March 29, 1932. A. C. McLAREN 1,851,200

VACUUM CLEANER

Filed July 18, 1927 2 Sheets-Sheet 1

Fig. 1.

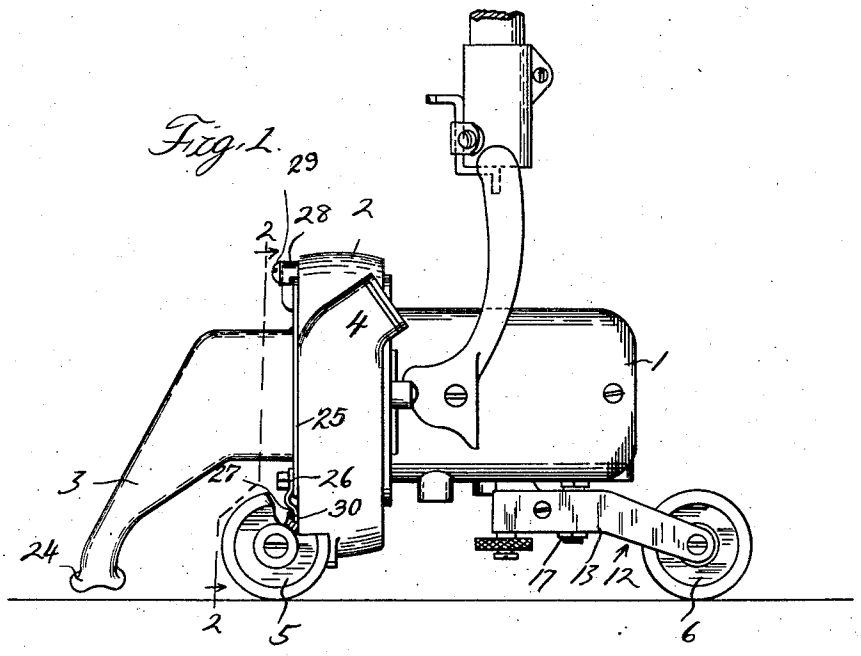

Fig. 2

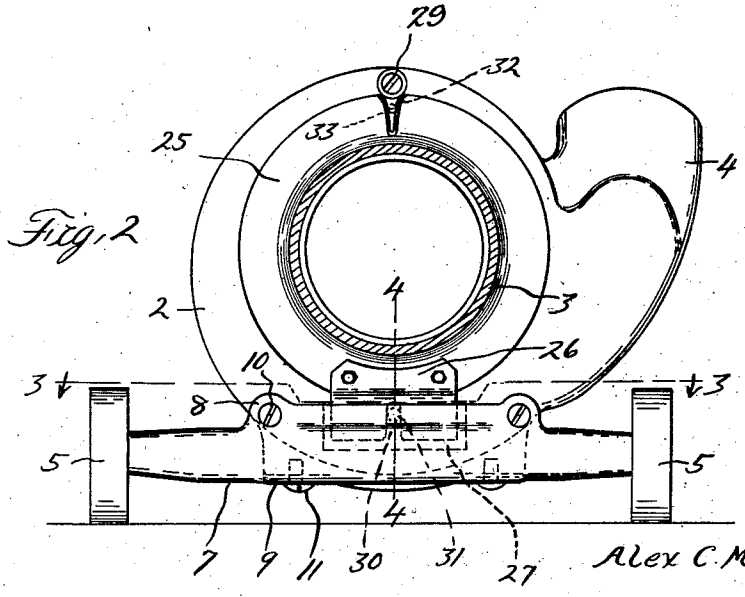

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Fig. 3.

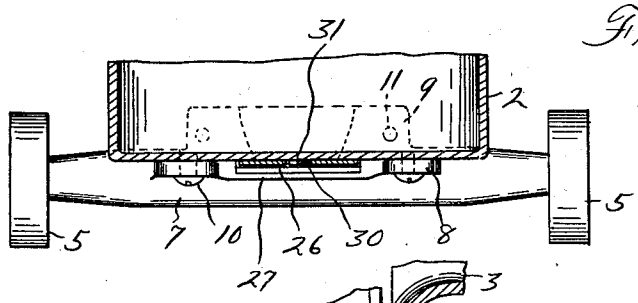


Fig. 4.

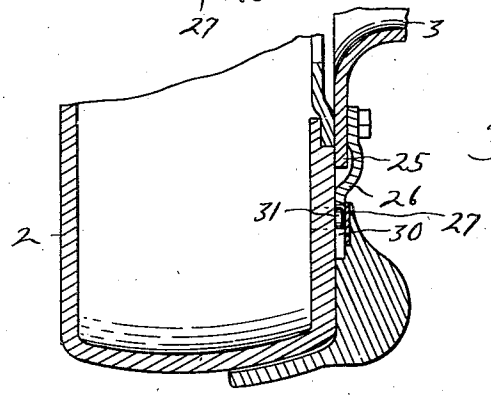


Fig. 6.

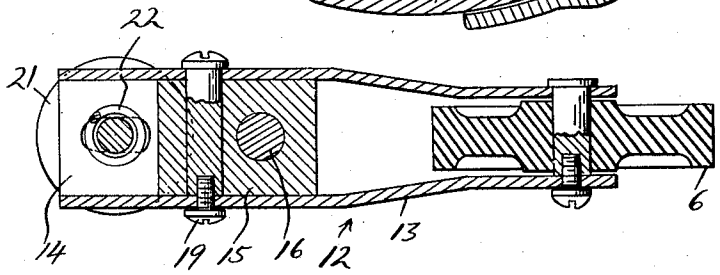
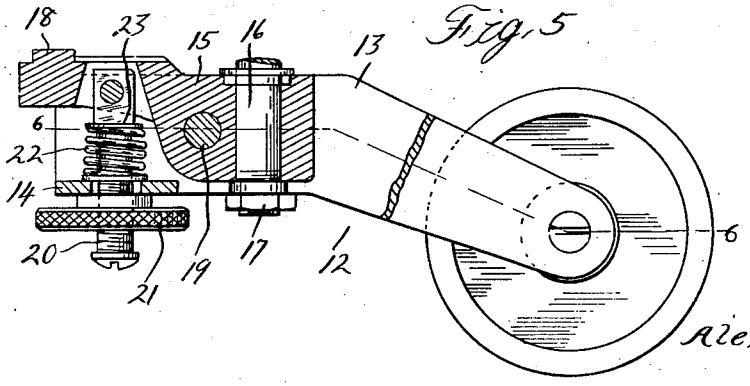


Fig. 5



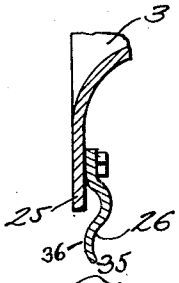


Fig. 7.

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UNITED STATES PATENT OFFICE

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VACUUM CLEANER

Application filed July 18, 1927. Serial No. 206,633

The invention relates to vacuum cleaners and refers more particularly to vacuum cleaners of the portable type. One object is to provide an improved mounting for securing a suction tool to the fan casing. With this as well as other objects in view, the invention resides in the novel features of construction and combinations and arrangements of parts as more fully hereinafter set forth.

In the drawings:—

Figure 1 is a side elevation with parts broken away of a vacuum cleaner, embodying my invention;

Figure 2 is a cross section on the line 2—2 of Figure 1;

Figures 3 and 4 are cross sections, respectively, on the lines 3—3 and 4—4 of Figure 2;

Figure 5 is a sectional elevation of a portion of vacuum cleaner, including the wheeled support for the rear end thereof;

Figure 6 is a cross section on the line 6—6 of Figure 5;

Figure 7 is a fragmentary sectional view through a portion of the structure shown in Figure 4.

The vacuum cleaner has the motor casing 1 and the fan casing 2, the latter having the inlet 3 and the discharge 4. 5 are the front wheels and 6 the rear wheel for supporting the vacuum cleaner and the carriers for these wheels are detachably secured to the vacuum cleaner so that in the event that they are broken they may be readily replaced.

7 is the front wheel carrier which is in the nature of a bar and extends transversely of the vacuum cleaner and is detachably secured to the fan casing. The front wheels 5 are journaled at the opposite ends of this carrier. The carrier is provided with the upwardly extending flange 8 and with the lateral flange 9, the former flange abutting the front face of the fan casing and the latter flange abutting the bottom of the fan casing. 10 and 11 are screws respectively extending through the flanges 8 and 9 and threaded into the fan casing for detachably securing the carrier to the fan casing.

12 is the rear wheel carrier having a sheet metal frame formed of the rearwardly spaced arms 13 at the rear ends of which the rear wheel 6 is journaled. This frame also has the web 14 extending between and integral with the arms at their front ends. 15 is a block which is rigidly secured to and depends from the motor casing 1, the bolt 16 and nut 17 securing the block to the motor casing. The block has extending upwardly therefrom near its front end, the projection 18 which extends into the motor casing to hold the block from rotating about its securing bolt. This block is embraced by the arms 13 which are pivotally connected thereto intermediate their ends by the pivot 19. For angularly adjusting the frame about its pivot, I have provided the threaded member 20 which is pivotally connected at its upper end to the block 15 in advance of the pivot 19 and depends downwardly through a longitudinally extending slot in the web 14, this threaded member being engaged by the knurled nut 21 which engages the lower face of the web. 22 is a coiled spring encircling the threaded member 20 and abutting the upper face of the web and the washer 23 which also encircles the threaded member 20 and abuts the enlarged portion formed at the upper end and through which the pivot extends.

With this arrangement it will be seen that in the event of either the wheel carriers being broken they may be readily replaced. It will also be seen that by reason of making the rear carrier adjustable, the height of the mouth of the suction nozzle of the vacuum cleaner may be readily adjusted.

The suction tool shown in the present instance is the suction nozzle 24, which is detachably secured to the fan casing and opens into its inlet 3. This suction nozzle has the radial flange 25, which is adapted to abut against the front face of the fan casing 2 and form a tight joint therewith. 26 is a resilient clip permanently secured to the lower portion of the radial flange and depending therebelow. For detachably securing this clip to the vacuum cleaner the front wheel carrier 7 has the central portion of its vertical flange 8 spaced from the front face of the casing to form an upwardly opening slot for receiving the depending portion of the clip. This portion of the wheel carrier is also pref-

erably provided with the wear plate 27, which is anchored as by welding or the like, in the wheel carrier and is engageable by the lower edge of the clip when the suction nozzle is in operative position upon the fan casing. 28 is a knob permanently secured to the upper portion of the front face of the fan casing and preferably yieldably forced toward the same by the spring 29, this knob being rotatable to engage over the upper portion of the radial flange 25 to clamp the same against the fan casing. To center the suction nozzle upon the fan casing the depending portion of the clip is provided with the central vertically extending slot 30 and the fan casing has the transverse pin 31 for engaging the slot. The upper portion of the radial flange is also provided with the vertically extending slot 32 and the fan casing is provided with the transverse pin 33 for engaging this slot. The clip is bowed as illustrated in Figure 7, and the lower edge 35 thereof normally extends outwardly away from the plane of the portion 36 thereof. The clip being resilient and bowed, has its lower edge engage the wear plate 27 and permits upward and rearward swinging of the suction nozzle with the lower portion of its radial flange first engageable with the casing and then the upper portion of its radial flange engageable with the fan casing, at which time the suction nozzle is in a position where the knob may be rotated to engage the radial flange. Since the edge 35 of the clip is placed under tension during swinging of the nozzle to its operative position, the lower portion of the lateral flange of the nozzle is resiliently forced against the fan casing. Since the knob is also resiliently forced toward the fan casing, the radial flange is firmly held against the fan casing to form a tight joint and to further prevent any rattling. Furthermore, the suction nozzle may be readily secured to or disconnected from the fan casing and replacd by another similarly equipped suction tool.

What I claim as my invention is:

1. In a vacuum cleaner, the combination with a fan casing, of a suction tool, a bracket secured to said casing and having a portion spaced therefrom to form a slot, a bowed resilient clip permanently secured to said tool and having a free edge portion detachably engageable in the slot, and a device opposite said clip and cooperating therewith to detachably secure said tool to said casing, the bowed portion of said clip being adapted to be placed under tension when said tool is in operative position to force said tool toward said casing.

2. In a vacuum cleaner, the combination with a fan casing, a suction tool, and a member carried by said fan casing and detachably engageable with a side of said suction tool, of means carried by said fan casing and providing a slot adjacent said suction tool at a point opposite said member, and a clip fixed to said suction tool at a point opposite said member, said clip being provided with a bowed portion engageable in said slot for urging said suction tool into firm engagement with said fan casing.

In testimony whereof I affix my signature.

ALEX C. McLAREN.