J. J. MERITHEW.

VACUUM SWEEPER.

APPLICATION FILED NOV. 25, 1916.

1,267,329.

Patented May 21, 1918.

2 SHEETS—SHEET 1

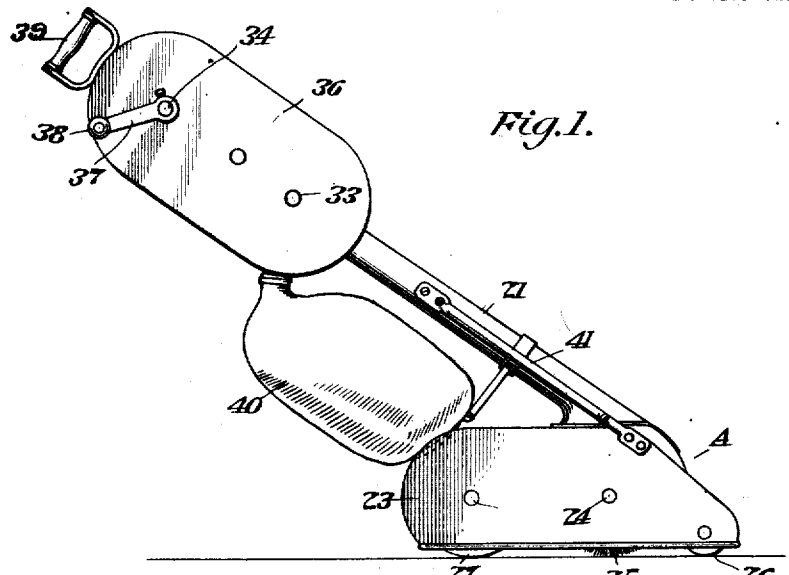


Fig. 1.

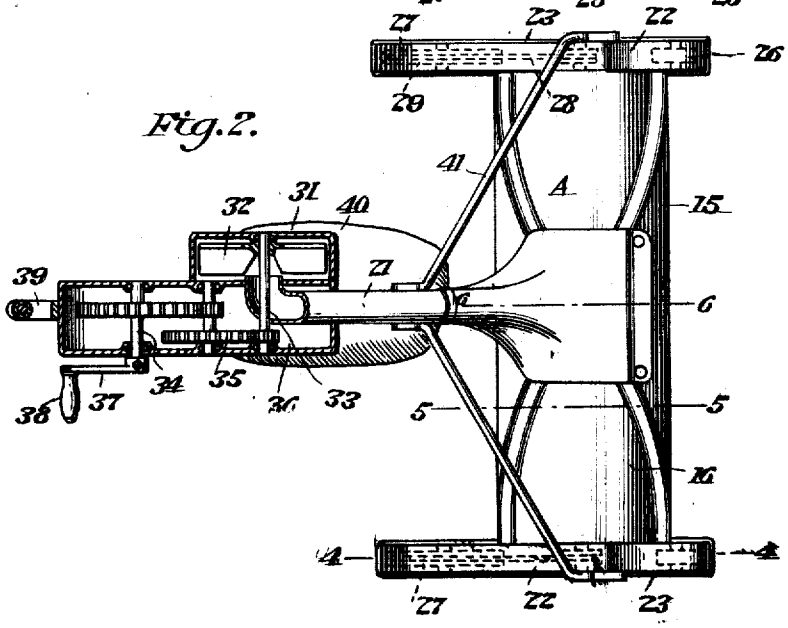


Fig. 2.

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WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

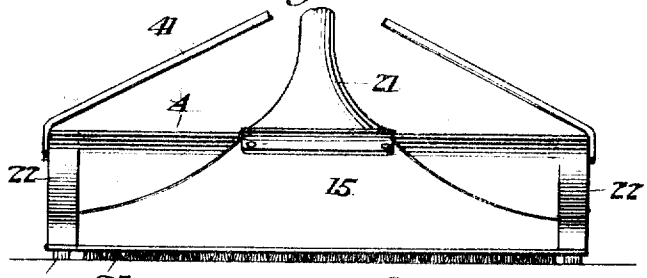


Fig. 4.

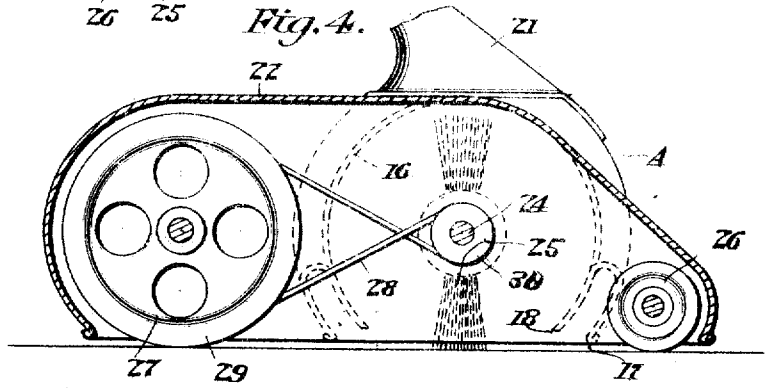


Fig. 5.

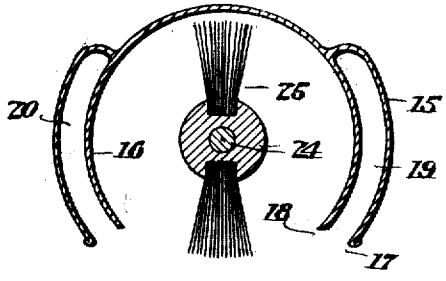
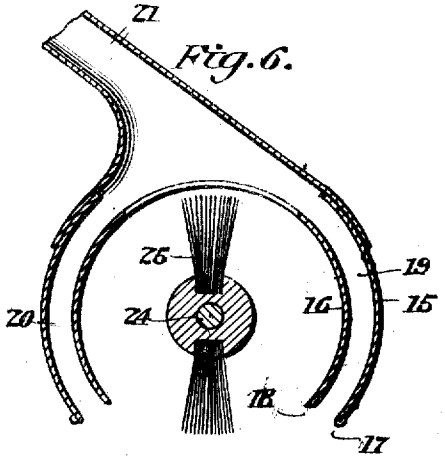


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

JERRY J. MERITHEW, OF AKRON, OHIO.

VACUUM-SWEEPER.

1,267,329. Specification of Letters Patent. Patented May 21, 1918.

Application filed November 25, 1916. Serial No. 133,459.

To all whom it may concern:

Be it known that I, JERRY J. MERITHEW, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Vacuum-Sweepers, of which the following is a specification.

This invention relates to vacuum sweepers, and it has particular reference to that class or type of vacuum sweepers which are manually operated and in which a fan driven by hand actuated mechanism is utilized to set in motion a column of air whereby dust and sweepings are conveyed on a sweeper casing to a strainer.

The invention has for its object to produce a device of the class described which will be of simple and improved construction and in which the sweeper casing contains a rotary broom that is driven reversely to the direction in which the sweeper casing is moved, said sweeper casing being formed with ducts adjacent to the two sides of the broom to receive and convey the sweepings regardless of the direction of movement.

A further object of the invention is to simplify and improve the construction of the sweeper casing and related parts.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claim may be resorted to when desired.

In the drawings—

Figure 1 is a view in side elevation of a vacuum sweeper constructed in accordance with the invention.

Fig. 2 is a top plan view, the casing containing the fan and the driving mechanism being shown in section.

Fig. 3 is a front view of the sweeper casing.

Fig. 4 is a sectional view taken on the line 4—4 in Fig. 2.

Fig. 5 is a sectional view taken on the line 5—5 in Fig. 2.

Fig. 6 is a sectional view taken on the line 6—6 in Fig. 2.

Corresponding parts in the several figures are denoted by like characters of reference.

The sweeper housing, which is generally designated by A, comprises an outer casing 15 and an inner casing 16, said outer and inner casings being approximately of cylindrical form and having bottoms cut away as at 17 and 18. The outer and inner casings, which are concentrically disposed with respect to each other, are spaced apart so as to form front and rear ducts or chambers 19, 20 which are of gradually increasing width from the ends of the housing to the longitudinal central medial line thereof where the said ducts merge with a tubular handle 21, as best seen in Fig. 6, said handle being connected with the outer casing 15.

The housing A is provided at the ends thereof with enlarged oblong portions 22 having heads 23 that afford bearings for a shaft 24 carrying a rotary brush 25. The enlarged portions of the housing afford bearings for the front wheels or guide wheels 26 and for the rear wheels or driving wheels 27 from which latter power is transmitted in any convenient manner to the brush carrying shaft 24, the transmission being, however, of such a nature that the brush carrying shaft will be rotated reversely to the rotation of the ground engaging drive wheels. In Fig. 4 of the drawings the transmission has been shown as consisting of a crossed belt or cord 28, the same being trained over pulleys 29, 30, one of which is associated with the driving wheel 27, while the other is mounted on the brush-carrying shaft.

The tubular handle 21 is extended upwardly, and it communicates at its upper end with a casing 31 in which a fan 32 is supported for rotation, said fan being mounted on a shaft 33 which receives motion from a shaft 34 through the medium of a train of gears 35, said gears being accommodated within a casing 36 which is preferably integral with the fan casing 31. The shaft 34 is provided with a crank 37, whereby it may be manually rotated, said crank being provided with a handle 38. The casing 36 is provided with a handle 39 whereby the device may be guided. The fan casing has an outlet which communicates with a strainer 40, the same consisting of a bag which may be constructed and sup-

ported in any convenient and well known manner.

For the purpose of reinforcing the construction of the device braces 41 are provided that connect the tubular handle 21 and the enlarged portion of said handle with the enlarged portions 22 at the ends of the housing A.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this device will be readily understood by those skilled in the art to which it appertains. The parts are so arranged and proportioned that when the brush housing is supported on the wheels 26, 27, the rotary brush will properly engage the surface of the ground when the device is pushed or moved either in a forward or in a rearward direction, the direction of rotation of the brush being opposed to the direction of the general movement of the device, thereby causing the sweepings to be directed into one of the ducts 19 or 20, according to the direction of movement. At the same time the fan is rapidly rotated by the means provided for the purpose, a suction being thereby set up whereby air entering through the inlets 17, 18 will be drawn into the ducts 19, 20, where it becomes charged with the sweepings and dust particles, the dust laden air being guided through the tubular handle 21 to the fan casing 31, from which it is expelled into the strainer. It is obvious that the train of gears whereby the fan is driven may be so proportioned as to impart to the fan any proper and desired speed, and that the general proportion and arrangement of parts constituting the device may be varied according to the conditions under which the device is to be used so as to produce the most satisfactory result.

Having thus described the invention, what is claimed as new, is:—

A device of the class described comprising a casing having its bottom cut away, a conduit on each side of said casing tapering upwardly, said casing having an opening in its top, a hollow handle having the opening therein covering said opening in the casing and communicating with the conduits, an elongated casing at each end of the first-mentioned casing, a driving wheel and a pilot wheel in each casing, a brush in the first-mentioned casing, a shaft therefor having its ends extending into the elongated casings, and means for connecting said shaft with the driving wheel.

In testimony whereof I affix my signature.

JERRY J. MERITHEW.