

G. & P. KLUMPP.
VACUUM CARPET SWEEPER.
APPLICATION FILED JUNE 22, 1912.

1,066,287.

Patented July 1, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

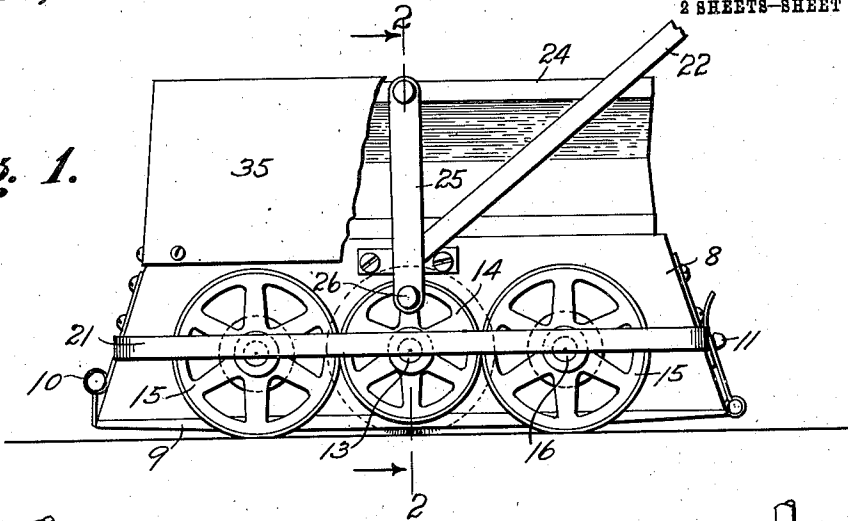


Fig. 2.

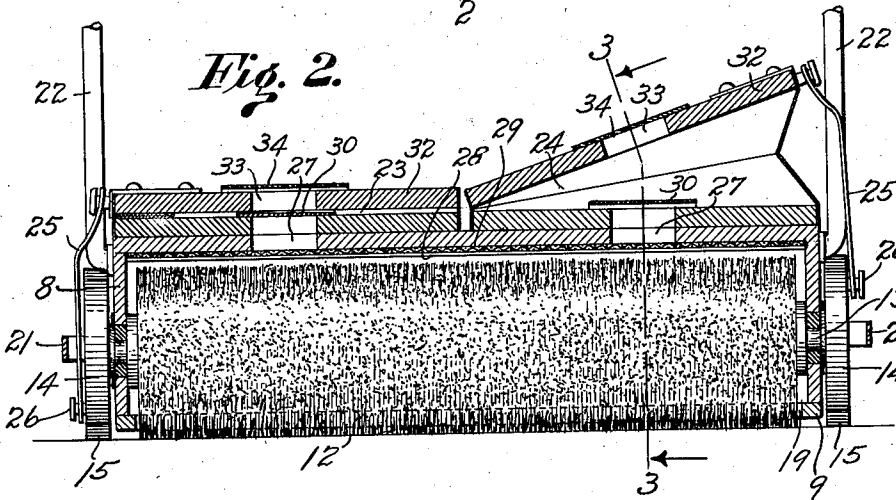
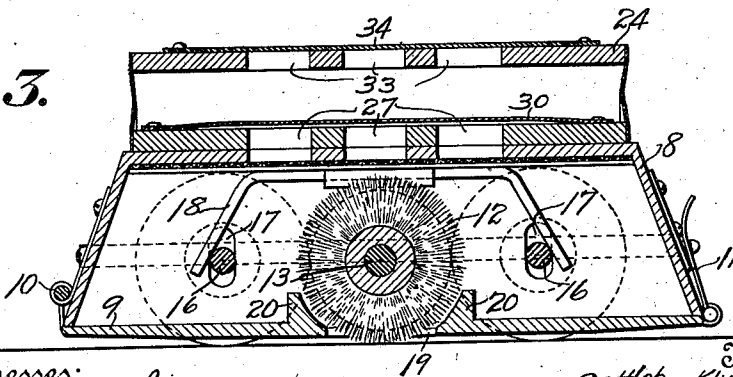


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

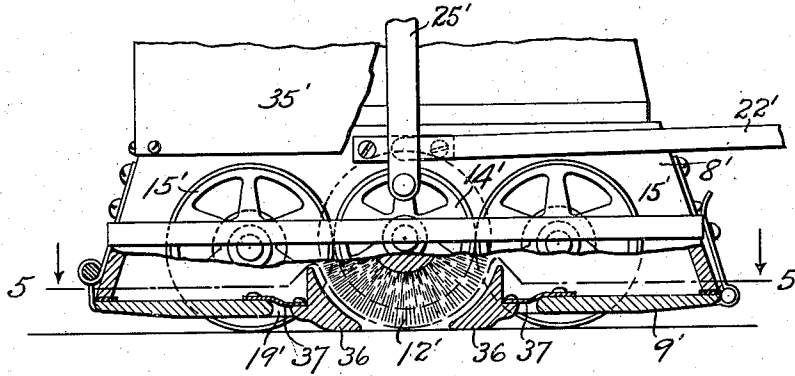


Fig. 5.

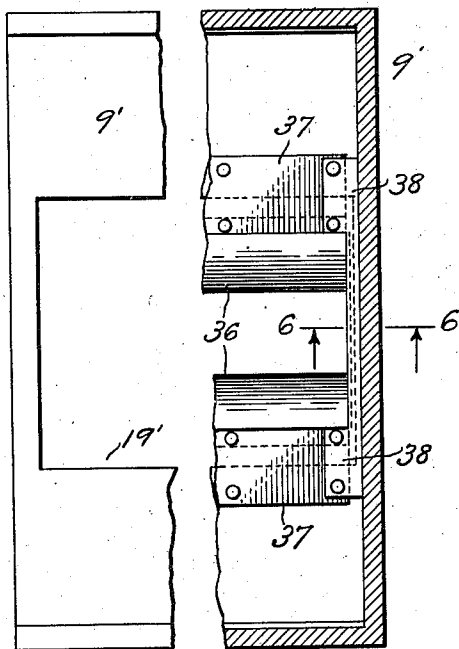


Fig. 6.

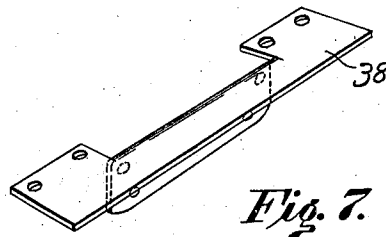
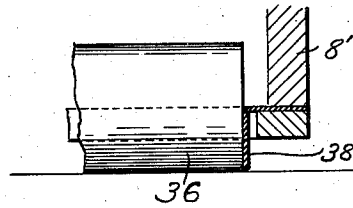


Fig. 7.

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VACUUM CARPET-SWEEPER.

1,066,287.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed June 22, 1912. Serial No. 705,243.

To all whom it may concern:

Be it known that we, GOTTLOB KLUMPP and PAULINE KLUMPP, both citizens of the United States, and residents of Bayonne, in the county of Hudson and State of New Jersey, have invented a new and useful Vacuum Carpet-Sweeper, of which the following is a specification.

This invention relates to carpet sweepers; and has for its object to improve the class of combination sweepers and cleaners in which the sweeping action of the brush is supplemented by the suction of air-pumping apparatus whereby any dirt taken up from the floor is certain to be deposited in the sweeper receptacle thereby insuring the thorough cleaning of the floor.

A further object of our invention is to provide a device of the character described adapted to act jointly as a sweeper and vacuum cleaner, or singly as a vacuum cleaner at the will of the operator.

A further object of this invention is to insure all the dirt being deposited in the dirt, or dust receptacle of the sweeper in a secure manner thereby insuring thorough cleaning without the escape of any dust.

The invention is illustrated in the accompanying drawings in which—

Figure 1, is an end view of a carpet sweeper constructed according to our invention, a part being broken away to show interior parts; Fig. 2, is a vertical section thereof, on the line 2—2 of Fig. 1; Fig. 3, is a section on the line 3—3, of Fig. 2; Fig. 4, is a view similar to Fig. 1, but partly in section, showing a modified form of construction; Fig. 5, is a plan view of parts of the bottom, on the line 5—5 of Fig. 4; Fig. 6, is a sectional view of a part of the device, on the line 6—6 of Fig. 5; and, Fig. 7, is a perspective view of the elastic end guard.

In the drawings the several parts of our invention are indicated by numerals of reference, similar numerals referring to the same parts in each of the views.

As shown in the first three figures, the device comprises a casing 8, having a bottom 9, hinged at 10, and held by a catch 11, whereby the bottom may be swung down from the casing for the purpose of removing the accumulated dirt.

Mounted within the casing 8, is a rotary brush 12, secured on an axle 13, to rotate therewith; and on the ends of this axle without the casing are mounted wheels 14, 14, which are so positioned between drive wheels 15, at each end that the periphery of the wheel 14, is in contact with the peripheries of the wheels 15, at each end by means of which the brush 12, is rotated, as will be understood. The wheels 15, are the supporting wheels for the device; and are mounted on axles 16, which are free to move to a limited extent in slots 17, in the casing; and are held with a spring action against the tendency of the wheels 15, to separate from contact with the wheels 14, by the springs 18.

The bottom 9, is provided with a longitudinal slot 19, through which the brush 12, may come in contact with the floor, and on either side of this slot is provided a projecting rib 20, to prevent the dirt escaping from the sweeper when the same has once been deposited therein by the brush, or other means. The wheels are provided with a guard 21; and the device is provided with a handle, as 22.

As thus far described the device is an ordinary carpet sweeper adapted to be pushed over the floor by the handle 22, and to sweep the dirt into the receptacle by the rotation of the brush, as will be readily understood. In practice, however, it is found that devices of this kind often fail to thoroughly clean the floor, and often fail to either deposit the dirt within the receptacle of the sweeper, or to keep it therein when deposited. In order to assist in the cleaning of the floor, and in the certainty of depositing the dirt within the receptacle we have provided means for sucking air through the slot 19, of the bottom while the brush is in operation thereby causing all the dirt stirred up by the brush to be drawn within the sweeper receptacle, and also causing much dirt to be drawn within the receptacle which would not be forced therinto by the brush. This air apparatus comprises a pair of bellows 23, and 24, operated respectively by links 25, connected with crank pins 26, on the wheels 14, which are so disposed that when the crank pin on one wheel is at the top the

one on the other wheel will be at the bottom thereby providing means to vibrate the bellows alternately, as will be readily understood, to cause a continuous suction of air through the slot 19.

Briefly pointing out the construction of the bellows,—the top wall of the casing 8, is provided with perforations 27, which are preferably covered on the bottom with a cloth 28, sufficiently open to allow air to readily pass therethrough, but close enough to prevent the dust being drawn through; and the cloth is prevented being drawn into the perforations 27, by the wire netting 29. On the upper side of the perforations 27, are mounted air valves 30, made to allow the passage of air into the bellows. The hinged lids, or upper parts 32, are provided with perforations 33, over which are mounted air valves 34, so constructed as to allow air to pass from the bellows, as will be understood. Thus, when the sweeper is pushed along the floor, the brush 12, will be rotated by the wheels 14, engaging the wheels 15; and as the wheels 14, are rotated, the bellows will be operated through the links 25, as will be readily understood, thereby causing air to be drawn through the opening 19, and out through the openings 34, in the top of the bellows with the dust extracted from the air by the cloth 28. A cover 35, is also used to conceal the bellows and to act as a buffer to break up the currents of air and dust particles escaping from the bellows thereby insuring that the same will pass from the cleaner in a manner that will not be noticeable.

The device is cheap in construction, simple in operation, and efficient in use.

In Figs. 4, to 7, we have shown a modified form of construction in that a cleaner is provided in which the device may be used as a sweeper and vacuum cleaner combined; or at the will of the operator the air suction can be used alone without the use of the brush. As shown the drive wheels 15' are so disposed as to hold the sweeper casing elevated so that the bottom 9', will be held at some distance from the floor, as shown in Fig. 4. The longitudinal opening in the bottom of the casing, 19', is made wider, and two longitudinal shoes 36, 36, are used to narrow this slot and contact somewhat closely with the brush 12', as shown. These shoes are free to move vertically in the slot 19'; and are held to the bottom in a flexible manner by leather strips 37, which make the connections between the shoes and bottom air tight. We also use elastic strips 38, at each end of the shoes, which are of the form shown in perspective in Fig. 7. This strip is connected with the ends of both shoes so as to close the space between the ends in an air-tight manner, and connecting extensions are provided with the leather

strips, as clearly as shown in Fig. 5, so that air can enter the sweeper, or cleaner only between the shoes.

In the operation of this form, when it is desired to use the brush and vacuum process combined, pressure can be put upon the handle 22', to cause the bottom 9', of the casing 8', to be brought closer to the floor, when the brush will protrude slightly between the shoes to act as an ordinary sweeper, while at the same time the bellows will be worked to cause suction of air to work as a vacuum cleaner. If desired, however, pressure need not be placed on the handle 22' to force the sweeper downward when the device may be pushed over the floor with the wheels 14' rotating, but with the brush out of contact with the floor. When operated in this way the cleaning will be by the vacuum process alone without the supplemental use of the brush. It will thus be seen that we have provided a device which can be readily used either as a sweeper and vacuum cleaner combined, or as a vacuum cleaner alone at the will of the operator.

While we have described the air apparatus as being comprised of bellows, we do not confine ourselves to that arrangement merely using the bellows as a convenient and cheap form of device to accomplish the purpose desired.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent of the United States, is—

1. In a carpet cleaner, a rotatable brush and means to rotate the same, air forcing apparatus and means to operate the same, means to hold said brush out of contact with the floor, means to operate said air apparatus when said brush is out of contact with the floor, and means to make close contact with the floor while said brush is free from contact therewith whereby said air apparatus will be effective as a cleaner.

2. A carpet cleaner comprising a rotatable brush and means to rotate the same, air forcing apparatus and means in conjunction with said brush rotating means to operate the same, means to hold said brush free from contact with the floor and simultaneously operate said air forcing apparatus, and means to make close contact with the floor while said brush is free from contact therewith whereby said air apparatus will be effective as a cleaner.

3. In a carpet cleaner, two independent shoes flexibly suspended and positioned to ride on a floor with a slot intervening, cross pieces connecting said shoes and inclosing the spaces at the end, and air forcing apparatus adapted to draw air through said slot when said shoes are in contact with a floor.

4. A carpet cleaner comprising a rotatable brush and means to rotate the same, an air forcing apparatus and means in conjunction with said brush rotating means to
5 operate the same, two shoes flexibly suspended and adapted to ride on the floor with an intervening slot through which said brush may contact with the floor, cross
10 pieces connecting said shoes and inclosing the spaces at the ends whereby air will be

drawn through the intervening slot by said air apparatus, and means to bring said brush into contact with the floor.

Dated June 20, 1912.

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