J. N. WHITEHOUSE.

VACUUM CLEANER.

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943,583.

Patented Dec. 14, 1909.

Fig. 1

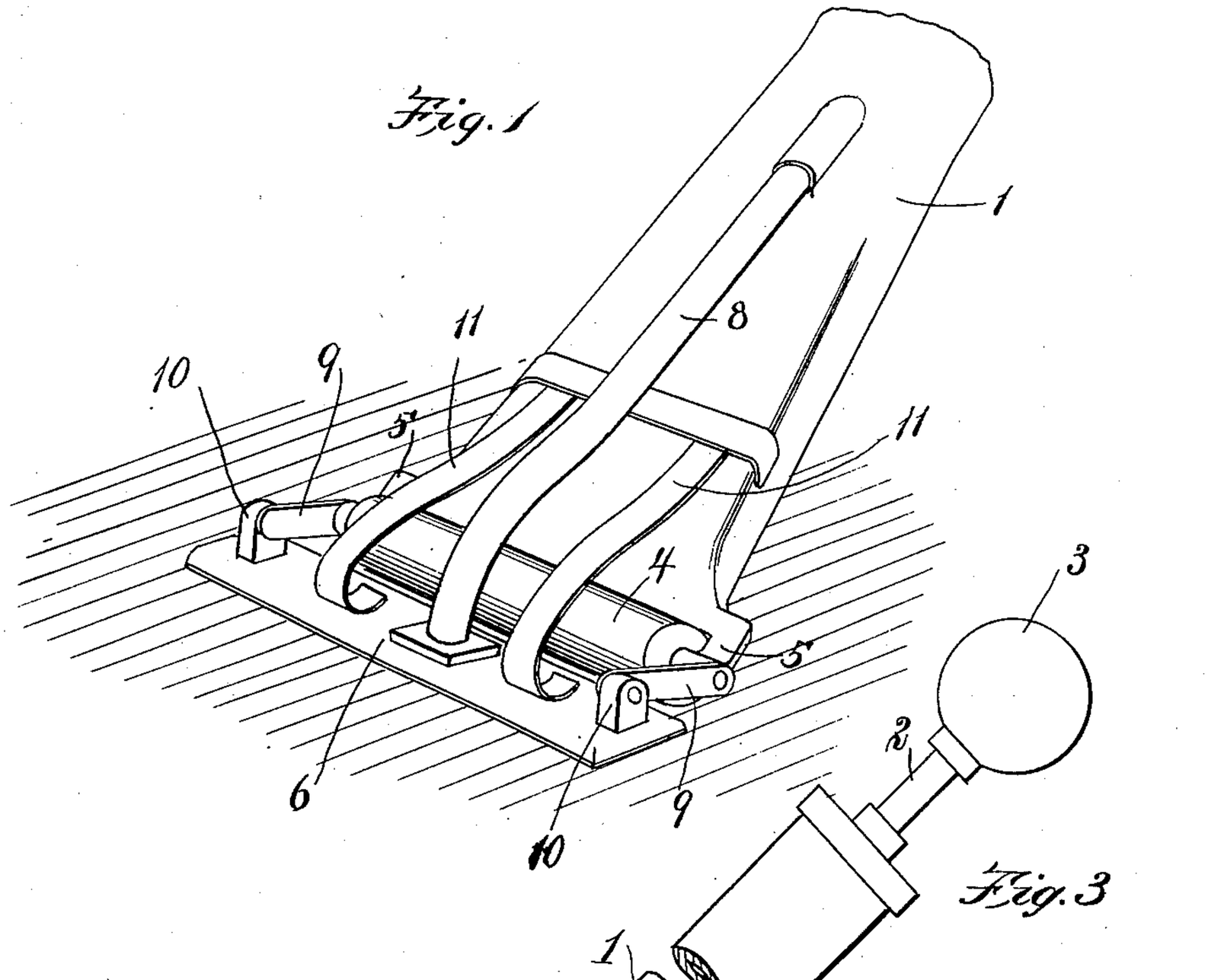
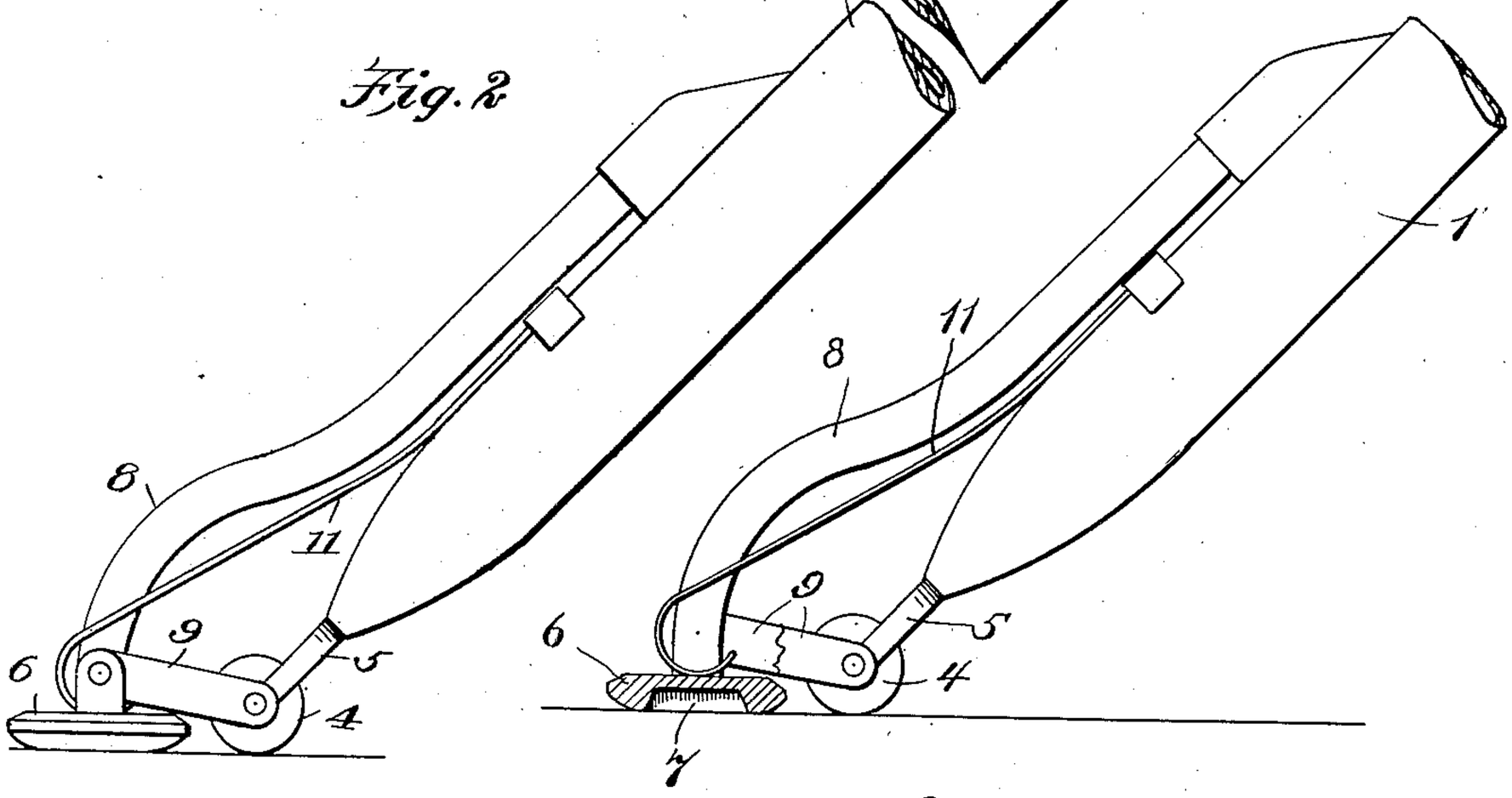


Fig. 3

Fig. 2



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UNITED STATES PATENT OFFICE.

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VACUUM-CLEANER.

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To all whom it may concern:

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

More particularly the invention relates to an improvement at the mouthpiece end of the device, whereby the down pressure of the operator of the device is not borne upon the mouthpiece proper and said mouthpiece has contact with the floor independent of said down pressure. Furthermore, the mounting of the mouthpiece proper through which the suction takes place and which therefore should conform closely to the floor or surface cleaned is such that said conformity of the mouthpiece is automatically taken care of with the result that the suction through the mouthpiece is at all times completely effective, thereby making the device a highly efficient vacuum cleaner. These and other advantages will be apparent from an understanding of the following description in connection with the drawings.

In the drawings which show one embodiment of my invention, Figure 1 is a perspective view of the mouthpiece end of the improved vacuum cleaner as the same appears when in working position on the floor, Fig. 2 is a view of the entire cleaner, and Fig. 3 is a side elevation partly in section of the mouthpiece end of the cleaner, showing the parts resting in working position upon the surface to be cleaned.

Describing now the device of the drawings and reserving it to the claims to point out the novel features and to define the scope of the invention, 1 designates the barrel of the device supposed to have the usual piston (not shown) working therein, attached to piston rod or plunger 2, having at its external end any form of handle 3 to be grasped by the operator to work the piston as usual in the barrel to produce suction of air through the mouthpiece of the device hereinafter to be described. Of course, it will be understood that any usual form and arrangement of valve or valves is to be provided, found suitable in this type of appliance. Similarly no attempt is here made to describe such other features of this character of appliance that are commonly found therein, but which form no part of the present improvement.

The barrel 1 at its lower end is provided with a roller 4 mounted to turn freely in any suitable bearing and to have rolling contact with the surface being cleaned, and at such time to support the main weight of the device and receive the down-thrust of the operator upon it. In this case there is a single roller of elongated form mounted rotatably between the arms of a downwardly extending fork 5 on the barrel. The suction mouthpiece 6 has the elongated form shown hollowed out at 7 from its under side and communicating by a central opening through its top with a flexible tube 8 which, at its other end, connects with the interior of the pump barrel 1. The mouthpiece 6 has upward extensions or lugs 10 at its ends, which are pivotally connected to links 9, which latter, in turn, at their other ends, have pivotal connection with the pump barrel, or rather, in this case, with the ends of the shaft of the roller 4. It will be noted that these connecting means between the mouthpiece 6 and the roller end of the pump barrel permit the mouthpiece to rest upon and follow the surface to be cleaned independently of the roller 4 and of any down-thrust thereon. In other words, increasing the down-thrust on the roller 4 does not cause the mouthpiece to be jammed into the carpet or other surface being cleaned. Springs 11 are provided, fixed at their upper ends to the pump barrel and projecting downwardly to act resiliently upon the top of the mouthpiece 6. These springs combine with the described flexible connecting means between the mouthpiece and the barrel to keep the mouthpiece in snug contact with the floor sufficient for perfect vacuum cleaning, and yet said mouthpiece bears on the floor with comparative lightness and is not affected by variations in the down-thrust of the operator on the roller 4. Moreover, the contact of the mouthpiece 6 is yielding, due to the springs 11 causing it to closely conform with the surface being cleaned.

It will be noted that the springs 11 simply contact with the mouthpiece 6, as distinguished from being secured thereto. This arrangement prevents the springs under any circumstances from holding the mouthpiece off the floor, which they might do if at-

tached, unless care were taken by the operator to hold the pump barrel inclined at the proper angle to the floor.

Having thus described my invention, what I claim is:

1. A vacuum cleaner comprising the combination of a hand operated pump; a roller at the lower end of the pump bearing upon the surface cleaned; a mouth-piece pipe-connected with the pump; and links connecting the mouth-piece and the lower end of the pump and having pivotal connection with each.

2. A vacuum cleaner comprising the combination of a hand operated pump; a roller at the lower end of the pump bearing upon the surface cleaned; a mouth-piece pipe-connected with the pump; a flexible connection between the mouth-piece and the lower end of the pump; and a spring attached to the pump yieldingly pressing the mouth-piece downward.

3. A vacuum cleaner comprising the combination of a hand operated plunger pump; a roller mounted on the lower end of the pump-barrel and bearing upon the surface cleaned; a mouth-piece; a flexible pipe connecting the mouth-piece with the pump; a flexible connection between the mouth-piece and the pump barrel; and a spring on the pump-barrel bearing slidingly and resiliently down upon the mouth-piece.

Witness my hand this 8th day of Feby. 1909, at New York, N. Y.

JOHN N. WHITEHOUSE.

Witnesses:

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