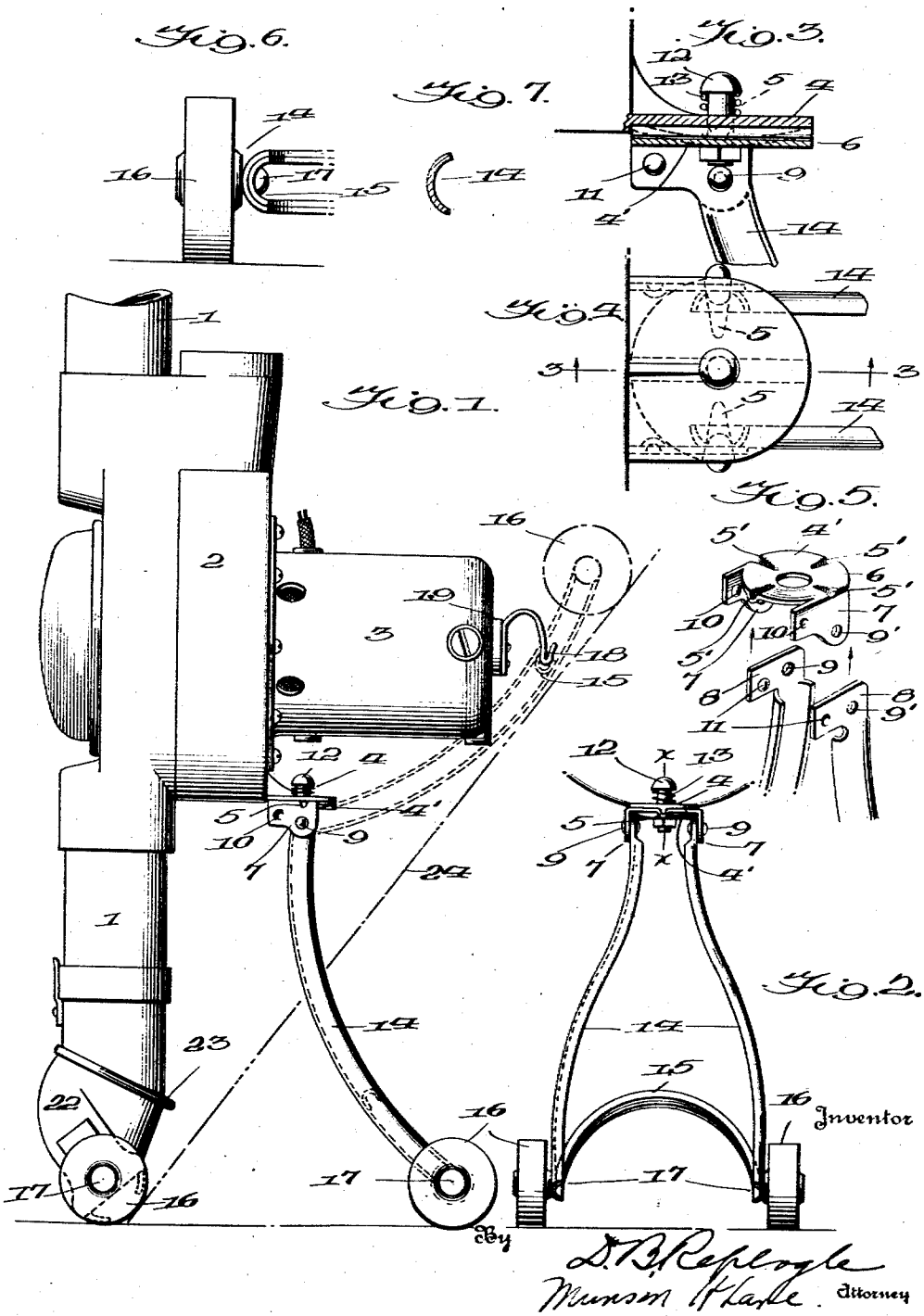
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SUPPORT FOR AIRWAY CLEANERS

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SUPPORT FOR AIRWAY CLEANERS

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Fig. 8.

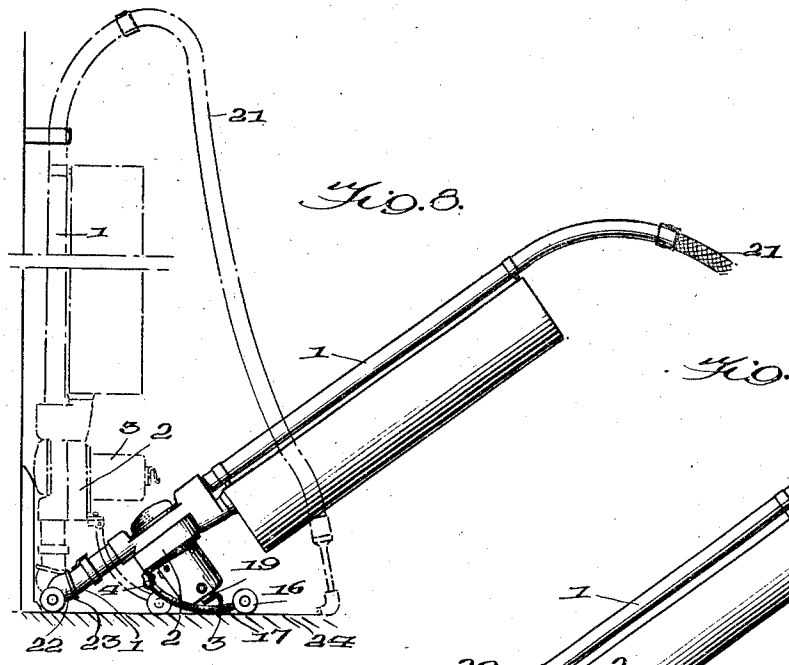


Fig. 9.

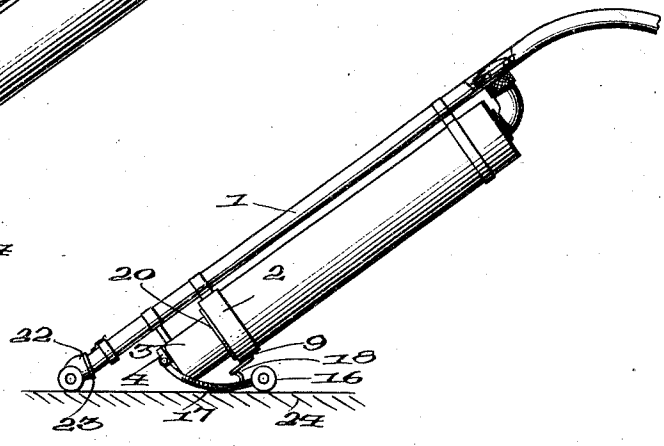


Fig. 10.

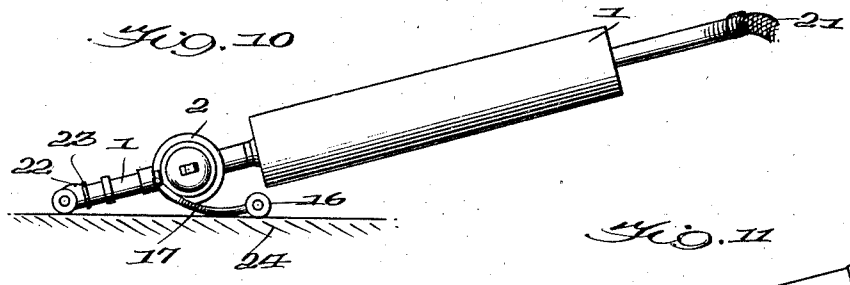
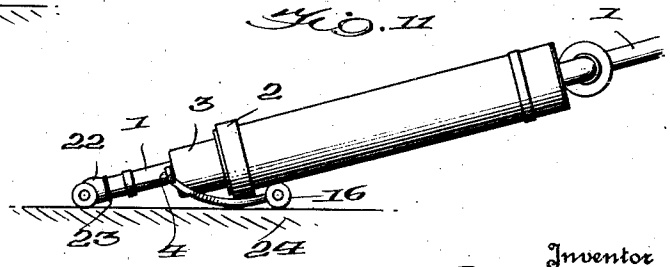


Fig. 11.



Inventor

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Patented Oct. 25, 1932

1,884,867

UNITED STATES PATENT OFFICE

DANIEL BENSON REPLOGLE, OF BERKELEY, CALIFORNIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE COMMERCE GUARDIAN TRUST & SAVINGS BANK, TRUSTEE, OF TOLEDO, OHIO

SUPPORT FOR AIRWAY CLEANERS

Application filed June 14, 1930. Serial No. 461,208.

This invention relates to adjustable roller supports suitable and applicable to air-way cleaners of both the bag type and tank or caddy-form now in general use, and in which there is the common characteristic of a suction tube section, extending to a swiveled cross-head cleaning tool on the floor end thereof.

Because of the swiveled connection between the floor tool and the suction tube or suction handle of the cleaner, it is evident that cleaners of this type may be readily employed for sweeping beneath furniture or the like, by merely swinging the device about the axis of the cleaner handle, as fully set forth in my Reissue Patent No. 16,224. According to the present invention, I have provided an adjustable support hingedly and rotatably connected to a portion of the rigid frame of the cleaner, whereby when the fan and motor casing and other portions of the frame of the cleaner are swiveled about the floor tool, the adjustable support by reason of its swiveled and hinged connection to the frame cooperates with the floor tool to support the cleaner in its various positions.

The object, therefore, of the present invention is to provide greater versatility in such roller supports, to materially strengthen, and to simplify the adjustment of such supports.

To these ends the invention consists of the design, the arrangement and construction of parts as herein specified, and illustrated in the accompany drawings, in which:

Fig. 1 is a side elevation of the suction producing means, suction tube and cross-head floor tool, of a bag type air-way cleaner having the present invention attached, and suggesting the hinge adjustment thereof in dotted lines;

Fig. 2 shows a front view of the attached support;

Fig. 3 is a partial section taken on the line x—x of Fig. 2;

Fig. 4 is a top view of the fastening bracket or lug, to which the adjustable support is pivoted;

Fig. 5 is a detail view of the upper ends of the legs of the support, and of the swivel plate member, to which the legs are to be hinged;

Fig. 6 is a detail showing how one of my attachment rollers, the subject of my Patent No. 1,541,280 issued June 9, 1925, is secured to the frame of the present support;

Fig. 7 shows a cross section of one of the curved strips preferably used in the construction of the legs and cross-brace of the device;

Fig. 8 shows a bag type air-way cleaner in the ordinary working position with the present invention in place, and suggests in dotted lines how the support is designed to hold the cleaner in an erect position when working attachments are connected to the cleaner handle;

Fig. 9 shows the tank or caddy-form air-way cleaner in the ordinary working position, with the present improvement in place;

Fig. 10 shows the bag type air-way cleaner, with the present improved support in the swiveled-over position, as occurs in cleaning under furniture with the swiveled cross-head or air-way cleaning tool; and

Fig. 11 shows the operation as last set forth, when connected to the tank or caddy-form air-way cleaner.

Similar characters of reference denote like and corresponding parts throughout the several views.

Referring to the drawings, 1 designates a suction tube, 2 a fan case, 3 an electric motor, as they are combined to form the suction producing means in the construction of an air-way cleaner to which this roller support is attachable. A projecting plate or lug 4 extends from either the motor casing or the fan case so as to have pivoted to it the element 4′, the said element being provided with a pair of lugs 7, 7 and with radial furrows 5′, 5′, etc., which are to engage radial frets 5, 5 of the lug or bracket 4, any two of them coinciding, or snapping in, according as the same is turned on its pivot.

The lugs 7, 7 are designed to have pivoted to them lugs 8, 8 of the legs 14 of the device. These lugs are also provided with projections 10, 10 adapted to snap into corresponding depressions 11, 11 of the legs 14, 14 aforesaid,

when the same are to be held in the upright position as shown in Fig. 1.

The legs 14 are further framed together by means of the bow-shaped brace 15 connected at 17, 17, at which points the rollers 16, 16 are attached. The frame thus assembled is adapted to swing on its hinge 9, 9 so as to take the position shown in full lines in Figs. 1, 8, 9, 10 and 11. When adjusted to this position, as shown in dotted lines, a detent 18 is adapted to engage with the brace 15 so as to hold them in the position desired. This detent is secured to the motor case or fan casing at a suitable point, as 19.

By making the legs 14, 14 and the brace 15 of a semi-circular cross section, as shown in Fig. 7, they are materially stiffened and fit together so as to make a secure joint when the rivet and spindle 17 securing the wheel 16 is put into place.

An assembling bolt 12 is passed through the center holes which coincide when the element 4′ is placed into position underneath the bracket or lug 4. A compression spring 13 is arranged on this bolt so as to permit an adjustment upward or downward of the element underneath, thus permitting it, under stress, to be snapped into one of two positions in which the frets 5 fall into opposite furrows 5′, 5′ on the face of the said element 4′. In addition to this rotative movement, a hinge movement is permitted on the rivets 9, 9, passing through the eyes 9′, 9′, and connecting the lugs 7, 7 with the legs 14, 14 of the device. The projections 10, 10, snapping into the depressions 11, 11 of the lugs, are designed to hold the device in the position shown in full lines in Fig. 1 sufficiently rigid for purposes of standing the machine vertically as shown. Snapping into the detent 18 is sufficient to stand the machine at an angle of about 45 degrees, or holds the supports in the working position, sufficiently rigid as shown in dotted lines.

The general utility and operation of the device may now be explained. A pair of rollers 16, 16 similar to the ones on the framework of the device described, are found on the cross-head of the machine to which they are to be attached; only one of these rollers is shown in the view which is taken endwise of the floor tool 22. This cross-head floor tool 22 has a swivel joint 23 permitting free rotation on the tube or handle 1 of the device. For the ordinary working position of the bag type machine, the adjustment rollers are swung directly back so that the machine sits at an angle of about 45 degrees, as shown in Fig. 8. Likewise the tank or caddy-form machine in the working position is shown in Fig. 9, where the adjustment rollers are swung directly back.

Where it is desired to clean under furniture, however, the entire frame of the machine is rotated through an arc of about 90 degrees on the swivel joint 23, thus bringing the sweeper on its side. It is apparent, then, that in order that the roller bracket support should function as heretofore, it should be rotated in an opposite direction about 90 degrees, which is accomplished by a stress bringing the frets out of their then occupied furrows to a corresponding set of furrows at the required angle which is turned. The rollers 16, 16 are now again in position, so that there are four rollers, two at the cross-head and two at the roller supports, resting upon the floor, in the plane 24.

By the term "caddy form", as employed in the present specification, I have reference to a type of cleaner in which the dust collector is housed within a rigid tank or can, as distinguished from the "bag" type of cleaner in which a flexible bag is employed for this purpose.

By the term "cross-head floor tool", I have reference to a tool which extends laterally on both sides of the cleaner handle.

Having thus described the invention and the operation thereof, what I claim and desire to secure by Letters Patent is:

1. In combination with the suction producing means of an air-way cleaner, a casing for said means, a cross-head floor tool rotatively mounted with reference to said casing, and means including a supporting bracket rotatively and hingedly connected with the casing and cooperating with the floor tool to adjustingly support the cleaner in various working positions.

2. The herein described support for air-way cleaners having suction producing means, comprising an attachment bracket on the casing of the suction producing means, a lug member rotatable with reference to the bracket and operatively secured to said bracket, a frame member having lugs hinged to the lugs of the said lug member, and means for holding the lugs of the lug member and frame member yieldingly together in a plurality of working positions.

3. In combination with the suction producing means of a suction cleaner, a casing housing said means, a floor tool rotatably mounted with reference to the casing, and means, including a supporting frame rotatably and hingedly connected to the casing cooperating with the said floor tool, for adjustably holding the cleaner in various working positions.

4. In combination with the suction producing means of a suction cleaner, a casing for said means, a floor tool rotatively mounted with reference to said casing, a bracket secured to said casing, a swivel plate member rotatably connected to the bracket, and a supporting frame hingedly connected to the swivel plate member.

5. In combination with the suction producing means of a suction cleaner, a casing housing said means, a floor tool rotatably mount-

ed with reference to the casing, a bracket member rigidly connected to the casing of the suction producing means, a plate member swiveled to said bracket, a supporting frame, hingedly connected to the swivel plate member, supporting rollers mounted on the frame and means for yieldingly holding the plate and bracket in selected adjusted positions.

6. In combination with a suction cleaner having a source of suction, an open-ended suction handle rigidly secured to the cleaner and operatively connected to the source of suction, a floor tool rotatably connected at one end of the handle, means hingedly and rotatably carried by the cleaner for adjustably supporting the cleaner with the floor tool resting upon the floor and the end of the handle opposite the floor tool raised.

7. In combination with a suction cleaner having a rigid frame portion including a suction handle, a dust collector body, and a casing for the suction producing means, a floor tool rotatably mounted with reference to the frame portion of the cleaner, and means, hingedly and rotatably connected to the rigid frame, cooperating with the floor tool to support the cleaner in various adjustment positions as the frame is raised or lowered in a vertical plane or rotated axially about the floor tool.

8. In combination with a suction cleaner having a rigid frame portion and a rotatably mounted floor tool, means, hingedly and rotatably connected to the frame portion of said cleaner, cooperating with said rotatable floor tool to adjustably support the cleaner in various positions.

In testimony whereof I affix my signature.

DANIEL BENSON REPLOGLE.