U. C. OBLOSSER.

VACUUM CLEANER.

APPLICATION FILED NOV. 13, 1912.

1,091,383.

Patented Mar. 24, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

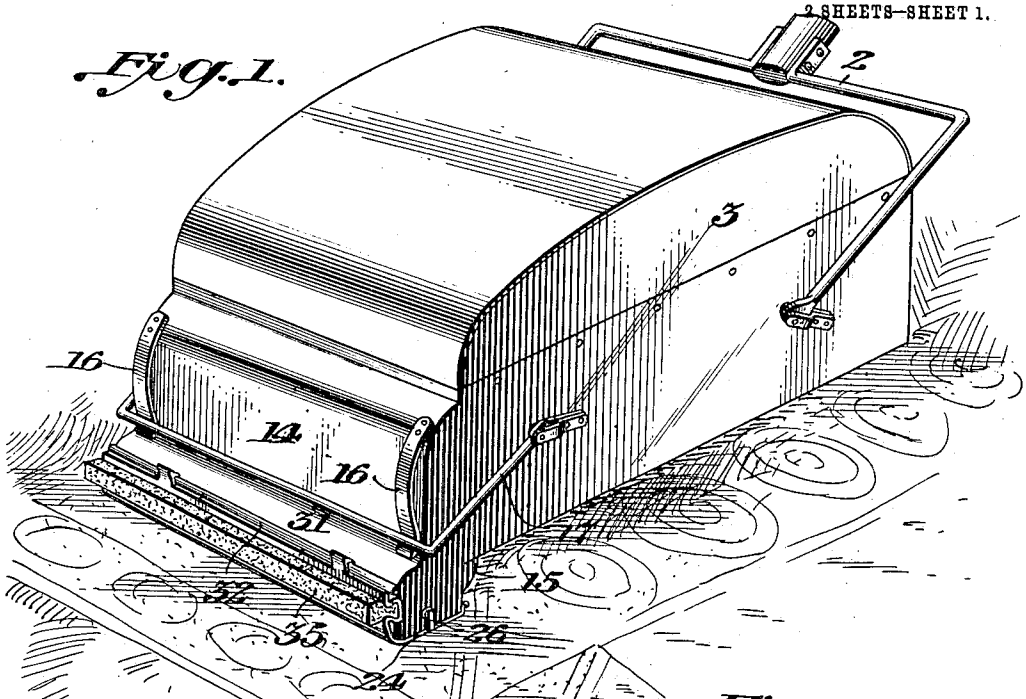


Fig. 2.

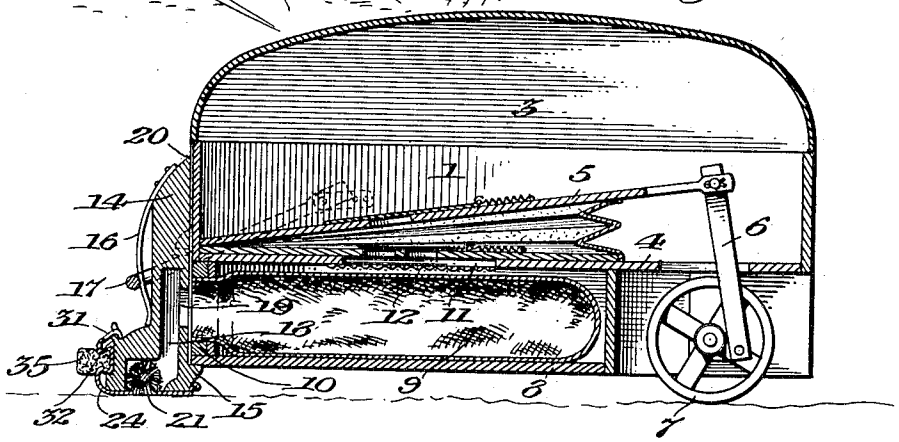
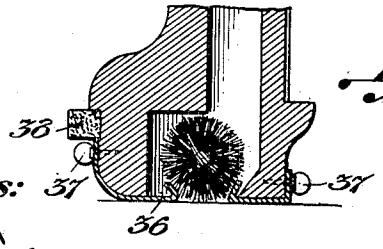


Fig. 7.



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2 SHEETS—SHEET 2.

FIG. 3.

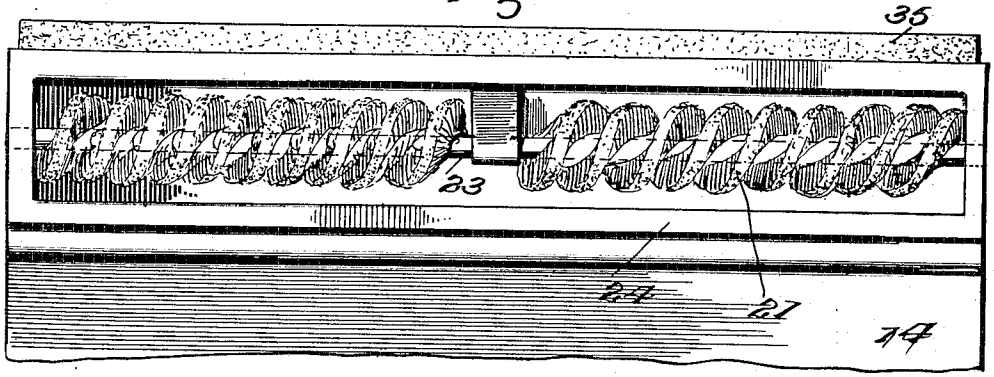


FIG. 6.

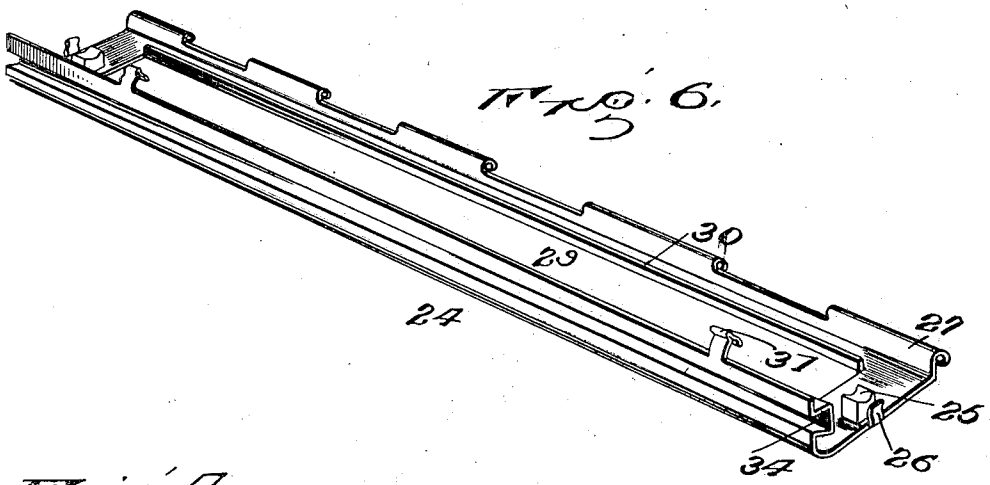


FIG. 4.

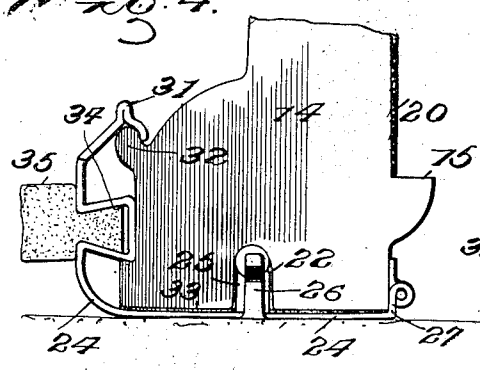
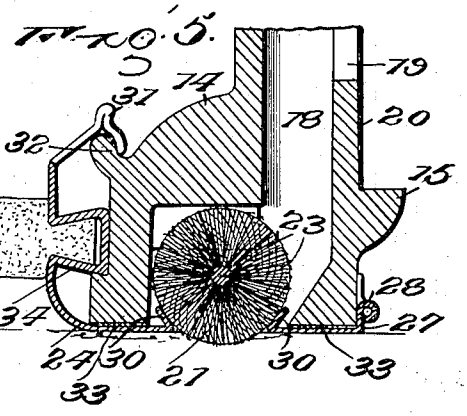


FIG. 5.



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VACUUM-CLEANER.

1,091,383. Specification of Letters Patent. Patented Mar. 24, 1914.

Application filed November 13, 1912. Serial No. 731,109.

To all whom it may concern:

Be it known that I, ULYSSES C. OBLOSSER, a citizen of the United States, residing at Bloomsburg, in the county of Columbia and State of Pennsylvania, have invented certain new and useful Improvements in Vacuum-Cleaners, of which the following is a specification.

This invention relates to vacuum cleaners, and has special reference to the suction nozzle for the same, the primary object of the invention being to provide means whereby the nozzle will be effectually attached to the front end of the main casing and will aid in supporting the same but may be readily detached when cleaning or repairing is necessary.

A further object of the invention is to provide a novel form of buffer to prevent injury to furniture by impact of the suction nozzle against the same, and a further object of the invention is to provide novel means for loosening the dirt upon the surface being cleaned.

A further object of the invention is to provide a novel support for the loosening brush fitted in the mouth of the suction nozzle, and finally the object of the invention is to improve generally the construction and operation to the end that the durability and efficiency of the vacuum cleaner may be increased.

In the accompanying drawings, which fully illustrate my invention, Figure 1 is a perspective view of a vacuum cleaner provided with my present improvements; Fig. 2 is a longitudinal vertical section; Fig. 3 is a bottom plan view of the suction nozzle on a larger scale; Fig. 4 is an enlarged detail end view of the lower portion of the suction nozzle; Fig. 5 is an enlarged vertical section of the lower portion of the suction nozzle, Fig. 6 is a detail perspective view of the runner or shoe attached to the nozzle. Fig. 7 is a sectional view showing a modification.

The main body or housing 1 may be of any desired form, but is preferably rectangular, and has a handle 2 attached to its sides near its rear end, so that the device may be conveniently pushed over the floor or carpet to be cleaned. As shown most clearly in Fig. 2, a hood 3 is fitted over the main body or housing, and the said housing or body 1 is equipped with a horizontal partition 4, upon the upper side of which is mounted a bellows 5 connected by a pitman 6 to a supporting and carrying wheel 7 fitted upon an axle extending between the sides of the housing below the said platform 4. A box or container 8 is secured to the underside of the partition 4 in advance of the carrying and driving wheel 7, and this box 8 is adapted to receive a dust-receptacle 9 which consists of a textile bag secured to a frame 10 adapted to fit in the open end of the said box 8, the partition 4 being provided with an opening 11 covered by a screen 12 and communicating with the interior of the bellows. As the housing is pushed over the floor or carpet, the wheel 7 will, of course, be rotated, and the pitman 6 will be thereby reciprocated so as to operate the bellows and, consequently, create suction through the dust-bag and the box 8, whereby air will be drawn through the open mouth of the dust-bag and will pass through the opening 11 into the bellows, as will be readily understood. The air will escape from the bellows and pass out from the housing through the opening in the platform 4, which accommodates the pitman, while the dust contained in the air will be caught and retained by the dust-bag 9.

Upon the front side of the body or housing 1 above the platform 4 are forwardly projecting pins, indicated in dotted lines at 13, and these pins engage recesses in the rear side of the suction nozzle 14. The suction nozzle is thus held in proper vertical relation to the body or housing, and it is further constructed with a shoulder or offset 15 on its rear side near its lower end which is adapted to fit against the bottom of the box 8 and thereby support the front end of the main body or casing. The weight of the body or casing is thus taken off the pins 13, so that the liability of the said pins to be sheared off in the operation of the machine is minimized.

In order to hold the nozzle close to the front end of the body or casing, I provide the leaf springs 16 on the front side of the nozzle, and a bail 17 pivoted to the sides of the main body or casing 1 is adapted to swing downwardly over the said leaf springs, so that the resiliency of the springs acting against the bail will effectually hold the nozzle against the casing. The nozzle is con-

structed with a passage 18, the lower end of which is expanded and extends through the lower end of the nozzle to constitute a mouth therefor, and through the back of the nozzle an opening 19 leads from the said passage 18 into the mouth of the dust-bag. To guard against leakage around the mouth of the dust-bag, I provide felt or similar packing 20 upon the rear wall of the nozzle which will fit against the frame 10 so as to effectually fill the joint or space between the nozzle and the said frame and thereby prevent the passage of air therethrough.

A brush 21 is mounted in the mouth of the nozzle and extends from end to end thereof and is preferably in two sections, as shown in Fig. 3, but it will be understood, of course, that a single section entirely filling the mouth of the nozzle may be used. This brush is intended to project through the mouth of the nozzle sufficiently to lightly touch the surface of the floor or carpet so as to loosen the particles of dirt and break up the same, so that there will be no liability of the mouth of the nozzle or of any other part being clogged by the dirt taken up and the surface treated will be thoroughly cleaned. It is desirable, of course, that the brush may be easily removed, as some material will tend to adhere thereto and it will be necessary to remove the accumulation with more or less frequency, and to this end the lower edges of the end walls of the nozzle are notched, as shown at 22, to receive the ends of the shaft 23 carrying the brush. To retain the brush in its operative position in the mouth of the nozzle, a shoe or runner 24 is fitted upon the lower end of the nozzle, and carries, at its ends on its upper side, lugs or bearing blocks 25 having concave upper ends adapted to fit against the ends of the shaft 23 and thereby hold them in the notches 22, as will be readily understood upon reference to Fig. 4. Adjacent the said lugs or bearing blocks 25, retaining lips or tongues 26 are formed on the edges of the shoe or runner and project upwardly a sufficient distance to engage the ends of the shaft 23, as clearly shown in Figs. 1 and 4, thereby preventing excessive endwise movement of the shaft and, consequently, reducing the wear between the bristles of the brush and the end walls of the nozzle. The shoe or runner 24 is constructed with an up-turned portion 27 of tubular form along its rear edge which constitutes part of a hinged connection between the shoe and the nozzle, as shown at 28, the remaining or connecting members of the hinge being secured to the rear wall of the nozzle near the lower end thereof and held in position, relative to the up-turned portion 27, by a pintle inserted through the alined members, as will be readily understood.

The shoe or runner is provided with a longitudinal slot 29, and along the front and rear edges of the said slot are upstanding lips or flanges 30 which fit close to the brush, as shown most clearly in Fig. 5, so that the suction through the nozzle must pass through the brush and, consequently, the larger pieces of paper and long hairs and similar substances will be caught and retained by the brush until they have cleared the lips and they cannot fly from the mouth of the nozzle. The front portion of the shoe or runner extends upwardly in advance of the nozzle and is equipped at its upper extremity or edge with hooks 31 adapted to engage over a rib or ledge 32 formed on the front side of the nozzle and thereby retain the shoe against the lower end of the nozzle, as shown. A felt or similar lining 33 will preferably be provided between the shoe and the lower surface of the nozzle, so as to prevent currents of air creeping between the shoe and the nozzle without passing through the slot 29 and then through the brush.

Between its bottom portion and its extreme upper end, the front portion of the runner is formed into a substantially dove-tailed groove 34, in which is fitted a buffer of felt or similar material, as shown at 35. The shoe, it will be understood, is preferably constructed of spring metal throughout, so that it may be readily swung around the end of the nozzle, and the resiliency of the material will serve to clamp the buffer within the said dove-tail groove 34, so that the said buffer will be effectually secured.

It is thought the operation and the many advantages of my improved device will be readily understood from the foregoing description, taken in connection with the accompanying drawings, without further specific mention thereof. As the device is pushed over the floor or surface to be cleaned, the bellows will be operated as before stated, and a suction created through the nozzle and the brush in the mouth of the same, so that the dust laden air drawn in through the fibers of the carpet or between the shoe and the floor will pass through the nozzle into the dust-bag and the air freed of dust drawn through and discharged from the bellows, as before described.

When it is desired to clean the brush, it is not necessary to remove the nozzle from the main body of the cleaner but the shoe is released by disengaging the hooks 31 from the rib 32 and then swinging the shoe about its hinged connection with the nozzle, so that it will swing away from and in rear of the nozzle and permit the brush to be withdrawn. Any possible tendency of the shoe to bind against any portion of the nozzle is effectually overcome by making the shoe of resilient sheet metal, the use of which material will also aid in holding the shoe in its operative position upon the nozzle by reason

of the engagement of the hooks 31 with the rib 32. When it is necessary to remove the nozzle so as to remove the filled dust-bag, the bail 17 is swung upwardly and the nozzle is then easily withdrawn from the front end of the main body.

In Fig. 7, I have shown a modified arrangement in which the shoe 36 is secured to the front and rear walls of the nozzle by thumb screws 37 so that it may be readily detached when necessary and the buffer 38 is secured directly to the front wall of the nozzle above the shoe by any convenient fastenings.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is—

1. In a vacuum cleaner, the combination with a suction nozzle, of a brush arranged in the mouth of the nozzle and having the ends of its shaft extending into the end walls of the nozzle, a shoe fitted to the nozzle and extending across the bottom thereof, bearings on the shoe to receive the ends of the brush shaft, and retainers rising from the shoe adjacent said bearings to engage the ends of said shaft.

2. In a vacuum cleaner, the combination with a suction nozzle, of a brush disposed in and substantially filling the mouth of the nozzle and having the ends of its shaft fitted in the end walls of the nozzle, a shoe fitted to the nozzle and extending across the lower end thereof, bearings on said shoe supporting the ends of the brush shaft, and retainers on the shoe adjacent said bearings projecting across the ends of the shaft.

3. In a vacuum cleaner, the combination of a suction nozzle, a brush mounted in and substantially filling the mouth of the nozzle, a shoe extending across the entire lower end of the nozzle and having a longitudinal slot to receive the brush, bearing blocks on the shoe adjacent the ends of the slot to receive the shaft of the brush, and retainers rising from the ends of the shoe adjacent said bearing blocks to engage the ends of the shaft of the brush.

4. In a vacuum cleaner, the combination of a suction nozzle provided on its front wall above its lower end with an upstanding rib, a brush mounted in and substantially filling the mouth of the nozzle, a hinge member fixed on the rear wall of the nozzle, a shoe positively connected at its rear edge with said hinge member and extending across the entire lower end of the nozzle and having its forward portion projected upwardly in front of the nozzle and provided at its free edge with hooks adapted to engage over the said rib, and means on the shoe for supporting and retaining the brush.

In testimony whereof I affix my signature in presence of two witnesses.

ULYSSES C. OBLOSSER. [L. S.]

Witnesses:

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