Dec. 13, 1932. C. PETERSEN 1,891,175

COMBINATION VACUUM CLEANER AND FLOOR WAXING MACHINE

Filed Nov. 14, 1930

Fig. 1

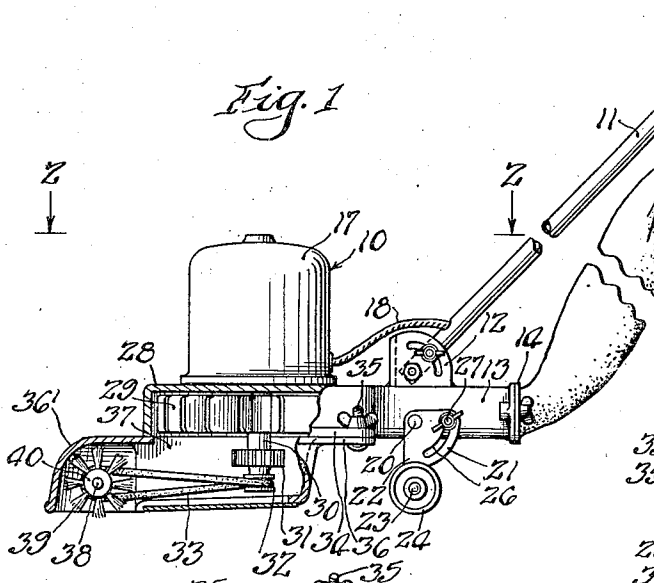


Fig. 7

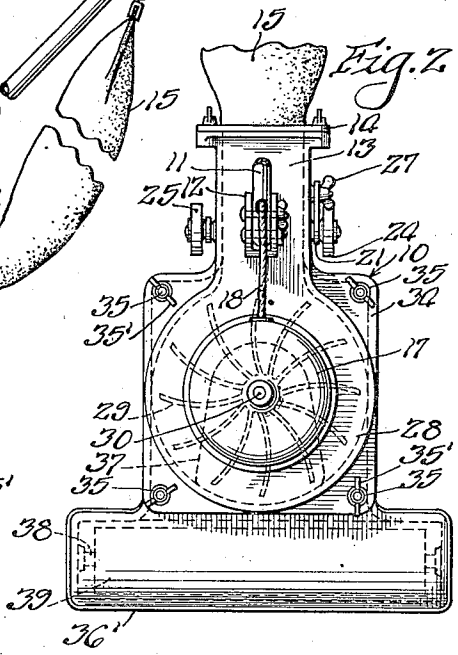


Fig. 3

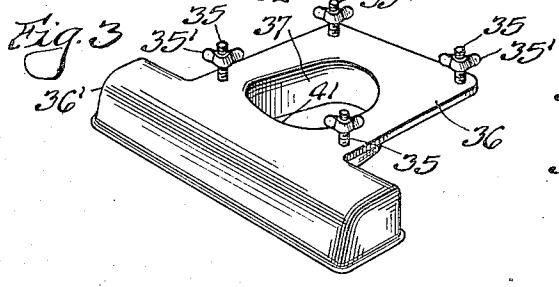


Fig. 4

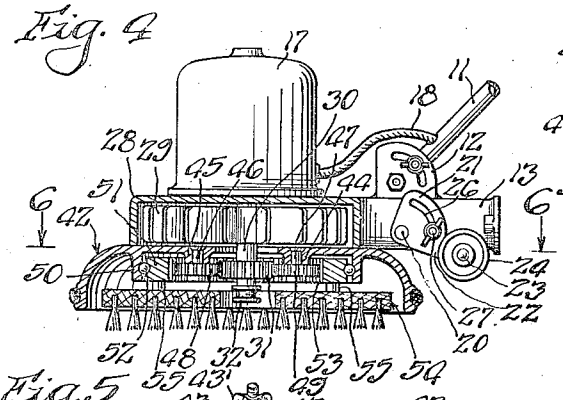


Fig. 5

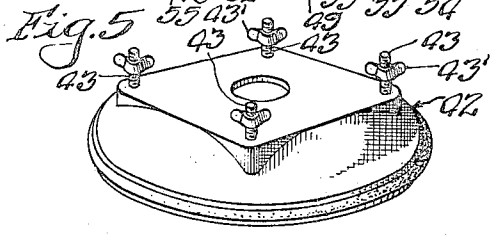
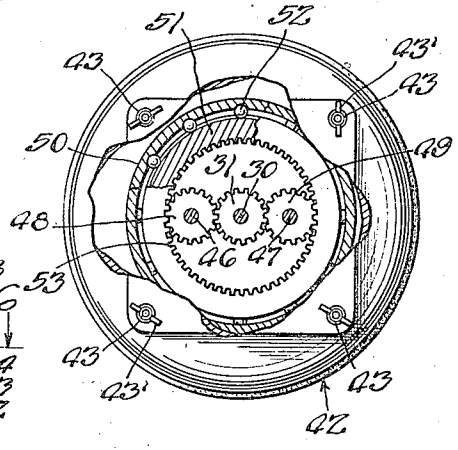


Fig. 6



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Patented Dec. 13, 1932 1,891,175

# UNITED STATES PATENT OFFICE

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## COMBINATION VACUUM CLEANER AND FLOOR WAXING MACHINE

Application filed November 14, 1930. Serial No. 495,754.

This invention relates to certain novel improvements in combination vacuum cleaner and floor waxing machines, and has for its principal object the provision of an improved construction of this character which will be highly efficient in use and economical in manufacture.

The salient object of this invention is to provide a machine which may be used as either a vacuum cleaner or a floor waxing machine.

Another object of the invention is to provide a machine of the character described herein which may be expeditiously changed from a vacuum cleaner to a floor waxing machine.

A further object of the invention is to provide a device of the character described herein which will embody a minimum number of parts and be simple in operation.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing, showing the preferred form of construction and in which:

Fig. 1 is a side elevational view of a preferred form of construction of the invention;

Fig. 2 is a top plan view taken substantially on the line 2—2 in Fig. 1;

Fig. 3 is a perspective view of a housing employed in the invention when used as a vacuum cleaner;

Fig. 4 is a transverse sectional view partly in elevation of a preferred form of construction of the invention used as a floor waxing machine;

Fig. 5 is a perspective view of a housing employed in the invention when used as a floor waxing machine; and

Fig. 6 is a sectional view taken substantially on the line 6—6 in Fig. 4.

Referring to the drawing wherein the preferred embodiments of the invention are depicted, generically indicated at 10 is my improved vacuum cleaner which includes a handle member 11. The handle 11 is provided with a foot portion 12 which is attached to the cylinder 13 in any approved manner. Having one end mounted on the handle 11 as at 16 is a dust bag 15, the other end of which is attached to the cylinder 13. Extended through the handle 11 to a suitable motor in the housing 17 is an electric cord 18 at the end of which is the usual plug 19.

Pivotally mounted on the cylinder 13, as at 20, is a plate 21 which includes a depending portion 22 in which is provided a shaft 23. Rotatably mounted on the shaft 23 at the sides of the cylinder 13 are suitable wheels 24 and 25. A pin and slot connection 28 and 27 is provided for holding the plate 21 and wheels 24 and 25 in position so as to rest on the surface over which the device is traveling, as in Fig. 1, or in upwardly extended position as in Fig. 4.

Preferably formed integrally with the cylinder 13 is a housing 28 in which is rotatably mounted a suction creating fan or impeller 29. A shaft 30 is provided and this shaft carries the fan 29 and is connected in any suitable manner to the motor in the housing 17. Mounted on the shaft 30 below the fan 29 is a gear 31 and a sheave 32 is formed on the shaft 30 so that rotation of the motor will operate the fan 29, the gear 31, and a belt 33 that is movable over the sheave 32.

A flange 34 is provided on the housing 28 and detachably connected to the flange 34 by means of suitable bolt and nut structures 35 is a housing 36 in which is provided a recess 37 to receive the sheave 32. The housing 36 includes a nose portion 36′ in which is rotatably mounted a shaft 38 which carries a suitable brush structure 39, it being understood that a sheave 40 is provided on the shaft 38 so that movement of the belt 33 will rotate the shaft 38 and brush 39. As the brush 39 is rotated dust collected by the brush 39 from a surface over which the device is moved will pass through the nose portion 36′ of the housing, into the recess 37 through the housing 36, through housing 28, cylinder 13 and into the dust collecting bag 15, the rear wall 41 of the nose portion 36′ being open to permit the belt 33 to operate therethrough and to permit dust from the brush 39 to pass into the recess 37.

To change the device from a vacuum cleaner to a floor waxing machine, the housing 36 is removed by removing the wing nuts 35, and the belt 33 is removed from the sheave 32. A housing, generically indicated at 42 is then attached to the housing 28 by means of bolts 43 and wing nuts 43′ which are substituted for the bolts 35 and wing nuts 35′. Depending from the top wall of the housing 42 interiorly thereof are bearing bosses 44 and 45 in which are journaled stub shafts 46 and 47 respectively. A gear 48 is carried by the shaft 46 and a similar gear 49 is carried by the shaft 47, and these gears 48 and 49 have meshing engagement with the gear 31 on the power driven shaft 30.

Depending from the upper wall of the housing 42 is an annular flange 50 and disposed within this flange 50 is a ring 51, a ball race 52 being provided between the flange 50 and the ring 51. An internal ring gear 53 is provided on the inner periphery of the ring 51 and the teeth of this ring gear mesh with the teeth of the gears 48 and 49. Manifestly, therefore, when the shaft 30 is driven by the motor in the housing 17 the gear 31 will be rotated and motion will be transmitted from the gear 31 to gears 48 and 49, to ring gear 53, which will rotate the ring 51 on the ball race 52. A suitable rotary brush structure 54 is provided and this brush 54 is secured to the ring 51 by means of suitable connecting elements 55. It will be seen, therefore, that as the ring 51 is rotated in the hereinbefore described manner, the brush 54 will be rotated and hence the brush 54 may be used for waxing floors in a manner well understood in the art.

From the foregoing description of the invention it will be apparent that I have provided an improved machine which may be selectively used as a vacuum cleaner or a floor waxing machine, and which may be conveniently and expeditiously changed from one form to another.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having thus described my invention what I claim as new and desire to protect by Letters Patent is:

In a device of the class described, a housing, laterally projecting horizontal flanges extending from the periphery of said housing and spaced about the bottom of the same, each of said flanges being provided with an opening, a second housing, bolts carried by said second housing projected through said openings, wing nuts on said bolts to clamp the second-named housing to said flanges and below the first-named housing, a motor driven shaft in the first-named housing, and means driven by said shaft to operate a mechanism in the second-named housing.

In testimony whereof I affix my signature.

CHRISTIAN PETERSEN.