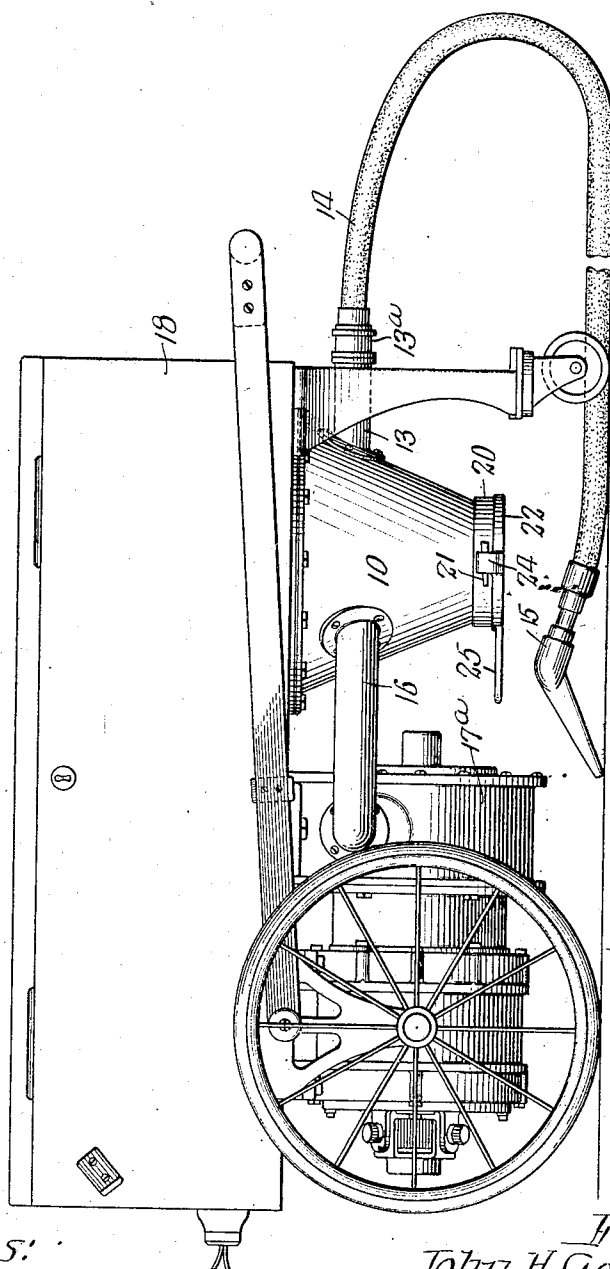


J. H. GOEHST & J. A. DUNLAP.
VACUUM CLEANING DEVICE.
APPLICATION FILED SEPT. 7, 1909.

950,767.

Patented Mar. 1, 1910.
2 SHEETS—SHEET 1.

Fig. 1.



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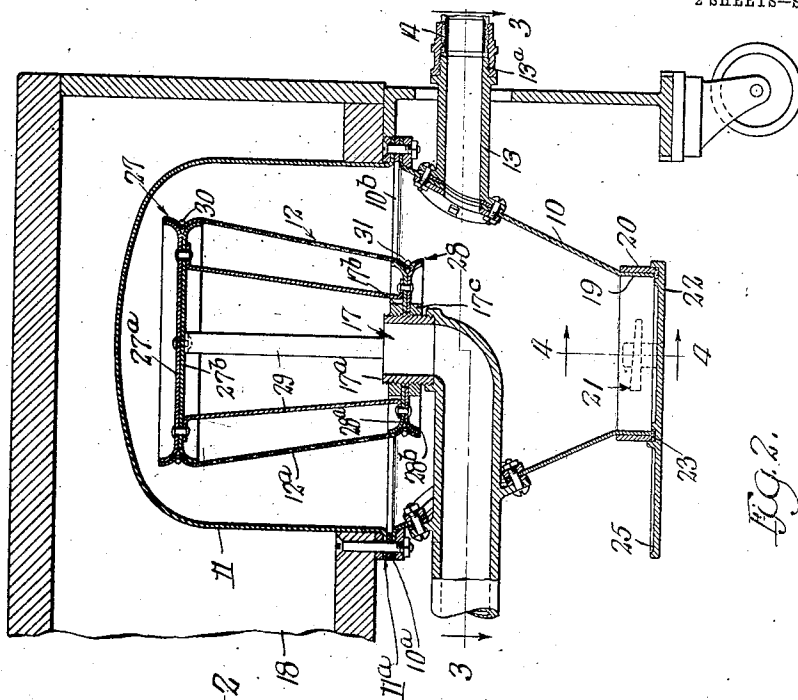


Fig. 2.

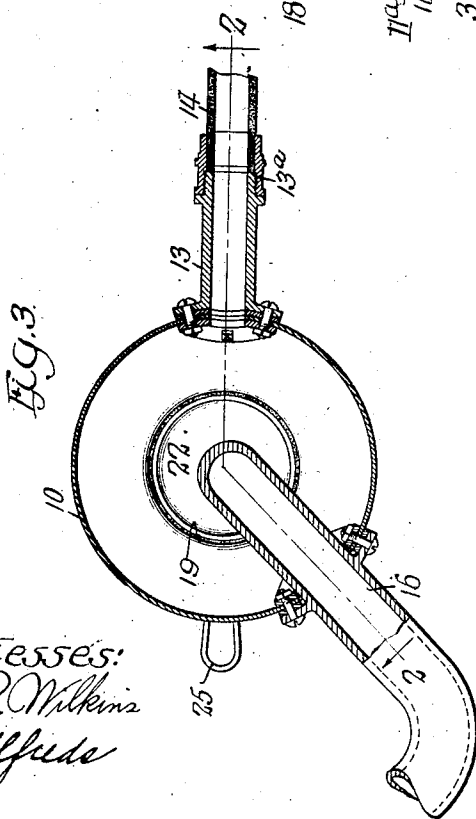


Fig. 3.

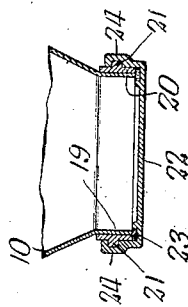


Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN H. GOEHST AND JOHN A. DUNLAP, OF CHICAGO, ILLINOIS, ASSIGNORS TO FEDERAL ELECTRIC COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

VACUUM CLEANING DEVICE.

950,767.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed September 7, 1909. Serial No. 516,526.

To all whom it may concern:

Be it known that we, JOHN H. GOEHST and JOHN A. DUNLAP, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vacuum Cleaning Devices; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to a vacuum cleaning device and more particularly to a novel construction and arrangement of dust separator and collector.

The improvements described herein are applicable to any vacuum cleaning device but are especially advantageous in use with a portable vacuum cleaning device, such as that described in an application filed by us on September 7th, 1909, Serial No. 516,585.

The invention consists of the combination of parts hereinafter described and pointed out in the appended claims.

In the drawings:—Figure 1 is a side elevation of a vacuum cleaning apparatus provided with the novel features referred to herein, as it appears when applied to a portable vacuum cleaner, such as that described in the application above referred to. Fig. 2 is a vertical section through the dust separator and collector. Fig. 3 is a transverse section through Fig. 2 on the line 3—3 thereof. Fig. 4 is a partial vertical section through Fig. 2 on the line 4—4 thereof.

In the drawings, 10 is a dust collector, 11 an inclosing dome and 12 the separator. The dust collector is preferably of conical shape, with the smaller end at the bottom.

13 indicates a fixed pipe secured in any convenient manner to the wall of the dust collector, said fixed pipe being provided with a screw-threaded nozzle 13^a by means of which may be attached a flexible hose 14 provided with a vacuum tool 15 in the usual manner.

16 indicates a fixed pipe which projects through the wall of the dust collector 10 and is rigidly secured thereto in any convenient manner. It connects at one end with the interior of the separator as indicated at 17, and at its other end is connected to a suction pro-

ducing device as indicated at 17^a. The dome 11 and the conical shaped dust collector 10 are provided respectively with flanges 11^a and 10^a by means of which they are secured together, there being interposed between them a washer 10^b to make the joint air tight. Said flanges also furnish a means for securing the two parts, thus attached together, to a cabinet 18 such, for example, as that used in the portable vacuum cleaners described in the application referred to.

The lower end of the dust collector 10 is provided with a cylindrical flange 19 which is surrounded by a ring or band 20 provided on opposite sides of its surface with wedge-shaped lugs 21, 21. Said collector is closed at the bottom by means of a disk 22 provided on its upper surface with an annular groove in which is located a washer 23 adapted to abut against the lower edges of the flange 19 and the band 20. 24, 24 indicate upstanding, oppositely arranged lugs formed on said disk. They are provided with horizontal grooves which are adapted to engage the wedge-shaped lugs 21, 21. 25 indicates an operating handle formed on one side of said disk by means of which it may be rotated to disengage the slotted lugs 24, from the wedge-shaped lugs 21 and thus remove the bottom from the collector.

The separator is of conical shape with the smaller end at the bottom. It comprises a head 27 and base 28, each composed of concave disks 27^a 27^b and 28^a 28^b which are secured together back to back by means of suitable rivets. Said heads are spaced apart by means of spacing bars 29. The outer peripheries of the heads are connected by means of a wall of fabric 12^a which will permit the flow of air but will not permit the dust or other impurities to pass through it. Said fabric wall is secured in place by means of wires 30, 31. The suction pipe 16 is attached to the bottom head 28 by means of a suitable thimble 17^a and washers 17^b, 17^c.

By reason of the shape of the separator with the bottom of smaller diameter than the top, as the dust laden air is sucked through the meshes of the fabric 12^a forming the wall thereof, the dust collects on the wall momentarily, and then by reason of the fact that the said wall falls away toward the bottom, the dust drops therefrom and falls

into the dust collector 10, and collects on the bottom 22 from which it may be from time to time removed in the ordinary way.

We claim as our invention:—

- 5 1. In a vacuum cleaner of the class described, an inclosed chamber, a separator located within said chamber, said separator comprising upper and lower heads with means for spacing them apart, the lower
- 10 head being smaller than the upper head, and a screen forming the conical wall of said separator secured to said heads, a suction pipe secured to the lower head of said separator and opening within said separator
- 15 said suction pipe acting to support said separator, and an entrance pipe opening into said inclosed chamber.

2. In a vacuum cleaner of the class described, a conical dust collector, a bottom
- 20 removably secured thereto, a dome secured to the top of said collector, a separator located in said dome, said separator comprising upper and lower heads, and an inclosing screen secured thereto, the lower head
- 25 being smaller than the upper head, a suction pipe secured to the bottom head and

opening within said separator, said suction pipe passing out through the walls of said collector and being secured thereto, and an entrance pipe secured to the wall of said collector opposite said suction pipe.

3. In a vacuum cleaning system, a separator having upper and lower heads, the lower head being smaller than the upper head, spacing bars secured, respectively, to
- 35 said upper and lower heads adapted to brace them apart, a conical screen secured to said head forming the side wall of said separator, and a suction pipe opening into said separator and secured to the lower head
- 40 thereof, said suction pipe being adapted to support said separator.

In testimony that we claim the foregoing as our invention we affix our signatures in the presence of two witnesses, this 25th day

JOHN H. GOEHST.
JOHN A. DUNLAP.

Witnesses:

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