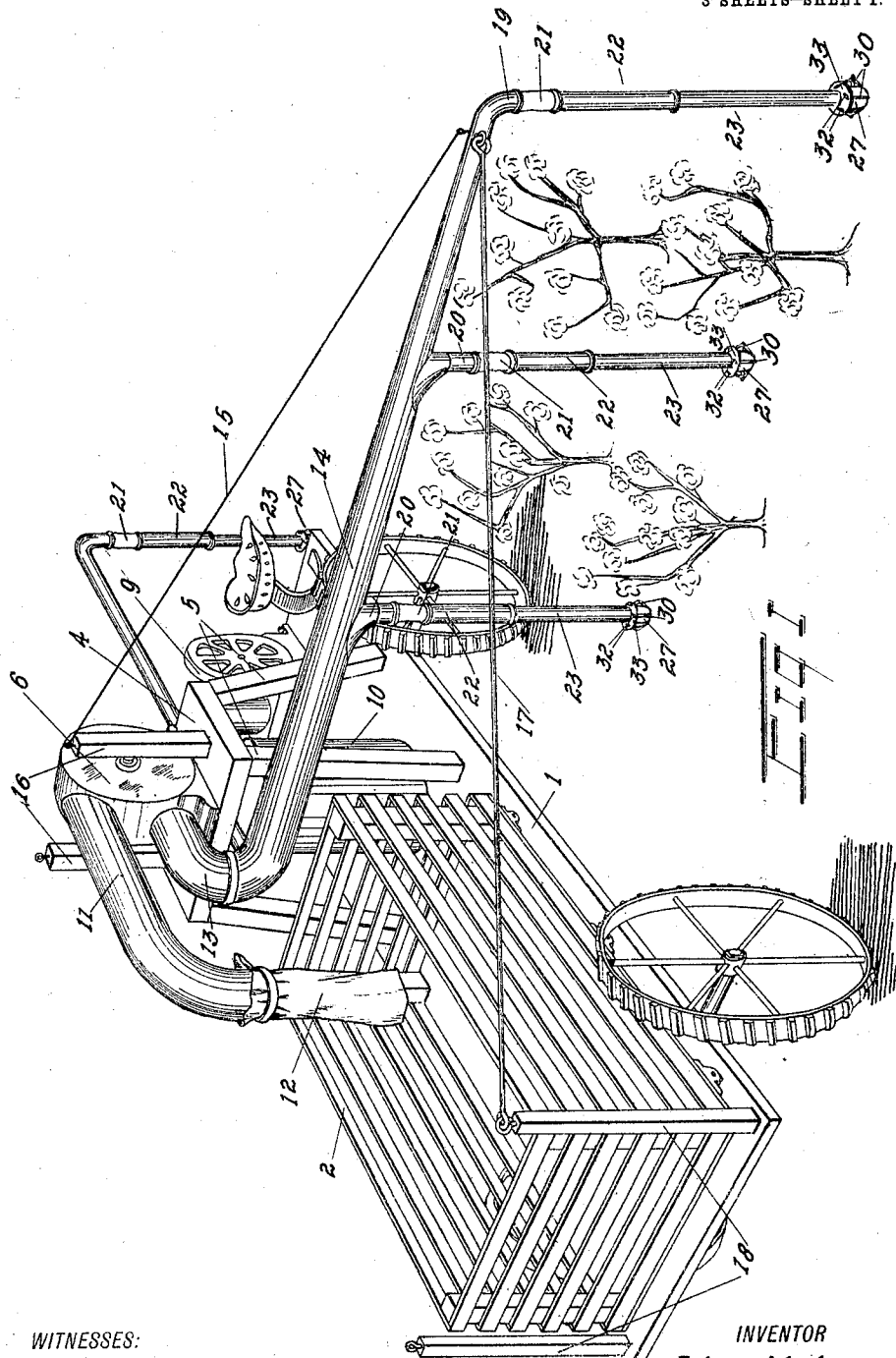


1,032,560.

J. MEIER.
COTTON PICKER.
APPLICATION FILED NOV. 27, 1911.

Patented July 16, 1912.

3 SHEETS—SHEET 1.



WITNESSES:

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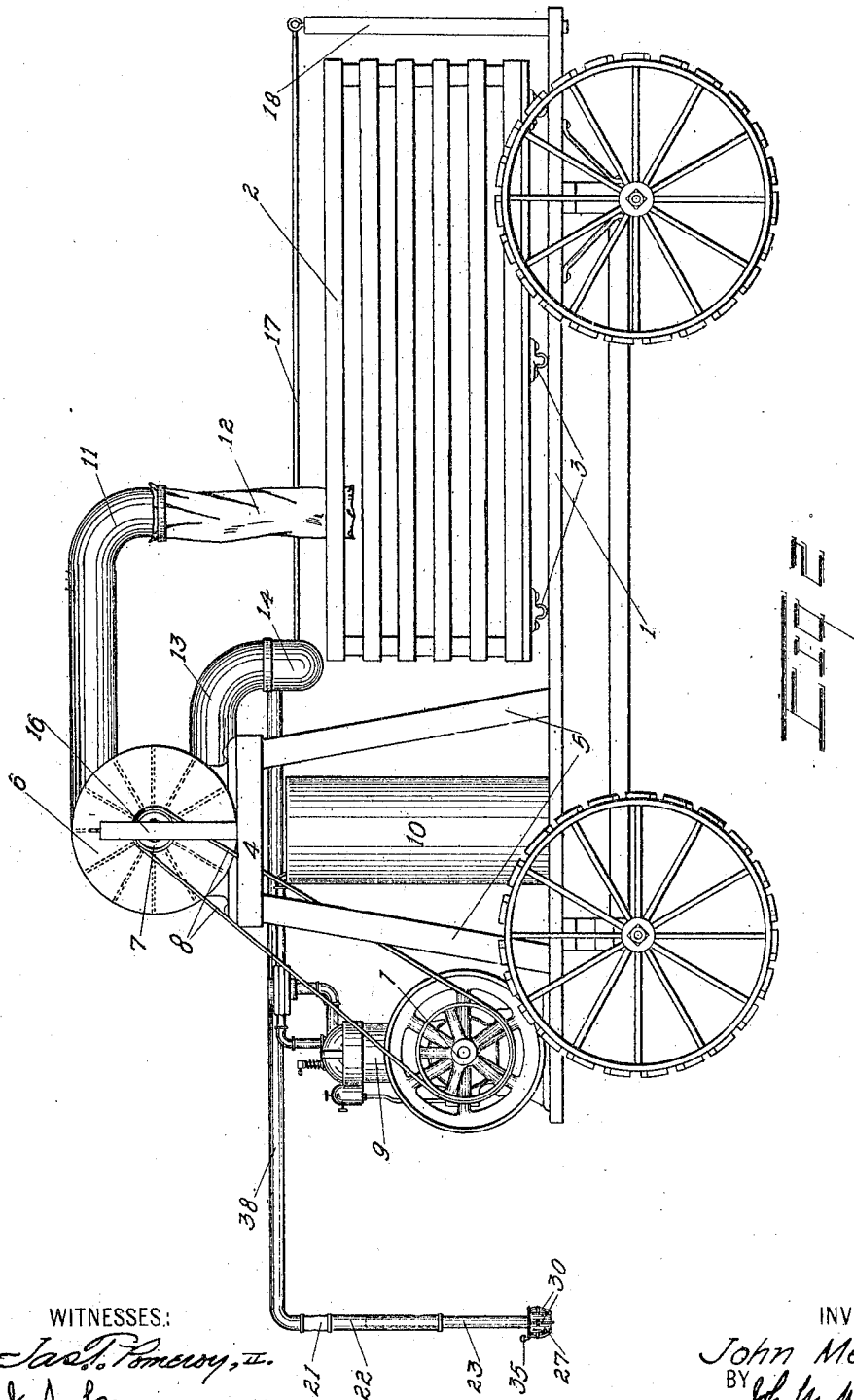
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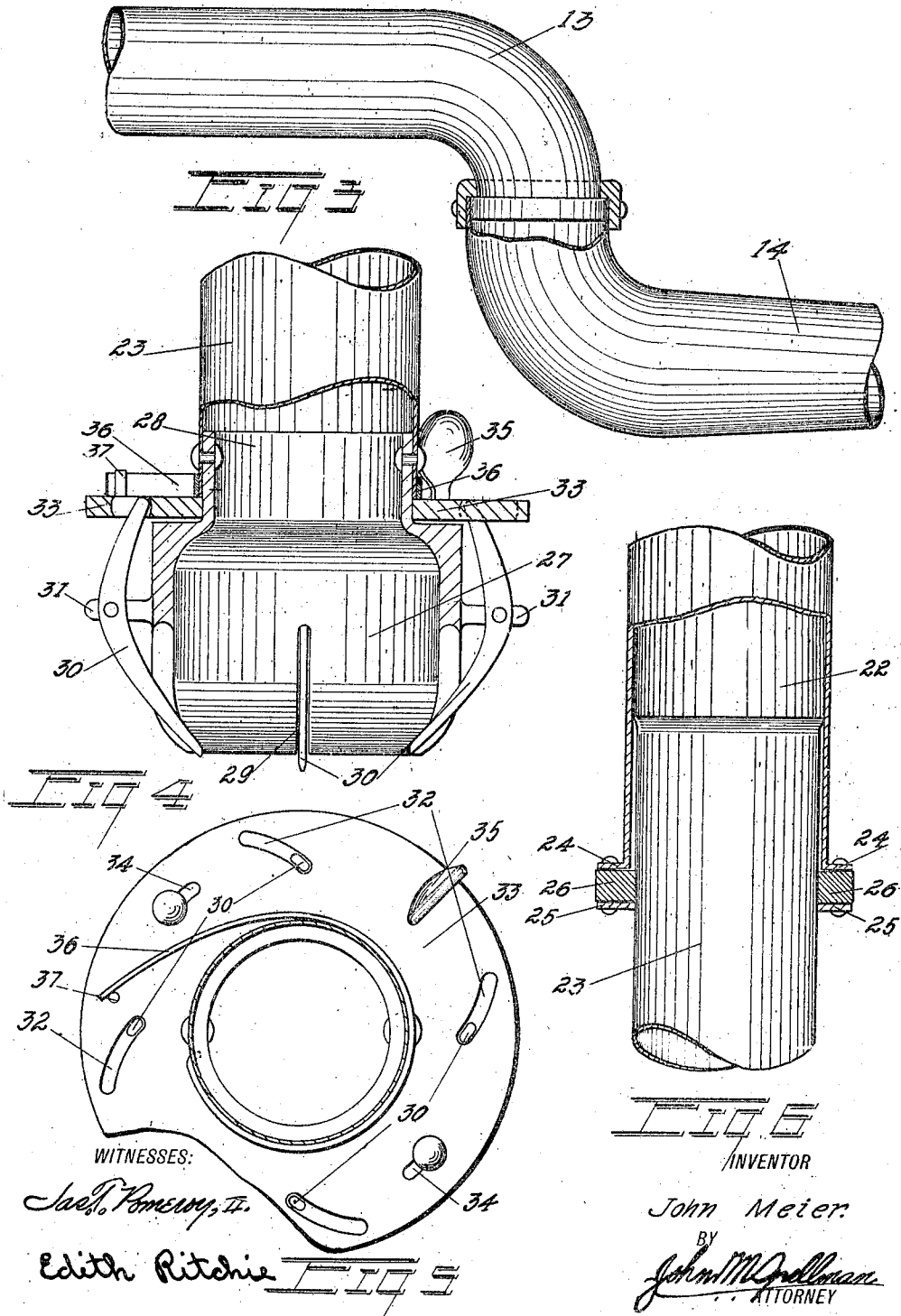
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1,032,560.

Patented July 16, 1912.
3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

JOHN MEIER, OF DE KALB, TEXAS.

COTTON-PICKER.

1,032,560.

Specification of Letters Patent.

Patented July 16, 1912.

Application filed November 27, 1911. Serial No. 662,581.

To all whom it may concern:

Be it known that I, JOHN MEIER, a citizen of the United States, residing at De Kalb, in the county of Bowie and State of Texas, have invented certain new and useful Improvements in Cotton-Pickers, of which the following is a specification.

My invention relates to new and useful improvements in cotton pickers. Its object is to provide a cotton picker that will be adapted to operate simultaneously on several rows of cotton and will not damage the green or unopened bolls of cotton, and will not accumulate sticks, leaves, trash or other objectionable matter, as it gathers the bolls.

The object of the invention is more specifically to provide a cotton picker which will pull the cotton bolls from the plant through a suction created by a suitable fan carried by the machine, this suction being applied to the plant through adjustable pipes having enlarged inlets, each pipe being controlled by an operator, who will apply the inlet thereof to the bolls.

A further object of the invention is to provide a gripping mechanism correlated with the inlet of each of said pipes, said mechanism comprising pivoted fingers, which by manipulation of the operator may be made to grip a boll of cotton, making it possible for the operator to thus assist the suction in removing the boll from the plant.

Other objects of the invention lie in the provision of a lightly constructed receptacle, having rollers upon its bottom and mounted upon the machine to receive the cotton, as it is ejected from the aforesaid fan, and in the provision of a swivel mounting for the main fan inlet pipe by which the same may be swung to either side of the machine.

Finally the object of the invention is to provide a device of the character described that will be strong durable, simple and efficient and comparatively easy to construct, and also one that will not be likely to get out of working order.

With these and various other objects in view my invention has relation to certain novel features of the construction and operation, an example of which is described in the following specification and illustrated in the accompanying drawings, wherein:—

Figure 1 is a perspective view of the complete cotton picker, showing all of the parts thereof in operative assembly. Fig. 2 is a view of the machine in side elevation, this

view being particularly adapted to show the transmission of power from a suitable engine to the fan. Fig. 3 is a detail view, showing the swivel mounting provided for the inner extremity of the main inlet pipe of the fan; said mounting making it possible to swing the pipe to either side of the machine. Fig. 4 is a detail sectional view of a cup shaped member, one of which forms a suction inlet for each of the pipes which branch from the main inlet pipe of the fan, a manually operated mechanism being shown correlated with said member for assisting the suction in removing a cotton boll from its stem. Fig. 5 is another view of the same as seen from above when in operative position. Fig. 6 is a detail view in partial section, showing a telescopic joint employed to secure extensibility in the length of the branch pipes which connect with the main inlet pipe of the fan.

Referring now more particularly to the drawings, wherein like reference characters designate similar parts in all the figures, the numeral 1 denotes a four-wheeled truck which carries upon its rear portion a large crate 2 formed of wooden slats or some other light material. In order to facilitate the loading or unloading of the crate, the same is provided upon its under side with several rollers 3, extending transversely of the crate. Upon the forward portion of the truck, there is erected a scaffolding, consisting of a platform 4, surmounted upon four posts 5. The scaffolding carries a suction fan 6, to which fan rotation may be communicated through a pair of pulleys 7 and a belt 8, from an internal combustion engine 9, mounted upon the forward extremity of the truck just in front of the scaffolding. Beneath the scaffolding is located a cylindrical tank 10 containing the water to be circulated in the usual manner about the engine cylinder to cool the same. The fan outlet communicates with a pipe 11, which extends a short distance rearwardly above the crate 2 and is then provided with an elbow making a quarter turn downward. A sleeve 12 of canvas or some other suitable fabric depends from the outlet of said elbow, its lower end extending into the upper portion of the crate.

The inlet of the fan, which is provided at the rear lower portion thereof, communicates with an elbow 13 forming a quarter turn downward. The elbow 13 communicates through a swivel joint with an up-

turned quarter turn elbow provided upon the inner end of a horizontal pipe 14 which is gradually reduced in diameter from its inner to its outer end. The pipe 14 is adapted to be swung about the swivel bearing formed at its inner end and is normally disposed transverse with the wagon at either side thereof. The outer extremity of the pipe 14 is supported by a wire 15 extending from said extremity to a post 16, two of which are provided on the platform 4 one at each side thereof. A brace rod 17 is also provided to steady the pipe 14 and hold it to a position transverse with the truck, this brace rod being extended from the outer extremity of said pipe to one of two posts 18 mounted at the rear corners of the truck.

The pipe 14 has a plurality of inlets, one of which has the form of an elbow 19 making a quarter turn downward at the end of the pipe. The other inlets of which there will preferably be two, communicating with the under side of the pipe 14, are designated by the numeral 20 and are spaced from each other and from the elbow 19, a distance equal to that between the rows of cotton. A short flexible sleeve 21, preferably of leather, is fitted tightly over each of the outlets 19 and 20 and the other end of each sleeve 21 has air-tight communication with a vertically suspended pipe 22. The flexible connection formed by the sleeve 21 makes it possible to swing the pipe 22 at an angle with the vertical in any direction, the necessity for this freedom of motion being later made clear. Within the lower portion of each pipe 22, is slidably fitted the upper portion of a slightly smaller pipe 23, a telescopic pipe joint thus being formed, adapted to permit adjustment in the combined length of the two pipes. The joint is made air-tight by providing the bottom of the pipe 22 with a flange 24 and providing upon the pipe 23 a sliding collar or washer 25, which is riveted to said flange, a packing ring 26 being clamped between the parts 24 and 25, as is shown in Fig. 6. Upon the lower extremity of each pipe 23, an inverted cup 27 is secured, said cup being provided with a neck portion 28 fitting tight within the correlated pipe and riveted or otherwise secured thereto. The diameters of the cups 27 will be slightly greater than that of the pipes with which they are associated and the rims of the cups will curve slightly inward as is clearly shown in Fig. 4. The interior diameter of the cups will be reduced to form the necks thereof in a gradual curve so as to offer no interior surface against which the picked cotton may lodge. In the cylindrical wall of each cup 27, there are provided a plurality of equidistant slots 29, extending from the rim to the middle portion of the cup, parallel to the axis of the latter. Into each slot 29 there projects

the outer extremity of a crescent-shaped finger 30, pivotally mounted at its middle, upon a lug 31 projecting from the outer surface of the cup at a right angle with said surface. The inner extremities of the fingers 30 respectively project into a plurality of slots 32 equidistantly provided in a collar 33, carried by the neck portion 28 of the cup 27 and contiguous with the circular shoulder formed at the juncture of said pipe with the cup 27. The slots 32 are slightly curved and form angles of approximately 45 degrees with a diameter of the collar passing through their center points. One end of each slot 32 therefore terminates adjacent to the central aperture of the collar (which end normally received one of the finger extremities) and the other close to the rim thereof. It is obvious therefore that the extremities of the fingers 30 which rest in the slots 32 may be outwardly or inwardly displaced by subjecting the collar 33 to a slight rotation thereby causing the finger extremities to travel from one end of said slots to the other. The possible rotation of the collar is limited by screws passing through slots 34 in the collar and fixed in the shoulder portion of the correlated cup, each slot having the form of a short circular arc. A small concave disk 35, projecting rigidly from the collar and perpendicular to the same, forms a thumb rest by the use of which the operator may manually subject the collar to the rotation necessary to actuate the rear ends of the fingers outwardly. When the operator removes his thumb from the disk 35, the same will be automatically rotated to its normal position through the operation of a spring 36 which encircles the pipe 23 adjacent to the collar, one of its extremities being fixed in said pipe and the other being extended contiguous with the collar and tangent with the pipe and being made to bear against a pin 37 carried by the collar near its rim. When a rotation is manually communicated to the collar, in the direction of the arrow, the spring 36 is distorted and it therefore produces a reverse rotation of the collar when manual pressure upon the thumb rest ceases.

From the upturned elbow at the inner end of the pipe 14 a pipe 38 extends forwardly, passing beneath the platform 4 and projecting some distance in front of the truck. The forward end of said pipe is provided with a downwardly turned elbow, with which are correlated parts 22, 23 & 28 similar to those already described.

The above explanation of the construction of the cotton picker will serve also to explain the main features of the operation to those familiar with the art. The two part extensible pipes, each of which is suspended between two of the rows are intended to be

each handled by an operator, who will grasp the lower extremity of the extensible pipe adjacent to the cup 27, and will apply the mouth of said cup to the ripened cotton bolls, thus causing the bolls to be pulled from their stems and drawn into the pipes by suction due to the fan. In case this suction alone is not sufficient to remove the boll from the stem, the operator will merely have to exert a slight pressure on the thumb-rest 35 to cause the boll to be gripped by the fingers 30, thus making it possible to pull the boll loose with said fingers.

The travel of the machine along the rows will be sufficiently slow to permit the operators to remove all the cotton from the plants as they walk along beside the machine.

The means employed to propel the machine through the cotton field will be to some extent dependent upon the size of the machine itself. In a very large machine intended to simultaneously work upon a considerable number of rows, it will be advisable to drive the machine from the explosive engine carried by the truck. In the case of a smaller and less expensive machine, however, horses or mules may be employed to produce the necessary traction.

The above described system of operation eliminates the disadvantage existing in almost every machine yet devised for this purpose of picking green cotton bolls as well as the ripe ones, and also the objectionable feature of gathering leaves and trash with the cotton, making it necessary to separate the same later.

For the operation of the machine shown in the drawings five men will be necessary one of whom will drive the machine and operate the engine, three will operate the suction tubes suspended from the tapering pipe 14, and one who will operate the suction tube suspended in front of the truck.

Galvanized sheet metal is to be preferred as the material for constructing the various pipes which form part of the machine, but

the construction need not of course be limited to such material.

The invention is presented as including all such changes and modifications as come within the scope of the following claims.

What I claim is:—

1. A suction tube mouth piece for a pneumatic cotton picker comprising a cup having an aperture in its bottom communicating with the suction tube, a neck shaped portion extending therefrom and projecting into the tube, a plurality of fingers pivotally mounted upon the exterior of the cup having their outer ends projecting through slots in the cup wall; which slots extend inwardly from the cup rim, and a collar rotatably mounted upon the neck portion of the cup and provided with a plurality of slots each receiving the inner end of one of the said fingers, the slots being so shaped that the fingers may be rocked on their pivots through rotation of said collar.

2. A suction tube mouth piece for a pneumatic cotton picker comprising a cup having an aperture in its bottom communicating with the suction tube, a neck shaped portion extending therefrom and projecting into the tube, a plurality of fingers pivotally mounted upon the exterior of the cup having their outer ends projecting through slots in the cup wall, said slots being extended inwardly from the cup rim, a collar rotatably mounted upon the neck portion of the cup, said collar being provided with a plurality of curved slots, each receiving the inner end of one of said fingers, and a spring correlated with the collar and the tube automatically returning the collar to its normal position when released from manual control.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN MEIER.

Witnesses:

W. D. SANDERS,

N. M. FUREY.