T. R. SIGAFOOS.

VACUUM CLEANER.

APPLICATION FILED MAR. 18, 1911.

1,067,446. Patented July 15, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

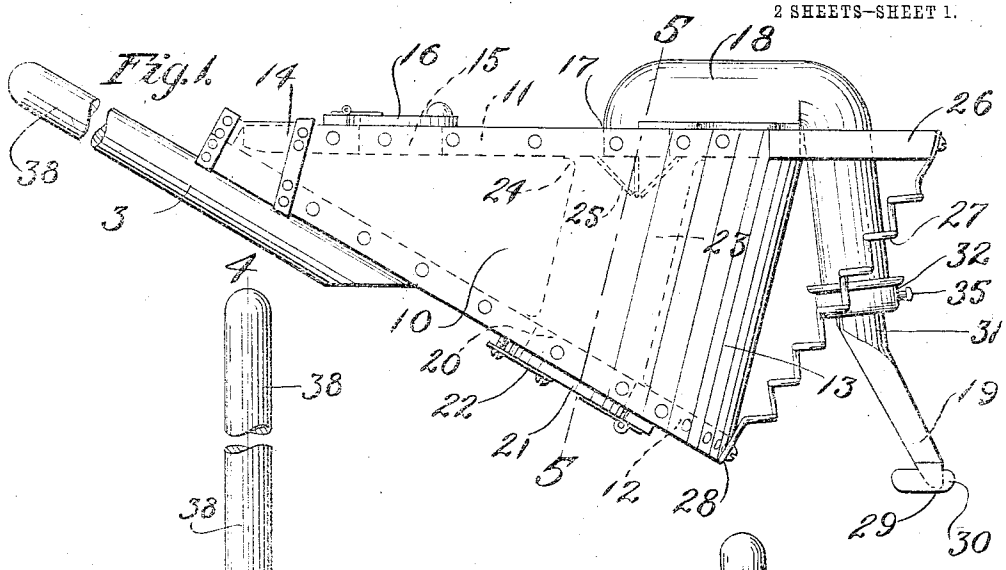


Fig. 3.

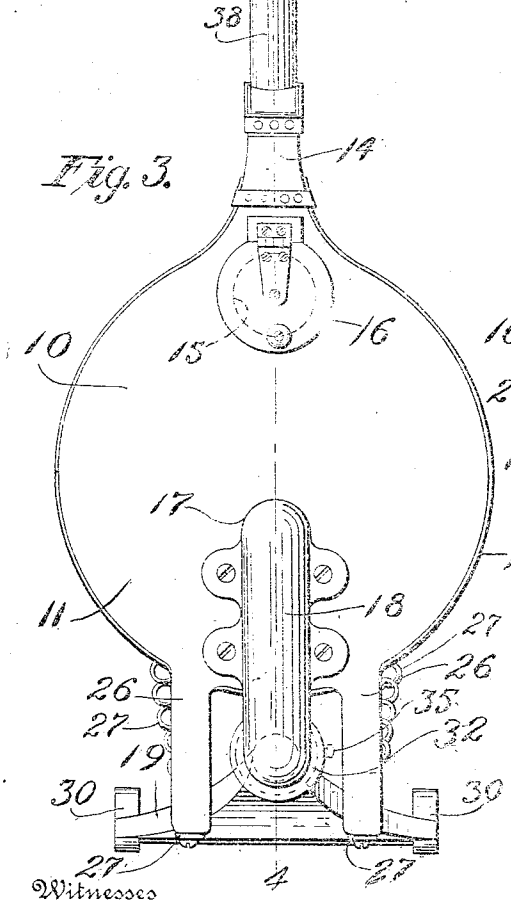
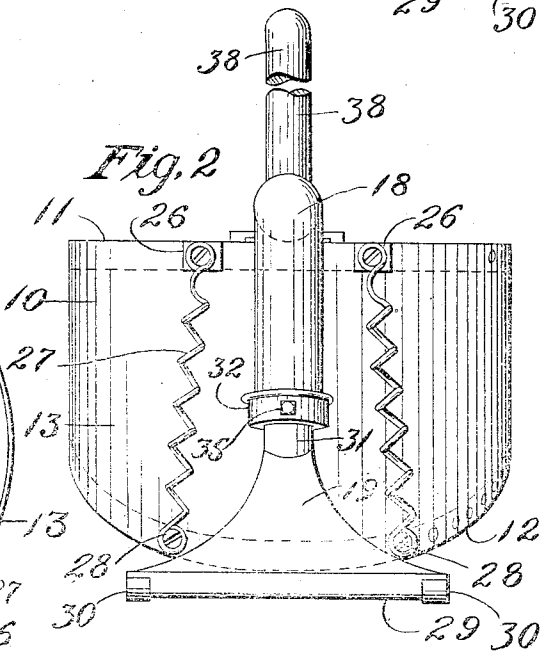


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

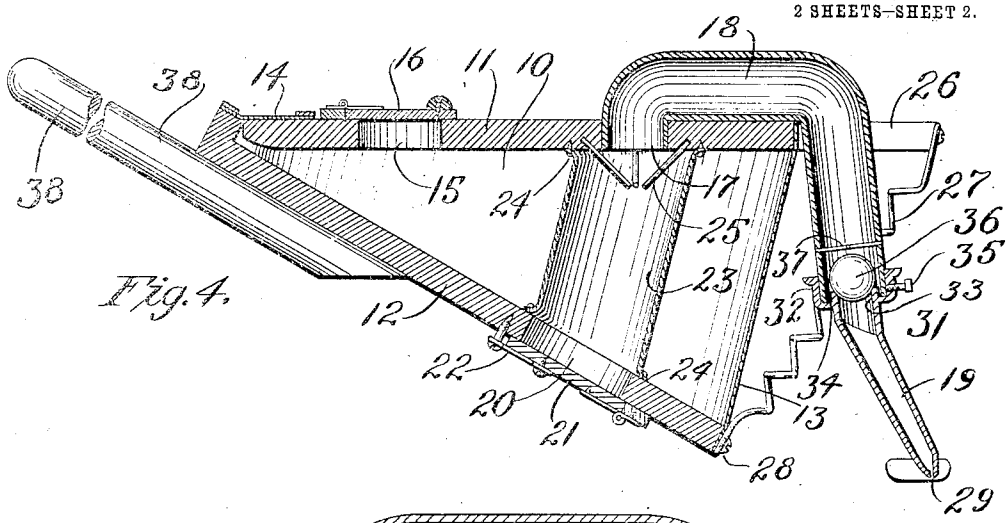


Fig. 4.

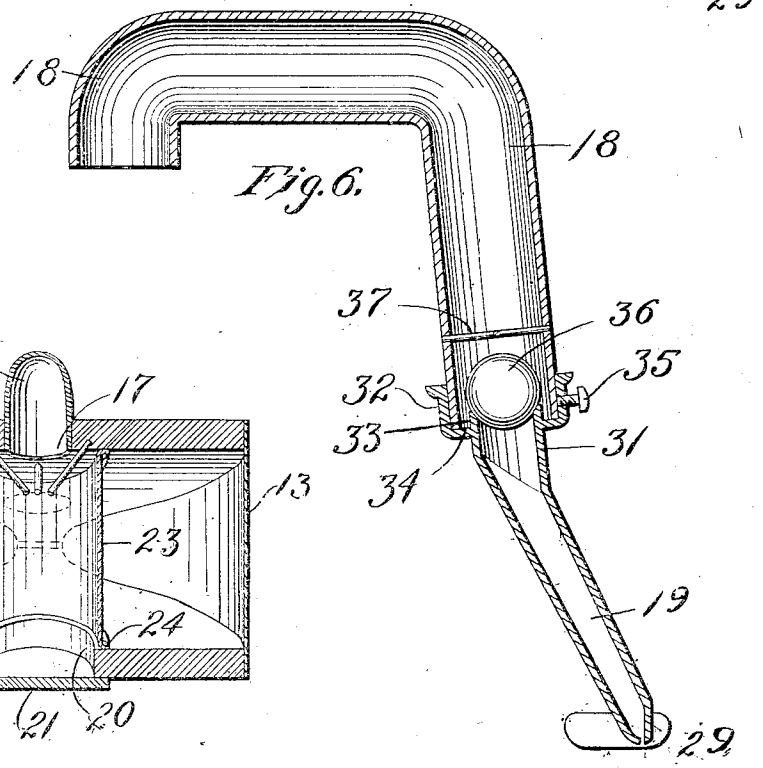


Fig. 6.

Fig. 5.

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UNITED STATES PATENT OFFICE.

THOMAS R. SIGAFOOS, OF GEORGETOWN, COLORADO, ASSIGNOR OF THREE-FOURTHS TO W. P. CARSTARPHEN, JR., OF DENVER, COLORADO, AND WILLIAM G. SHEDD, JR., OF CHICAGO, ILLINOIS.

VACUUM-CLEANER.

1,067,446. Specification of Letters Patent. Patented July 15, 1913.

Application filed March 18, 1911. Serial No. 615,225.

To all whom it may concern:

Be it known that I, THOMAS R. SIGAFOOS, a citizen of the United States, residing at Georgetown, in the county of Clear Creek and State of Colorado, have invented certain new and useful Improvements in Vacuum-Cleaners, of which the following is a specification.

This invention relates to improvements in carpet sweepers and more particularly to the type known as vacuum cleaners.

One object of the invention is to provide a vacuum cleaner which is simple in construction, cheap to manufacture and easily operated.

Another object of the invention is to provide a pneumatic carpet cleaner which may be readily drawn across the floor and the suction apparatus manually operated.

A still further object is to improve the construction of the suction apparatus and the location of the dust receptacle.

Other objects and advantages will be apparent from the following description, and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings: Figure 1 is a side elevation of the device. Fig. 2 is a front elevation of the same. Fig. 3 is a top plan view. Fig. 4 is a vertical longitudinal section on the line 4—4 of Fig. 3. Fig. 5 is a vertical transverse section on the line 5—5 of Fig. 1. Fig. 6 is an enlarged sectional view of the valve in the suction pipe.

Referring particularly to the drawings, the device comprises a bellows 10 having the top and bottom boards 11 and 12. Extending between the boards and secured thereto is the usual bellows covering 13. The boards 11 and 12 are hingedly connected at the smaller end of the bellows by means of the leather hinge 14. In the board 11 and at a suitable distance from the hinge 14 is an opening 15 closed from without by means of the weighted flap valve 16 through which the air is exhausted from the bellows. At a suitable point in the board 11 and forwardly of the valve 16 is a dust inlet opening 17 connected to which is a dust carrying pipe 18 connected to the suction nozzle 19 to be later described. At a point opposite the opening 17 and formed through the bottom board 12 is an opening 20 somewhat larger in diameter than the opening 17, which is closed by a hinged door 21 suitably held in closed position by the hook 22. Between the openings 17 and 20, is a dust collecting sack 23, the opposite ends of which are open and have the respective marginal edges 24 secured around the openings 17 and 20. Secured in the under face of the top board 11 and in circular series around the opening 17 are the pins 25 which converge toward each other to a point directly below the center of the opening 17, and into the dust sack. These pins will prevent the dust sack from working up into the dust inlet opening. Extending forwardly from the top board 11 and on either side of the pipe 18 are the arms 26 to each of which is secured one end of each of a pair of coil springs 27, the opposite ends of which are secured at the points 28 to the forward end of the bottom board 12. The normal position of this spring in contracted position holds the bellows closed. The suction nozzle 19, above referred to comprises a transversely slotted bottom portion 29 formed integrally with which, and on which said nozzle is adapted to slide are the runners 30. Extending upwardly and rearwardly from the portion 29 is a hollow chambered portion which gradually reduces itself to form the neck 31 at its upper end. Formed integrally on the neck is a vertically extending annular flange 32 between which and the upwardly extending portion 33 of the neck 31 is an annular channel 34 in which is adapted to rest the lower end of the pipe 18, which may be secured to said flange by any suitable means as the set screw 35. The inner edge of the portion 33 is beveled to provide a seat for the ball valve 36, and in the pipe at a suitable distance above the valve seat is a transversely arranged pin 37 to prevent the ball being sucked up through the pipe 18 during the operation of the device. To the lower board 12 of the bellows and adjacent its rear end is secured a handle 38 by means of which the device is operated.

The operation of the device may be briefly described as follows: The handle of the device is grasped and the nozzle 19 pressed against the carpet. The device is drawn toward the operator in the same manner employed in the use of the ordinary rake or

hoe, and at the same time pressure is exerted to cause the bellows to open and close. Upon pressing down, the bellows will open against the force of the spring 27 and draw into the dust sack 23 dirt laden air, and upon release, the spring 27 will draw the bellows closed and exhaust the air through the opening 15, the force being sufficient to raise the flap valve 16. When it is desired to empty the dirt from the sack, the door 21 is opened, when the dust and dirt will readily fall out.

From the foregoing it will readily be seen that I have provided a simple device of this character which may be easily operated. The action being similar to that of raking, drawing the nozzle across the carpet and at the same time sucking in the dust.

What is claimed is:

1. In a vacuum cleaner, a bellows including a pair of hinged leaves one of which is provided with a dust inlet, a nozzle adapted to contact with the surface to be cleaned, a pipe rigidly connecting the nozzle and the dust inlet, means for holding the bellows normally in closed position, and a handle rigidly secured to the other leaf and extending from the hinged end whereby when the nozzle is drawn over the surface to be cleaned and downward pressure exerted on the handle, the bellows will be opened to draw in the dust.

2. In a vacuum cleaner, a bellows including upper and lower hinged leaves, the upper leaf having an inlet opening therein, a dust collector in said bellows, means for holding the bellows normally closed, a pipe rigidly secured to the upper leaf and communicating at one end with the inlet opening, a nozzle connected with the opposite end of the pipe and adapted in the operation of the cleaner to bear against the surface to be cleaned, and a handle rigidly secured to the lower leaf and extending from the hinged end thereof.

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

THOMAS R. SIGAFOOS.

Witnesses:
CHARLES J. NICHOLAS,
CHARLES J. HANCOCK.