July 7, 1942. F. E. KINSELLA 2,288,952

POWER DRIVEN TOY VACUUM SWEEPER

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Fig. 1.

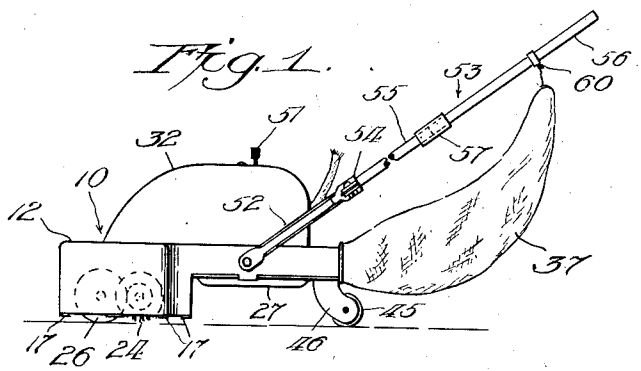


Fig. 2.

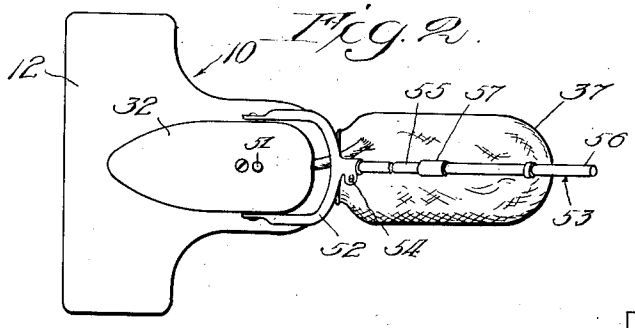


Fig. 6.

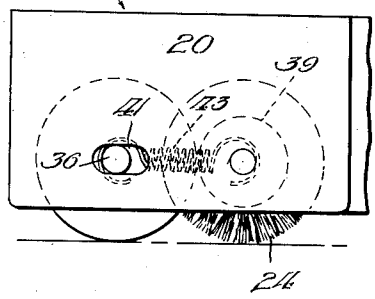
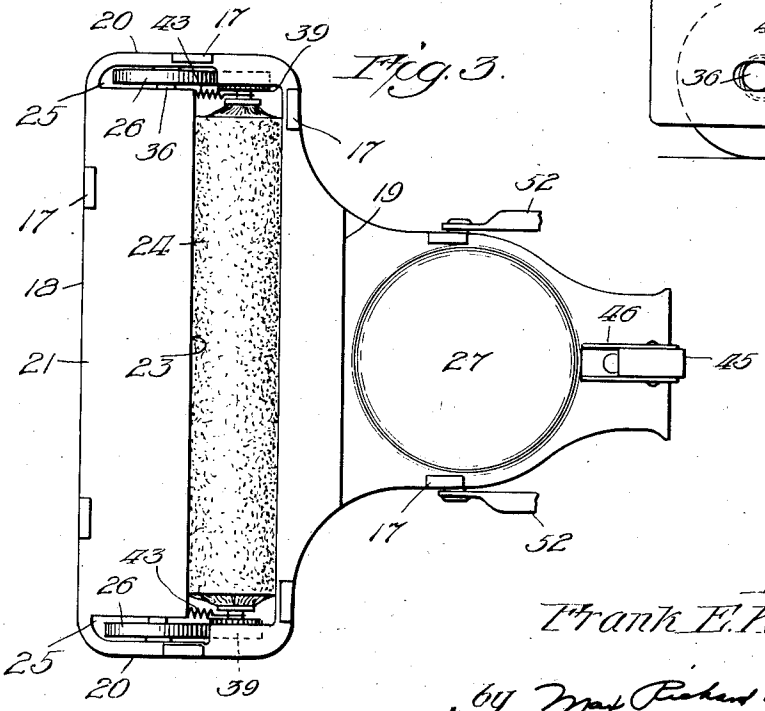


Fig. 3.



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Fig. 4.

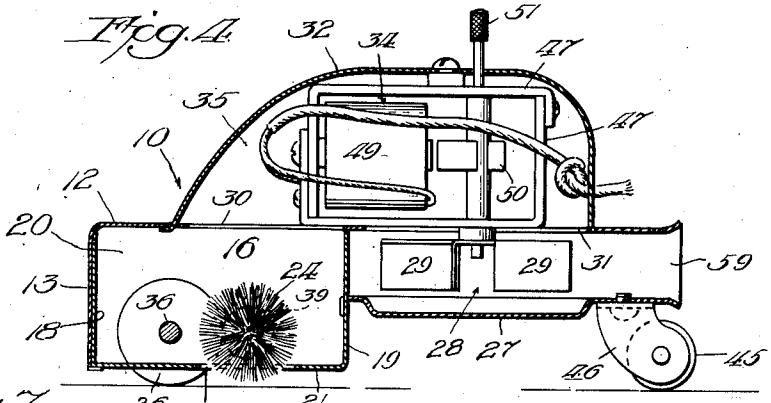


Fig. 7.

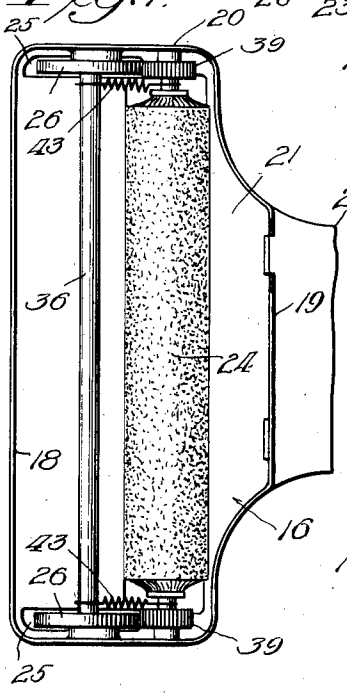
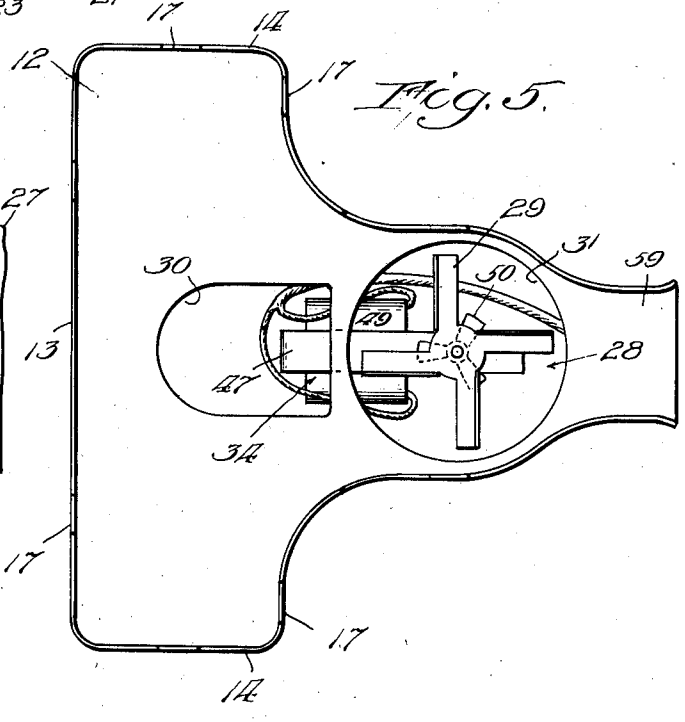


Fig. 5.



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UNITED STATES PATENT OFFICE

2,288,952

POWER DRIVEN TOY VACUUM SWEEPER

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Application March 1, 1940, Serial No. 321,689

2 Claims. (Cl. 15—8)

This invention relates to power driven toy vacuum sweepers.

One of the objects of this invention is the provision of a power driven by toy vacuum sweeper which simulates in appearance and in operation the professional models now currently being used.

Another object of this invention is the provision of a power driven toy, of the character described, which is safely and easily operable by children.

A further object of this invention is the provision of a power driven toy, of the character described, which is durable, simple in construction and cheap to manufacture.

Other objects and advantages will become apparent during the course of the following description.

In the accompanying drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a side elevational view of a toy vacuum sweeper embodying my invention.

Fig. 2 is a plan view of same.

Fig. 3 is an enlarged bottom plan view of the toy sweeper.

Fig. 4 is a longitudinal cross sectional view of the toy sweeper.

Fig. 5 is a bottom plan view, with the brush chamber removed.

Fig. 6 is a fractional end view of the brush chamber.

Fig. 7 is a plan view of the brush chamber removed from the housing.

Referring to the drawings, wherein is shown a preferred embodiment of my invention, the numeral 10 designates, generally, a housing formed of a top member 12, shaped substantially as shown, and front and side walls 13 and 14 respectively. The forward portions of the side walls 14 are substantially the same height as the front wall 13 while the rearward portions are of a substantially reduced height.

A brush containing chamber, indicated, generally, by the numeral 16 is adapted to be telescopically received within the forward portion of the side walls 14 and is suitably secured therein, as by bent lugs or ears 17 which are integrally formed with the walls 13 and 14. The brush chamber 16 is formed of front, rear and side walls 18, 19 and 20 respectively, and a bottom 21 integrally formed therewith, the said bottom being provided with a transverse opening 23 to accommodate a rotatable brush 24 and with longitudinal openings 25 to accommodate the supporting wheels 26, presently to be described. A bottom member 27 is secured to the rear wall 19 of the brush chamber and to the reduced portions of the side walls 14 and serves to provide an enclosed chamber 28 for housing a fan 29.

The top member 12 is provided with openings 30 and 31, the opening 30 being disposed above the brush chamber 16 and the opening 31 being disposed above the fan chamber 28. A cap member 32, shaped substantially as shown, is adapted to be secured to the member 12 and serves to house the motor 34, presently to be described. It will be seen that the cap member 32 provides a chamber 35 which communicates with both the brush and fan chambers 16 and 28 respectively. When air is drawn in by the fan through the transverse opening 23, it passes through the brush chamber 16, through the motor chamber 35, through the fan chamber 28 and into a bag 37. Thus, the motor, when in operation, is continuously subjected to a cooling stream of air which serves to maintain same in cool and safe condition.

An axle member 36, suitably mounted in the side walls 20 of the brush chamber, rotatably supports a pair of supporting rollers or wheels 26. Spacedly disposed from said axle and suitably journaled in the side walls 20, is a rotatable brush member 24 which is provided, at each end thereof, with fixedly mounted friction elements 39 which are arranged to engage the supporting wheels 26 and to be rotated thereby.

Referring to Fig. 7, it is seen that the axle member 36 is mounted in substantially elongated slots 41 disposed in the walls 20. The said slots permit slight longitudinal movement of the brush 24 in the chamber 16. Spring members 43 are adapted to engage the axle member 36 and the ends of the brush 24 and serve to maintain the elements 39 in frictional engagement with the supporting wheels 26, thus insuring positive rotation of the brush 24 when the toy sweeper is moved over a floor surface.

A trailer wheel 45 suitably supported in a bifurcated member 46 serves as the rear support for the toy sweeper.

The motor 34, hereinbefore referred to, may be of any suitable type. It will, however, be apparent that it is desirable to use a motor, in a toy of this character, which is extremely simple in construction and which can be manufactured at very low cost. Accordingly, I find it preferable to provide a motor which operates on one cycle of an alternating current supply.

Referring to Fig. 4, the motor 34 comprises an enclosed iron frame formed of two substantially L shaped members 47 on which are mounted a coil and core 49 which provide the field for the motor. A rotor or armature 50 is disposed within the field and is suitably journaled in the frame members 47. One end of the rotor 50 is extended and provided with a knurled portion 51 by which the rotor 50 may be spun to effect a starting of the motor.

A fan 29 having a plurality of blades is fixedly mounted on the other end of the rotor 50 and depends therefrom, being housed in the chamber 28, hereinbefore described.

A bifurcated member 52 is pivotally mounted on the side walls 14 of the housing and is arranged to accommodate a handle 53 which is frictionally secured thereto, as at 54, by suitable means. Preferably, the handle is formed of two sections 55 and 56 in order to facilitate packaging of the device. The sections 55 and 56 are adapted to be assembled and to be secured by a slidable collar member 57 to provide a handle of suitable length.

A fabric bag 37 having a reduced mouth portion is arranged to fit over the discharge opening 59 of the housing and is removably secured thereon by elastic means which extend circumferentially of said mouth portion. The bag is maintained in upright position by securement to a hook element 60 mounted on the handle 53.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention or the scope of the appended claims.

I claim:

1. In a vacuum sweeper of the character described a sectionally constructed housing forming a brush chamber and a fan chamber, a motor and motor housing mounted on said sectionally constructed housing and communicating with both of said chambers, said sectionally constructed housing comprising a horizontally disposed member having a depending flange forming front and side walls, the forwardly disposed portion of said member arranged to telescopically receive a boxlike member forming a brush chamber, the said boxlike member being open at the top and having an intake and opening ings being disposed over said brush chamber and in the bottom thereof, a plate member coacting with the rearward portion of the said side walls and forming a fan chamber, a suction fan mounted on the shaft of said motor and disposed in said fan chamber, said fan being arranged to create a suction whereby air is caused to enter said brush chamber and to pass successively through said motor to cool same during its operation and through said fan chamber.

2. In a vacuum sweeper of the character described a sectionally constructed housing forming a brush chamber and a fan chamber, a unitary member forming the top and side walls of said chambers, said member having provided in the top thereof two openings, one of said openthe other of said openings being disposed over said fan chamber, a motor and motor housing mounted on said unitary member over said openings and providing a continuous conduit for a stream of air passing successively through said brush chamber, through said motor housing, and through said fan chamber.

FRANK E. KINSELLA.