

Sept. 10, 1968

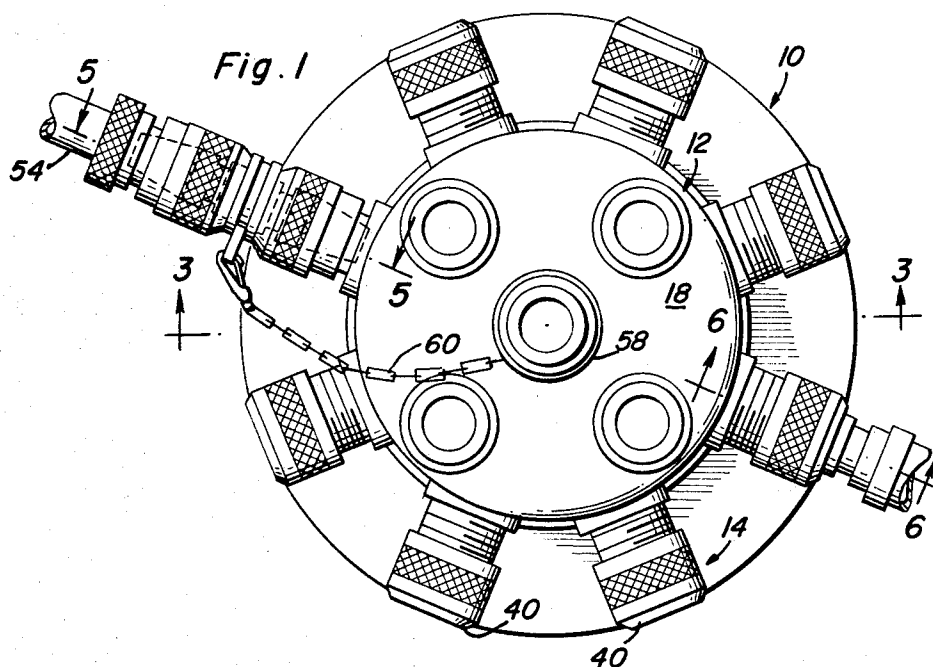
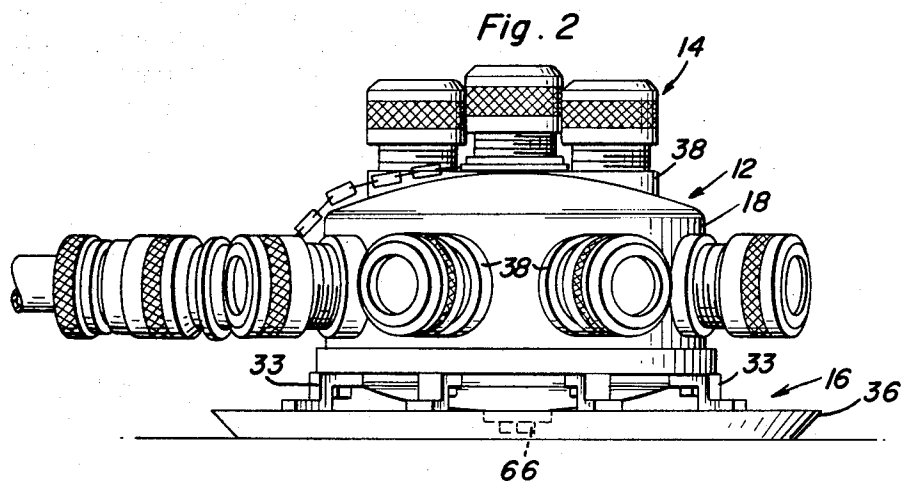
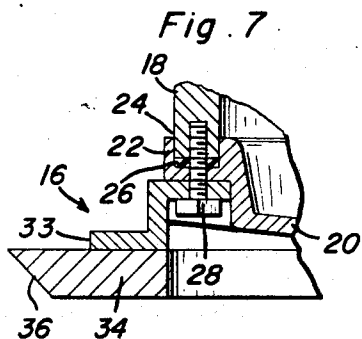
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3,400,732

MULTIPLE OUTLET RECEPTACLE

Filed Sept. 20, 1965

2 Sheets-Sheet 1



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Fig. 3

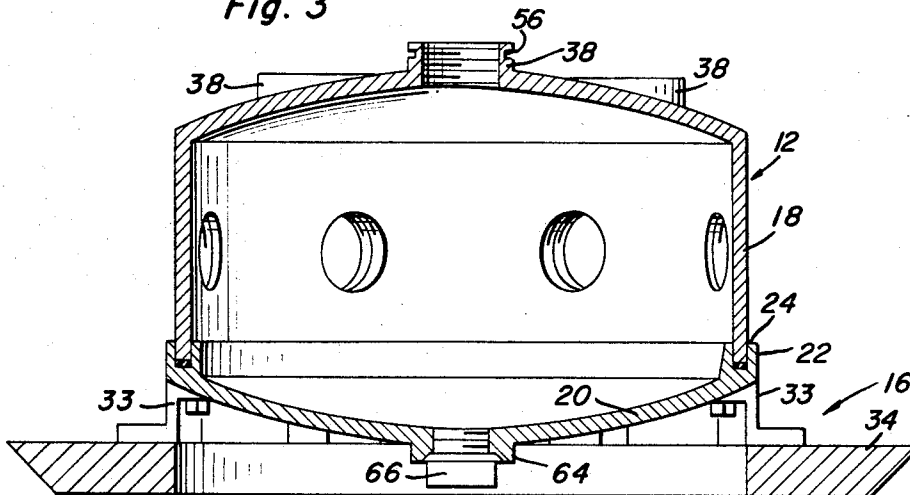


Fig. 5

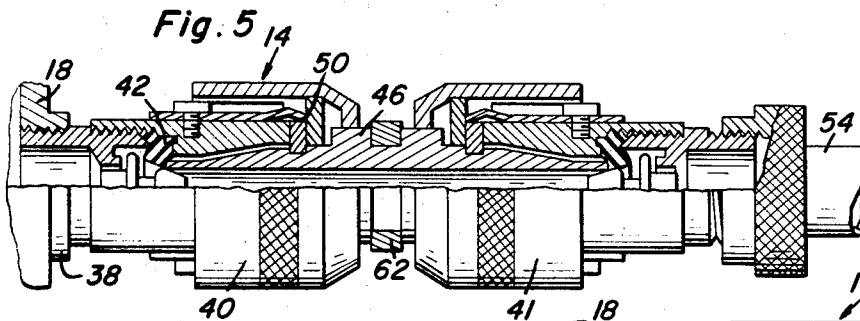


Fig. 6

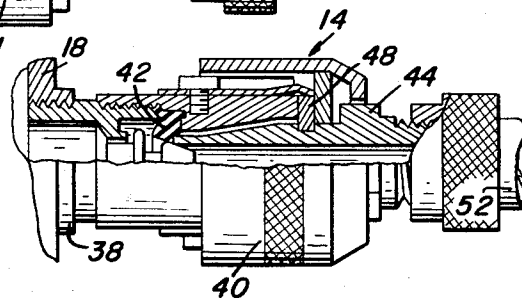
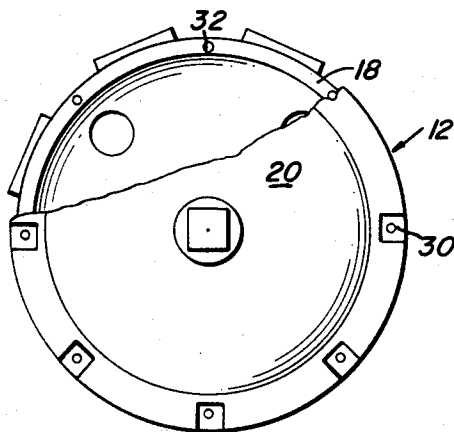


Fig. 4



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MULTIPLE OUTLET RECEPTACLE
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ABSTRACT OF THE DISCLOSURE

A multiple outlet pressure receptacle for connection to a source of fluid under pressure and provided with a plurality of quick-release valved outlet members whereby the multiple outlet pressure receptacle can be utilized to operate a plurality of fluid pressure operated devices from a single source of fluid pressure and wherein the multiple outlet pressure receptacle includes a support base, or skid, to facilitate movement of the pressure receptacle along a supporting surface.

This invention relates generally to apparatus utilized in conjunction with fluid pressure operated devices and more particularly to a multiple outlet receptacle adapted to permit operation of a plurality of fluid pressure operated devices such as air operated grinders, pneumatic hammers, etc. from a single conduit connected to a source of fluid under pressure such as provided by a compressor.

It is therefore an object of this invention to provide a multiple outlet receptacle for fluid pressure operated devices which includes a receptacle for pressurized fluid adapted to be connected to a source of fluid under pressure such as an air compressor, which receptacle is provided with a plurality of coupling members adapted to facilitate the simultaneous coupling of a plurality of supply lines for fluid pressurized operated devices to the receptacle.

Another object of this invention is to provide a multiple outlet receptacle for fluid pressure operated devices wherein the receptacle is provided with a plurality of selectively operable normally closed valved conduit couplings adapted to releasably retain fluid supply conduits in coupled relation thereto wherein the coupling of the conduit with the conduit coupling simultaneously opens the valve of the valved conduit coupling thereby pressurizing the receptacle.

A further object of this invention is to provide a multiple outlet receptacle of the class described wherein the receptacle is provided with a plurality of valved female couplings such as disclosed in Patent No. 2,102,774 to Williams, which receptacle is further provided with a double ended connector means adapted to facilitate connecting any one of the female outlet couplings to a pressurized fluid conduit terminating in a female coupling.

Still another object of this invention is to provide a multiple outlet receptacle adapted to facilitate the operation of a plurality of fluid pressure operated devices from a single source of pressurized fluid wherein the receptacle is preferably fabricated from mating sections to facilitate disassembly of the receptacle for cleaning and the like.

Still a further object of this invention is to provide a multiple outlet receptacle adapted to facilitate the simultaneous utilization of a plurality of fluid pressure operated devices from a single source of pressurized fluid wherein the pressurized fluid receptacle is provided with a support base adapted to facilitate moving the receptacle over a support surface.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accom-

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panying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a top plan view of a multiple outlet receptacle constructed in accordance with the present invention;

FIGURE 2 is a side elevational view of the device of FIGURE 1;

FIGURE 3 is a vertical sectional view taken substantially along the plane of the line 3—3 of FIGURE 1;

FIGURE 4 is a bottom plan view in reduced scale of the pressure vessel of the multiple outlet receptacle of FIGS. 1 and 2;

FIGURE 5 is an enlarged view of a preferred form of the coupling means used on the present device with portions shown in section along substantially the plane of the line 5—5 of FIGURE 1;

FIGURE 6 is an enlarged view of an outlet coupling of the multiple outlet receptacle with portions shown in vertical section taken substantially along the plane of the line 6—6 of FIGURE 1; and

FIGURE 7 is an enlarged fragmentary vertical sectional view showing certain details pertaining to the support base and pressure vessel of the multiple outlet receptacle of the present invention.

Referring now to the drawings and FIGURES 1 and 2 in particular an exemplary embodiment of a multiple outlet receptacle embodying the present invention is indicated generally at 10 and includes a pressure vessel indicated generally at 12 provided with conduit coupling means indicated generally at 14. The pressure vessel 12 is retained in spaced apart relation from a support surface by support means indicated generally at 16.

The pressure vessel 12 is preferably cast from an aluminum alloy or the like and is designed to withstand relatively high internal fluid pressures. The pressure vessel 12 is preferably cast in two sections comprising a top body portion 18 having a downwardly opening generally hemispherical configuration and a bottom body portion 20 having a generally dish-shaped configuration provided with an upstanding peripheral bifurcation indicated at 22 which bifurcation 22 provides a groove 24 adapted to receive the upper body portion 18.

A pressure type seal is provided between the upper body portion 18 and the bottom body portion 20 by a relatively rigid somewhat resilient gasket 26 as seen best in FIGURE 7. The body portions 18 and 20 are rigidly, yet removably, secured in assembled pressure-tight relation by a plurality of threaded fasteners or bolts 28 which are preferably equidistantly spaced about the periphery of the bottom portion 20 of the pressure vessel 12. The bolts 28 pass through suitable apertures 30 provided in the bottom body portion 20 and are threadably received in suitable threaded apertures 32 provided in the top body portion 18 of the pressure vessel 12.

As seen best in FIGURES 3 and 7, the fasteners 28 also provide a means of securing the support means 16 to the pressure vessel 12 by virtue of the fact that they also pass through suitable apertures in a plurality of Z-shaped support brackets 33 which in their assembled relationship project downwardly and outwardly from the pressure vessel 12. A support base 34 having a generally flat ring-like configuration is rigidly secured by means of welding or the like to the lower portion of the Z-shaped brackets 33. The support base 34 is preferably formed of relatively abrasion resistant material such as hard steel for example so as to resist abrasion as the multiple outlet pressure receptacle 10 is skidded along a support surface. In addition, the support base 34 is preferably beveled inwardly such as at 36 to assist in guiding the receptacle 10 over minor obstructions.

The top body portion 18 of the pressure vessel 12 is provided with a plurality of outwardly projecting general-

ly cylindrical bosses 38 and in the exemplary embodiment of the receptacle 10 illustrated the top body portion 18 is provided with eight bosses 38 on the upstanding wall thereof which bosses 38 are preferably equidistantly spaced about the periphery of the body portion 18 of the pressure vessel 12. In addition, the upper convex portion of the top body portion 18 is preferably provided with five bosses 38 as seen best in FIGURE 1. Each of the bosses 38 is provided with a concentrically disposed aperture which defines a through passage between the interior and exterior of the pressure vessel 12.

The conduit coupling means 14 comprises a plurality of valved, normally closed, conduit couplings 40 threadably received or otherwise rigidly secured in pressure-tight relation to the top body portion 18 of the pressure vessel 12. As seen best in FIGURES 5 and 6, the conduit couplings 40 are preferably of the type disclosed in Patent No. 2,102,774 to Williams, which conduit couplings 40 preferably include a normally closed resilient valve element 42 which may be selectively opened by the insertion of a male coupling member such as the male coupling members 44 or 46. The male coupling members 44 and 46 are releasably retained by spring biased detents 48 and 50 respectively. Accordingly, it may be seen that a conduit, either flexible or rigid in nature, may be placed in communication with the interior of the pressure vessel 12 by inserting a conduit such as indicated at 52 provided with a male element such as 44 into the conduit coupling 40, which it will be understood, of course, is a female coupling, thereby simultaneously opening the normally closed valve element 42 to place the conduit in communication with the interior of the pressure vessel 12 and simultaneously releasably locking the conduit 52 to any one of the conduit couplings 40 such as seen best in FIGURE 6. As will become apparent as the description proceeds, all but one of the conduit couplings 40 may be utilized to operate fluid pressure operated devices which are provided with conduits terminating in male coupling members such as coupling member 44.

The interior of the pressure vessel 12 may be pressurized by connecting to a suitable source of fluid under pressure such as provided by an air compressor, not shown, by means of utilizing at least one of the conduit couplings 40 as an inlet coupling. In the event that a conduit such as indicated at 54, which conduit is operatively connected to the discharge of an air compressor or pressurized fluid reservoir, terminates in a male coupling such as 44, the conduit 54 could be directly coupled to any one of the female couplings 40. However, in the event that the conduit 54 terminates in a female coupling 41, substantially identical to the female couplings 40, it is necessary to utilize a double-ended male connector such as the connector 46 in the manner shown in FIGURE 5.

As seen best in FIGURES 1 and 2, one of the upstanding bosses 38, preferably the centrally disposed one, is provided with a circumferential groove such as at 56 adapted to rotatably retain a spring steel split ring 58 to which is secured a flexible chain 60 which carries the split spring steel ring 62 which in turn is rotatably carried by the double ended male connector 46 as seen best in FIGURE 5, thereby assuring that the connector 46 is readily available as required.

As seen best in FIGURES 2 and 3, the bottom body portion 20 of the pressure vessel 12 is preferably provided with a centrally disposed apertured boss 64 within which is threadably received a pipe plug or the like 66, the threaded aperture within which the pipe plug 66 is secured may be utilized as a cleanout port or alternatively the plug 66 may be removed and the pressure vessel 12 provided with the conduit couplings 40 may be threadably secured to a rigid upstanding conduit connected to a suitable source of fluid under pressure provided by a device

such as an air compressor, for example, thereby providing a "permanent" multiple outlet receptacle station. It will be understood, however, that the multiple outlet receptacle 10 comprising the present invention is primarily intended for portable use wherein its pressurization from a source of fluid under pressure facilitates the operation of a plurality of fluid pressure operated art devices. It will be further understood, of course, that inasmuch as the valved couplings 40 are self-closing that when the conduit coupling 40 is actuated in a conventional manner to withdraw the spring detent, such as the detent 48 the valve member 42 will automatically close thereby sealing off the through passage in communication to the interior of the pressure vessel 12 until such time as a connector such as 44 is reinserted into locking engagement with the female conduit coupling 40.

Therefore, it will be seen that there has been provided a novel multiple outlet receptacle for the simultaneous operation of a plurality of fluid pressure operated art devices such as pneumatically operated drills, grinders, chipper hammers and the like from a single conduit connected to a suitable source of fluid under pressure such as provided with an air compressor or the like.

The foregoing is considered as illustrative only of the principles of the invention. Further, 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 and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A multiple outlet pressure receptacle comprising in combination a pressure vessel adapted to be connected to a source of fluid pressure, said pressure vessel being provided with conduit coupling means, said conduit coupling means including a plurality of valved selectively operable normally closed conduit couplings, at least one of said valve conduit couplings comprising a pressurized fluid inlet means, the remainder of said valve conduit couplings comprising pressurized fluid outlets, said valved conduit couplings being adapted to releasably receive inlet and outlet conduits provided with coupling members complementary to said conduit coupling means whereby said multiple outlet receptacle may be utilized to operate a plurality of fluid pressure operated art devices at a point spaced from a single source of fluid pressure, said pressure vessel including a body including a top and a bottom portion, fastener means releasably securing said top and said bottom portions in sealed relationship, a downwardly projecting support means adapted to maintain said pressure vessel in spaced apart relation from a supporting surface and adapted to facilitate movement of said pressure vessel along the supporting surface, and said support means comprising a plurality of downwardly projecting generally Z-shaped brackets, the upper portion of said Z-shaped brackets being removably secured to said pressure vessel by said fastener means, said support means including a generally flat support base ring rigidly secured to the bottom of said Z-shaped brackets.

2. The combination of claim 1 wherein said conduit couplings are selectively and rigidly positioned on said top portion of said pressure vessel.

3. The combination of claim 2 including an inlet conduit connecting means adapted to facilitate coupling of an inlet conduit to any one of said conduit couplings whereby pressurized fluid may be introduced into said pressure vessel, said conduit connecting means being secured to said pressure vessel by flexible means.

4. A multiple outlet pressure receptacle comprising in combination a pressure vessel adapted to be connected to a source of fluid pressure, said pressure vessel being provided with conduit coupling means, said conduit coupling means including a plurality of valved selectively operable normally closed conduit couplings, at least one of

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said valve conduit couplings comprising a pressurized fluid inlet means, the remainder of said valve conduit couplings comprising pressurized fluid outlets, said valved conduit couplings being adapted to releasably receive inlet and outlet conduits provided with coupling members complementary to said conduit coupling means whereby said multiple outlet receptacle may be utilized to operate a plurality of fluid pressure operated art devices at a point spaced from a single source of fluid pressure, a downwardly projecting support means maintaining said pressure vessel in spaced apart relation from a supporting surface to facilitate movement of said pressure vessel along the supporting surface, said support means including a generally flat support base ring rigidly secured to and spaced downwardly from said pressure vessel by a plurality of bracket members secured to said pressure vessel and said support base ring.

5. The combination of claim 4 including an inlet con-

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duit connecting means for coupling an inlet to any one of said conduit couplings whereby pressurized fluid may be introduced into said pressure vessel, said conduit connecting means being secured to said pressure vessel by flexible means.

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