July 17, 1923.

1,462,218

D. TONSO

VACUUM CLEANER ATTACHMENT

Filed March 15, 1922

Fig. 1.

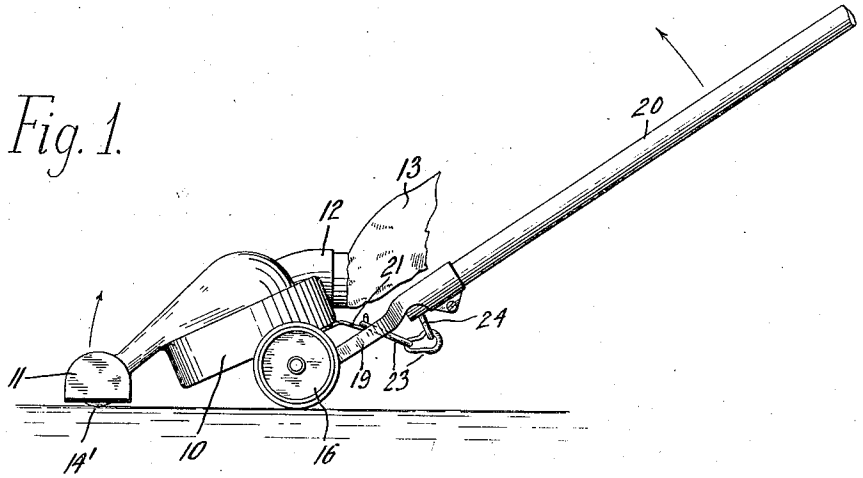


Fig. 2.

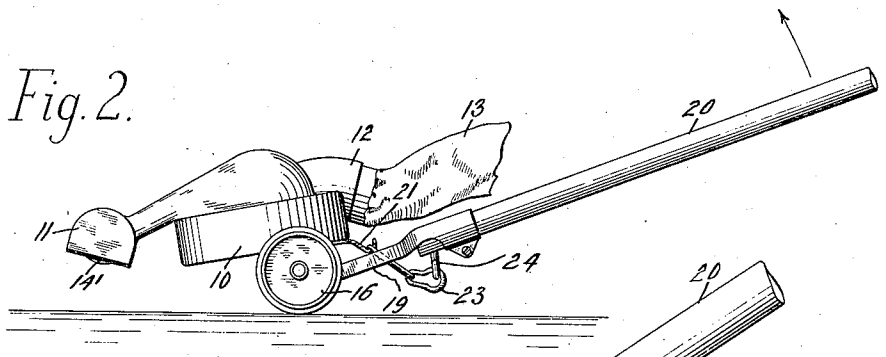


Fig. 3.

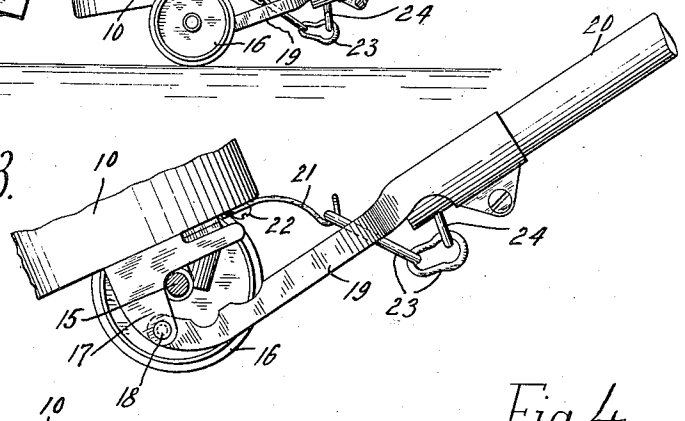
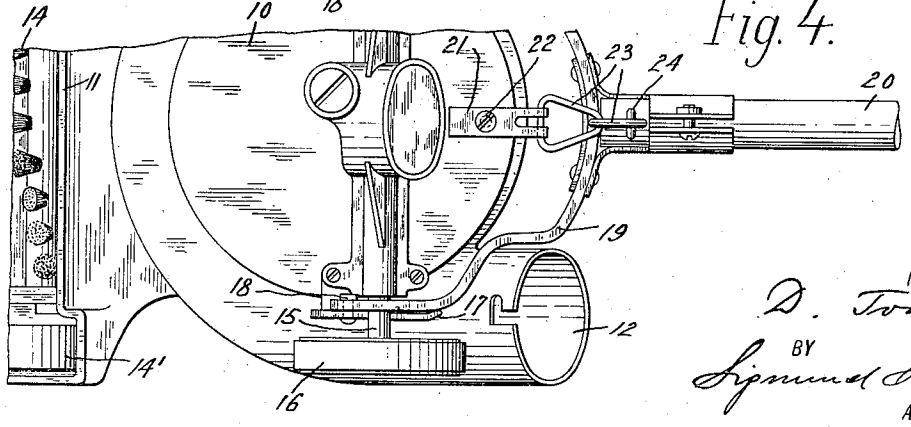


Fig. 4.



INVENTOR

D. Tonso

BY

Sigmund Herzog

ATTORNEY

Patented July 17, 1923. 1,462,218

UNITED STATES PATENT OFFICE.

DOMENICK TONSO, OF NEW YORK, N. Y.

VACUUM-CLEANER ATTACHMENT.

Application filed March 15, 1922. Serial No. 543,956.

To all whom it may concern:

Be it known that I, DOMENICK TONSO, a citizen of the United States, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Vacuum-Cleaner Attachments, of which the following is a specification.

The present invention relates to improvements in vacuum cleaners, and more particularly to the portable type thereof.

Devices of this type usually comprise a casing having a nozzle open at the bottom, in combination with means for creating a current of air through said nozzle. The casing is usually mounted upon wheels and connected with a handle, which is pivotally mounted on the contrivance. In using the instrument, the same is caused to traverse the surface to be cleaned by causing it to move back and forth upon the same. In cleaning carpets, troubles have been experienced with these devices due to the fact that on the backward strokes thereof, that is to say, on the strokes toward the operator, they lift the carpet, rug, etc., from the floor when working adjacent the edges thereof or when operating upon small objects. Furthermore, when the instrument is to be moved from place to place, with the suction mechanism in operation, the casing and the parts carried thereby swing by gravity around the handle, so that, when the casing is again to be brought into engagement with the surface, it must be manually swung around the handle into proper position, the operator being compelled to use both hands and is also compelled to bend down, for the purpose stated.

The main object of the invention is to provide an attachment for vacuum cleaners which overcomes the difficulites above referred to, in that it permits the nozzle to be disengaged from the surface to be treated by a slight movement of the handle on its pivots, and also prevents a turning of the casing and the parts carried thereby on the handle when the instrument is bodily lifted from said surface.

Another object of the invention is to produce a vacuum cleaner attachment of the type mentioned, which is simple in construction, efficient in operation and capable of manufacture on a commercial scale, or in other words one which is not so difficult to make as to be beyond the reasonable cost of such a contrivance.

A further object of the invention is to so construct the attachment that it is capable of being mounted on the vacuum cleaner without necessitating changes in the construction of the latter.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter described, pointed out in the appended claim and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and details of construction within the scope of the appended chaim, without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a vacuum cleaner with an attachment constructed in accordance with the present invention in position thereon; Fig. 2 is a similar elevation, the elements being shown in other positions; Fig. 3 is a side elevation of a portion of the vacuum cleaner, on a larger scale, certain elements being removed in order to more clearly show the construction of the attachment; and Fig. 4 is a bottom plan view, on a larger scale, of a portion of the vacuum cleaner and the attachment.

In the drawings, the numeral 10 indicates a casing, provided with a nozzle 11, which is open at its bottom and communicates with a fan chamber, not shown. To the outlet 12 of the fan chamber is secured, in any suitable manner, a bag 13, for collecting the dust, etc., drawn through the nozzle by a mechanism creating a current of air through said nozzle, as usual in constructions of this type. Within the nozzle is mounted a rotary brush 14, and in operative relation thereto are carried by the casing supporting wheels 14'. The casing and the elements disposed therein are oscillatably mounted on a shaft 15, carrying wheels 16. Adjacent the wheels 16, there depend from the casing lugs 17, to which is pivoted at 18 a bail-shaped handle 19, into which is fitted a staff 20. So far de-

scribed, the construction of the elements and their operation are well known, so that a further detailed description thereof seems to be unnecessary.

The attachment comprises a rearwardly projecting hook 21, that is attached by one or more screws 22 to the underface of the casing 10 and connected by links 23 with a bolt 24, preferably, an eye bolt, which is screwed into and projects below the underface of the handle, more particularly the staff 20 thereof. In other words, the handle and casing are connected by flexible means, which permit of a free movement of the handle in the direction of the arrow shown in Fig. 1 of the drawings toward the casing, but allow of a limited movement only of said handle in relation to the casing in the opposite direction.

The operation of this device is as follows: The connection between the casing and handle being flexible, the instrument may be moved back and forth on the surface to be treated in the ordinary manner. In Fig. 1 of the drawings the vacuum cleaner is shown in its operative position, in which the nozzle 11 is disposed a slight distance above the surface traversed, the brush 14 being rotated by contact with the surface, and the dust, etc., being removed from the latter by the means which create a current of air through the nozzle. On the forward stroke of the instrument, that is to say on the stroke away from the operator, the elements are in the positions shown in Fig. 1 of the drawings, but on the backward stroke the operator depresses the staff 20 of the handle, whereby, through the intermediary of the links 23 and the elements connected to the casing 10 and handle, respectively, the said casing and the mechanism thereon is caused to move around the axle 15 into the direction of the arrow shown in Fig. 1 of the drawings, the elements being brought thereby into the positions shown in Fig. 2 of the drawings, the nozzle being thus disposed at a distance above the surface which prevents an adhesion of the carpet or other material to the nozzle. The device can thus be moved on its back stroke without carrying with it the said surface, the operator swinging the handle at the end of the backward stroke in the direction of the arrow shown in Fig. 2 of the drawings, whereby the nozzle drops into operative relation to the surface. If the device is to be moved from place to place on the surface to be treated, the operator first brings the elements into the positions shown in Fig. 2 of the drawings, raising the device and transferring it to the desired place, and then bringing the nozzle again in proper relation to the surface. When the device is raised from the surface, the elements remain in the relative positions shown in Fig. 2 of the drawings, the casing and the mechanisms thereon being unable to swing by gravity around the axle 15, they being prevented from doing so by the flexible connection mentioned.

It is to be observed that the handle of the vacuum cleaner must be pivoted to the casing 10 thereof, in order to permit the handle to be swung up and down on the forward and back strokes of the instrument. A rigid connection between these two elements cannot be made, because, with a fixed handle, the operation of the device would be too tiresome.

Attention is also called to the fact that, while herein a specific type of vacuum cleaner casing and elements have been shown, the attachment is applicable to other types also without departing from the invention, which lies mainly in the provision of a flexible connection between the cleaner casing and the handle thereof, which permits of a limited swinging movement of the handle on the casing in one direction and of a free movement in the opposite direction, for the purpose stated.

What I claim is:—

A vacuum cleaner including a casing provided with a suction nozzle and a rotary brush adjacent thereto, wheels carrying said casing, wheels operating said brush, both sets of wheels normally resting on the ground, a handle pivotally connected with said casing, a hook fixed to said casing, and a flexible connection between said hook and said handle including a link in engagement with said hook, whereby the lowering of said handle below a certain limit results in the lifting off the ground of said brush operating wheels while the casing carrying wheels remain on the ground, and the lifting of said handle beyond a certain limit causes a disengagement of said link from said hook.

Signed at New York, in the county of New York and State of New York this 10th day of March, A. D. 1922.

DOMENICK TONSO.