May 7, 1968 A. W. KELLEY 3,381,327

ROTATABLY SUPPORTED VACUUM CLEANER

Filed July 29, 1966

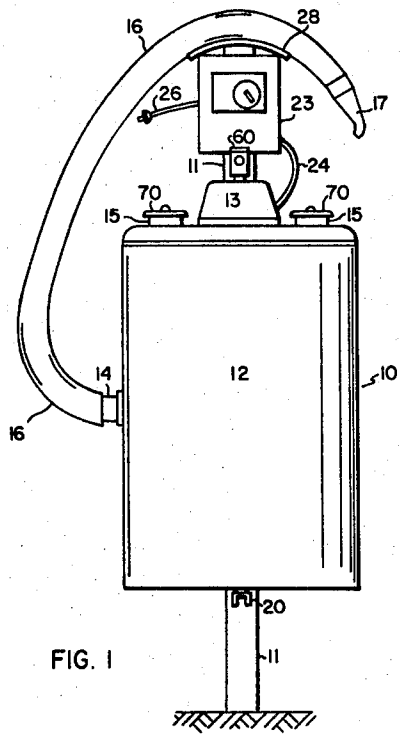


FIG. 1

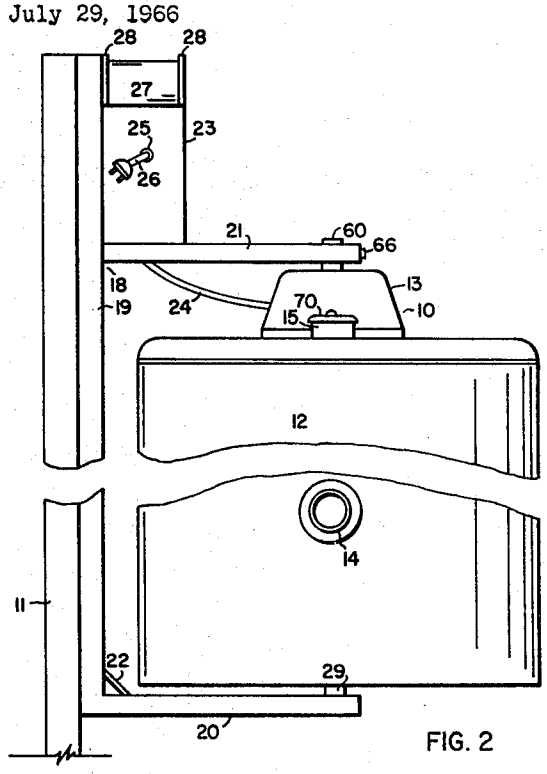


FIG. 2

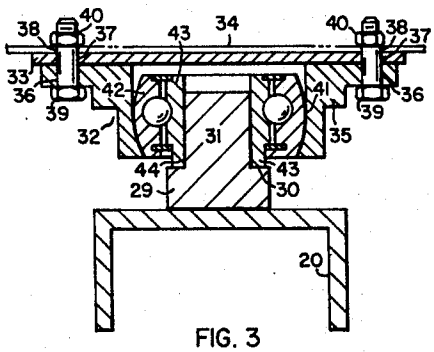


FIG. 3

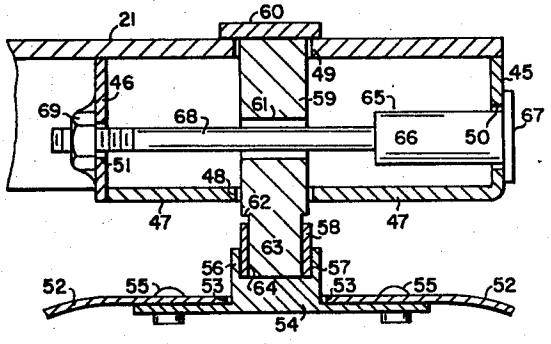


FIG. 4

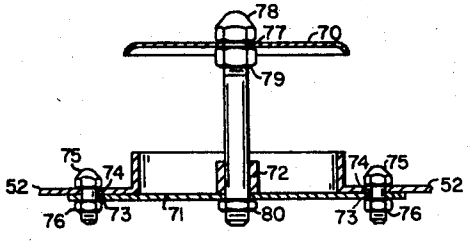


FIG. 5

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ROTATABLY SUPPORTED VACUUM CLEANER

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The present invention relates to a vacuum cleaner which is fixedly mounted and rotatable about a vertical axis and more particularly to such a vacuum cleaner which is weather conditioned for outdoor use.

At the present time many coin operated car washing installations do not include vacuuming apparatus whereby the driver or attendant may clean the interior of a vehicle. In those few installations providing vacuuming equipment, it has heretofore been the general practice to use a household-type vacuum cleaner; obviously such equipment has limited cleaning capability and an attendant is required to collect the service charges and to safeguard such equipment from theft and vandalism.

The rotatable vacuum cleaner of the subject invention is normally mounted in proximity to a car washing installation, service station or the like; upon insertion of a suitable coin into the accumulator, the vacuum cleaner is operative for a predetermined period of time.

An object of the present invention is the provision of a vacuum cleaner which is fixedly mounted and capable of rotating approximately three hundred forty-five degrees about the mounting means.

Another object is to provide such a vacuum cleaner which is operated by means of a coin controlled switch.

A further object of the invention is the provision of such a device which is durable, weather conditioned, and protected against vandalism.

Still another object is to provide such apparatus which is simple in construction, capable of mass production techniques, and easy to maintain in serviceable condition.

Other objects and features of the invention will become apparent to those skilled in the art as the disclosure is made in the following detailed description of a preferred embodiment of the invention as illustrated in the accompanying sheet of drawing in which:

FIG. 1 is a front elevational view of the preferred embodiment of the subject invention.

FIG. 2 is an enlarged, fragmentary, side elevational view of the invention with the hose removed.

FIG. 3 is a greatly enlarged, transverse, vertical sectional view taken through the outermost portion of the lower bracket.

FIG. 4 is a greatly enlarged, transverse, vertical sectional view taken through the outermost portion of the upper bracket.

FIG. 5 is a greatly enlarged vertical sectional view taken through an exhaust tube.

Referring now to the drawings, wherein like reference characters designate like or corresponding parts throughout the several views, there is shown in FIG. 1 the preferred embodiment of the subject invention which consists, in general, of an upstanding vacuum cleaner **10** mounted above ground level upon a standard **11**. Vacuum cleaner **10** is of the type manufactured by the Black and Decker Company of Towson, Md., and identified as Model No. 165–1; it is to be understood that the invention is not restricted solely to such type vacuum cleaner but includes within the scope of the invention any vacuum cleaner consisting of a tank **12**, a dust bag (not shown) positioned therein, with a power unit **13** detachably connected to such tank. Although the aforementioned proprietary vacuum cleaner includes a horizontally extending inlet tube **14** connected to the side of tank **12** with vertically extending exhaust tubes **15** on diametric sides of the power unit **13**, the inlet and exhaust tubes may obviously be connected to any selected portion of the tank and/or power unit with the necessary modifications to such cleaner.

One end of an elongated, flexible hose **16**, preferably of neoprene, is secured to inlet tube **14**; a nozzle **17** of conventional design detachably connects to the distal end of such hose and is used for vacuuming a vehicle or the like.

Referring now to FIGS. 1 and 2 of the drawings, vacuum cleaner **10** is rotatably mounted on bracket **18** consisting of a vertically extending member **19** with spaced, horizontally extending and vertically aligned lower and upper members **20–21** secured inwardly to member **19**. The bracket **18** thus formed is preferably constructed of channel or the like with member **19** opening rearwardly and members **20, 21** opening downwardly; a gusset **22** is provided in the exterior angle formed between members **19** and **20**, respectively. Member **20** is positioned approximately twenty-four inches above ground level with member **19** of such bracket secured to standard **11** as by welding or the like.

An accumulator or coin box **23**, such as manufactured by H. Greenwald Co., Inc. of Brooklyn, N.Y., under United States Letters Patent Nos. 2,300,785, 2,334,040, 2,353,305 and D–188,391 is fixedly secured to members **19** and **21**; a bore (not shown) is provided in either a side or bottom of such coin box through which wire **24** passes and connects to power unit **13** and a timing device and control switch, respectively, within the said coin box. A second bore, indicated generally by **25**, is provided in the side or bottom of such coin box whereby a 110 volt, alternating current supply is applied by means of wires **26** to the other terminals of such timing device and control switch.

An arcuate hose holder **27** includes upturned flanges **28** on front and back; such holder is secured as by welding to the upper corners of the coin box **23** while the back flange **28** is secured to member **19**; hose **16** may be passed over and retained on such holder when not in use.

Referring now to FIG. 3 of the drawings, there is shown an upstanding pintle **29** the base of which is fixedly secured to the web of member **20** in proximity to the outer end thereof; the said pintle terminates upwardly in shoulder **30** and portion **31** of reduced diameter, which shoulder **30** and reduced portion **31** co-act with a self-aligned flange bearing **32** hereinafter to be more fully described.

Strap **33** extends diagonally across the bottom **34** of tank **12** with flange bearing **32** secured thereto. More specifically, housing **35** of bearing **32** includes a plurality of vertically aligned bolt holes **36** with aligned bores **37–38** in the strap **33** and bottom **34**, respectively, through which bolts **39** pass upwardly with nuts **40** threaded thereon inside tank **12**. As heretofore mentioned, flange bearing **32** is preferably self-aligned, such as "Browning FB200," and includes a spherical socket **41** in housing **35** with the outer race **42** fitting therein in a close fit; the inner race **43** includes an axially extending bore **44** which accommodates the reduced diameter portion **31** of the pintle with shoulder **30** supporting the lower end of race **43**.

There is illustrated in FIG. 4 of the drawings means whereby the upper end of tank **12** is rotatably mounted and detachably secured to the outermost end of member **21**. As heretofore mentioned, member **21** is preferably of channel and opens downwardly. The outermost end of such channel is boxed in by means of a vertically and transversely extending end piece **45** with a piece **46** parallel and spaced inwardly therefrom; a horizontally extending base plate **47** is secured laterally to the downwardly

depending legs of such channel and at each end to pieces **45, 46** to form a closed, rectangularly shaped chamber. Vertically aligned bores **48–49** are provided in base plate **47** and the web of channel **21** while horizontally aligned bores **50–51** pass through pieces **45, 46**. Casing **52** of the power unit **13** includes a bore **53** in the top thereof; a flange **54** is secured to the said casing by means of rivets **55** or the like with neck **56** passing upwardly through bore **53**. A vertical bore **57** in neck **56** accommodates a bushing **58** or the like.

Pin **59** has secured thereto at one end a transversely extending strap **60**, such pin is passed downwardly through bores **49, 48** until stopped by strap **60** bearing against the web of member **21**; such pin further includes a diagonally and horizontally extending bore **61** aligned with bores **50, 51** heretofore mentioned. The said pin **59** terminates downwardly of base plate **47** in a shoulder **62** and portion **63** of reduced diameter which inserts into bore **64** of bushing **58**.

A screw type lock **65** such as manufactured by Chicago Lock Co. of Chicago, Ill., and identified as "CX100" consists of a cylinder **66**, a face plate **67** of slightly greater outside diameter secured to the keyed end of such cylinder with a longitudinally extending, threaded extension **68** secured to the other end of such cylinder. Nut **69** is fixedly secured to piece **46**; extension **68** is passed through bores **50, 61** and **51**, respectively, and is threaded into nut **69** by means of the key for such lock until face plate **67** abuts end piece **45**. Upon removal of the key, pin **59** is secured in such position. Pin **59** may be withdrawn by inserting the key into lock **65** and reversing such steps; at such time vacuum cleaner **10** may be removed from bracket **18** for cleaning the dust bag or for periodic maintenance.

At the present time there are no commercially available vacuum cleaners which are weather conditioned for outdoor use; more specifically, the exhaust tubes **15** normally open upwardly whereby rain or snow may enter into the same or articles inserted into the said tubes, with resultant damage to power unit **13**.

There is shown in FIG. 5 of the drawings a disc **70** which covers the exhaust tubes **15** when the cleaner is not in use and is raised by exhaust from the cleaner when the said cleaner is operative. Disc **70** is of greater diameter than the corresponding exhaust tube and preferably includes a circumferential, downturned edge; such disc is secured to strap **71** which is mounted within casing **52** of the power unit. Specifically, strap **71** includes an upstanding sleeve **72** secured in the approximate center thereof with vertical bores **73** in proximity to each end thereof. Vertically aligned bores **74** in casing **52** on diametric sides of each exhaust tube permit passage of bolts **75** with nuts **76** threaded thereon downwardly of the strap. A bore **77** in the center of disc **70** accommodates bolt **78** with nut **79** bearing against the under-surface of such disc; bolt **78** is passed downwardly through sleeve **72** with a lock nut **80** or the like threaded thereon. Disc **70** rests upon the rim of the respective exhaust tube when cleaner **10** is inoperative, preventing the insertion of articles or moisture from entering the power unit; when cleaner **10** is operative, however, in a manner hereinafter to be described, exhaust forces disc **70** upward until stopped by nut **80** which bears against the under-surface of strap **71**.

When it is desired to operate cleaner **10**, upon insertion of a suitable coin into coin box **23**, power unit **13** of cleaner **10** is activated for a predetermined period of time, regulated by the timing device and control switch within the coin box; the power unit **13** is deactivated upon termination of such predetermined time period.

Vacuum cleaner **10** is free to rotate approximately three hundred forty-five degrees about the standard **11** and is stopped in either direction only when inlet tube **14** and hose **16** connected thereto abuts member **19**.

It should be understood, of course, that the foregoing disclosure relates to only a preferred embodiment of the invention and that it is intended to cover all changes and modifications of the example of the invention herein chosen for the purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

What is claimed is:

1. A rotatable vacuum cleaner comprising a standard, upper and lower horizontally extending and vertically aligned members secured to said standard, a vacuum cleaner rotatably mounted between said upper and lower members, activating means for said vacuum cleaner secured to said standard, said vacuum cleaner including at least one inlet tube and at least one exhaust tube, and closure means covering said exhaust tube when the said vacuum cleaner is inoperative.

2. A rotatable vacuum cleaner comprising a standard, upper and lower horizontally extending and vertically aligned members secured to said standard, a vacuum cleaner rotatably mounted between said upper and lower members, coin operated activating means for said vacuum cleaner on said standard, said vacuum cleaner including at least one inlet tube and at least one exhaust tube, a flexible hose connected to said inlet tube, means in said upper member securing the said vacuum cleaner in position, closure means covering said exhaust tube when the said vacuum cleaner is inoperaitve and vertically displaced from the said exhaust tube by exhaust gases when the vacuum cleaner is operative.

3. A rotatable vacuum cleaner comprising a standard, upper and lower horizontally extending and vertically aligned members secured to said standard, a vacuum cleaner rotatably mounted between said upper and lower members, locking means in said upper member securing the said vacuum cleaner in position, coin operated activating means for said vacuum cleaner secured to said standard, said vacuum cleaner including at least one inlet tube and at least one exhaust tube, a flexible hose connected to said inlet tube, support means secured to said standard to accommodate said hose, and closure means covering said exhaust tube when the said vacuum cleaner is inoperative.

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