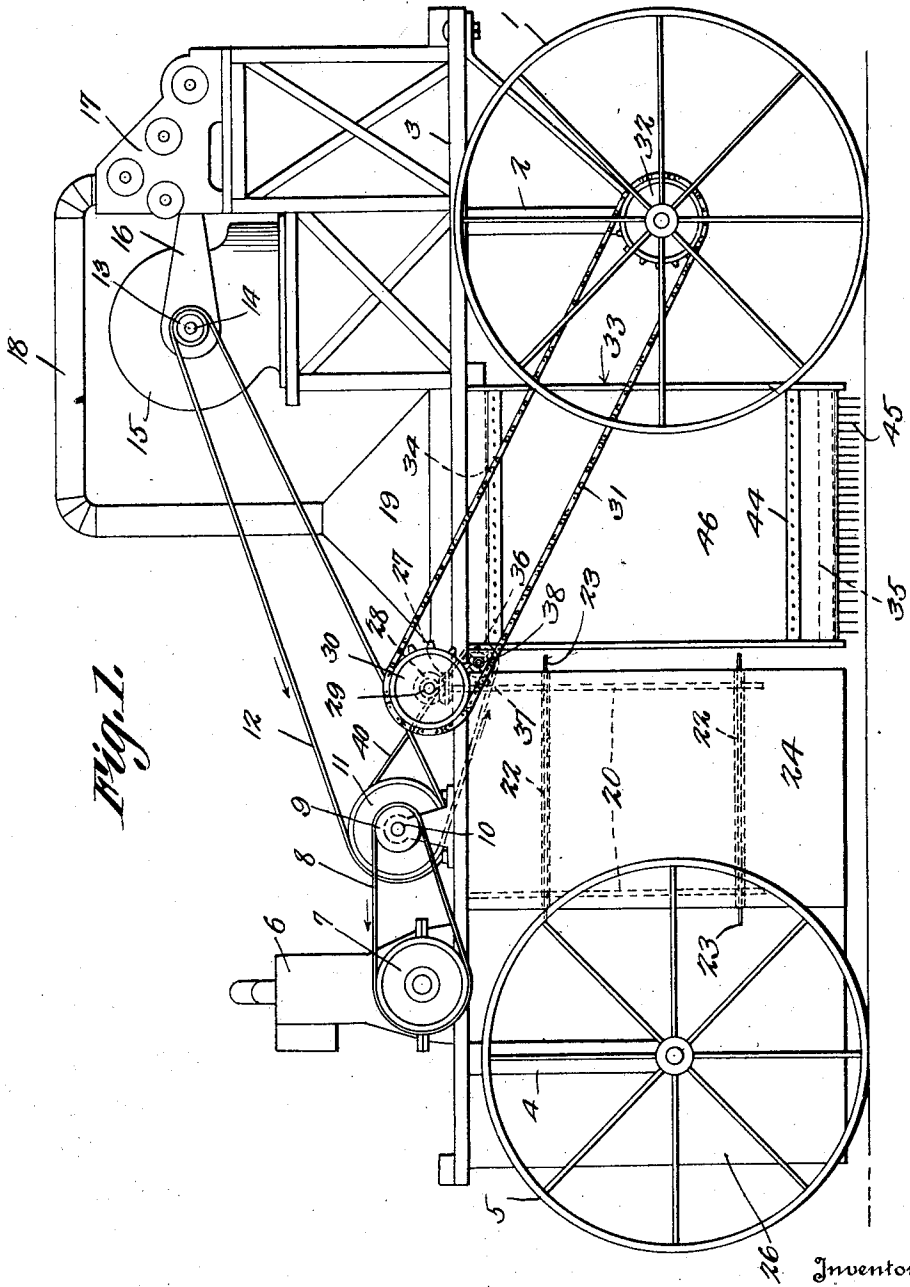
1,589,340

G. B. RODGERS

COTTON HARVESTER

Filed June 11, 1924

3 Sheets-Sheet 1



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COTTON HARVESTER

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3 Sheets-Sheet 2

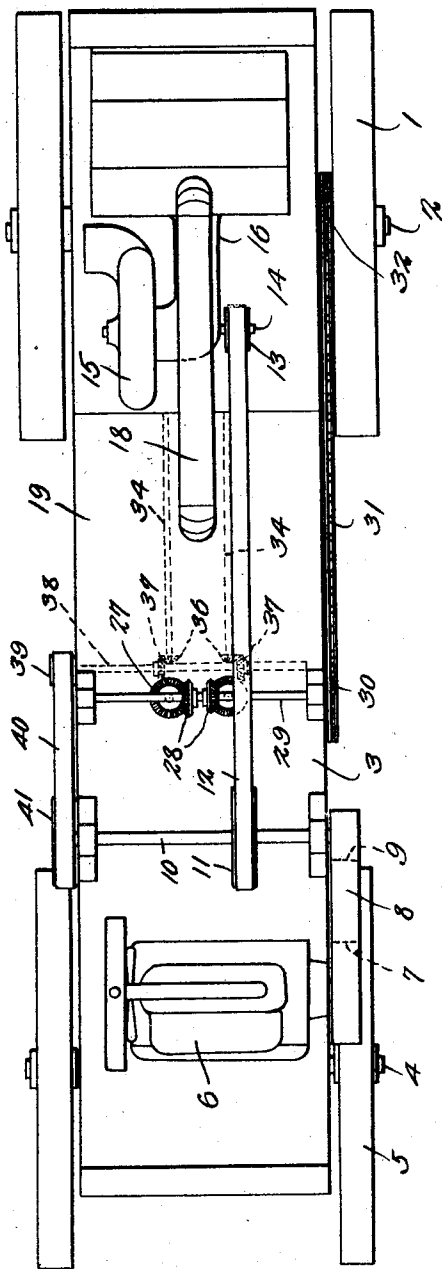


Fig. 2.

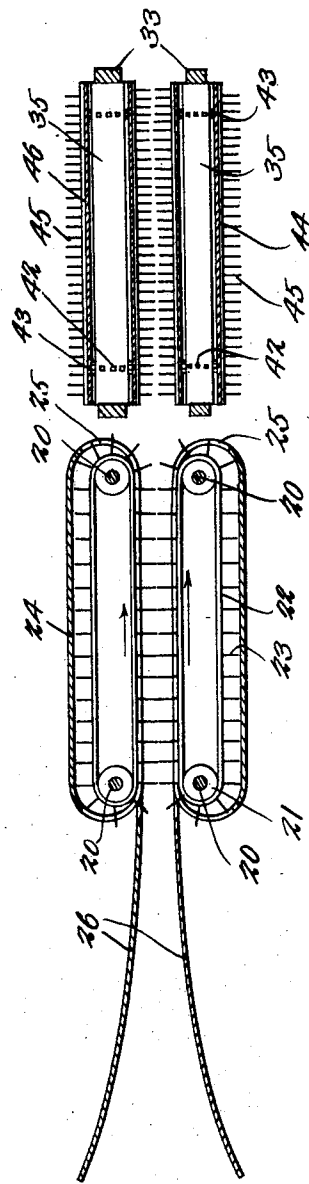


Fig. 3.

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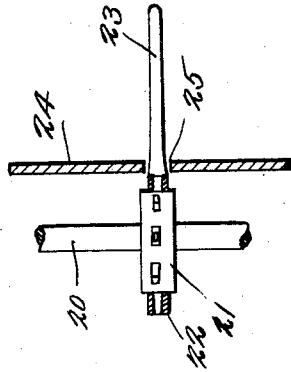


Fig. 7.

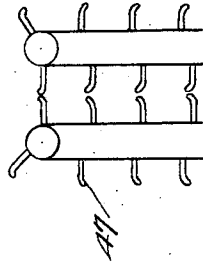


Fig. 6.

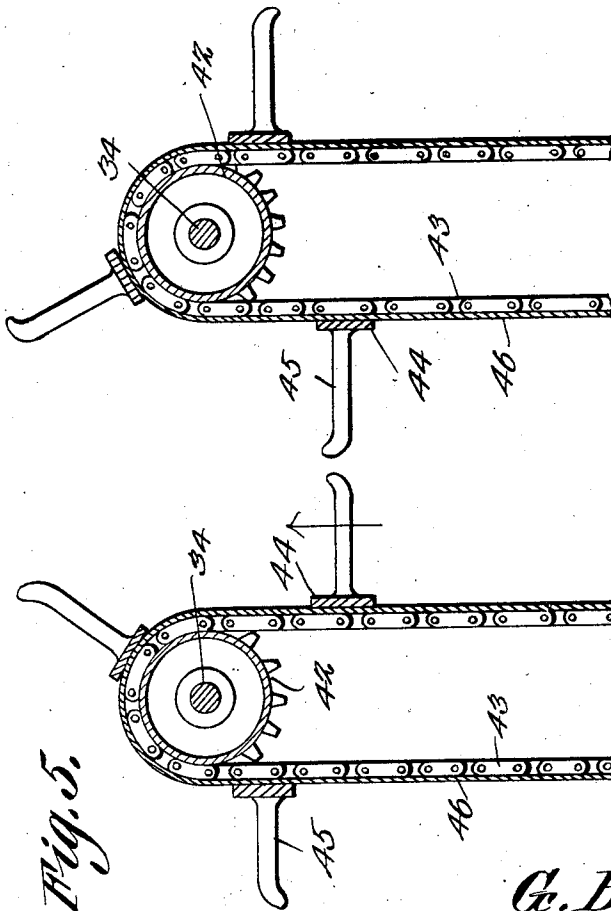


Fig. 5.

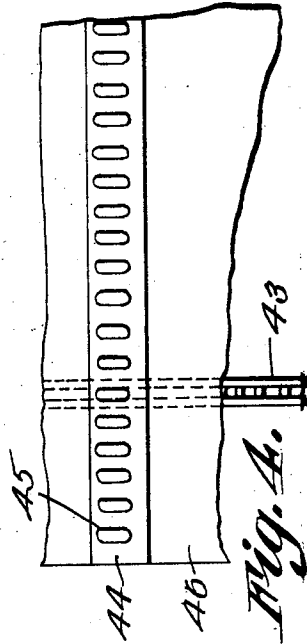


Fig. 4.

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UNITED STATES PATENT OFFICE.

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COTTON HARVESTER.

Application filed June 11, 1924. Serial No. 719,382.

This invention relates to machines for harvesting cotton, one of the objects of the invention being to provide a machine adapted to be moved along the rows of cotton and operating not only to strip the bolls from the plants but also to separate the cotton fibers from the bolls.

A further object is to provide a machine of this character which is simple and compact in construction and will effect a vast saving in the cost of harvesting.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings—

Figure 1 is a side elevation of the complete machine.

Fig. 2 is a plan view.

Fig. 3 is a horizontal section through the picking mechanism.

Fig. 4 is an enlarged elevation showing a portion of the inner side of one of the picking belts.

Fig. 5 is an enlarged vertical transverse section through portions of the picking members.

Fig. 6 is a view similar to Fig. 5 but on a reduced scale, showing a slightly modified structure.

Fig. 7 is an enlarged vertical section through a portion of one of the feeders.

Referring to the figures by characters of reference 1 designates rear supporting wheels for an arched axle 2 on which is mounted the rear portion of a frame 3. The front portion of this frame is supported by an arched axle 4 carried by supporting wheels 5, it being understood that any suitable means, not shown, may be provided for shifting the front wheels 5 for the purpose of steering the machine. An engine 6 is mounted on the frame 3 and is adapted to transmit motion from a pulley 7 through a belt 8 to another pulley 9 mounted on a transverse

shaft 10. To this shaft 10 is secured another pulley 11 adapted to transmit motion through a belt 12 to a pulley 13 secured to the shaft 14 of a blower located in a casing 15. The intake flue 16 of this blower communicates with a cotton cleaner indicated generally at 17 and opening into this cotton cleaner is a flue 18 extending from a collecting hood 19 supported in the frame 3.

Journalled in and depending from the frame 3 back of the arched axle 4 are opposed pairs of parallel shafts 20 having sprockets 21 on which are mounted upper and lower endless chains 22. Certain of the links of these chains are provided with oppositely extending teeth 23. These chains and their shafts are preferably arranged within elongated sheet metal housings 24, the inner or adjoining walls of the respective housings being provided with longitudinal slots through which the fingers or teeth 23 extend. The outer walls of these housings are sufficiently spaced from the chains 22 to allow the teeth to travel within the housing without coming into contact therewith. This arrangement of parts has been shown clearly in Fig. 3. Guide plates 26 are extended forwardly from the inner walls of the housing 24 and gradually diverge, as shown in Fig. 3, thereby to properly gather standing plants and direct them into the space between the housing 24.

The rear shaft 20 of each pair is provided, at its upper end, with a pinion 27 and the pinions on the two shafts mesh with pinions 28 secured to a transverse shaft 29 on the frame 3. This shaft has a sprocket 30 on which is mounted a chain 31 adapted to receive motion from a sprocket 32 rotatable with one of the rear wheels 1. Thus it will be seen that when the machine moves forwardly motion will be transmitted from this wheel 1 to the shaft 20 and the chains 22 will be caused to move in the directions indicated by the arrows in Fig. 3. The driving mechanism is so proportioned that the rearward movement of the inner or adjoining flight of the opposed chain 22 will be at the same speed as the forward movement of the entire machine. Consequently any vegetation brought to position between the chains 22 will be maintained upstanding as the machine moves forwardly.

Supported directly back of the housings 24 are laterally spaced depending frames 33. In each frame are journaled upper and lower horizontal shafts 34 and 35. The upper shafts 34 are provided at their forward ends with pinions 36 meshing with corresponding pinions 37 secured to a transverse shaft 38. A pulley 39 is secured to this shaft and is adapted to receive motion through a belt 40 from a pulley 41 secured to the shaft 10. The shafts 34 and 35 are provided with sprockets 42 on which are mounted endless chains 43, certain of the links of which are connected by cross bars 44. Each bar 44 has a longitudinal series of picking fingers 45 outstanding therefrom. The two chains connected by the bars are also preferably connected by a belt 46 of canvas or the like. Thus there are provided two opposed picking belts, the inner or adjoining flights of which are adapted to move upwardly during the operation of the machine so as to cause the fingers 45 likewise to move upwardly within the space between the belts as shown in Figs. 3 and 5.

It is preferred to arrange the bars 44 in diametrically opposed groups, there being preferably three bars in each group as shown in Fig. 5. If desired, however, the bars can be regularly spaced throughout the length of each pair of chains, so that the series of teeth will be regularly spaced as illustrated at 47 in Fig. 6. By having the series of teeth and the bars arranged in groups, however, the fingers 45 of each group will pull upwardly through the standing plants very quickly and there will be little, if any, danger of the plants being dragged over and pulled from the ground by the teeth. In other words when one group of picking fingers 45 is moving the machine can be moved forwardly to allow standing plants to be received between the opposed picking belts before the next group of pickers comes into engagement with the plants.

It is believed that the operation of this machine will be apparent from the foregoing disclosure. The machine can be drawn over the field by a tractor and the motor or engine 6 can be employed solely for operating the feeding, picking and cleaning mechanism. Obviously, however, the motor can also be used for driving the machine if so desired.

As the machine moves along a row of plants the guides 26 will gather the plants so that they can move properly into the space between the feeding chains. Here the plants will be engaged by the fingers 23 and held in upstanding position as the machine moves forwardly. Consequently the plants will not be pulled over as would be the case should the fingers 23 and their operating means be dispensed with. As the plants emerge from between the rear portion of the housing 24

they will be received between the lower portions of the picking belts. Here the upwardly moving fingers 45 will comb through the plants and pull all of the bolls therefrom. The bolls are carried upwardly to a position close to the hood 19 where the suction of air will be strong enough to convey the bolls through the flue 18 to the cleaner 17. Here the bolls will be threshed and the trash separated from the fibers, the trash being delivered onto the ground while the fibers are sacked in any suitable manner.

The construction and operation of the cleaner 17 need not be set forth in detail and this part of the structure constitutes no part of the present invention but has already been disclosed in a patent issued to me and others on Jan. 7, 1902, No. 690,614.

The machine is to be drawn over the field after the first frost which will kill the plants and leave the bolls and leaves dry.

What is claimed is:—

1. In a cotton harvester, the combination with a portable structure, of depending endless belts spaced apart to provide a plant receiving passage there-between, said belts being movable about axes extending in the direction of movement of the structure, parallel series of combing fingers upon each belt and extending transversely thereof, the series of fingers on each belt being spaced apart to receive a plurality of plants there-between prior to each combing operation, the fingers on each belt being directly opposite the fingers on the opposed belt.

2. In a cotton harvester, the combination with a portable structure, of opposed endless belts depending from the structure and movable about axes extending longitudinally of said structure, parallel series of combing fingers upon each belt and extending transversely of the belt, each series of fingers on one belt being directly opposite the corresponding series of fingers on the other belt, the series of fingers on each belt being spaced apart sufficiently to receive a plurality of standing plants between said series and between the belts prior to each combing operation by the upwardly moving fingers, and means for simultaneously actuating the belts to move the fingers upwardly through the plants between the belts.

3. In a cotton harvester, the combination with a portable structure, of opposed endless belts depending from the structure and movable about axes extending longitudinally of said structure, parallel series of combing fingers upon each belt and extending transversely of the belt, each series of fingers on one belt being directly opposite the corresponding series of fingers on the other belt, the series of fingers on each belt being spaced apart sufficiently to receive a plurality of standing plants between said series and be-

tween the belts prior to each combing operation by the upwardly moving fingers, means for simultaneously actuating the belts to move the fingers upwardly through the plants between the belts, and means movable longitudinally of the structure for maintaining plants in upstanding positions

during the forward movement of the structure and until delivered to position between the belts. 10

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

GEORGE B. RODGERS.