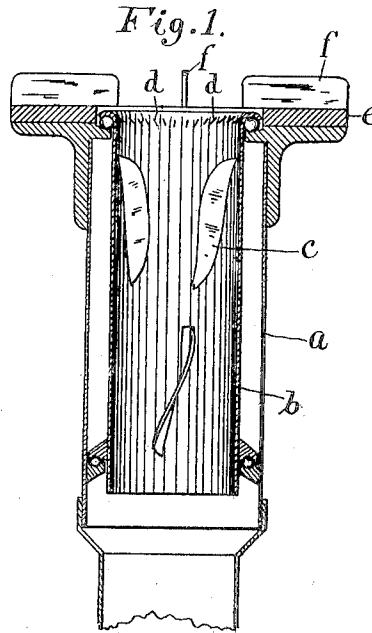
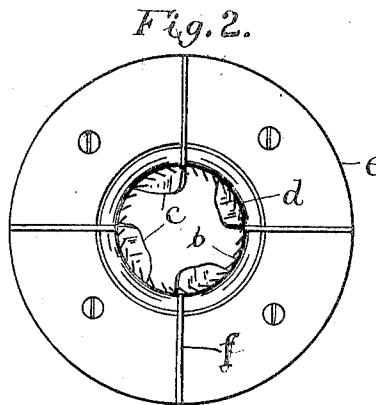


W. K. DANA.
VACUUM HEAD FOR COTTON PICKING MACHINES.
APPLICATION FILED JUNE 28, 1913.

1,087,872.

Patented Feb. 17, 1914.



Witnesses:
E. B. Creighton
L. J. Steward

Inventor:
Woodbury K. Dana
by S. W. Bates
Att.

UNITED STATES PATENT OFFICE.

WOODBURY K. DANA, OF WESTBROOK, MAINE.

VACUUM-HEAD FOR COTTON-PICKING MACHINES.

1,087,872.

Specification of Letters Patent.

Patented Feb. 17, 1914.

Application filed June 28, 1913. Serial No. 776,259.

To all whom it may concern:

Be it known that I, WOODBURY K. DANA, of Westbrook, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Vacuum-Heads for Cotton-Picking Machines, of which the following is a specification.

My invention relates to vacuum heads for cotton picking machines and it is designed primarily as an improvement on the vacuum heads described and claimed in my Patent No. 1,067,802, dated July 22, 1913, although it is capable of use in other forms of vacuum heads using rotating picking tubes.

The above mentioned head included a cylindrical casing and an independently rotating picking tube within the casing with inclined blades on its inner surface and picking teeth at its outer end. The intruding air rotated the picking tube and caused the teeth to engage the fibers of the cotton twisting them and causing them to free themselves from the boll or capsule in which the cotton fibers are held. They were then drawn inwardly through the picking tube and so on through the suction pipe. Although the above described vacuum head was an efficient device there was this difficulty found in its use when the fibers of cotton were seized by the picking teeth and twisted, the entire boll was also twisted including the capsule and the tendency was to twist the boll from its stem. This led to the necessity of holding the capsule with one hand to prevent it from turning while the other hand held the vacuum head.

The object of my invention is to so construct the vacuum head that while the cotton fibers may be seized and twisted to free them from the capsule the latter will be held stationary thus allowing the cotton to tear itself free. I accomplish this object by placing fixed abutments around the mouth of the picking tube against which abutments the parts of the capsule will strike as they approach the entrance to the picking tube, checking their rotation and preventing them from turning. Thus the body of the boll tends to remain stationary while the cotton fibers are free to twist and thus to free themselves.

My invention may best be understood by reference to the accompanying drawing in which one of the picking tubes described in

my said application with the attachment covered by my present invention applied thereto.

In the drawing, Figure 1 is a longitudinal section through the vacuum head, and Fig. 2 is an end view of the same.

In the drawing, *a* is the outer tube or casing, *b*, the inner or picking tube mounted within the casing on ball bearings which enable it to rotate independently of the casing, *c c* are the vanes or blades within the picking tube which cause it to rotate as the air and cotton are drawn in and *d d* are the picking pins or fingers which engage with the fibers of the cotton to twist them from the capsule and *e* is the annular flange which surrounds the mouth of the picking tube. The above parts are all common to my above mentioned vacuum head and form no part of the present invention.

For the purpose of preventing the dry capsule from turning with the cotton fibers, I provide a series of abutments which are placed adjacent to the mouth of the picking tube so that they will be in position to check the rotation of the capsule.

The opening in the end of the picking tube is designed to be about the diameter of the mass of cotton as it projects from the capsule and as the cotton is drawn in the portions of the capsule will extend out far enough to be engaged by the abutments.

As here shown, the abutments are provided in the form of upwardly projecting plates *f* which extend radially from the mouth of the picking tube. They may be of any number and these project far enough outward to catch the ends of the capsules as the latter are drawn down to the end of the head by the drawing of the cotton fibers into the picking tube. The addition of the abutments to the end of my vacuum head tends to hold the dry capsules and to prevent them from turning as the mass of cotton is twisted by the rotation of the picking tube. The effect is to release the cotton more freely and quickly from its adhering capsule than is the case where the latter is free to revolve.

With this attachment it is not ordinarily necessary to steady the capsule with one hand to prevent it from being twisted from its stem and usually it is sufficient to approach the head to the open boll and the cot-

ton is drawn in and pulled out of the capsule, the latter being caught and held by the abutments.

It is evident that these abutments may be of any desired shape so long as they are positioned to intercept the parts of the capsule and hold them from rotating.

I claim;—

1. A vacuum head for cotton picking machines including an outer casing, an independently rotatable picking tube within said outer casing, picking teeth in the end of said picking tube, diagonally disposed blades within said picking tube and fixed abutments at the outer end of the vacuum head adjacent to the mouth of the picking tube for checking the rotation of the husk.

2. A vacuum head for cotton picking machines including a casing, a rotating picking tube within said casing through which the air and cotton are drawn, picking teeth in the end of the picking tube and diagonally disposed blades carried by said picking-tube and fixed abutments at the outer end of the vacuum head adjacent to the mouth of the picking tube for checking the rotation of the husk.

3. A vacuum head for cotton picking machines including a casing, a rotating picking tube within said casing through which the air and cotton are drawn and a series of fixed picking teeth in the end of said picking tube and diagonally disposed blades on its inner surface, outwardly extending abutments surrounding the mouth of the picking tube and radiating therefrom for checking the rotation of the husk.

4. A vacuum head for cotton picking machines including a casing, a rotating picking tube within said casing through which the air and cotton are drawn, picking teeth in the outer end of the picking tube and diagonally disposed blades on its inner surface, an annular flange surrounding the mouth of the picking tube and a series of outwardly extending abutments arranged radially on said flange for checking the rotation of the husk.

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

WOODBURY K. DANA.

Witnesses:

S. W. BATES,

C. B. CREIGHTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."