COTTON-PICKER MECHANISM.


To all whom it may concern:

Be it known that I, LOUIS CARROLL STUKENBORG, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cotton-Picker Mechanism; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereto, which form a part of this specification.

This invention relates to improvements in cotton picker mechanism embracing a suitable casing having brush means by which to withdraw the cotton from the cotton plant, suction means for drawing the cotton rearwardly from the head or casing, and an intermediate take-off device within the head to dislodge cotton fiber which would otherwise tend to adhere thereto.

The present invention relates more particularly to the construction of the take-off device, and its mounting.

The invention consists in the combination and arrangement of the elements herein described and shown in the drawings, and is pointed out in the appended claims.

In the drawings:

Figure 1 is a partial inner elevation and a partial section of a cotton picker head embodying my invention.

Figure 2 is a section on the line 2—2 of Figure 1.

Among the objects of the invention is to simplify and improve the take-off device for removing the cotton from the brushes and to avoid the winding of cotton about the take-off bearings, and further objects of the invention are to improve and simplify mechanisms of this character, and the invention consists in the combination and arrangement of the parts shown in the drawing and described in the specification, and is pointed out in the appended claims.

The picker head or casing embraces in general terms two similar shell parts 10 and 11 which, when fitted together, constitute a hollow casing that is formed at one end with an intake mouth 11', and at its other end with an outlet or exhaust portion 12 which, as herein shown, is made an integral part of the shell member 10. The outlet portion is connected to a flexible tube 13 which is adapted for connection at its other end to an exhaust fan to produce a draft of air through the head. The said head may be provided with a hand piece 14 to manually direct the head to the cotton fiber at the plant.

Rotatively mounted across the mouth is a pair of brushes each comprising a wood or other fiber core 15, an encircling shell 16 and a plurality of outstanding bristle tufts 17, said bristle tufts being so located that the rotation of the brushes in the direction indicated by the arrows in Figure 1 draws the cotton between the brushes and through suitably located guards shown in Figures 1 and 2.

The shafts 18 of the brushes extend through and fit non-rotatively in the brush cores 15, and they are formed at their outer ends with cylindric portions 19 which extend beyond the cores, and said cylindric portions of the shafts are supported in roller bearings 20 which are seated in inwardly opening sockets of lugs 21 that may be made integral with and extend inwardly from opposing walls of the casing; the terminals 22 of the shafts being herein shown as extended through the bases of said lugs on said side walls. The shells 16 which encircle the core of the brush extend endwise beyond the core, as before stated, and substantially from one side wall to the other side wall of the casing to constitute cylindric extension guards 25 which are disposed concentrically about and in overlapping relation to the lugs 20 to avoid cotton finding its way into the bearings of the brush. The brush shafts extend beyond one side of the casing and have attached thereto meshing spur gears 26, 26 through which the brushes are rotated in a manner hereinafter to be described.

In rear of the brushes in a chamber 28 is mounted a take-off device designated as a whole by 30. Said take-off device is of cylindric formation and is provided on its periphery with a series of outstanding teeth 31, 32, the latter being two ends of a pin 33, which pins the shell to a driving shaft 34 within the casing, said shell having a central diaphragm 35 through which the pin 33 extends.

Said shaft 34 constitutes a driving pin for the take-off device and is located concentrically arranged with the shell in a housing formed by a pair of facing surfaces 36, 37, which are clamped together by bolts 38, 39, 39 through nuts 40, 40, 40.

The driving pin 34 revolves within a portion 41 of a cable 42 which is wound upon a drum 43 an integral part of the shell member 10. The cable 42 is connected by a take-off member 44 to a driving member 45 made an integral part of the shell member 10. The take-off member 44 is connected to the driving member 45 by a flexible guide 46.
trically in the take-off device. It extends outwardly beyond one of the walls 10 and carries a spur gear 30 that meshes with an idler 37 which, in turn, meshes with one of the brush gears 28, whereby the take-off device and brush gears are rotated from the same source of power which consists, in this instance, of a detachably connected flexible shaft 38.

The shaft 34 of the take-off device is mounted in anti-friction bearings 40, which are seated in inwardly opening sockets of bearing blocks 41 that are provided with outer polygonally squared ends 42 to fit within like shaped openings in the walls 22 of the casing so as to be non-rotatively held therein.

The said shell 30 is made of such length as to extend substantially from one wall 22 to the other like wall, and the ends 46 of said shell constitute guards which prevent the entwining of cotton about the bearings of the take-off device. So far as the latter feature of the invention is concerned, for wit: the extension beyond the bearings of the take-off device annular collars or shells, the take-off device in itself may be made of other construction.

The driving gears for the various parts of the machine are enclosed by a gear casing 47 which is detachably fixed to the adjacent wall 43 of the casing in any preferred or suitable manner.

The two parts or halves of the casing are fastened together when fitted with their edges abutting together with edges engaging threaded lugs 48, and when the parts of the shell are disassembled and parted, the brushes and take-off device may be readily withdrawn from their bearings for inspection and repair, and the shells or parts of the casing may be with equal facility fitted and secured with their bearings assembled.

In order that the greater part of the air flowing through the head may not create a suction through the mouth such as would tend to carry parts of burs, leaves, and the like into the head with the cotton, the case may be provided at and in rear of the take-off device with air inlets 50 and 51, the latter in the elbow of the casing, so as to cause a substantial portion of the air to pass over the rear portion of the take-off device and remove the cotton therefrom. While fixed teeth are employed movable eccentric teeth may be employed to more certainly clear the cotton from the take-off device.

I claim as my invention:

1. A cotton picker head comprising a casing having a mouth formation and a pneumatic outlet, picker means at the mouth and a rotative take-off shell in the casing in rear of the picker means and having external, relatively fixed, formations to remove cotton from the picker means and terminating at its ends closely adjacent to opposing casing walls and bearings carried by said casing walls for the take-off device, said take-off device having endwise hollow extensions to axially overlap said bearings.

2. A cotton picker head comprising a casing having a mouth formation and a pneumatic outlet, picker means at the mouth, a tubular take-off device in the casing in rear of the picker means and having relatively fixed external formations to remove the cotton from the picker means, a driving shaft extending through and fixed to the shell of said take-off device, and bearings carried by opposing casing walls in which said shaft is rotatively mounted, the said casing walls and take-off device having overlapping parts to prevent admission of cotton staple to said bearings.

3. In a picker head for cotton picking machines, a casing having a mouth formation, with picker means thereof, and provided with an outlet, a take-off device between said picker means and outlet, embracing a hollow cylinder extending between and terminating closely adjacent to opposite walls of the casing and having peripheral cotton removing means, bearing members removably fixed to the casing walls and extending into and radially spaced from the ends of said cylinder, a shaft extending through and fixed to said hollow cylinder and rotatively mounted in said bearing member, and means to rotate said shaft.

4. In a picker head for cotton picking machines, a casing having a mouth formation, with picker means thereof, and provided with an outlet, a take-off device between said picker means and outlet, embracing an open ended hollow cylinder extending between and terminating at its ends closely adjacent to opposite walls of the casing and having peripheral cotton removing means, bearing members carried by said casing walls and extending into the ends of and radially spaced from said cylinder, and a shaft extending through said take-off device and fixed thereto and rotatively mounted in said bearing members and provided exterior to the casing with a detachable driving shaft.

5. In a picker head for cotton picking machines, a casing having a mouth formation, with picker means thereof, and provided with an outlet, a take-off device between said picker means and outlet, embracing a cylinder extending between and terminating at its ends closely adjacent to opposite walls of the casing and having peripheral cotton removing means, bearing members fixed to the casing walls and extending into and radially spaced from the ends of said cylinder, a shaft extending through said take-off device and fixed thereto and rotatively mounted in said bearing members and provided exterior to the casing with a gear.
wheel, and gear wheels on the picker means, one connected to and directly driven by the gear wheel on said driving shaft.

6. In a picker head for cotton picking machines, the combination with a casing having at one end a mouth, and picker means thereat, of a take-off device, embracing a cylinder having peripheral cotton removing means, bearing blocks removably fixed in opposing casing walls and extending within the open ends of the shell, and a shaft rotative in said bearing blocks and fixed to said cylinder.

In witness whereof I claim the foregoing as my invention, I hereunto append my signature this eleventh day of August, 1920.

LOUIS CARROLL STUKENBORG.