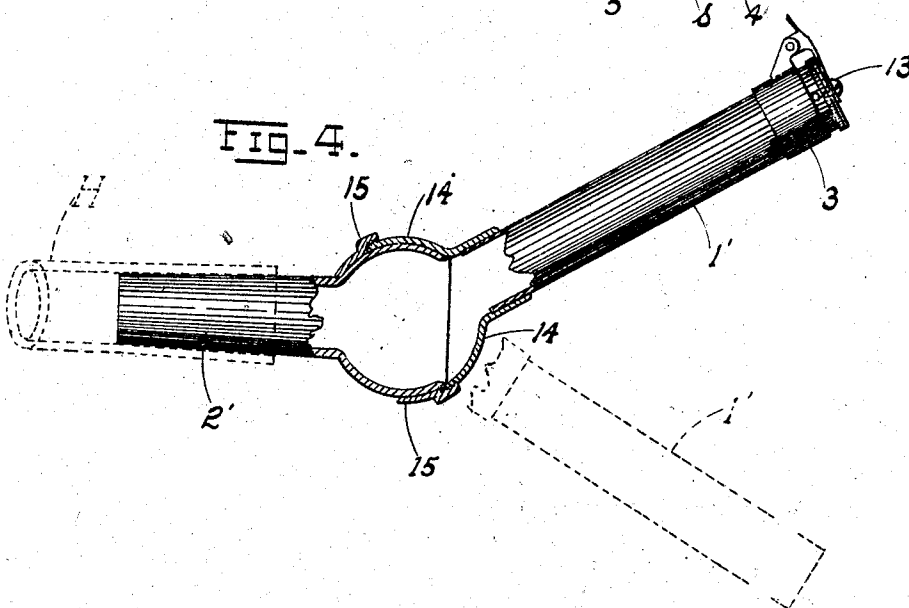
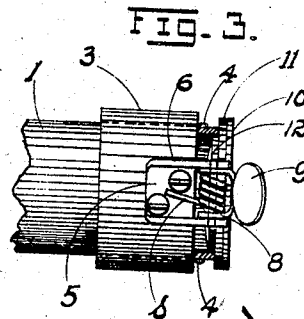
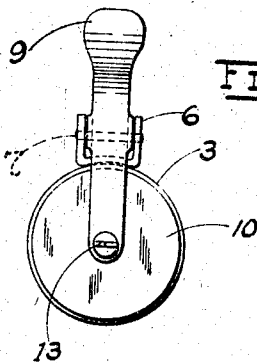
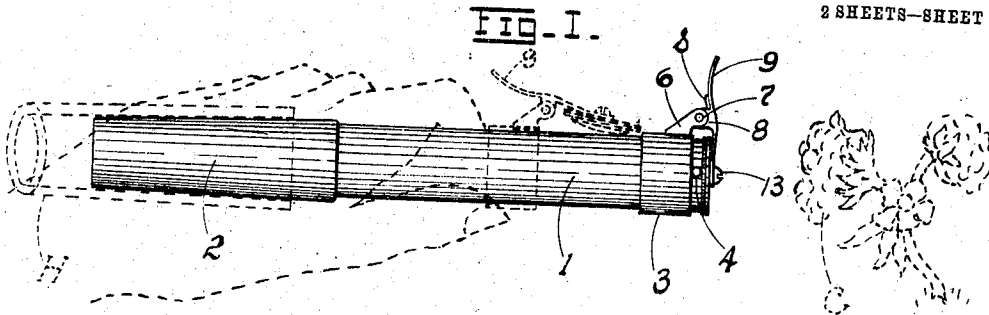


J. S. THURMAN.
 SUCTION HEAD FOR VACUUM COTTON PICKERS.
 APPLICATION FILED OCT. 15, 1908.

918,795.

Patented Apr. 20, 1909.

2 SHEETS—SHEET 1.



WITNESSES:
 Harry G. Reimes.
 M. H. Burns

INVENTOR.
 John S. Thurman.
 BY *Chas. H. Hare*
 ATTORNEY.

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2 SHEETS—SHEET 2

FIG. 5.

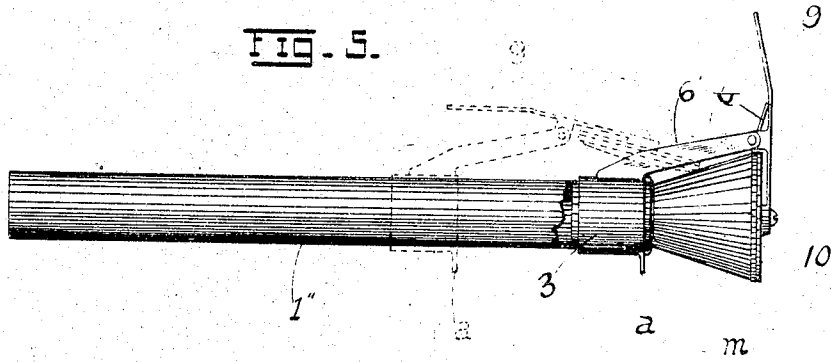
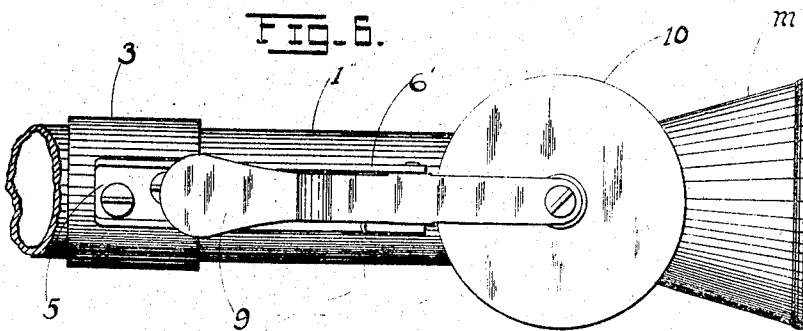


FIG. 6.



WITNESSES:

Harry G. Beines.
 M. L. Beines.

INVENTOR.

John S. Thurman

BY

Ernest Stares
 ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN S. THURMAN, OF ST. LOUIS, MISSOURI.

SUCTION-HEAD FOR VACUUM COTTON-PICKERS.

No. 918,795.

Specification of Letters Patent.

Patented April 20, 1909.

Application filed October 15, 1908. Serial No. 457,886.

To all whom it may concern:

Be it known that I, JOHN S. THURMAN, citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Suction-Heads for Vacuum Cotton-Pickers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in suction-heads or tools for vacuum cotton-pickers; and it consists in the novel construction and arrangement of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is an elevation of one form of tool showing the mode of its application; Fig. 2 is an enlarged end view thereof; Fig. 3 is a top plan of the closed end; Fig. 4 is a combined section and side elevation of another form of my invention or of the jointed type of nozzle; Fig. 5 is a side elevation of a modified form of tool, having a funnel shaped or flaring mouth; and Fig. 6 is a top plan of Fig. 5 (broken away) with valve drawn to open position.

The object of my invention is to construct a suction-head or tool which is applied to the cotton-boll, the suction through the head (effected by any suitable vacuum-producing means) severing the cotton from the boll and drawing it into the head.

A further object is to provide the tool with a self-closing valve which will close the mouth of the tool at the conclusion of the operation, the valve when released being held open during the picking of the cotton, by the outer wall of the tool whereby the full opening of the mouth of the tool is available for presentation to the cotton and choking of the mouth is avoided.

A further object is to provide a valve which need not be held in its open position by the operator thereby relieving the muscles of the hand, and permitting the operator to give more attention to the picking operation.

A further object is to provide a tool which is equipped with a ball and socket joint so that the mouth of the nozzle may be readily directed to any particular boll without the necessity and inconvenience and labor of twisting the air-hose to which the tool is attached.

In detail the invention may be described as follows:—

Referring to the drawings, and for the present to Figs. 1 to 3 inclusive, 1 represents the shank or body portion of a tubular suction-head, the rear tapering extension 2 serving to couple on to the line-hose H as well understood in the art. Mounted slidingly on the shank 1 is a sleeve 3 which is limited in its movement outwardly by the pins 4, 4, carried by the part 1, its movement in the opposite direction being limited by the annular shoulder formed between the parts 1 and 2 (Fig. 1). Secured to the sleeve 3 is a plate 5 provided with lateral ears or lugs 6, 6, through which passes a pin or spindle 7 affording a hinge connection between said ears 6, and the lugs or ears 8 of an oscillating lever 9. The inner arm of the lever 9 has secured to it a disk-valve 10 provided with a washer 11 which latter is retained in place by a disk or plate 12, the parts being collectively secured by a screw 13. Wrapped about the pin 7 is a spring *s* one end of which bears against the plate 5, and the other against the lever 9, the normal tendency of the spring being to force the outer arm of the lever 9 outwardly. This of course tends to force the end which carries the valve 10 inwardly or toward the axis of the member 1.

When the sleeve 3 is shoved to its outer limit or against the pins 4, the spring *s* forces the valve 10 over the mouth or intake end of the tool as fully shown in Figs. 1, 2, 3. When occasion arises to apply the tool to a cotton-boll C, the sleeve 3 is drawn back, say to the dotted position shown in Fig. 1, (the valve being first preferably swung to an open position by an inward pressure of the thumb on the outer end of the lever 9) the valve being held in engagement with the outer wall of the member 1 under the resilient action of the spring *s*. It is obvious of course that at the conclusion of the "cotton-picking" operation, the sleeve is simply shoved outwardly whereupon the spring *s* automatically forces the valve over the mouth of the tool (Fig. 1) thus cutting off the action thereof until needed.

In Fig. 4 I provide a nozzle or tool 1' which is secured to a semi-spherical section 14 screwed to a similar section 15 which is passed over the spherical base of a hose-coup-

ling extension 2', the tool in other respects being the same as described in connection with Figs. 1, 2 and 3. In this modification (Fig. 4) the parts referred to form a ball-and-socket joint about which the nozzle 1' may be oscillated in any direction without the necessity of subjecting the line-hose H to an undue twist.

In the forms described thus far, the mouth of the tool corresponds to the open end of the tubular portion 1, 1', but in the modification shown in Figs. 5 and 6, I provide the tubular portion or body 1'' with a terminal funnel-shaped or flaring mouth *m*, this being resorted to in some cases to better guide the cotton into the tube 1'' as it is severed from the boll by the suction through the tool. In this modification it becomes necessary to provide extended arms 6' for the mounting of the lever 9 to which the valve is secured in order that the valve may reach beyond the funnel *m* when the sleeve 3 is pushed up against the limiting pins 4. To facilitate manipulating the sleeve 3 I provide the same with a lip or lobe *a* which may be engaged by the forefinger of the operator, leaving the lever 9 to be engaged by the thumb for swinging the valve to an open position preparatory to drawing the sleeve 3 rearwardly as shown by dotted position in Fig. 5; or full position in Fig. 6. The hose H may be slipped directly over the rear end of the tube 1'' as is obvious.

Of course with any change in the general design of the tool, the mountings for the valve would be correspondingly altered, such alterations coming within the skill of the ordinary mechanic. An example of such a change is shown in the modifications in Figs. 5 and 6 where one end of the actuating spring *s* is hooked over one of the arms 6' in lieu of extending it rearwardly against the plate 5 as is done in the first two forms.

Having described my invention, what I claim is:—

1. A suction-head or tool having a suitable passage-way, and a valve mounted in movable relation to the mouth thereof and adapted to close over said mouth, said valve being retained in open position by the tool during the operation of the tool.

2. A suction tool having a suitable passage-way, a member movable along the wall of the tool, and a valve on said member adapted to close over the mouth of the passage-way for one position of said member, and to uncover said mouth for another position of said member.

3. A suction-tool having a suitable passage-way, a member movable to and from the mouth of said passage-way, and a valve coupled to said member and closing over the mouth of said passage-way for a movement of the member to a position contiguous to

said mouth, and uncovering said mouth with a movement of the member in the opposite direction.

4. A suction-tool having a suitable passage-way, a member mounted thereon and movable to and from the mouth of the passage-way, and a spring-controlled valve carried by the movable member and closing over the mouth of the passage-way under the action of the spring upon a shifting of the movable member to a position adjacent to said mouth.

5. A suction-tool having a suitable passage-way, a sleeve mounted thereon and adjustable to and from the mouth of the passage-way, a spring-controlled valve hinged to the sleeve and held in an open position by engagement with the outer wall of the tool upon a movement of the sleeve a suitable distance from the mouth of the passage-way, the valve automatically closing over the mouth under the action of the spring by a movement of the sleeve close to the end of the passage-way.

6. A suction-tool comprising a tube, a sleeve loosely encompassing the same, means at the intake end of the tube for arresting the movement of the sleeve in one direction, ears formed on the sleeve, a valve hinged to said ears, a spring for forcing the valve against the walls of the tube whereby upon the shifting of the sleeve to the limit of its movement toward the intake end of the tube, the spring automatically forces the valve over the mouth of the tube, and a lever arm coupled to the valve for opening the same.

7. In combination with a member adapted to be coupled to a line of hose, an air nozzle coupled thereto by a ball-and-socket joint for directing such nozzle in any desirable direction, and a valve for closing over the mouth of the nozzle.

8. A suction-tool having a suitable passage-way terminating in a flaring mouth, a member movable along the wall of the tool, and a valve coupled to said member and adapted to close over the mouth aforesaid for one position of the said member, the valve being held in an open position upon the shifting of the movable member a suitable distance from the mouth of the tool.

9. In combination with a suction tool, a valve mounted thereon for closing over the mouth of the same, the tool retaining the valve in open position during the operation of the tool.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN S. THURMAN.

Witnesses:

EMIL STAREK,
MABEL L. BURNS.