G. WEBSTER.

SUCTION PRODUCING APPARATUS.

APPLICATION FILED SEPT. 22, 1910.

1,056,865. Patented Mar. 25, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

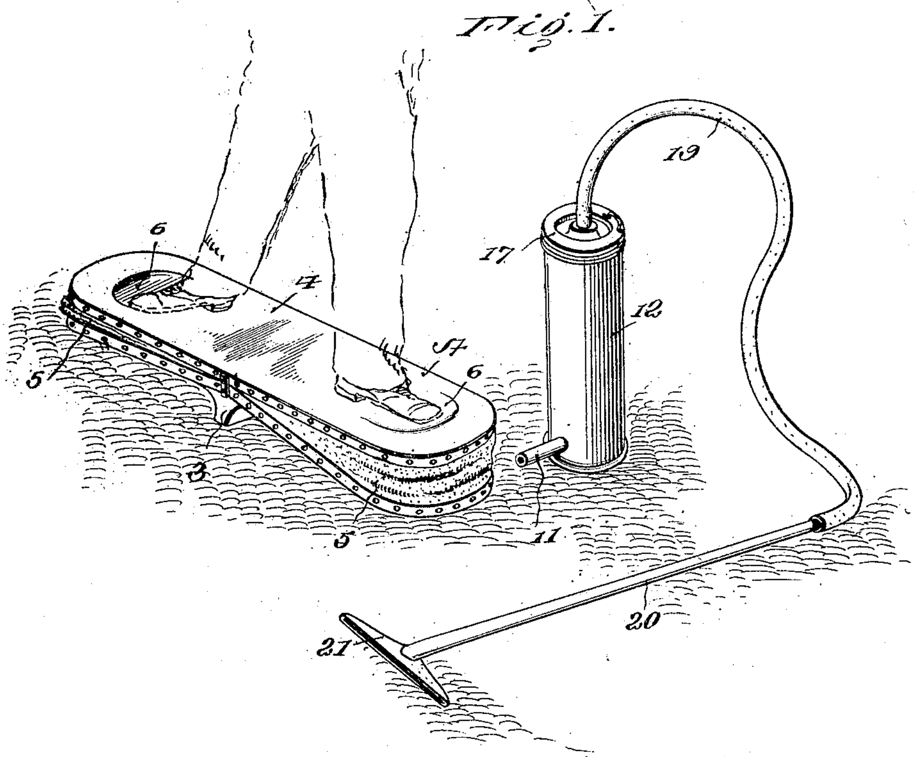
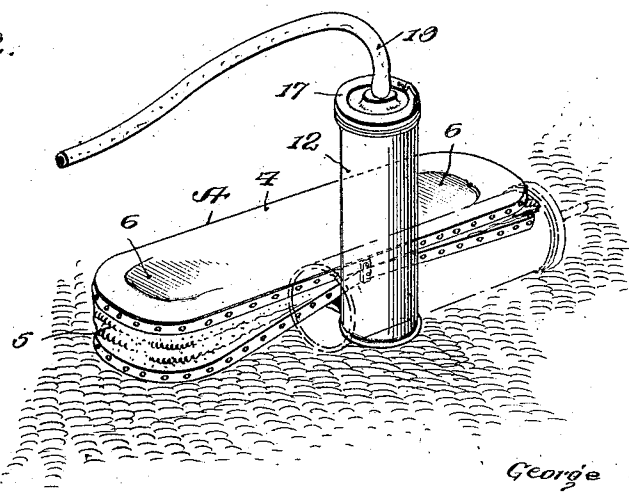


Fig. 2.



Witnesses

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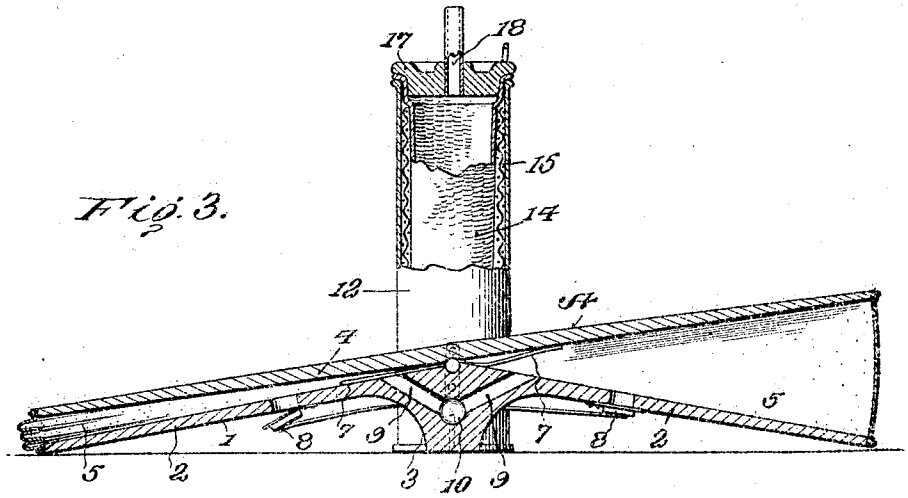
2 SHEETS—SHEET 2.

Fig. 3.



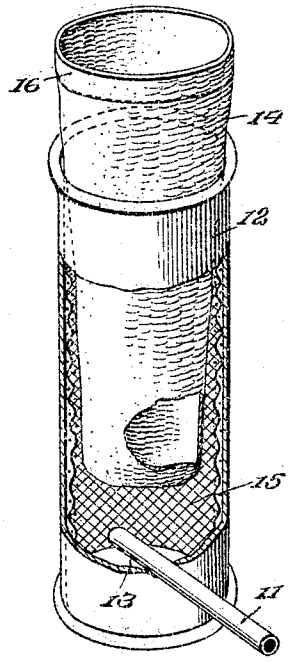


Fig. 4.

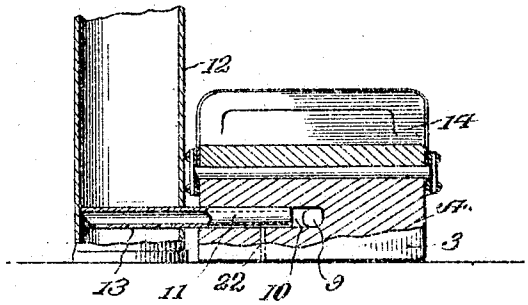


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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SUCTION-PRODUCING APPARATUS.

1,056,865. Specification of Letters Patent. Patented Mar. 25, 1913.

Application filed September 22, 1910. Serial No. 583,284.

To all whom it may concern:

Be it known that I, GEORGE WEBSTER, a citizen of the United States, residing at Christiana, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Suction-Producing Apparatus, of which the following is a specification.

This invention comprehends certain new and useful improvements in that class of devices that are known as vacuum or suction cleaners, and the invention has for its primary object a simple, durable, inexpensive and efficient device of this character which is operated by a double action see-saw bellows upon which the operator may stand, the motion of the body in moving the suction-nozzle back and forth, tending to throw the weight of the operator from one bellows to the other, thereby creating a strong and practically continuous suction and double action.

With this and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view illustrating my improved suction cleaner, the bellows being shown separated from the other parts; Fig. 2 is a perspective view of the parts combined, the handle and suction nozzle of the device being omitted; Fig. 3 is a longitudinal sectional view of the device, the vacuum chamber being shown partly in section and partly in side elevation; Fig. 4 is a transverse sectional view, the section being taken through the middle of the bellows and showing a portion of the vacuum chamber; and Fig. 5 is a sectional perspective view illustrating the vacuum chamber and the parts which it contains.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

My improved suction cleaner embodies a bellows A which comprises a base 1 formed of two inclined members 2 merging at the middle in a transversely elongated foot 3, and a tilting platform 4 which is hingedly connected at its middle to the middle of the base 1, in any desired way.

5 designates leather or similar bellows material or substance which is secured in any desired manner to the marginal edges of the base 1 and platform 4 on opposite sides of the middle thereof, whereby to produce a double action or duplex bellows which may be operated by one standing on the platform 4 and tilting the latter after the manner of a see-saw. Preferably, the platform 4 is formed in its upper face with depressions 6 so as to prevent the feet of the operator from slipping. Each side or compartment of the double bellows A is provided with a suction valve 7 and a discharge valve 8, the latter being of the spring pressed flap variety, as clearly illustrated in the drawing, and being secured to the lower face of the base and accommodated by the inclined parts thereof. The two suction valves 7 control openings 9 which lead into the bellows compartments, said openings both leading to a common transversely extending bore 10, in which a tubular spindle 11 is mounted for a turning movement about its longitudinal axis. The spindle 11 is secured to the side wall of a cylindrical vacuum chamber in the form of a flat bottom can 12 and extends within the latter, as shown, being formed within the can with any desired number of orifices 13, so as to permit the air to pass from the can through the spindle and into the bellows, and out of the latter to the atmosphere.

A bag 14 is held within the can 12, said bag being composed of cambric or other suitable cloth arranged to pass air easily therethrough and at the same time catch and retain dust and other particles, and a cylindrical screen 15 is interposed between the bag and the interior wall of the can 12 so as to prevent the air from pressing the bag against the side of the can, the air being thus permitted to escape all around. The bag 14 is formed with a relatively heavy mouth rim 16 which is engaged by the lid 17 of the can so as to hold the bag in place. This lid is provided with a nipple 18 to which the flexible hose 19 is connected, said hose being secured to one end of the tubular handle 20 which is provided at its opposite end with a suction nozzle 21 of any desired formation. Obviously, the can 12 may be

turned on the spindle 11 as an axis so that it may extend longitudinally of the bellows and economize space when the apparatus is not desired for use, the can being turned upright or at right angles to the bellows in the operation of the device. If desired, the can may be held in said last named position by a pin 22 or the like extending through an opening formed in the foot 3 and a corresponding opening formed in the spindle, the spindle being thereby prevented from turning.

As the transversely extending opening or bore 10 is at a distance from the bottom of the base foot 3 equal to the distance between the spindle 11 and the flat bottom of the can 12 which constitutes the vacuum chamber, it is obvious that the can can rest solidly on the floor in an upright position without depending at all upon the base for its support.

From the foregoing description in connection with the accompanying drawings, the operation of my improved suction cleaner will be apparent. In the practical use of the device, the operator stands on the tilting platform 4 and operates the same after the manner of a see-saw, the two parts of the bellows operating alternately and producing a regularly strong suction, the dust particles being thereby drawn in through the nozzle 21 and into the can 12, being caught by the bag 14, the air passing through the bag and out through the outlet or discharge valves 8. As before stated, by moving the nozzle back and forth, the body of the operator will naturally move in unison, thereby throwing the weight of the operator from one part of the bellows to the other and creating a strong suction and double action.

Having thus described the invention, what is claimed as new is:

A suction producing apparatus comprising a supporting base having a central transverse inlet opening in one side with branch passages leading therefrom through the top of the base, upwardly opening valves controlling said branch passages, downwardly opening outlet valves disposed beyond said upwardly opening valves, a tilting platform mounted centrally on the base between said upwardly opening valves, connections between the platform and the base whereby suction chambers are formed around said upwardly opening valves, a vacuum chamber disposed adjacent the base, and a hollow spindle secured in said vacuum chamber near the lower end thereof and extending laterally therefrom into the central transverse inlet opening in the side of the base.

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

GEORGE WEBSTER. [L. S.]

Witnesses:
J. A. Habrar,
E. L. Gonett.