E. K AND P. C. WARD.

STREET SWEEPER.

APPLICATION FILED OCT. 6, 1919.

1,422,501.

Patented July 11, 1922.

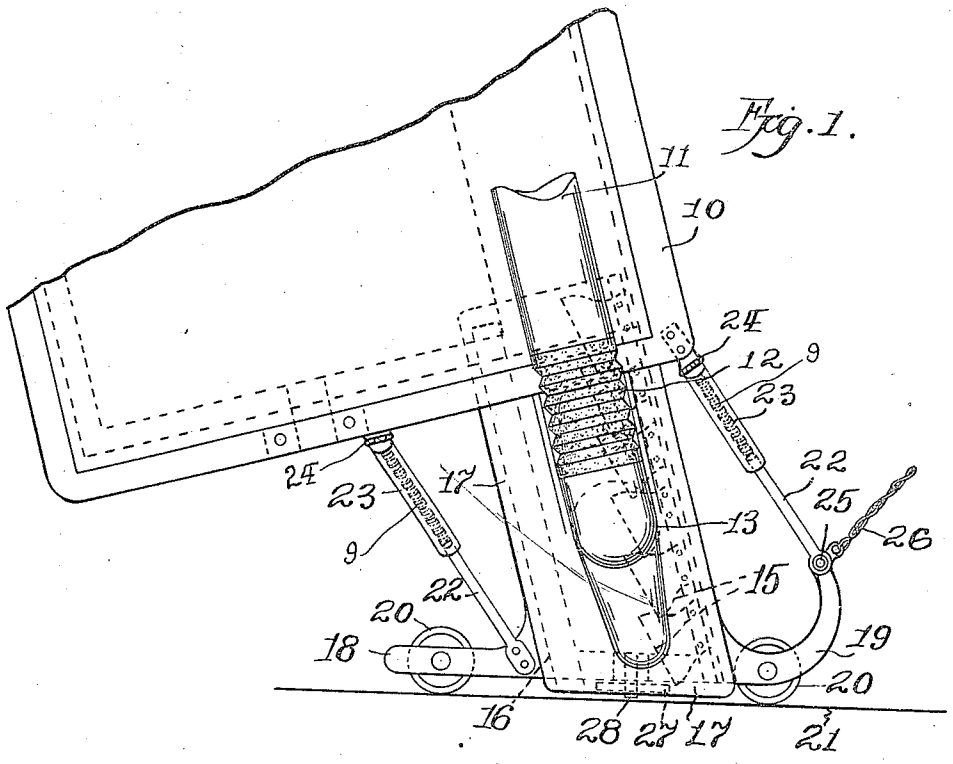



Fig. 1.

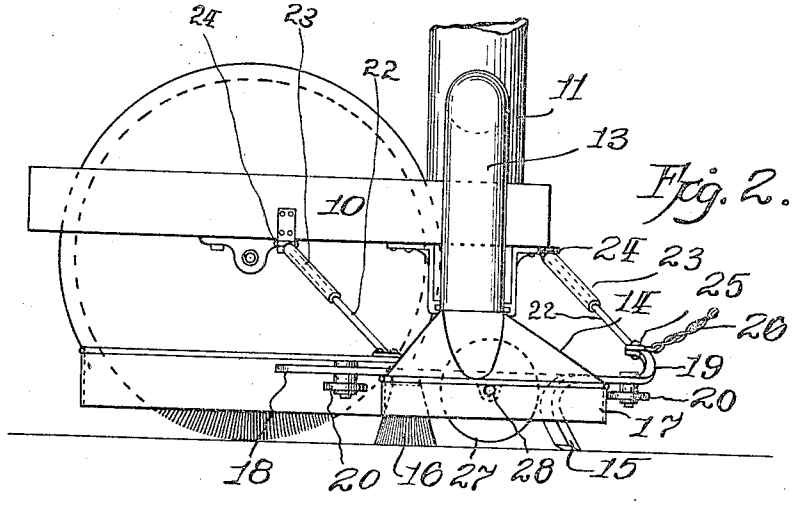



Fig. 2.

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# UNITED STATES PATENT OFFICE.

EDWARD K. WARD AND PIER C. WARD, OF ST. PAUL, MINNESOTA.

## STREET SWEEPER.

1,422,501. Specification of Letters Patent. Patented July 11, 1922.

Application filed October 6, 1919. Serial No. 328,856.

*To all whom it may concern:*

Be it known that we, EDWARD K. WARD and PIER C. WARD, citizens of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented new and useful Improvements in Street Sweepers, of which the following is a specification.

Our invention relates to improvements in street sweepers.

Our invention is adapted to be used in connection with a vacuum street cleaner in which dirt, dust and refuse material are removed from pavements by means of brushes and the suction produced by revolving fans.

The object of our invention is to provide automatically adjustable means for cleaning gutters and portions of street pavements adjacent to curbs.

In the accompanying drawings Figure I is a plan of our invention; and Fig. II is an elevation thereof.

In the drawings the numeral 10 indicates a frame rigidly attached to the under frame of a street vacuum sweeper of any usual design, such for example as that illustrated in United States Patent No. 1,107,564, of August 18, 1914, to Edward K. Ward. The pipe 11 is the usual conduit for dust and refuse leading to the suction head and dirt receptacle of the street sweeper. To the pipe or conduit 11 we attach by means of a flexible accordion pleated tube 12 an auxiliary pipe 13, provided at its outer extremeties with a downwardly flaring housing 14, open at the bottom and adapted to receive and conduct through the pipe 13 to the conduit 11 dust and refuse removed from the surface of the pavement by the steel scraper 15 and brush 16.

The housing 14, scraper 15 and brush 16 are attached to and carried by a frame 17, provided with arms 18 and 19 in which are journaled horizontally revoluble wheels 20 adapted to form a rolling contact with the street curb represented by the line 21 in Fig. I. The frame 17 is slidably attached to the frame 10, and the arms 18 and 19 are flexibly connected with said frame 10 by rods 22 attached at their outer ends to the arms 18 and 19 and slidable in tubes 23, which at their inner ends are attached to the frame 10 by means of drop hinges 24. Spiral springs 9 housed within the tubes 23 and bearing against the inner ends of the rods 22 tend to press the wheels 20 against the curb, but, in case of inequalities or a turn in the curb towards the line of travel of the sweeper, permit the rods 22 to slide into the tubes 23 and thereby move the frame 18 under the frame 10, and at the same time collapse the expansible tubing 12. The connection between the forward rod 22 and the arm 19 is made by a pivotal joint 25 to give greater flexibility to the contact with a curb. A stay chain 26 is also provided which is attached at one end to the arm 19 and at the other to the main frame of the sweeper to protect the mechanism of our attachment from strains due to striking obstructions in the street.

A supporting wheel 27 is journaled on a stub shaft 28 fixed in the outer end of the frame 17. This wheel serves to support the outer end of the attachment when the scraper 15 and brush 16, because of compression or wear, fail to carry the weight of the outer end of the frame 17 and its attachments.

Having described my invention what I claim as new and desire to protect by Letters Patent is:

1. In a vacuum street sweeper a rigid frame, a second frame movable laterally beneath said rigid frame, articulated and telescopic means connecting the forward and rearward ends of said movable frame with said rigid frame, a housing carried by said movable frame and having an opening adjacent to the surface of the street, a flexible conduit connecting said housing with the suction pipe of said sweeper, frictional cleaning means within the opening in said housing and means for supporting and for guiding said movable frame horizontally.

2. In a vacuum street sweeper a rigid frame, a brush revoluble in said frame, a second frame movable laterally in the side of said rigid frame, articulated and telescopic means connecting the forward and rearward ends of said movable frame with said rigid frame, a housing carried by said movable frame and having an opening adjacent to the surface of the street, a flexible conduit connecting said housing with the suction pipe of said sweeper, a second brush and scrapers within the opening in said housing and means for supporting and for guiding said movable frame horizontally.

In testimony whereof, we have hereunto subscribed our names to this specification.

EDWARD K. WARD.
PIER C. WARD.