C. S. MATTHIESSEN.

COTTON PICKER.

APPLICATION FILED JAN. 26, 1910.

979,184. Patented Dec. 20, 1910.

Fig. 1.

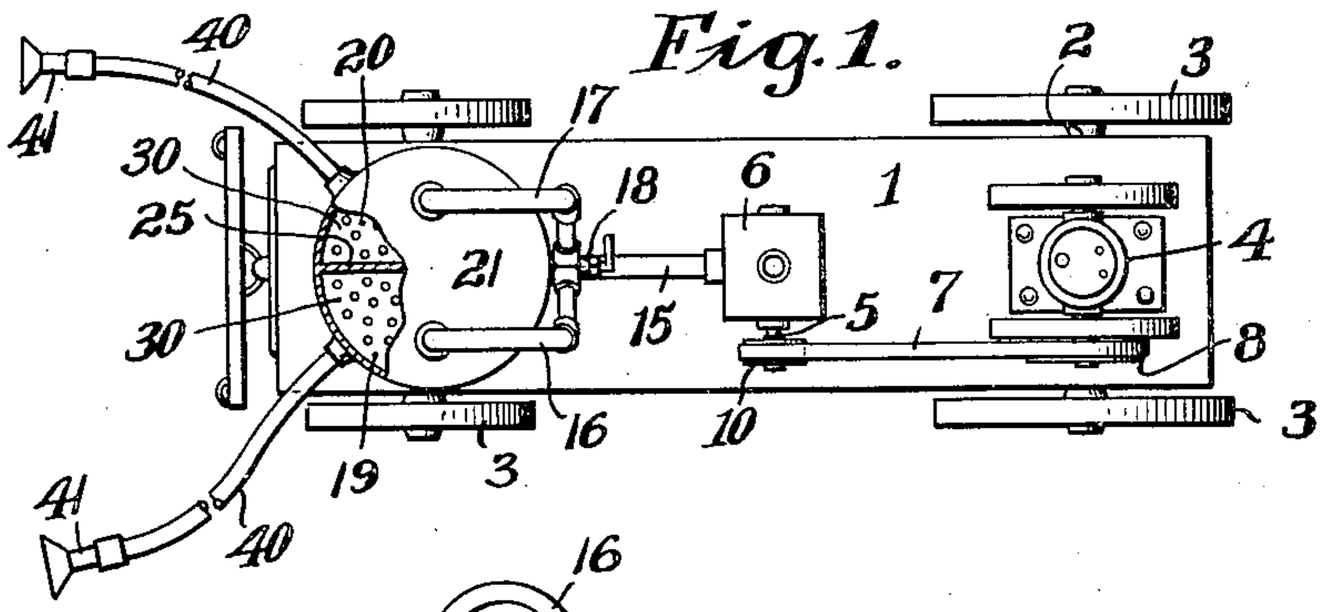


Fig. 2.

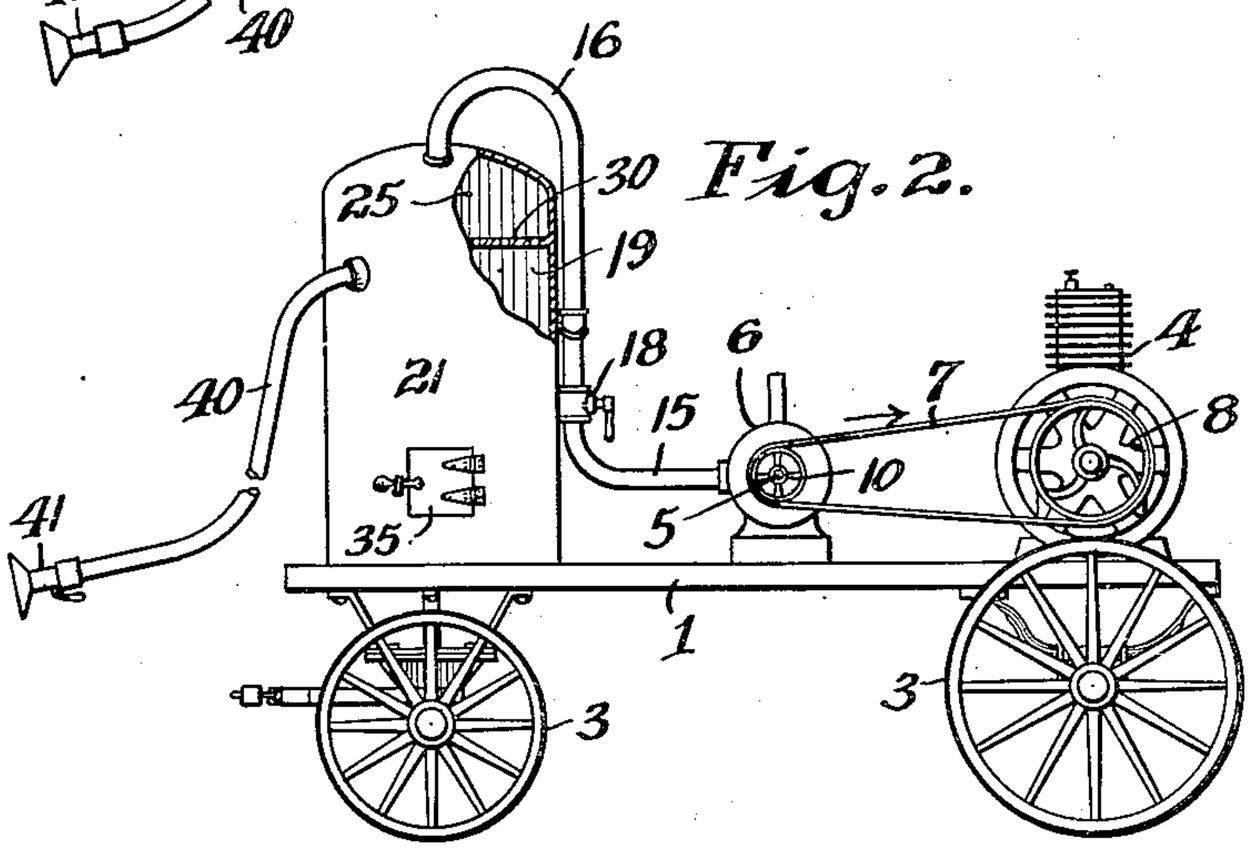


Fig. 3.

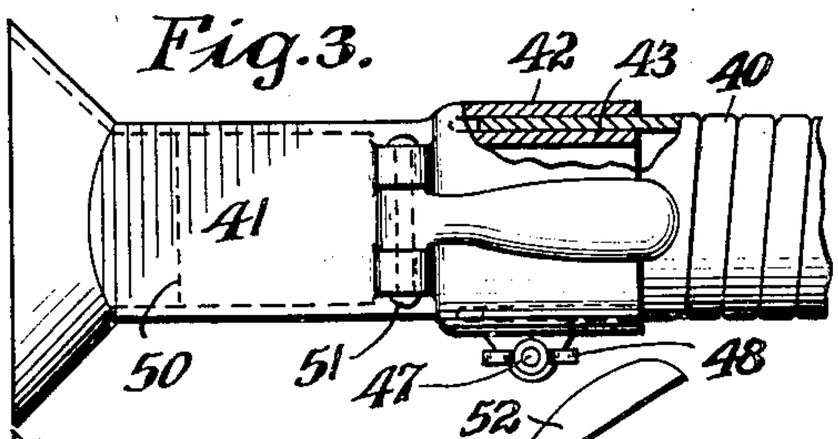


Fig. 4.

Fig. 5.

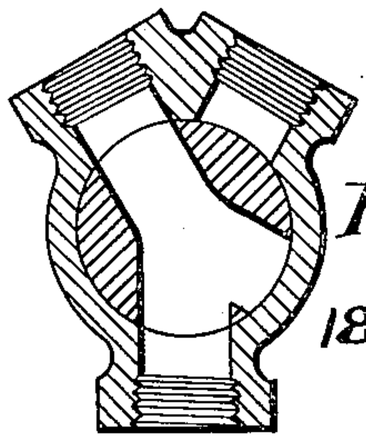
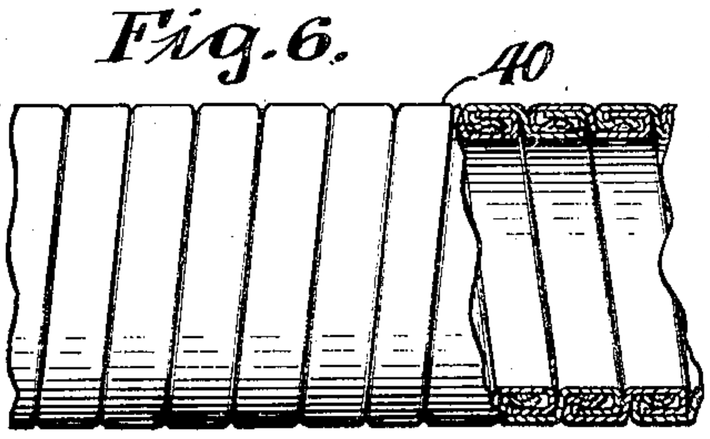


Fig. 6.



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COTTON-PICKER.

979,184. Specification of Letters Patent. **Patented Dec. 20, 1910.**

Application filed January 26, 1910. Serial No. 540,207.

To all whom it may concern:

Be it known that I, CONRAD S. MATTHIESSEN, a citizen of the United States, residing in Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Cotton-Pickers, of which the following is a specification.

My invention relates to improvements in cotton pickers and particularly to pickers of the pneumatic class.

One of the objects of my invention is to provide an improvement in the construction of the receptacle into which the cotton is received as it is picked and stored until it is desired to remove the same.

Another object is to produce in the said receptacle a vacuum into which the cotton is discharged.

A further improvement in my machine resides in the arrangement of the receptacle with relation to the vaccum pump. The said receptacle is located intermediate the exhaust or discharge end of the tubes or pipes employed for collecting or withdrawing the cotton from the bolls and the said vacuum pump. The action of the said pump creates a suction and causes a blast of air to pass or travel through the tubes or pipes, the said air being drawn through the receptacle into which the cotton is carried. The connections of the tubes or pipes through which the cotton is drawn are made at such points with respect to the receptacle that the greater proportion of the receptacle or receptacles, as the case may be, is a vacuum.

A further object of my invention is to provide an improved construction in the connection between the tubing and the cup or nozzle at the end of the tubing which is placed in juxtaposition to the bolls of cotton from which the fiber is drawn.

With these and other ends and objects in view, my invention consists in the features of construction, combination of parts and arrangement of elements hereinafter more fully set forth as an exemplification of the underlying principles involved in my invention.

In order that my invention may be more fully and readily understood by others skilled in the arts to which it relates, drawings illustrating a convenient means for carrying out my said invention are appended as a part of this specification, and while the controlling principle of invention may be illustrated by modified constructions falling within the scope of the claim, the hereinafter disclosed embodiment is that which ordinarily will be preferred in practice and is regarded as representing the best form or embodiment of my invention.

In the drawings:—Figure 1 is a top plan view, certain portions being broken away and showing other portions in section, of an apparatus embodying my invention; Fig. 2 is a side elevation of the same; Fig. 3 is a top plan view showing the construction of the nozzle or cup employed upon the end of a tube or pipe and the manner of its connection to the said tube; Fig. 4 is a side elevation of the same; Fig. 5 is a sectional view of a three-way cock employed in connection with my invention; and Fig. 6 is a view of a short portion of tubing, a portion of which is in section.

Referring to the drawings:—1 designates a frame of suitable construction supported upon the axles 2 of a wagon or vehicle, the wheels of the same being designated by the numeral 3.

4 designates a motor of any desired construction, as a gas engine, supported upon the frame 1 and which is adapted to drive the shaft 5 of a vacuum pump 6 by means of a driving belt 7, the said belt being driven by a drive wheel 8 upon the drive shaft of the motor and passing over a wheel 10 upon the shaft 5.

15 designates a pipe communicating with branch pipes 16 and 17 through a three-way cock 18. By means of the said cock the pipe 15 may be placed in communication either with the pipe 16 or 17. The pipes 16 and 17 respectively communicate with the opposite sections or compartments 19 and 20 of a receptacle or chamber 21. The said chamber is divided into two compartments by means of a vertical and longitudinal division plate 25 which extends from the top to the bottom of the receptacle 21. The said plate is continuous and shuts off all communication between the compartments 19 and 20 of the said receptacle, upon its opposite sides. For all practical purposes, the said compartments constitute separate and independent chambers.

Located a short distance below the top of the receptacle 21 upon the opposite sides of

the plate 25 are plates 30 which I designate as baffle plates. These plates are perforated, as clearly indicated in Fig. 1 of the drawings. Doors 35 are provided upon opposite sides of the receptacle or chamber 21. These doors open into the compartments 19 and 20. Only one of the said doors is shown but it will be understood that the other door is located in the same relative position with respect to the receptacle 21 and the chamber 20 as is the door which is shown with respect to the said receptacle and the compartment 26. These doors are so constructed that when they are closed they are air tight, preventing the entry of air from the surrounding atmosphere into the compartments 19 and 20.

Suction picker tubes or pipes 40 are connected to the respective compartments 19 and 20 which tubes or pipes are provided at their outer ends with cups or nozzles 41 which are adapted to be placed in juxtaposition to the bolls of cotton from which the fiber is to be withdrawn. The intermediate body portions of the cups or nozzles 41 are substantially square or rectangular in cross section and are provided with concentric sleeves or collars 42 and 43 between which the circular wall of the outer or forward end of the tube 40 is adapted to extend or project as shown in cross section in Fig. 3 of the drawings. The outer concentric sleeve or collar 42 is split or slotted, as indicated at 45 in Fig. 4 of the drawings. Ears 46 are provided upon the said sleeve or collar at opposite sides of the split or slot 45 and by means of a bolt 47 and wing nut 48 the said sleeve is drawn together and tightened about the said tube after it is projected or extended into the annular space between the sleeves 42 and 43 to secure the same firmly in position.

In order that the cup or nozzles 41 may be closed when necessary, I provide what may be termed a valve plate 50 pivoted to the upper wall of the said cup or nozzle, as indicated at 51. A handle 52 is secured to the said valve plate by means of which the said plate may be opened when desired by the operator pressing upon the same with the thumb or finger of the hand in which he holds the outer end of the tube and cup or nozzle. Except when the said valve plate is held open in the manner stated, it is closed by the action of gravity, the said plate being heavier than the handle 52.

My invention is not limited to suction tubing or hose of any particular construction, but I prefer the metallic flexible tubing such as is shown, which is an article of commerce, because by the use of such tubing having interior spiral grooves, the air in its passage therethrough is given a rotatory or cyclonic movement as well as a forward movement, which compound movement is given to the cotton in its passage through said tubing.

The tubes 40 are connected to the receptacle 21 at points relatively close to the transverse baffle plates 30 in consequence of which the cotton as it escapes from the said tubes into the receptacle strikes the baffle plates at an angle of 15 degrees more or less. The momentum with which the said cotton strikes the said baffle plates carries it forward along the under surface of the said plates out of the path or line of travel of the blast of air which escapes from the said tubes and is drawn through the perforations in the said plates into the upper portions of the receptacle upon either side of the plate 25, depending upon which one of the tubes or pipes 16 or 17 is in communication with the pipe 15. The suction of the air through the tube or tubes 40 and the pipes 16 or 17, as the case may be, creates a vacuum in the portions of the receptacle 21 below the baffle plates 30 or at least below the points of entry of the tubes 40 into the said receptacle. Although only one tube is shown connected with each of the said compartments 19 and 20, it will be understood that as many additional tubes may be secured to the said compartments 19 and 29 as may be desired. The number, of course, is limited somewhat by the size of the receptacle and the capacity of the machine.

The cotton strikes the baffle plates and its movement thereafter due to its momentum carries it beyond the influence of the air passing from the tubes 40 to the pipes 16 or 17, as the case may be, and drops downwardly by gravity into the bottom of the compartments 19 or 20 of the receptacle 21. The separation of the cotton from the baffle plates 30 and its descension into the compartments 18 and 19 is facilitated by the compound forward and rotatory movement with which it is discharged from the suction picker tubes 40.

When one of the compartments is filled the three-way cock 18 is turned so as to draw the air through the other of said compartments and the cups connected to such compartments are employed as pickers and such receptacle is filled while at the same time the cotton may be removed from the other of the said compartments.

The purpose of the division plate 25 is to provide means whereby the machine may be continuously operated, one of the said compartments being employed to receive the cotton as the cotton which previously has been drawn into the other of the said compartments is being removed.

It will be understood that the tubes 40 may be detachably secured to the receptacle 21 and that therefore one set of tubes may be employed in connection with both of the compartments 19 and 20 by being trans-

ferred from one to the other as occasion may require.

In use the machine is driven by any suitable power device over the cotton field or may be drawn by horses or other draft animals. Preferably the suction tubes 40 should be of sufficient length to extend in front of the horses or other draft animals so that the cotton fiber will not be dragged or otherwise separated from the boll by the passage of the horses or other draft animals through the field before the cotton is picked.

Having thus described my invention, I claim:—

In a cotton picking machine, the combination of a unitary receptacle divided longitudinally into air tight compartments and the said compartments each having a transversely extending perforated baffle plate located therein near one end thereof, a vacuum pump, a pipe communicating with the ends of said compartments adjacent to and above said baffle plates and also having connection and communication with the said pump, means for closing the passage-way to either of the said compartments and at the same time opening the passage-way to the other of said compartments, tubes connected to said receptacle and communicating with said compartments, means for operating said pump to create a partial vacuum in the said compartments and cause the air to flow through said tubes into said compartments, and a truck upon which all of the aforesaid parts of the said machine are supported and upon which they may be transported from place to place.

In testimony that I claim the foregoing as my invention, I have hereunto signed my name this 15th day of January, A. D. 1910.

CONRAD S. MATTHIESSEN.

In the presence of—

GEO. H. WEIDNER,

CARRIE E. KLEINFELDER.