

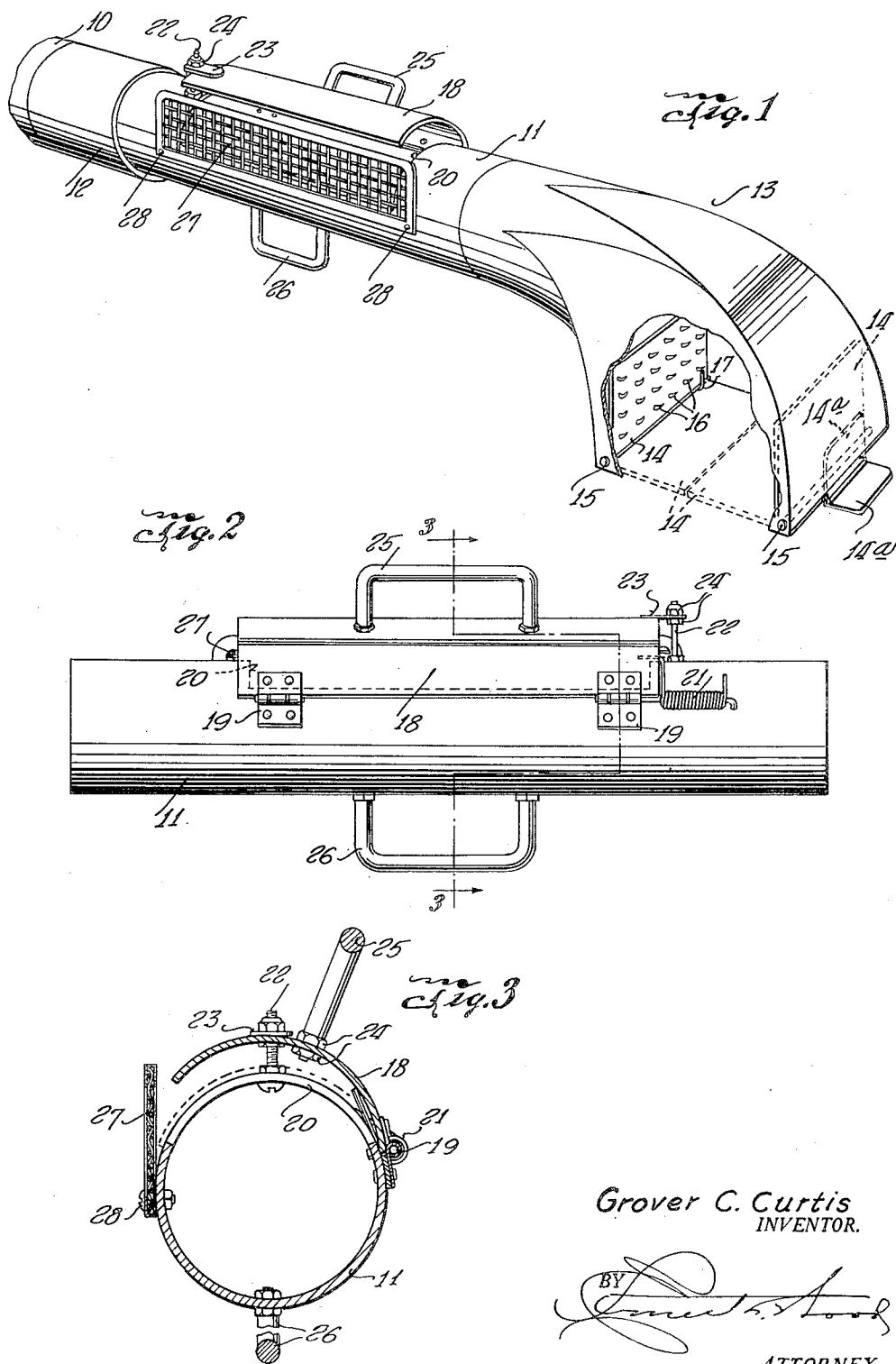
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GATHERING HEAD VALVE FOR COTTON HARVESTERS

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GATHERING HEAD VALVE FOR COTTON
HARVESTERS

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1 Claim. (Cl. 302-64)

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This invention relates to the art of harvesting cotton and it has particular reference to new and useful improvements in valves used in conjunction with gathering heads employed with suction type cotton harvesting apparatus.

The principal object of the invention is to provide a suction control valve especially designed to cooperate with my gathering head, described in U. S. Letters Patent No. 2,471,314, issued May 24, 1949. This gathering head is adaptable to any type of suction harvesting machine using one or more flexible suction tubes. It is the purpose of the present invention to improve upon the construction and performance of the valve described in said patent by making the same more functional in that it may be operated by either hand with equal dexterity by virtue of a pair of finger engaging loops and further, to provide a hinged valve plate operable by one of said loops in such manner as to reduce to the very minimum the interference caused by adjacent plant foliage influenced into proximity of the valve by suction. Moreover, provision is made through the medium of a foraminous guard adjacent the valve opening to preclude entrance of matter other than the cotton extracted from the open bolls by the gathering head.

With the foregoing objects in view, the invention has further reference to certain features of accomplishment which will become apparent as the description proceeds, taken in connection with the accompanying drawing wherein:

Figure 1 is a perspective view of a valve constructed according to the invention, shown in conjunction with a gathering head.

Figure 2 is an elevational view of the valve per se, and

Figure 3 is a transverse sectional view thereof.

In the drawing, reference numeral 10 denotes fragmentarily the flexible suction hose of the harvesting machine, of which there are several, each being connected to the intake manifold of the blower of the machine, not shown.

The valve of the present invention consists of a tube 11 which is of equal diameter throughout its length and one end thereof is frictionally retained in a collar 12, mounted on the end of the hose 10. In like manner, a gathering head, generally designated by reference numeral 13 is attached to the opposite end of the valve tube 11. Further details of the valve will be described presently.

The gathering head 13 shown only in Figure 1 forms the subject matter of the above identified patent and consists of the preferably square head

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whose front and rear walls are perpendicular to the orifice and recessed to accommodate complementary extractor plates 14, pivoted in the head on pins 15 along their opposed edges and are thus capable of displacement from closed position in the orifice to open position in the wall recesses.

The plates 14 are each studded with a multiplicity of sharpened teeth 15, which are curved towards the midsection of the nozzle orifice.

As the suction through the nozzle is established by closing the valve, the suction overcomes the resistance of a light spring 17, tending to hold the plates 14 in closed position, to move the plates to the open position shown in solid lines in Figure 1. As the plates are displaced, the teeth 16 engage the cotton in the boll and exert a force effective to aid the suction in dislodging the cotton from its boll after which the cotton is influenced by suction, continues through the head, valve tube and flexible hose to the hopper of the harvesting machine when the valve is opened, the suction through the head is suspended.

Each of the hinged extractor plates 14 has a tongue 14a formed on its outer edge, which is disposed at an angle of substantially 90 degrees with respect to the plane of the plate. These tongues extend outwardly beyond the walls of the nozzle 13 and serve as manipulators for the plates should the nozzle become clogged by cotton, leaves, stalks or the like seeking passage into the nozzle. The plate may be manually operated by these tongues to dislodge any matter caught therebetween.

Returning to the valve; it will be observed that an elongated and longitudinally curved plate 18 is hinged at 19 to the valve body or tube 11 in such manner that it may be moved to open and close a longitudinal opening 20 in the valve tube. The valve plate 18 is held normally open by a torsion spring 21, mounted on the extended pintle of one of the hinges 19. An adjustable stop to limit the opening displacement of the valve plate is defined by a threaded pin 22, extending upwardly from the tube 11 at one end of the opening 20 therein. A tongue 23 is made adjustable on the pin 22 by means of opposing nuts 24 thereon and this tongue extends over into the path of the valve plate 18 to thus limit its opening travel.

To operate the plate 18, a loop handle 25 is mounted thereon and is shaped to receive either the thumb or fingers of one hand while a similar loop handle 26 is mounted on the tube 11 in near diametric relationship with respect to handle 25.

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Depending upon whether the operator is right or left handed, the remaining fingers or the thumb of the same hand are inserted under handle 26, thus to hold and manipulate the valve plate 18 as the gathering head is moved about the cotton stalk to seek out and extract cotton from open bolls thereon.

A screen guard 27 is affixed along one edge at 28 to the tube 11 adjacent the outer edge of the valve opening 20 and rises above the free edge of the valve plate 18 at its full open position to exclude leaves and other matter influenced towards the opening 20 when the valve plate is opened. This screen is edged with metal to present a smooth surface to cotton and other matter likely to catch thereon.

Manifestly, the construction as shown and described is capable of some modification and such modification as may be construed to fall within the scope and meaning of the appended claim is also considered to be within the spirit and intent of the invention.

What is claimed is:

A valve for a suction harvesting machine comprising an elongated tube of equal diameter throughout its length and having a longitudinal

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opening intermediate its ends, a longitudinally curved plate hinged along one edge and adapted to be moved to open and close said opening, means normally urging said plate towards open position; a looped handle on said plate adapted to receive the thumb of a hand, an analogous handle on said tube in substantially diametrically opposed relationship with said first handle adapted to receive the fingers of the same hand, adjustable means to limit opening displacement of said plate and foraminous means for excluding matter influenced by suction towards said opening.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
608,689	Lee	Aug. 9, 1898
971,458	McCleary	Sept. 27, 1910
1,109,525	Hartnell, Jr.	Sept. 1, 1914
1,184,151	Tulley	May 23, 1916
2,471,314	Curtis	May 24, 1949