Oct. 25, 1955 W. E. BRUCKER 2,721,566

PARTS WASHER

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Fig. 1

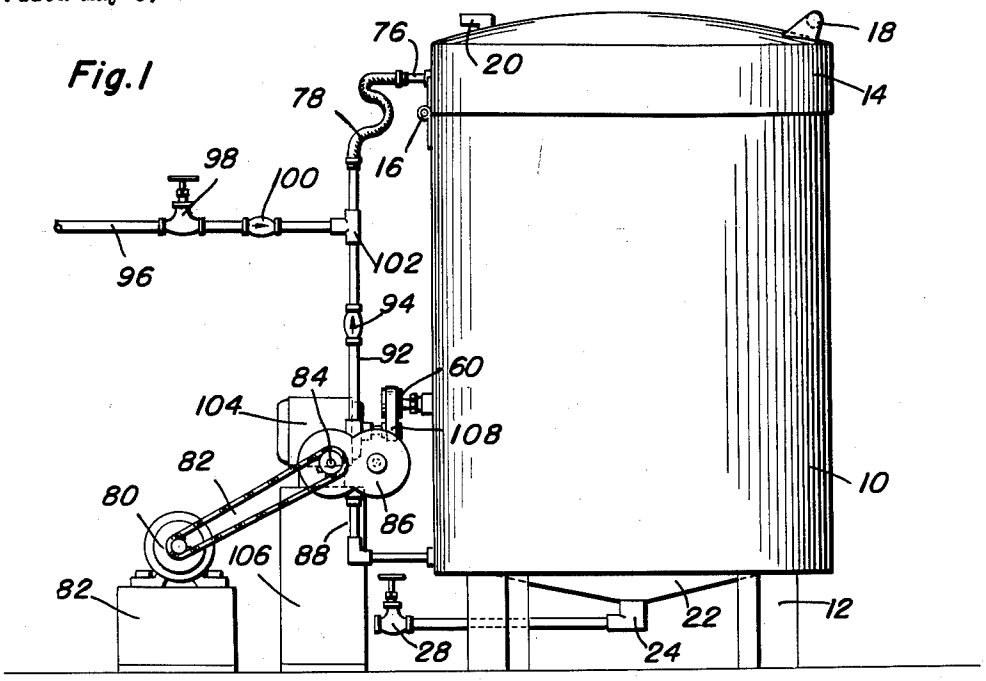


Fig. 5

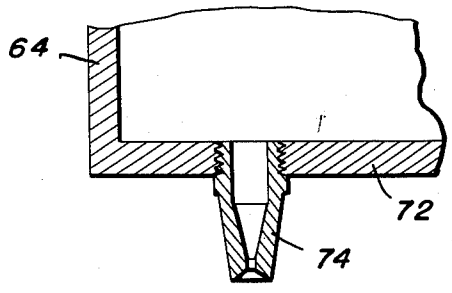
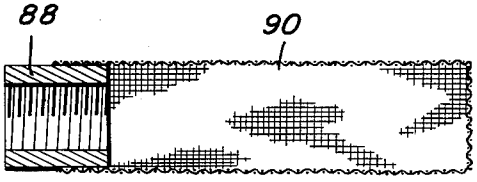


Fig. 6



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Fig. 2

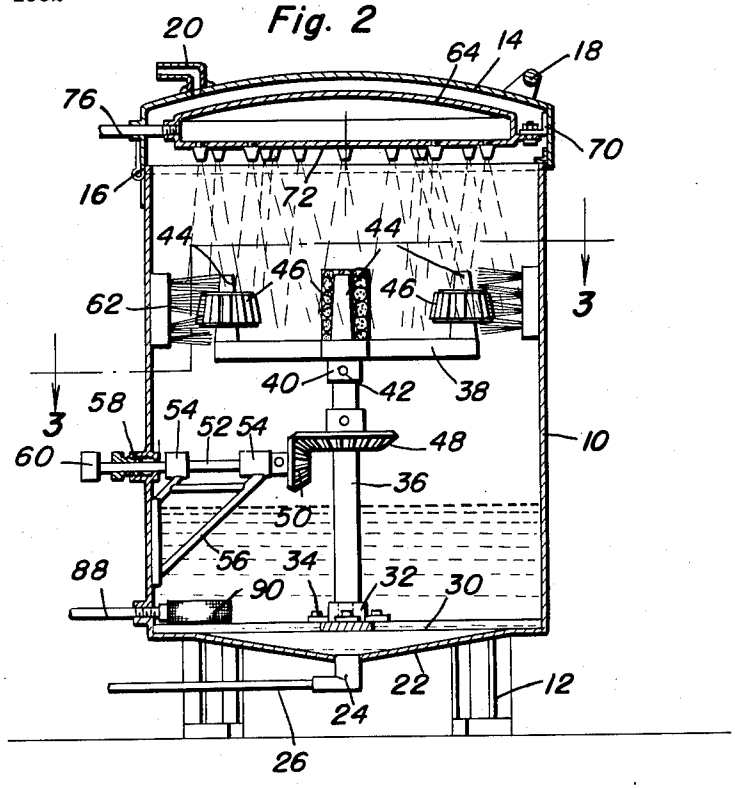


Fig. 3

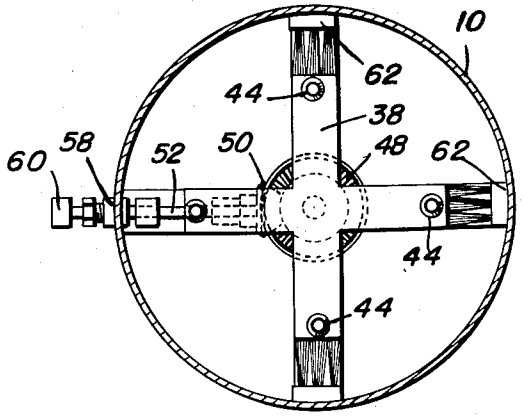
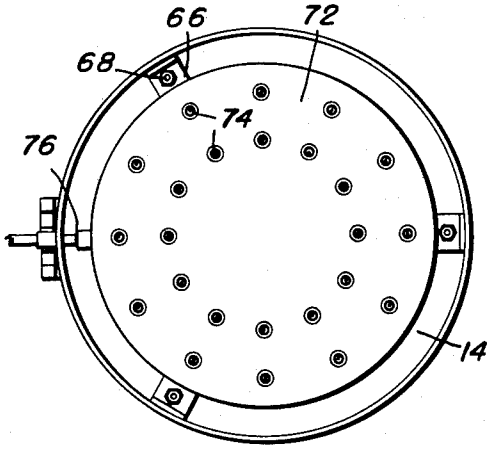


Fig. 4



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United States Patent Office 2,721,566
Patented Oct. 25, 1955

2,721,566

PARTS WASHER

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Application May 8, 1952, Serial No. 286,746

2 Claims. (Cl. 134—101)

This invention comprises novel and useful improvements in a parts washer and more specifically pertains to an apparatus for washing and cleansing certain machine parts such as bearings, gears and the like.

The primary object of this invention is to provide an apparatus for automatically and efficiently cleansing certain articles such as machine parts as for example, bearing assemblies and the like in an improved manner, and with a great saving of time and labor.

A further and more specific object of the invention is to provide a cleaning apparatus in accordance with the preceding object which shall be capable of either manual or power operation as desired.

A still further object of the invention is to provide a cleaning apparatus in conformity with the foregoing objects in which the cleansing operation is facilitated by moving the parts to be cleansed against stationary brush assemblies, subjecting the parts to a stream of cleasing fluid under pressure, and if desired drying the parts by impinging streams of air thereon.

An additional and important object of the invention is to provide a cleansing apparatus as set forth in these above mentioned objects in which the spraying assembly of the apparatus shall be compactly mounted in a removable closure member of the apparatus.

These, together with various ancillary features and objects of the invention, will later become apparent as the following description proceeds, are attained by the present invention, a preferred embodiment of which has been illustrated, by way of example only, in the accompanying drawings, wherein:

Figure 1 is a side elevational view showing a washing apparatus incorporating therein the principles of this invention;

Figure 2 is a vertical central sectional view through the apparatus of Figure 1, parts being shown mounted within the apparatus for cleansing thereby;

Figure 3 is a horizontal sectional view taken substantially upon the plane indicated by the broken section line 3—3 of Figure 2;

Figure 4 is a bottom plan view of the removable closure member of the apparatus showing the spray head assembly mounted therein;

Figure 5 is a vertical transverse sectional detailed view taken substantially upon the plane indicated by the section line 5—5 of Figure 2 and showing the manner in which a spray nozzle is mounted in the spray head of the assembly; and,

Figure 6 is a detailed view in vertical section showing a filter element immersed in the cleansing tank of the device.

Referring now more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, attention is directed primarily to Figures 1 and 2 wherein it will be seen that the washing and cleansing apparatus, forming the subject matter of this invention, includes a tank or similar receptacle **10** of any desired size, shape and capacity,

and which as illustrated may conveniently be mounted upon supporting legs **12**. This tank is preferably open at its upper end, and is provided with a closure member **14** which is hinged to the tank as at **16**. A handle **18** may be provided for lifting the closure or lowering the same, and the closure is further provided with an air escape or vent pipe **20** extending through the top of same.

The tank **10** is adapted to receive a cleansing liquid of any desired character and to any desired depth as may be found desirable in the use of the apparatus.

The bottom wall of the tank indicated at **22** is provided with a drainage fixture **24** having a drainage discharge pipe **26**, which as shown in Figure 1 may be controlled by a hand valve **28**.

A cross-shaped supporting platform **30**, see also Figure 3, is secured in any convenient manner in the bottom of the tank to overlie the downwardly sloping bottom wall **22**. A journaled bearing **32** of any desired character is removably secured as by fastening bolts or the like **34** to the cross-shaped supporting member **30**, and rotatably supports the lower end of a vertically extending axle or shaft **36** which is disposed axially of the tank and extends upwardly from the bottom wall thereof. Fixedly secured upon the upper end of the shaft **36** is a platform **38** which may conveniently consist of a cross-shaped member having any desired number of radially extending arms, this platform **38** having a hub portion **40** which is removably secured to the upper end of the shaft **36** as by a set-screw or the like **42**. At convenient positions upon the arms of the cross-shaped platform **38**, there are provided upwardly extending article holders **44** which may conveniently comprise conical or pyramidal standards or devices of any other desired character by which articles to be washed by the apparatus may be conveniently mounted, the device being specifically adapted to handle such articles as bearing assemblies which are indicated by the numeral **46**.

Fixedly secured in any suitable manner to the shaft **36** is a driven gear **48** which is continuously in mesh with a driving gear **50** carried by a horizontally disposed shaft **52** journaled in suitable bearings **54** carried by a supporting bracket **56** which is mounted upon the side wall of the tank or receptacle **10**. The shaft **52** extends through the side wall, passing through a suitable sealing or packing buoyant assembly **58** of any desired character and at its outer end is provided with a driving member **60**. It will now be evident that when power is supplied to the member **60** as set forth hereinafter, the shaft **36** will be rotated carrying with it the platform **38** and consequently the articles **46** mounted upon the article holders **44** will be rotated. It should be observed preferably these article holders are disposed adjacent the outer ends of the cross arms of the platform **38**, and when so positioned will be brushed against brushing members **62** which are secured to the walls of the tank in proper position for engagement by the article during rotation of the platform and shaft.

While in some instances, the rotation of the articles against the stationary brushes may be sufficient for thoroughly cleansing the articles, and especially if the level of the cleansing liquid in the tank is high enough to immerse the brushes and articles, I deem it preferable in other instances to employ a spraying device to assist in the cleansing operation.

For this purpose, a spray head **64** which is preferably drum-shaped and consists of a hollow body of any desired character, is provided with mounting lugs **66** which by means of bolts **68** are secured to the mounting bracket **70** provided upon the inside surface of the cover member **14**. This spray head is provided with a flat bottom wall **72**, see also Figure 5, in which are provided suitable

screw threaded apertures for receiving screw threaded spray nozzles **74** which thus depend downwardly from the head, and are arranged in concentric circles in position to direct spray downwardly upon the articles carried by the article holders upon the rotating platform. A pipe **76** is screw threadedly engaged into the spray head **64** and communicates with the interior of the same, and also extends through the side of the cover member **14**, and is connected by means of a flexible conduit **78** with a pressure supply means as set forth hereinafter.

By means of a flexible conduit, it is evident that the spray head assembly and the cover member may be opened or closed, as a unit, without interfering with the fluid connection to the spray head.

Reference is now made more particularly to Figure 1 wherein it will be seen that an electric motor **80** mounted upon a suitable supporting base **83** is connected by driving means such as a sprocket chain **82** with a driving shaft **84** by means of which a fluid pressure circulating pump of any desired character, indicated by the numeral **86**, is actuated. This pump has its intake side connected by a conduit **88**, extending through the side of the tank adjacent the bottom wall thereof, and communicating with the interior of the tank through a screen or filtering member **90**, see also Figure 6. The delivery side of this pump is connected by a conduit **92** and a non-return check valve **94** with the above mentioned flexible conduit **78**. By this means, cleansing fluid withdrawn from the bottom of the tank and extracted through the screen or filtering member **90**, is discharged under pressure by the pump **86** to the spray head and is sprayed downwardly upon the articles carried by the rotating platform. There is also provided an air supply conduit **96** by means of which air from any suitable source of pressure (not shown) is delivered past a manually operating control valve **98**, and a non-return check valve **100**, into a T-coupling **102** which is interposed in the conduit **92** between the latter and the flexible conduit **78**. By this means, air under pressure may be utilized either with the cleansing fluid or separately when the cleansing fluid pump **86** is not operating, and discharged to the spray head. When delivered with the cleansing fluid, the air will assist in finely dispersing the particles of the cleansing fluid, prior to their impingement upon the articles carried by the rotating platform. When used separately, however, the air supply will serve to quickly dry and remove from the articles moisture and dirt particles thereby facilitating the cleansing of the same.

A further electric motor **104** mounted upon a suitable base **106**, is provided with a driving wheel **108** which may frictionally engage the driving member **60** to rotate the same.

It will thus be seen that the rotation of the article supporting platform may be controlled independently of the operation of the pump. By this means, a variety of treatment and operations for cleansing and drying articles may be effected.

From the foregoing, the construction and operation

of the device will be readily understood and further explanation is believed to be unnecessary.

However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A parts cleaning device comprising a cylindrical tank for cleaning fluid, said tank including a bottom having a conically sloping central portion provided with a drain orifice for silt laden cleaning fluid, a supporting platform secured on said bottom, a shaft rotatably mounted on said supporting platform and extending coaxially within said tank, an article holding platform mounted on said shaft for rotation therewith, article holders on said article holding platform, means for causing rotation of said shaft, a cover for said tank, a spray head mounted in said cover, means for supplying under pressure liquid and air to said spray head simultaneously or separately selectively, spray nozzle carried by and communicating with said head for discharging fluid against the article holders on said article holding platform.

2. A parts cleaning device comprising a cylindrical tank for cleaning fluid, said tank including a bottom having a conically sloping central portion provided with a drain orifice for silt laden cleaning fluid, a supporting platform secured on said bottom and, a shaft rotatably mounted on said supporting platform and extending coaxially within said tank, an article holding platform mounted on said shaft for rotation therewith, article holders on said article holding platform, means for causing rotation of said shaft, a cover for said tank, a downwardly discharging spray head mounted in said cover for discharging spray against the article holders on said article holding platform, a valve controlled recirculation conduit having one end opening into said tank adjacent the bottom thereof and its other end opening in said spray head, a pump in said conduit for causing recirculation of liquid through said tank, spray head and conduit, and a valve controlled air pressure line connected to said conduit for admitting air to said conduit to recirculate with the recirculated liquid.

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