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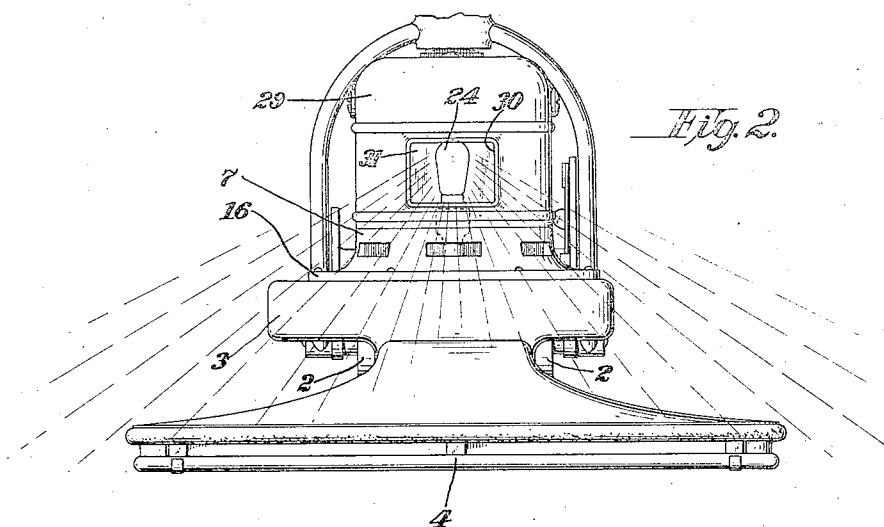
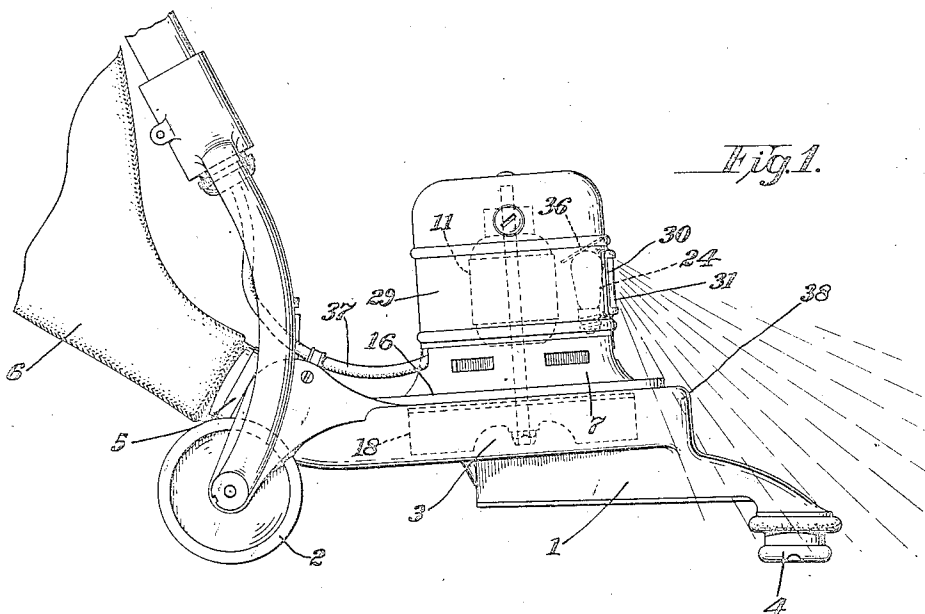
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1,934,048

ELECTRICALLY LIGHTED VACUUM CLEANER

Filed July 22, 1932

3 Sheets-Sheet 1



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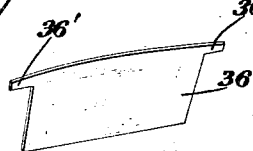
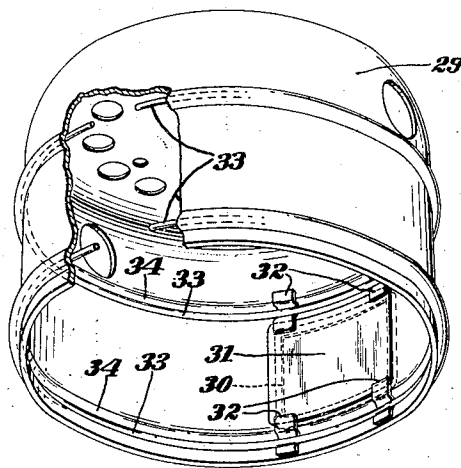
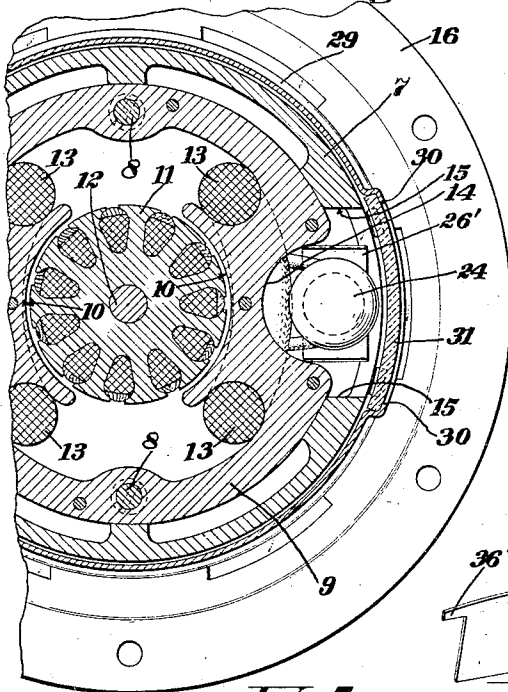
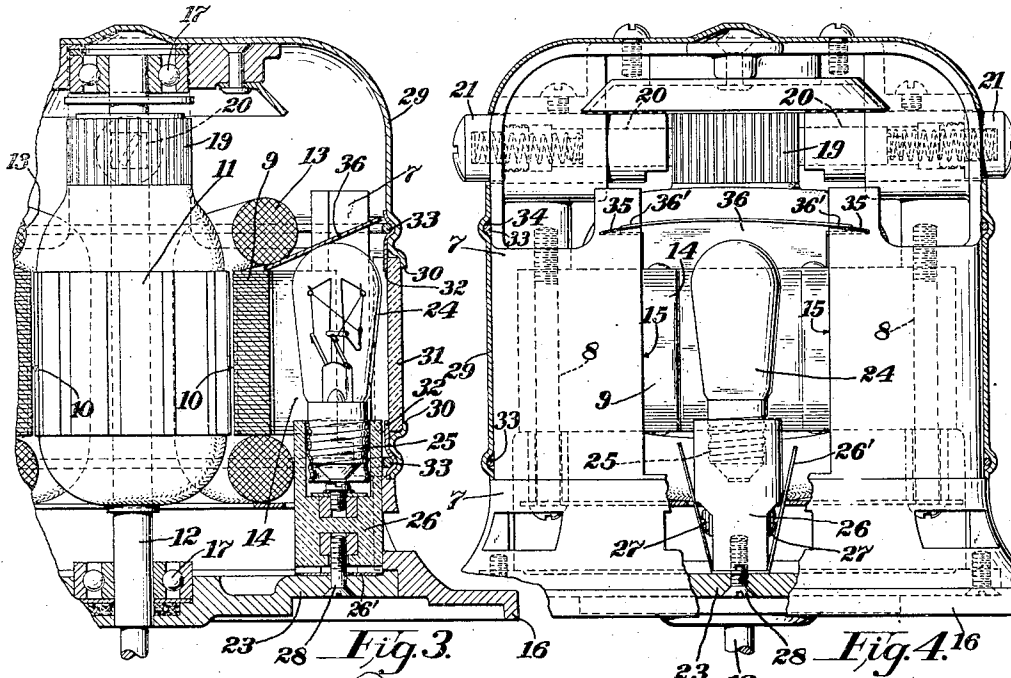
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ELECTRICALLY LIGHTED VACUUM CLEANER

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3 Sheets-Sheet 2



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ELECTRICALLY LIGHTED VACUUM CLEANER

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3 Sheets-Sheet 3

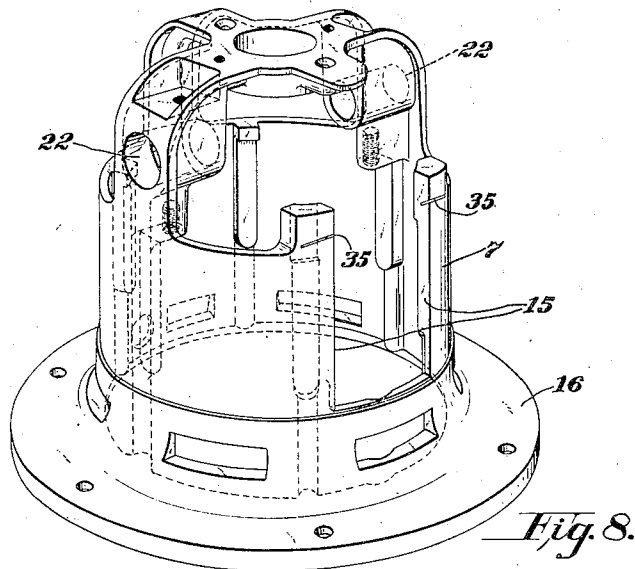


Fig. 8.

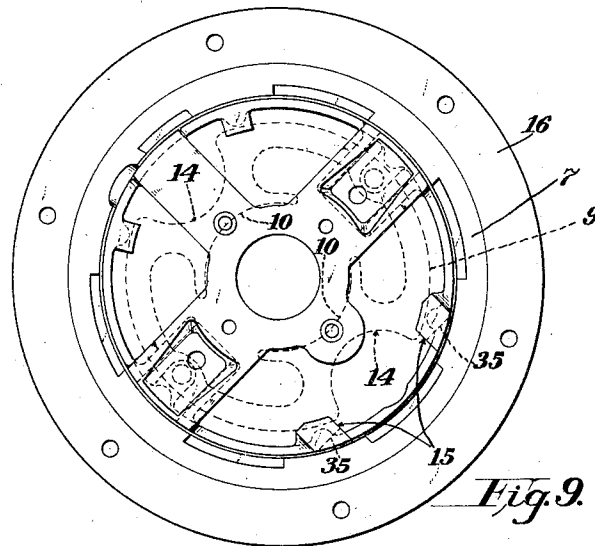


Fig. 9.

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UNITED STATES PATENT OFFICE

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ELECTRICALLY LIGHTED VACUUM
CLEANER

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Application July 22, 1932. Serial No. 624,020

10 Claims. (Cl. 240—2)

This invention relates to vacuum cleaners of the usual domestic floor-cleaning type embodying an ambulant motor-driven fan, suction-nozzle and dust-bag assembly to which is pivotally connected a handle for propelling the cleaner over the floor.

The present invention has for an object to further improve and simplify the electrically lighted vacuum cleaner disclosed in the application of Herbert J. Goosman; Serial No. 580,064; filed Dec. 10, 1931.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations, and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

Fig. 1 is a side elevation of a domestic electric floor-type suction-cleaner embodying the invention. Fig. 2 is a front elevation of the cleaner. Fig. 3 is a vertical section through the motor-element of the cleaner. Fig. 4 is a front elevation of the motor-element of the cleaner with the motor-casing removed. Fig. 5 is a horizontal section through the motor-element of the cleaner. Fig. 6 is a perspective view of the motor-casing. Fig. 7 is a perspective view of the light-reflector element shown in Figs. 3 and 4. Fig. 8 is a perspective view of the motor-frame casting and Fig. 9 is a top plan view of such casting.

1 represents the ambulant frame of the cleaner which is mounted on wheels 2 and includes the fan-casing 3 having a downturned suction-nozzle 4 and a dust-discharge pipe 5 to which is connected the dust-bag 6.

Mounted on the fan-casing 3 is the fan-motor including a frame-casting 7 of skeletonized inverted cup-shape within which is secured by bolts 8 a laminated magnetic field-core 9 having opposed poles 10 embracing the usual armature 11 on the motor-shaft 12; the field-core being excited by the field-coils 13 embracing the poles 10.

The field-core 9 is vertically channeled or recessed in rear of or outwardly of its polar projections 10 and the field-core 9 as a whole is arranged in the frame 7 with its axis upright and so that one of these field recesses or upright channels 14 is exposed by the opening 15 in the side wall of the motor frame-casting 7; the motor-frame and field-core assembly being secured to the fan-casing in a position such that

the opening 15 and exposed recess or channel 14, which are in register, are at the front side of the cleaner assembly or adjacent the suction-nozzle 4. The frame-casting 7 has a lower flange 16 by which it is attached to the fan-casing 3.

The motor-shaft 12 is journaled in ball-bearings 17 and at its lower end carries the usual suction fan-blades 18. The armature 11 includes the usual commutator 19 upon which press the brushes 20 in the brush-tubes 21 received in the brush tube holes 22 in the frame 7. The lower ball-bearing 17 is carried by a circular bottom plate 23 screwed to the frame 7 within the flange 16.

Mounted within the front recess or channel 14 of the field-core 9 and in the registering opening 15 of the frame-member 7 is an electric lamp-bulb 24 preferably of commercial lighting voltage (110 volts). This lamp has the usual candle-labra screw-base 25 received in a receptacle 26 having terminal conductor-screws 27 and mounted on the plate 23 in an upstanding position by means of the screw 28. A strip of insulation 26' bent into trough form is secured at its center under the receptacle 26 so that its side wings may cover or guard the live terminal screws 27.

The motor-frame and lamp assembly is enclosed by an inverted cup-shaped cylindrical casing 29 having a window 30 in its front wall in register with the opening 15. The window 30 is fitted with a glass 31 or other suitable transparent sheet of material preferably curved to conform to the general cylindrical curvature of the casing 29. The glass 31 is retained in the window seat by means of clips 32, Fig. 6, held in place by the outwardly expansible spring-rings 33 seated in the internal circumferential grooves 34 in the casing.

The frame 7 is slitted at the sides of the opening 15 at 35 to receive the tangs 36' of the polished reflector 36 supported above the lamp 24 at a rearward and downward inclination, so as to reflect or concentrate the light downwardly and forwardly upon the floor in the vicinity of the suction-nozzle 4. After removal of the casing 29 the reflector 36 may be detached from the frame 7 by sliding it outwardly and upwardly to carry its tangs 36' out of the frame slits 35, thus permitting removal or replacement of the lamp 24 in the receptacle 26. The lamp may be connected to the usual current supply cord 37.

The lamp is thus disposed within the vertical dimension or height of the motor-body and does not add to the overall height of the cleaner. The

window glass 31 and lamp 24 are well in rear of the cleaner-nozzle and the shoulder 38 of the fan-casing where they are protected from collision. The lighting device as a whole is built substantially wholly within the vertical cylindrical motor-casing and is devoid of protuberances. By recessing the lighting device in the front side of a vertical cylindrical motor there is secured the advantages of maximum compactness with minimum protuberance of the lighting device and maximum lateral spread of the light rays as well as frontal distribution.

The invention is not to be understood as limited to the specific embodiment shown and described.

Having thus set forth the nature of the invention, what I claim herein is:—

1. A domestic floor-cleaner having an ambulant frame including an electric motor, a fan-casing and a downturned suction-nozzle, said motor having a laminated field-core externally recessed, an electric lighting device including a lamp-bulb disposed in said field-core recess, and a casing enclosing said field-core and lighting device and having a window in register with said lamp-bulb.

2. A domestic floor-cleaner having an ambulant fan-casing and downturned suction-nozzle, an electric motor mounted on said casing with its shaft upright, said motor having a frame formed with a lateral opening and a laminated field-core secured to said frame and having an external recess in register with said lateral frame opening, an electric lamp and receptacle assembly mounted with its longitudinal axis upright and within said registering frame opening and field-core recess, and a casing enclosing said motor frame and lamp, said casing having a window in front of said lamp.

3. A domestic floor-cleaner having an ambulant frame including an electric motor, a fan-casing and a downturned suction-nozzle, said motor having a cylindrical frame-member formed with a lateral opening and with a flange at its lower end whereby it is secured to said fan-casing, a bottom bearing plate removably secured to said frame-member within said flange, a laminated field-core secured within said frame-member and having an external recess in register with said lateral opening, an electric lamp receptacle mounted on said bottom plate with its axis upright and embraced within said lateral opening, an electric lamp-bulb in said receptacle, and a casing surrounding said frame-member and having a window in register with said lamp-bulb.

4. A domestic floor-cleaner having an ambulant frame including an electric motor, a fan-casing and a downturned suction-nozzle, said motor having a laminated field-core externally recessed, an electric lighting device including a lamp-bulb disposed in said field-core recess, a reflector disposed in an inclined position over the top of said recess, and a casing enclosing said field-core, lighting device and reflector and having a window in register with said lamp-bulb.

5. A domestic floor-cleaner having an ambulant fan-casing and downturned suction-nozzle,

an electric motor having a frame and shaft, said motor being mounted on said fan-casing with its shaft upright, a cylindrical casing surrounding said motor, a window in the front side of said cylindrical casing, said window being curved to conform to the curvature of said cylindrical casing, and an electric lighting device recessed into the motor-frame and disposed closely in rear of said window.

6. A domestic floor-cleaner having an ambulant fan-casing and downturned suction-nozzle, an electric motor having a frame and shaft, said motor being mounted on said fan-casing with its shaft upright, a casing enclosing said motor, a window in the front side of said motor-casing, and an electric lighting device recessed into the motor-frame and disposed behind said window.

7. A domestic floor-cleaner having an ambulant frame including an electric motor, a fan-casing and a downturned suction-nozzle, said motor having a laminated field-core externally recessed, a motor-casing having a window in front of said field-core recess, an electric lighting device including a lamp-bulb disposed in said field-core recess, and a reflector disposed within said motor-casing and above said lamp-bulb and adapted to direct light forwardly and downwardly through said window.

8. A domestic floor-cleaner having an ambulant fan-casing and downturned suction-nozzle, an electric motor mounted on said casing with its shaft upright, said motor having a frame formed with a lateral opening and a laminated field-core secured to said frame and having an external recess in register with said lateral frame opening, an electric lamp and receptacle assembly mounted with its longitudinal axis upright and within said registering frame opening and field-core recess, said motor-frame having slots at the edges of said opening, a reflector having tangs received in said slots, and a casing enclosing said motor-frame, lamp and reflector, said casing having a window in front of said lamp.

9. A domestic floor-cleaner having an ambulant fan-casing and downturned suction-nozzle, an electric motor having a frame and shaft, said motor being mounted on said fan-casing with its shaft upright, a casing enclosing said motor, a window in the front side of said motor-casing, said motor having a field-core supported by the motor-frame, said field-core being formed externally with a vertical channel, said motor-frame having a lateral opening exposing said channel, and an electric lighting device disposed in said frame opening and partially received in said channel, said lighting device, frame opening and channel being directly behind said window.

10. A domestic electric suction floor-cleaner having an ambulant frame including an electric motor and suction fan provided with a downturned suction-nozzle, said motor having an externally recessed magnetic field-core and a casing enclosing said field-core and formed with a window, and an electric lighting device including a lamp-bulb partially received in said field-core recess and disposed behind said window.

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