April 9, 1929. A. A. SERVA 1,708,282

ATTACHMENT FOR VACUUM CLEANERS

Filed May 22, 1924 4 Sheets-Sheet 1

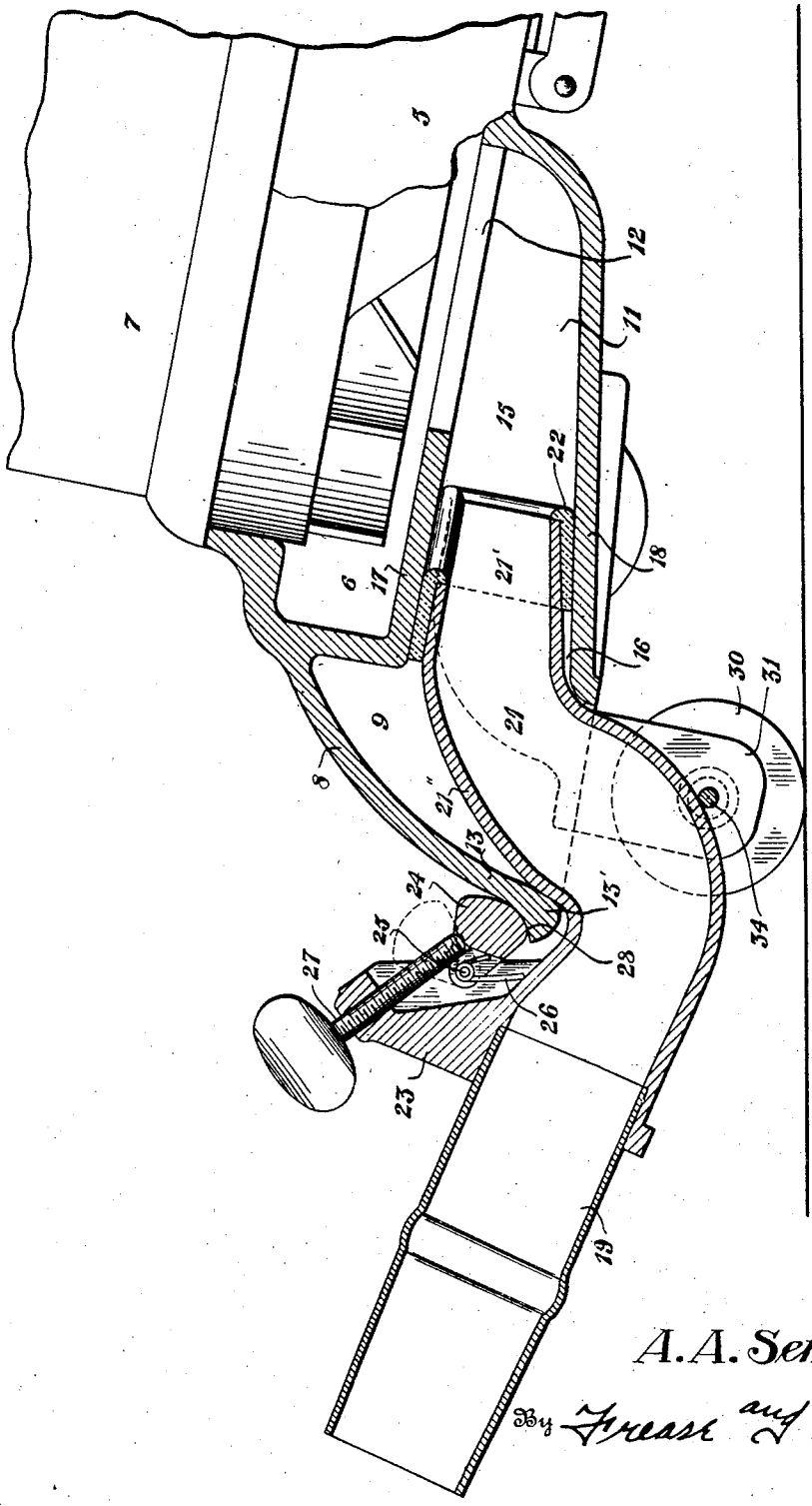


Fig. 1.

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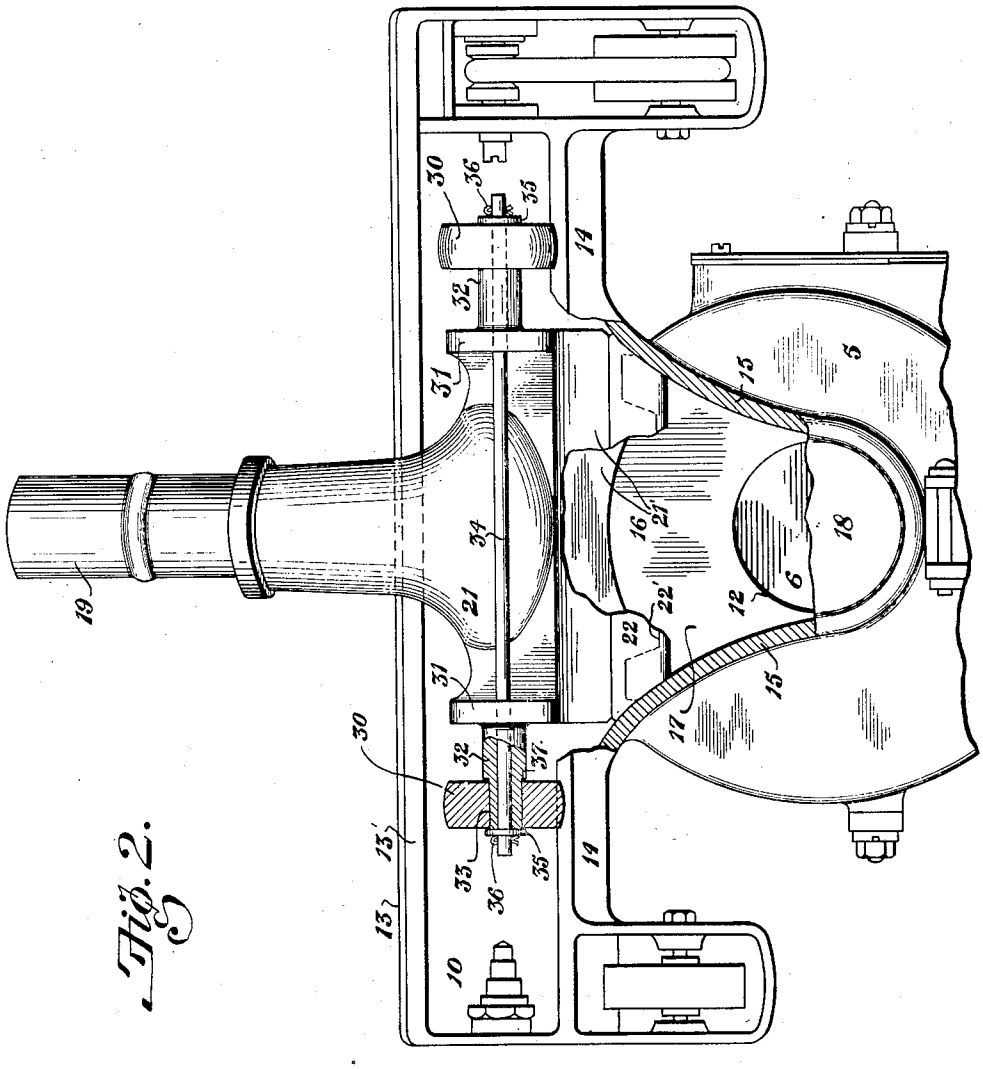


Fig. 2.

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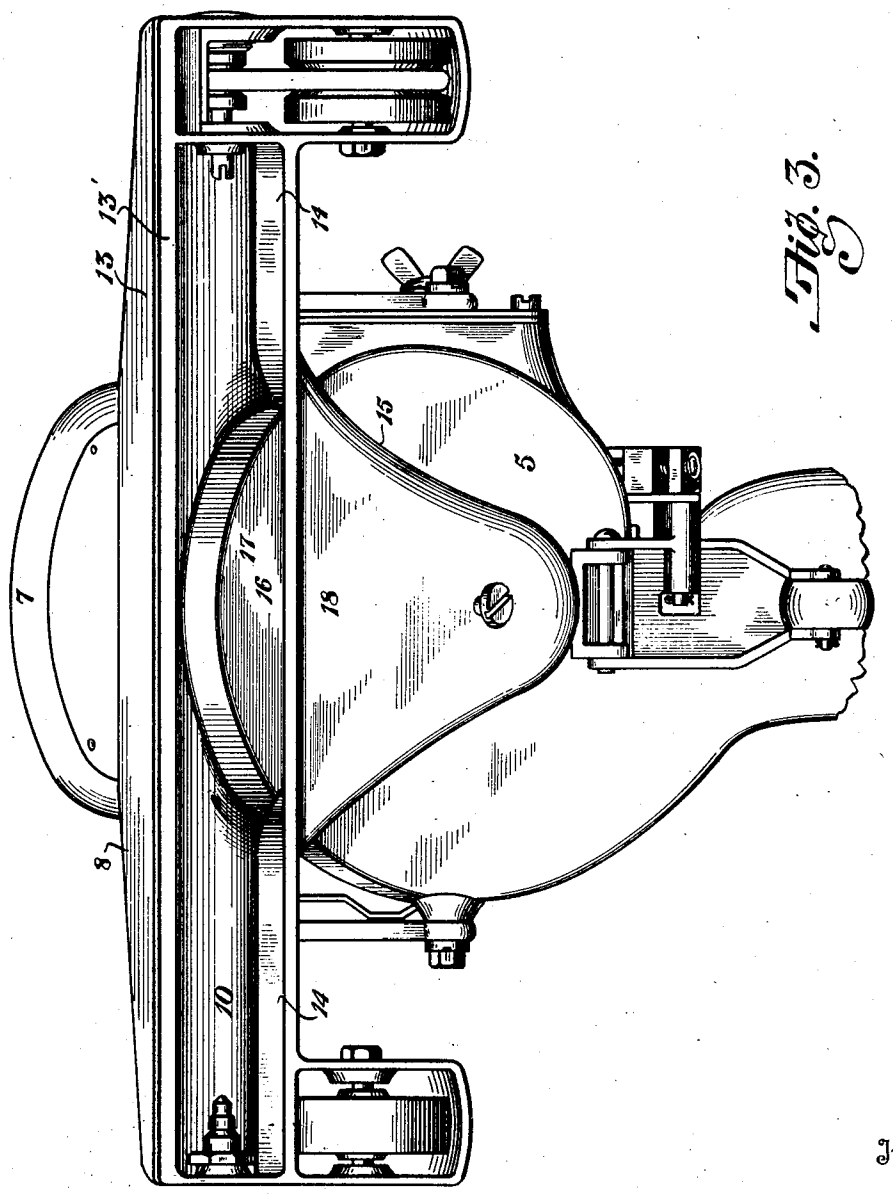


Fig. 3.

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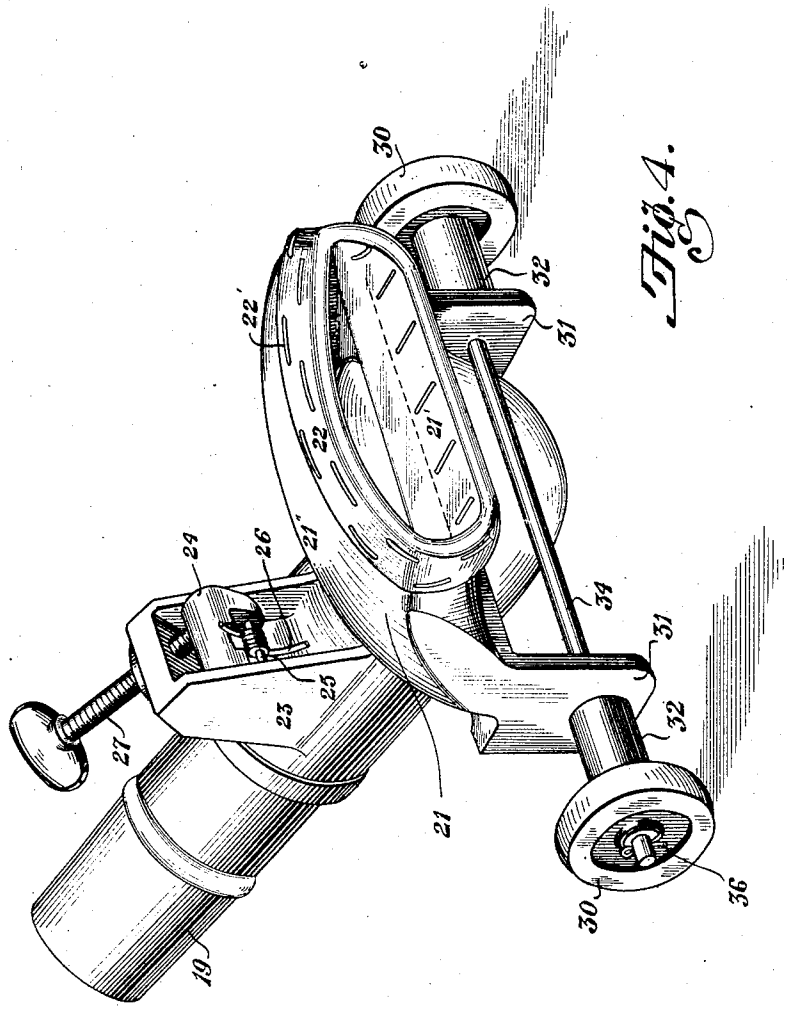


Fig. 4.

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Patented Apr. 9, 1929. 1,708,282

UNITED STATES PATENT OFFICE.

ADAM A. SERVA, OF CANTON, OHIO, ASSIGNOR TO THE UNITED ELECTRIC COMPANY, OF CANTON, OHIO, A CORPORATION OF OHIO.

ATTACHMENT FOR VACUUM CLEANERS.

Application filed May 22, 1924. Serial No. 715,112.

The invention relates to a hose attachment for a portable vacuum cleaner, and the object of the improvement is to provide an attachment which can be applied to the ordinary cleaner, without making any changes therein.

This object is attained by providing a hose connection with a shoe arranged to be inserted through the mouth and wedged into the throat of the nozzle of the vacuum cleaner, with means for forcing and clamping the shoe into position.

The improvement also involves the use of a castor on each side of the attachment, so that when the attachment is placed in position, the vacuum cleaner will rest and may ride upon the attachment castors and the castor ordinarily provided on the rear end of the machine.

The invention is illustrated in the accompanying drawings, forming part hereof, in which—

Figure 1 is a fragmentary, side elevation of a portable vacuum cleaner, showing the nozzle in section with the attachment shown in place therein;

Fig. 2, an underside plan view of the same;

Fig. 3, an underside, perspective view of the vacuum cleaner without the attachment, looking into the mouth of the nozzle thereof; and

Fig. 4, a detached, perspective view of the hose attachment, looking at the end of the shoe.

Similar numerals refer to similar parts throughout the drawings.

The portable vacuum cleaner may be of any ordinary type including a case 5 forming a fan chamber 6, upon which is mounted a motor 7 and a nozzle case 8 extending downward and forward from the fan case, forming a suction chamber 9 with an elongated mouth 10 on its lower side extending across the front of the machine, and a neck 11 extending rearward under the fan chamber from the suction chamber to the inlet opening 12 of the fan chamber.

The forward wall 13 and the lip 13′ thereof extend entirely across the front of the machine, but the rear wall 14 of the suction chamber merges at each side with the side walls 15 of the neck of the nozzle to form the throat 16 of the neck between the bottom wall 17 of the fan chamber and the bottom wall 18 of the neck of the nozzle.

The side walls of the neck converge toward each other from front to rear and the bottom wall of the neck converges slightly toward the bottom wall of the fan casing; thus forming the throat 16 of the nozzle with all its walls converging from front to rear.

The hose attachment is in the form of a casing having a forwardly extending, tubular stem 19, to which a hose may be attached, and a rearwardly extending shoe 21 in the form of a flattened tubular goose neck curved first upward and then rearward, and having its rear end shaped to fit into the throat of the nozzle and tapered on all its sides to wedge between the tapered walls thereof.

A resilient packing ring 22 is secured upon and around the rear end 21′ of the shoe, to which it may be cemented or fastened by a wire lacing 22′ or the like, and this packing ring serves to seal the connection between the rear end of the shoe and the throat of the nozzle when the shoe is inserted and clamped therein, as shown in Figs. 1 and 2.

The upper wall 21″ of the shoe is curved to form a cam guide acting against the forward lip of the nozzle, and when the rear end of the shoe is inserted through the mouth of the nozzle into the throat thereof, this cam guide serves to force and wedge the end of the shoe into the throat by raising the forward end of the attachment upward.

Upon the forward end of the stem of the hose attachment is formed a bracket 23 in which is mounted a clamping dog 24 upon a transverse pivot 25, carrying a spring 26 which normally urges the dog upward; and in the same bracket is mounted a clamping screw 27 arranged to operate against the upper side of the dog to force it downward.

When the clamping screw 27 is turned outward, the clamping dog is normally held upward by action of the spring 26, as shown by broken lines in Fig. 1, so that the goose neck shoe may be readily entered through the mouth of the nozzle into the neck thereof; after which the clamping dog is forced downward by the clamping screw 27, against the cam shoulder 28 formed on the forward side of the forward lip 13′ of the nozzle for drawing the stem of the hose connection upward and forcing and wedging the rear end 21′ of the shoe into the neck of the nozzle, as shown in Fig. 1.

By these means the hose connection is made directly with the throat of the nozzle, and the rear end of the attachment shoe is

given the cross sectional shape and the endwise taper corresponding to the neck of the nozzle for the particular machine for which it is intended, so as to seal the joint by a wedging action when forced and clamped therein.

For the purpose of supporting the nozzle portion of the cleaner in raised position, so that the same may ride upon the floor when the hose attachment is in place, castors 30 may be provided upon the attachment.

A depending ear 31 may be formed upon each side of the attachment and provided with an outwardly extending, tubular boss 32 terminating in the reduced journal portion 33, upon which the castor 30 may be journaled.

A shaft 34 extends through the bosses 32 and is provided at each end with a washer 35 held against the end of the adjacent journal portion, as by a cotter pin 36. The journal portions 33 are of sufficient length to permit the castors to rotate freely thereon, while the shoulder 37 and washer 35 limit lateral movement of each castor upon its journal.

I claim:—

1. A vacuum cleaner including a case forming a fan chamber and a nozzle with a suction chamber having a mouth, and a neck leading from the suction chamber to the fan chamber, and a hose attachment including a tubular shoe having a tapered end insertable through the mouth for wedging into the entrance end of said neck.

2. A vacuum cleaner including a case forming a fan chamber and a nozzle with a suction chamber having a mouth, and a neck leading from the suction chamber to the fan chamber with a tapered throat at the entrance thereof, and a hose attachment including a reversely curved, tubular shoe having a tapered end insertable through the mouth and wedged into said throat.

In testimony that I claim the above, I have hereunto subscribed my name.

ADAM A. SERVA.