

July 12, 1932.

F. E. SODE

1,867,477

VACUUM FLOOR CLEANER

Filed Nov. 1, 1926

2 Sheets-Sheet 1

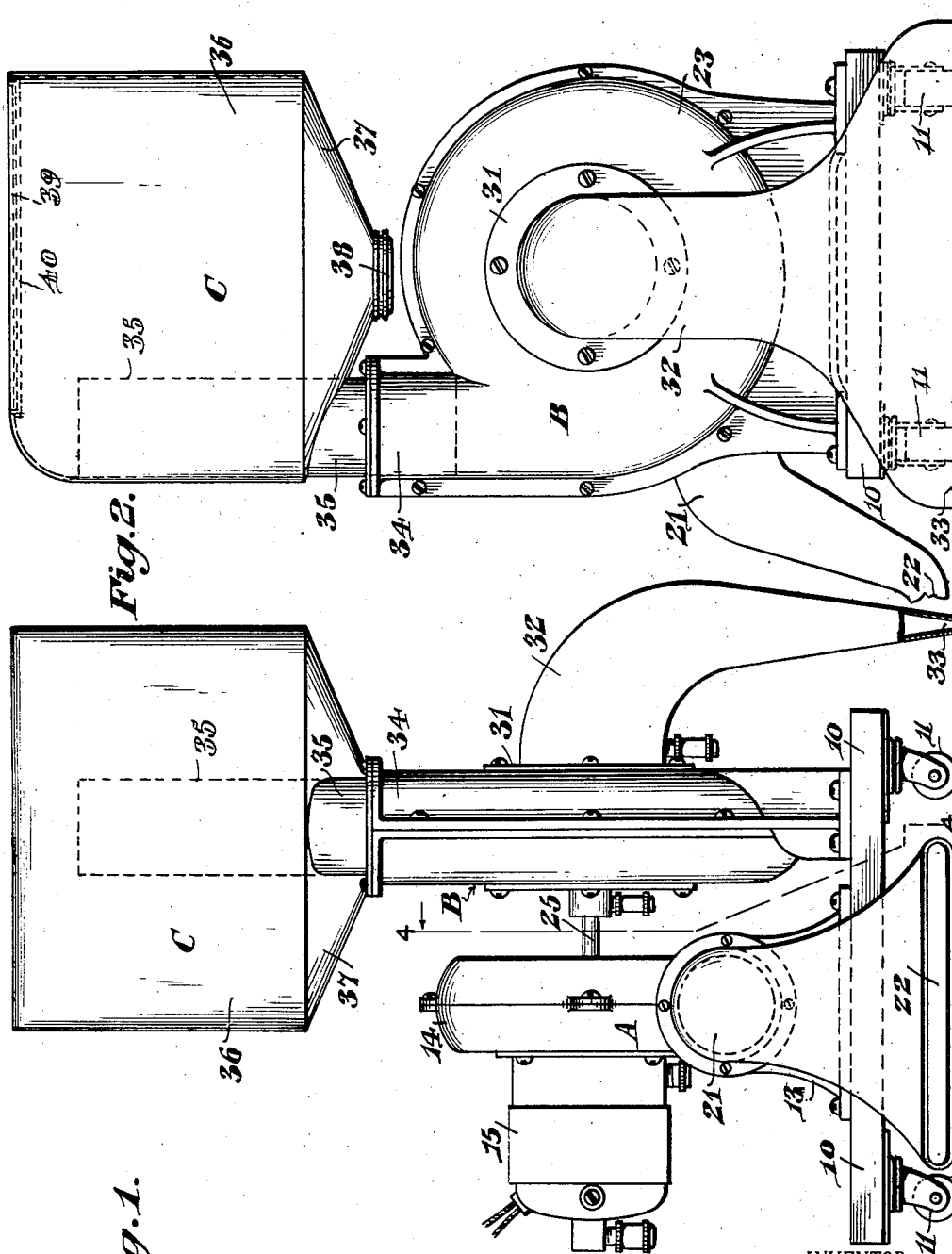


Fig. 2.

Fig. 1.

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Fig. 5.

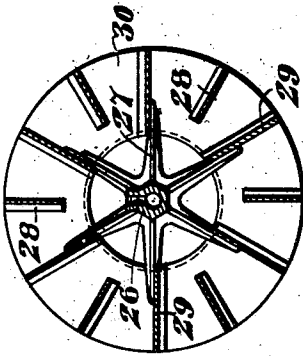


Fig. 4.

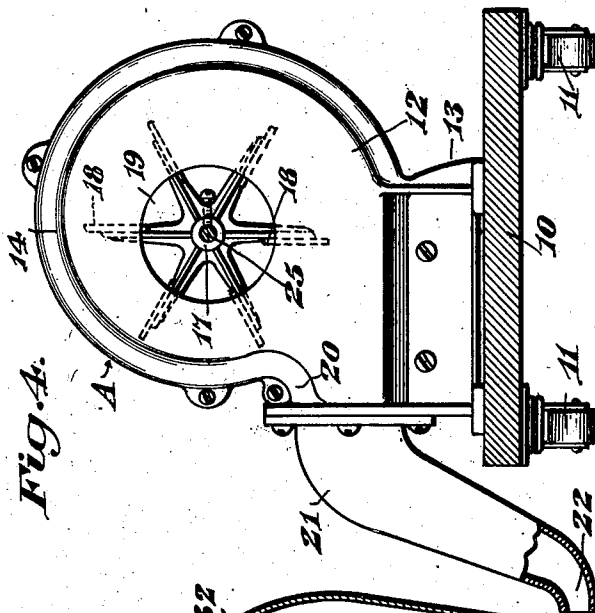
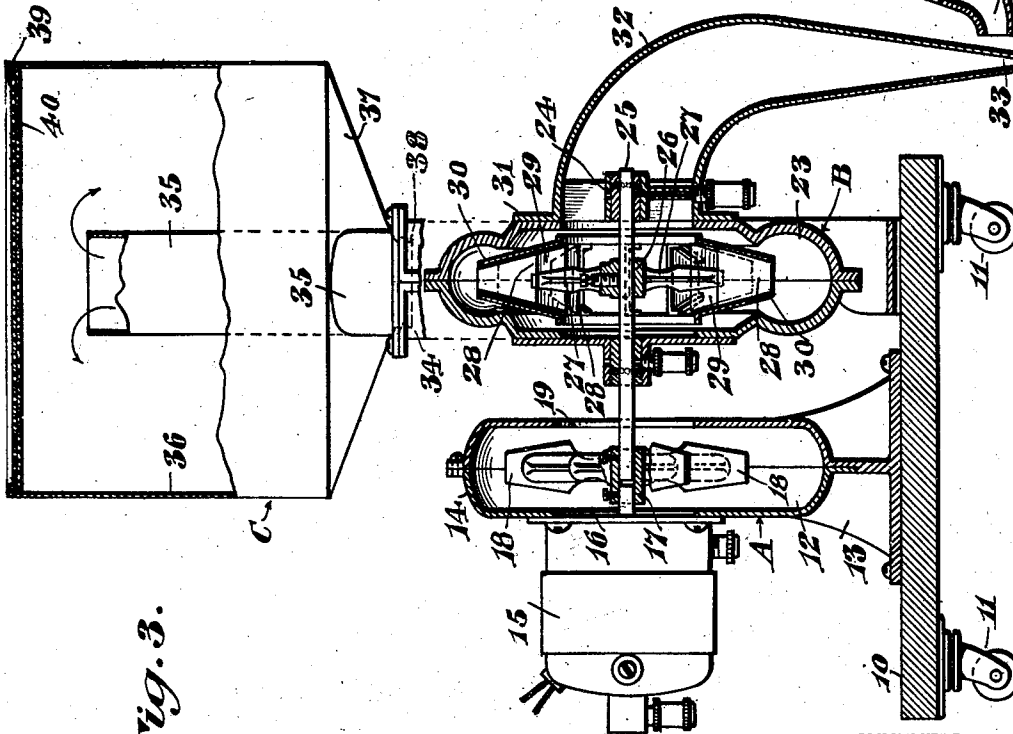


Fig. 3.



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VACUUM FLOOR CLEANER

Application filed November 1, 1926. Serial No. 145,497.

The invention relates to cleaning apparatus, and more especially to the class of combined blast and suction sweepers.

The primary object of the invention is the provision of an apparatus of this character, wherein the construction thereof enables its use in sweeping out passages or aisles between rows of seats, desks, or other separated groups of furniture, thus eliminating manual labor for the hand sweeping of such aisles.

Another object of the invention is the provision of an apparatus of this character, wherein the suction and blower elements are associated in a novel manner so that the same will be simultaneously operated and supported to permit carriage thereof, whereby the same may be moved as a unit over a floor or other foundation, the suction and blower mouth pieces being disposed relative to each other for cooperation to displace dirt and other foreign matter from beneath articles of furniture located in rows and for the collection of such dirt and other foreign matter when the apparatus is advanced in an aisle between the rows of furniture, the blower and suction elements being of novel form to render the device efficacious and positive in its operation.

A further object of the invention is the provision of an apparatus of this character which can be moved along the row of articles of furniture and will blow the dust out from under the same and suck such dust or other foreign matter up on either side of the row according to the location of the apparatus when being advanced between the rows adjacent each other of such furniture.

A still further object of the invention is the provision of an apparatus of this character, which is comparatively simple in construction, readily and easily portable, of the mobile type, thoroughly reliable and efficient in its purpose, strong, durable, compact, neat in appearance, and inexpensive to manufacture.

With these and other objects in view, the invention consists of the features of construction, combination and arrangement of parts, as will be hereinafter fully described, illustrated in the accompanying drawings showing the preferred embodiments of the inven-

tion, and pointed out in the claim hereunto appended.

In the accompanying drawings:

Figure 1 is a side elevation of a combined blast and suction sweeper or vacuum floor cleaner, constructed in accordance with the invention.

Figure 2 is a front elevation of the same.

Figure 3 is a fragmentary vertical sectional view through the apparatus.

Figure 4 is a sectional view on the line 4—4 of Figure 1 looking in the direction of the arrows.

Figure 5 is a detailed vertical sectional view through the suction fan proper.

Similar reference characters denote corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail the combined blast and suction sweeper constituting the present invention, comprises a mobile stand or table having a base or platform 10, preferably of squared or rectangular contour made from wood, although the same may be of any other desired shape and made from any suitable material, having near the corners thereof depending from its underside rotatable and revoluble casters 11, of any standard type. The platform 10 and casters 11 constitute what may be more properly termed the carriage of the apparatus.

Superimposed upon this carriage is a blower device A and a suction device B respectively, the latter supporting and having superposed relative thereto a dust or dirt and other foreign matter collector C. The blower device A comprises a shell or casing 12 of the two part separable type, provided with a stand 13 bolted or otherwise fastened upon the table or platform 10, the separable part 14 of this casing being fitted centrally exteriorly of the same with an electric power motor 15, of any conventional type, the power shaft 16 thereof being extended through a suitable opening in the casing 12 a distance therein. Upon this power shaft 16 is detachably mounted the hub 17 of a blower wheel or fan 18, of the bladed type. The casing 12 opposite the separable part 14 centrally of the

same is provided with the customary opening 19 for the ingress of air thereinto.

Formed tangentially relative to the casing 12 at its periphery is a flanged throat 20 to which is detachably connected the downwardly and outwardly curved blower mouth-piece 21, the elongated mouth 22 of the same being located in close proximity to a floor or foundation, so that the blast from the blower device A will be directed in a horizontal plane contiguous to the surface of the floor or foundation for the blowing of dirt and other foreign matter in a given direction.

The suction device B comprises a suction casing or shell 23 preferably of the two part separable type having a reduced width portion adjacent its periphery and further having centrally thereof bearings 24 in which is journaled a driven shaft 25, the same being extended into the casing 12 and the hub 17 of the blower wheel or fan 18 and is detachably connected to the said hub 17 thereof. Mounted within the casing 23 and fixed to the driven shaft 25 between the bearings 24 is a suction fan or wheel including a hub 26 radial spider arms 27 projecting therefrom and short and long blades 28 and 29, respectively, the long blades being made fast to the spider arms 27. These long and short blades 28 and 29 are also made fast to outwardly convergent side rings 30 concentrically of the shaft 25 and constitute a part of the suction fan or wheel. The long blades 29 extend from the outer peripheries of the side rings 30 to the inner peripheries thereof while the short blades 28 extend from the outer peripheries of the side rings 30 to a concentric line located between the outer and inner peripheries of the rings. The casing 23 at the outer side thereof is formed with a central opening 31 which establishes communication with a suction head or nozzle 32 the same being curved outwardly and downwardly with its mouth 33 confronting the floor or foundation as is clearly shown in Figures 1 and 3 of the drawings. The converging side rings 30 terminate within the reduced width portion of the casing 23.

Formed on the casing 23 and disposed tangentially to the periphery thereof in an upward direction is an extension 34 having removably fitted therein a delivery or discharge spout 35 extended within the collector C which is in the form of a receptacle 36 having a hopper bottom 37 provided with a discharge opening normally closed by a removable cap or closure 38. In the top of the receptacle 36 there is arranged a reticulated head 39 which has underlying the same a fabric shield or covering 40 constituting a filterer, so that air admitted to the receptacle can pass freely through the head and the dust or other foreign matter so ladening the air will be deflected downwardly and become deposited in the receptacle where the same will be collected

and at intervals removed therefrom on accumulation of such dirt and other foreign matter within the receptacle.

The carriage can be transported or moved over a floor or foundation in any desirable manner in the use of the combined blast and suction sweeper or cleaner.

In operation, the sweeper is moved upon the floor or foundation through an aisle between rows of an article of furniture, so that the suction nozzle 32 will collect all dirt or dust or other foreign matter upon the floor or foundation, while the blast mouth-piece 21 will be located at one side of the apparatus to trail rearwardly of the suction nozzle 32 and the blast from the device A will dispel or drive all dirt, dust or other foreign matter from beneath the row of articles of furniture beyond the same to the next aisle adjacent to the aisle traversed by the apparatus, whereby when the said apparatus is brought into the next aisle the dirt, dust and foreign matter blown thereinto will be collected by the suction device B and such dirt, dust and foreign matter collected and deposited in the collector C of the apparatus as will be clearly apparent.

It is obvious that this apparatus is adapted for cleaning an open space, that is, a space which is not obstructed by a row of desks or other articles of furniture as well as cleaning an obstructed space.

It will also be apparent that the blower fan or wheel 18 and the suction fan or wheel will be simultaneously operated from the power motor 15 of the device.

It is to be understood that the motor may be located between the blower device A and the suction device B if found desirable.

It is thought that the many advantages of the vacuum floor cleaner in accordance with this invention, can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall properly within the scope of the invention as claimed.

What is claimed is:—

In a mobile vacuum cleaner, a sectional casing formed adjacent its periphery with a portion of reduced width, bearings carried by the casing, a shaft extending through the casing and journaled in said bearings, a spider element including a hub detachably mounted on the shaft and further including a plurality of arms projecting radially from the hub, a blade secured to each arm and projecting beyond the sides and outer end thereof, each of said blades tapering toward its outer end, a pair of annular members secured to said blades, said annular members converging in an outward direction and terminating within the reduced width portion of the casing, and a plurality of relatively short

blades secured between said annular members, said relatively short blades being disposed midway between and alternately with respect to the tapered blades, said tapered
5 blades having their inner and outer edges respectively flush with the inner and outer peripheries of said annular members, said relatively short blades having their outer edges flush with the outer peripheries of said
10 annular members and terminating at their inner edges in a line concentric to the shaft and located between the inner peripheries of the annular members and the outer ends of said arms.

15 In testimony whereof, I affix my signature hereto.

FRANK E. SODE.

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