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2,627,862 2/1953 Hoerner 134/111X
 2,746,467 5/1956 Dempsey et al 134/111
 2,897,830 8/1959 Palmer 134/111X
 3,378,019 4/1968 Riolo et al 134/111

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[54] **WASHER FOR PARTS AND THE LIKE**
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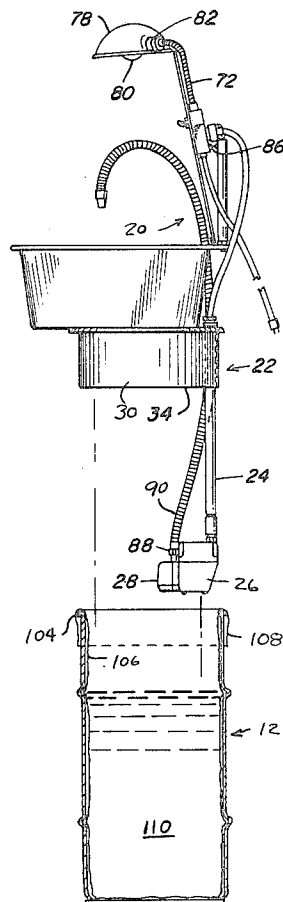
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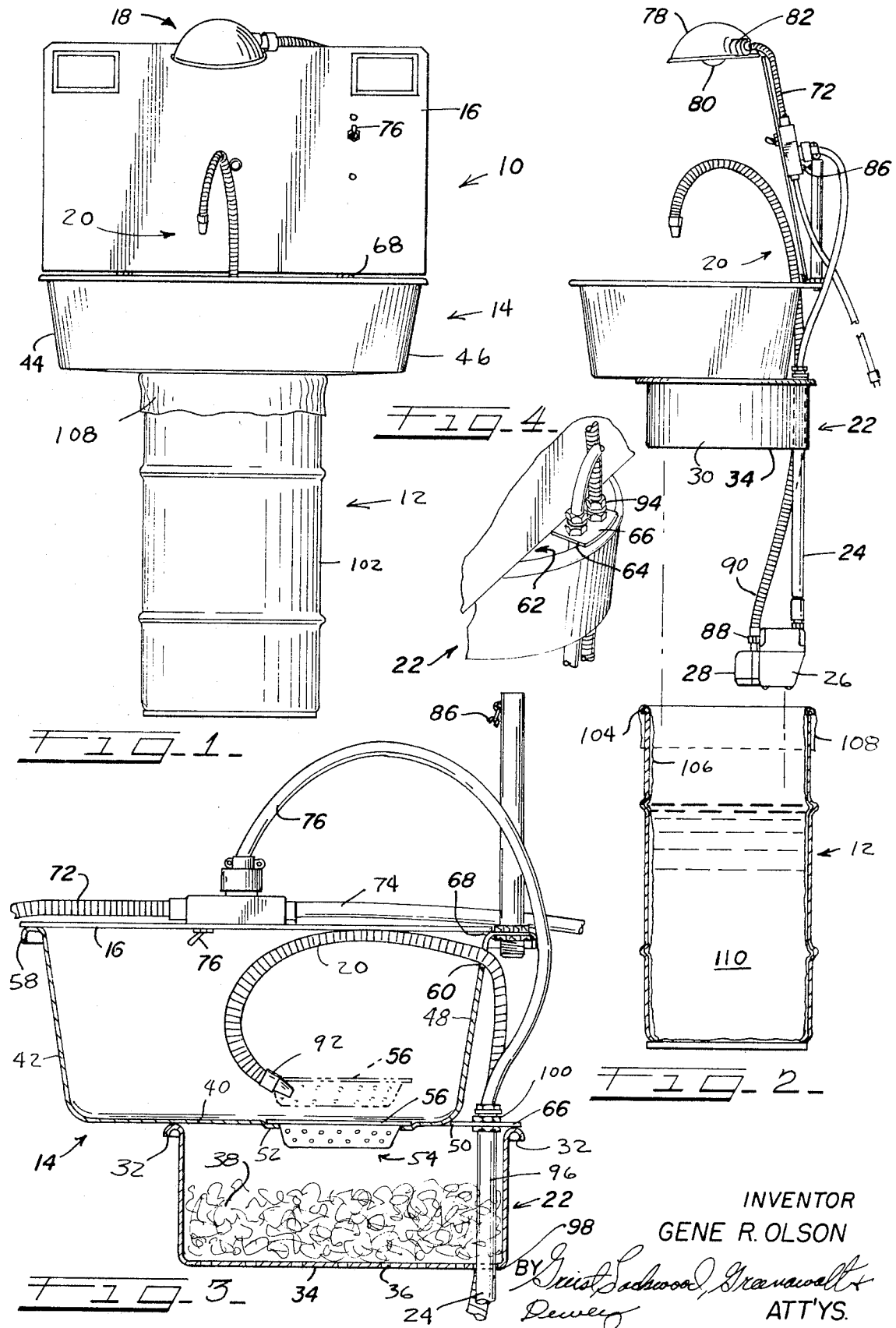
[56] **References Cited**

UNITED STATES PATENTS

2,438,654 3/1948 Albertson 134/111

ABSTRACT: A parts washer for cleaning mechanical parts and the like, comprising a filter body having a perforated bottom wall and cylindrical side walls surmounted by a mounting flange, a sink affixed to the top of the filter body, a pump assembly attached to the filter body and depending downwardly therefrom, and a fluid conduit extending from the pump outlet upwardly and having an end portion thereof adapted to be disposed within the sink for directing solvent flowing thereto to parts disposed in the sink. The mounting flange and filter body are preferably adapted to be received in a cylindrical drum, which contains a cleaning solvent or like fluid. The filter body contains a waste material, and the solvent container preferably includes a disposable plastic bag therein which facilitates disposing of the solvent.





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U.S. PATENT 3,522,814 WASHER FOR PARTS AND THE LIKE

BACKGROUND OF THE INVENTION

In the mechanical service industries, particularly in automotive parts repair and replacement, and like services, there is a significant demand for a simple and effective means to clean component mechanical parts prior to inspection, repair, or replacement thereof, or in connection with other treatment thereof, such as repair or rebuilding of major components. For example, in repairing, replacing, or rebuilding automotive carburetors, fuel pumps, transmissions, wheel and axle assemblies, and the like, there is a need to remove from the auto number of parts which may have been exposed to dirt, grease, and other contamination, and to examine such parts or assemblies, following which appropriate replacement or rebuilding thereof, as indicated may be accomplished.

Today, it is very common for typical repair shops to deal with component parts which are highly precise, and which must be clean and well lubricated to function properly. In many such precision assemblies, it is essential that parts be thoroughly cleaned prior to being replaced in the unit from which they were removed, such as a transmission or the like. Likewise, it is necessary that such parts be handled during cleaning in a manner such that they are not lost or intermingled with other parts.

In view of the requirement for parts washing or cleaning to be performed by service personnel or other tradesmen, there has been a demand for a simple and effective parts washer, particularly a washer which contains an adequate solvent reserve so that a number of parts may be clean without replenishing the supply thereof. The demand for such washers has been heretofore satisfied by the provision of a large variety of washing units, ranging from the simple dish or cake pan to elaborate units containing outer housings, filters, pumps, lights, and the like. With all such units, an important consideration is a combination of economy, serviceability, and ability to perform the desired cleaning function.

The simplest units heretofore provided have had certain shortcomings insofar as their inability to separate the parts being washed from a mass of solvent, and providing simple means for disposing of the solvent after contamination thereof.

Some of the more elaborate parts washing devices are adequate from a functional standpoint but are not really economical, and often present a problem of changing solvent or determining when the solvent should be changed. Accordingly, it is now common for such parts washers to be serviced on a periodic basis by a route man who disposes of old solvents, or the filter therefor, or both, and provides new solvent and reassembles the device. To operate such a service or concession, it is essential that the service be provided for little more than the cost of the solvent itself, and it is therefore necessary that the solvent be able to be changed in a minimum of time, in a simple manner. It is also desired that the washer be of economical construction, so that the service provided may include providing the washer itself, often without a charge other than the periodic service charge. However, until the present time, most parts washers have been unsuited to simple manipulation for changing solvent thereof, several types have been unsatisfactory in relation to the mounting method used, or have been highly expensive, or have had one or more of the other drawbacks referred to herein.

Accordingly, an object of the present invention is to provide a parts washer which may be used in combination with a barrel unit of the type in which cleaning solvent is customarily supplied.

Another object of the invention is to provide a parts washer having a unitary construction, which may be removed from a solvent supply holder to facilitate rapid changing thereof.

A still further object of the invention is to provide a parts washer adapted to form, in combination with a cylindrical solvent barrel, a unitary parts washer including a solvent supply,

a pump, a sink, filter body and filter means therein for cleaning the solvent used therewith.

Another object is to provide a parts washer in which a cylindrical filter body and sink combination is provided, and in which the pump for circulating the solvent is fixedly mounted in relation to the filter and sink elements.

Another object is to provide a washer in which the cleaning fluid conduit and the pump support means are rigidly attached to the filter and extend into the filter inwardly of the rear wall of the sink, into the interior of a solvent supply barrel.

Another object is to provide a parts washer which may be used with a solvent supply barrel, and which includes means for holding a disposable barrel liner in position within the barrel, when the washer is in position or use thereover. The present invention accomplishes these objects, and others which are inherent therein, by providing a parts washer having a filter body with a mounting flange thereon, a sink surmounting the filter body and attached thereto, a pump unit supported from and depending downwardly from the filter body radially inwardly of the outer walls thereof, and a conduit for connecting the discharge end of the pump to means to a nozzle which may be disposed within the sink for directing a stream of cleaning fluid to parts contained within the sink. The exact manner in which these objects are accomplished will become more clearly apparent as the description proceeds, and when considered in conjunction with the detailed description, the appended claims, and the drawings, in which like references numerals include corresponding parts throughout.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a front elevational view of the parts washer of the invention, shown in association with a solvent supply barrel.

FIGURE 2 is a side exploded view, partly in elevation and partly in section, showing the relation of the parts washer to the solvent barrel.

FIGURE 3 is a vertical sectional view, on an enlarged scale, of the parts washer of the invention, showing the cover in a closed position.

FIGURE 4 is perspective view, with portions broken away, showing a portion of the parts washer unit of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

Referring now to the drawings in greater detail, **FIGURE 1** shows a parts washer **10** surmounting means in the form of a barrel **12** for holding a supply of cleaning solvent or like fluid. The parts washer **10** is comprised of a number of elements, including a sink **14**, a cover unit **16**, a lamp assembly **18** and a fluid conduit **20**.

Referring now to **FIGURE 2**, it is shown that the washer **10** also includes filter body **22**, means in the form of a tubular shaft **24** for supporting the motor **26** and the pump **28**. The filter body **22** is preferably cylindrical in shape and includes a generally vertically extending side wall portion **30**, a mounting flange **32**, and a bottom wall **34**, which includes a number of drain openings **36** therein. A mass of filter material **38**, such as waste cotton, is disposed within the filter body **22**.

The sink **14** includes a bottom wall **40**, a front wall **42**, two side walls **44**, **46**, and a rear wall portion **48**. Each wall **42-48** is connected to the bottom wall **40** along a bottom edge portion **50**. An inner margin portion **52** of the bottom wall **44** defines an opening **54** in which is disposed a removable strainer **56**. The sink **14** also includes an upper flange portion **58**, and an opening **60** in the rear wall portion **48** thereof, for purposes which will be referred to in greater detail herein. The sink **14** overlies the top of the filter body **22**, covering it except for a small open area **62**, which is defined by the flange **32**, the sink edge **50**, and the edges **64** of a mounting bracket **66** which extends between the sink edge **50** and the flange **32**.

Referring again to **FIGURES 1-3**, it is shown that the cover **16** is attached by a hinge **68** to the sink **14**, and that a terminal

box 70 is attached to the rear of the cover 16. The terminal box includes a standard 72 extending upwardly therefrom, a current source cord unit 74 extending downwardly therefrom, and a motor cord 76 attached thereto. A toggle switch 76 extends through the cover 16 so that the operator of the washer may turn the pump on and off. A shield 78 covers a light bulb 80 disposed within a fixture 82 on the end of the standard 72.

The sink 14 also includes a support member 84 to which is connected a chain 86, made up of one or more fusible links. One end of the chain 86 is attached to the support element 84 and the other end is attached to the cover 16, and, in a normal position of use, the cover 16 is inclined slightly forwardly and downwardly, so that the cover 16 will, if released, fall downwardly into an overlying relation with the sink 14. Thus, in the event of a fire in the solvent, the links comprising the chain 86 will melt and a fire in the sink will be extinguished or retarded.

Referring again, to FIGURES 2 and 3, it is shown that the pump 28 includes an inlet (not shown) and an outlet 88 which is connected to the lower end 90 of the conduit 20. The conduit 20 extends through the opening 60 in the rear wall of the sink 14, and terminates at its upper end in a nozzle 92. The conduit 20 is flexible so that the nozzle 92 may be moved to various positions in the sink, and so that the conduit 20 may be bent downwardly into a position within the sink 14 in the event the cover 16 falls downwardly into a position overlying the flange 58. Suitable fittings 94 locate the conduit 20 on the bracket 66.

As shown in FIGURE 3, the upper portion 96 of the tubular shaft 24 is disposed between an opening 98 in the bottom wall 34 of the filter body 22 and a fitting 100 holding it in fixed relation with the bracket 66. Thus, the motor 26 and pump 28 are fixedly mounted in relation to the filter body 22, with the shaft 24 extending through the bottom 34 thereof. Since the sink 14 is fixedly attached, as by welding, to the flange 32 of the body 22, the entire washer 10 may be removed as a unit from the barrel 12.

Referring particularly to FIGURES 1 and 2, it can be seen that the solvent supply barrel 12 includes side walls 102, and a top edge portion 104, and that a disposable barrel liner bag 106 is disposed within the barrel 12 and has an upper portion 108 thereof extending over the top edge 104, so that it may be held in place by engagement between the flange 32 and the edge 104 when the washer 10 is in position of use over the barrel 12. A substantial volume of the solvent 110 is held within the bag or barrel liner 106, to facilitate disposal of the solvent and eliminate the need for cleaning the barrel.

In the use of the device, the barrel liner bag 106, such as a polyethylene plastic bag, is placed within a standard barrel 12 and the solvent 110 placed therein. With the edges 108 of the bag overlying the barrel edge 104, the parts washer 10 is placed in position over the barrel 12. When it is desired to direct a stream of cleaning solvent at the parts for cleaning, the pump switch 76 is operated. Normally, the strainer 56 is in place, and the solvent drains from the parts through the opening 54 and passes into the barrel 12, through the filter material 38. The strainer 56 may be removed vertically from the opening 54, thus exposing the opening 54 in the bottom wall 40 of the sink 14. In this manner, the filter material 38 may be removed and replaced. If it is desired to soak the parts in the sink 14 for some time, the strainer 56 may be covered.

When it is desired to change the solvent, the washer 10 may be removed as a unit from the barrel, and laid aside while the bag 106 and solvent 110 are removed as a unit from the barrel 12. Thereupon, the liner 106 is replaced in the barrel 12 and filled with solvent, and the cycle is repeated. Since the pump and motor are rigidly supported in relation to the unit, no disassembly, or even unplugging of the cord 74, is required to change solvent. Accordingly, servicing the unit is an extremely straight forward and simple operation.

Since the filter body 22 is complementary in shape to the barrel 12, a secure fit of the washer 10 therein is assured, and the sink 14 is stable in use. Since the shaft 24 passes through

the filter body but not through the sink, the sink remains liquid tight. Preferably, the unit is designed so that a standard size barrel or drum, such as a 30-gallon drum, will fit therewith, and accordingly, the cost of providing a solvent container is nothing or is minimal.

It will thus be seen, by reference to the foregoing, that the present invention provides a simple, effective, and economical parts washer having a number of advantages and characteristics including those referred to above, and others which are inherent in the invention.

I claim:

1. A parts washer for cleaning mechanical parts and the like comprising, in combination, a filter body having a perforated bottom wall and an upstanding, generally circular side wall portion, said side wall portion defining an opening at the top of said filter body, a mounting flange extending outwardly from and at least partially around the exterior of said filter body, a parts washing sink disposed over and forming a cover for at least a portion of said opening at the top of said body, said sink including bottom front, side and rear wall portions, each joined to the bottom wall portion along a lower edge, rigid pump support means extending through said bottom wall portion of said filter body, a pump fixedly attached to the bottom of said pump support means, said pump having inlet and outlet means, and fluid conduit means having one end thereof attached to said outlet means and the other end thereof adapted to be disposed so as to direct fluid passing therethrough into said sink for washing parts disposed therein.

2. A parts washer as defined in Claim 1 which includes a cover unit hingedly mounted on said sink and adapted to move to a closed position thereof, said cover being held against downward movement under the influence of gravity by a fusible link.

3. A parts washer as defined in Claim 1 in which said fluid conduit extends through an upper portion of said rear wall portion of said sink assembly.

4. A parts washer as defined in Claim 1 in which said sink includes a drain opening therein communicating with said filter body and in which said drain opening includes a removable strainer element therein to provide ready access to filter material disposed in said mounting sink.

5. A parts washer as defined in Claim 1 in which said sink unit includes a lamp unit mounted thereon for illuminating said sink and parts contained therein.

6. A parts washer as defined in Claim 1 in which said fluid conduit is a flexible but self-sustaining conduit having a portion thereof disposed inwardly of the wall portions of said sink.

7. In combination, a parts washer as defined in Claim 1, and a solvent supply receptacle in the form of a standard cylindrical barrel disposed therebelow, said mounting flange being removably received over the top edge portion of said barrel.

8. A combination as defined in Claim 7 in which said standard barrel includes, on the inside thereof, a flexible, disposable fluid-tight barrel liner, said liner having the upper portions thereof folded over the exterior of said barrel and held in place between said mounting flange and said top edge of said barrel.

9. A parts washer as defined in Claim 1 which further includes a mounting bracket extending between said mounting flange and a portion of said sink, in which said rigid pump support means is fixed to said mounting bracket, and in which said bottom wall portion of said filter body closely surrounds said pump support means.

10. A parts washer as defined in Claim 1, in which said lower edge of said sink and a portion of the inner surface of said mounting flange define an opening at the top of the said filter body, and in which said conduit means and said pump support means extend through a portion of said opening.

11. A parts washer for cleaning mechanical parts and the like comprising, in combination, a bottom filter wall having a plurality of openings therein and adapted to support a mass of filter material thereon, a mounting flange for retaining said wall in position of use within a solvent container, means for

locating said bottom wall in a spaced apart relation from said mounting flange, a parts washing sink disposed over said mounting flange, rigid pump support means extending downwardly from said mounting flange and through a portion of said bottom wall, a pump attached to the bottom of said pump support means, said pump having inlet and outlet

means, and fluid conduit means having one end thereof attached to said outlet means and at the other end thereof adapted to be disposed so as to direct fluid passing therethrough into said sink for washing parts disposed therein.