Oct. 8, 1940. W. O. LANGILLE 2,217,174

VACUUM CLEANER

Filed April 30, 1937

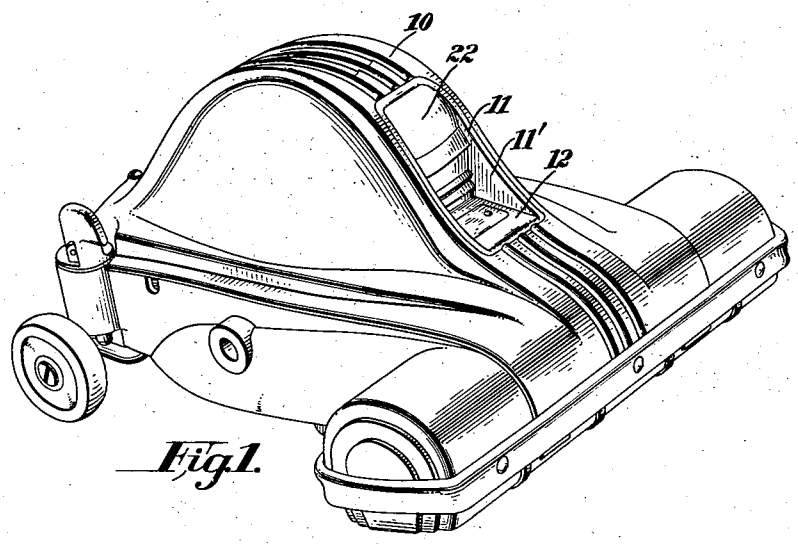


Fig. 1.

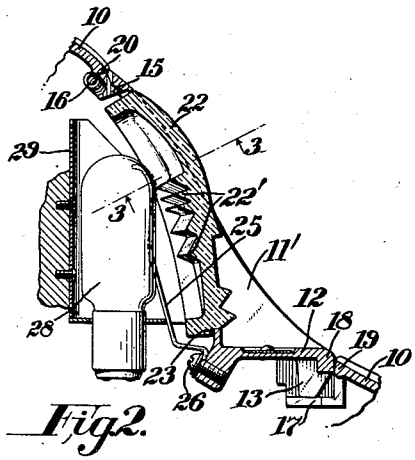


Fig. 2.

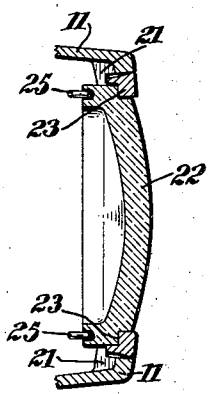


Fig. 3.

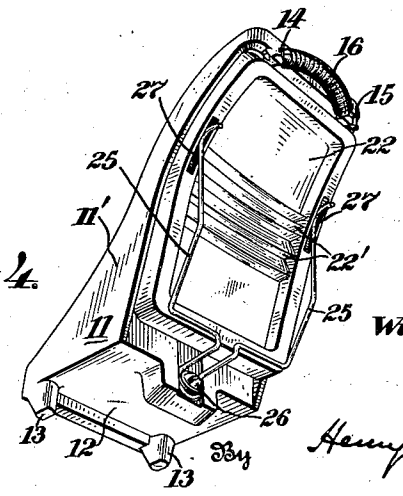


Fig. 4.

Witness:

John N. Cave

Inventor

Wilfred O. Langille

By Henry J. Miller

Attorney

Patented Oct. 8, 1940 2,217,174

UNITED STATES PATENT OFFICE

2,217,174

VACUUM CLEANER

Wilfred O. Langille, Chester, N. J., assignor to The Singer Manufacturing Company, Elizabeth, N. J., a corporation of New Jersey

Application April 30, 1937, Serial No. 139,834

2 Claims. (Cl. 240—2)

This invention relates to the ambulatory type of vacuum cleaner and more particularly to a support for a lens used in conjunction with an electric light carried by the cleaner for the purpose of illuminating the floor in advance of the cleaner, and has for its objective the provision of an improved support which will resiliently sustain a lens in a vacuum cleaner casing so that it will yield inwardly to prevent breakage if it should strike an obstruction. Another object of this invention is to provide a support for a lens which may be readily and cheaply manufactured and which is easily assembled. A further object of this invention is to so construct the support for the lens that the lens is yieldingly held against its support at all times and will assume its normal position if it should be displaced by striking an object.

Figure 1 is a perspective view of a vacuum cleaner casing showing the lens therein.

Figure 2 is a vertical section taken through a portion of the casing and through the center of the lens.

Figure 3 is an enlarged horizontal section taken substantially along the line 3—3 of Figure 2.

Figure 4 is a perspective view of the lens and its support.

In the embodiment of this invention selected for illustration 10 represents the casing of an ambulatory type vacuum cleaner which may be of any suitable size or shape. Seated in the casing 10 is a frame 11 having a forwardly extending portion 12 provided with feet 13. Carried by the upper part of the frame 11 are two lugs 14 and 15 which are apertured to receive the free ends of a compression type spring 16 which is bowed upwardly and extends above the upper edge of the frame. When the frame 11 is in position, the feet 13 of the frame rest on the ledge 17 (Fig. 2) of the casing 10, the lower edge 18 of the frame abutting the edge 19 of the casing, and the arched portion of the spring 16 slips under the edge 20 of the casing. Lugs 21 carried by the casing 10 position the frame.

Carried by the frame 11 is a lens 22 having prisms 22' which reflect and refract the light from an electric bulb 28 and reflector 29, located within the casing 10. The edges of the lens 21 are formed with step-like shoulders 23 which are in contact with the marginal edges of the rectangular shaped aperture in the frame 11. The lens 22 is resiliently held in place by means of a substantially U-shaped spring which is fixed to the frame 11 by the screw 26 and has its up-standing arms 25 bowed at their terminal portions and entering grooves 27 in the side edges of the lens.

It will be obvious from the above that the lens is yieldingly held against the frame at all times and is permitted to move inwardly if it should strike an object, such as furniture.

As shown in Figure 2 the lens 22 projects outwardly from the frame at the top only and the lower part of the lens is partially protected by the sides 11' of the frame. Thus if the lens strikes an object it will pivot about its lower edge and as soon as the force is removed will assume its normal position. The spring arms 25 also tend to prevent lateral displacement of the lens.

Having thus set forth the nature of the invention, what I claim herein is:

1. In combination with a vacuum cleaner casing formed with an aperture, illuminating means carried by said casing and located in rear of said aperture, a frame having an opening therein, means for detachably securing said frame in the aperture in said casing, a lens fitted into the opening in said frame, and a spring secured to said frame and having two arms which enter grooves formed in the edges of said lens to yieldingly urge said lens against said frame, whereby said lens is adapted to move inwardly when pressure is encountered and then assume its normal position when the pressure is relieved.

2. In combination with a vacuum cleaner casing formed with an aperture, illuminating means carried by said casing and located in rear of said aperture, a frame having an opening therein, means for detachably securing said frame in the aperture in said casing, a lens fitted into the opening in said frame, said lens having grooves formed in its edges, and a U-shaped spring secured to said frame and having two arms the free ends of which are bent to form convex terminal portions which enter the grooves in said lens to resiliently hold said lens in said frame.

WILFRED O. LANGILLE.