

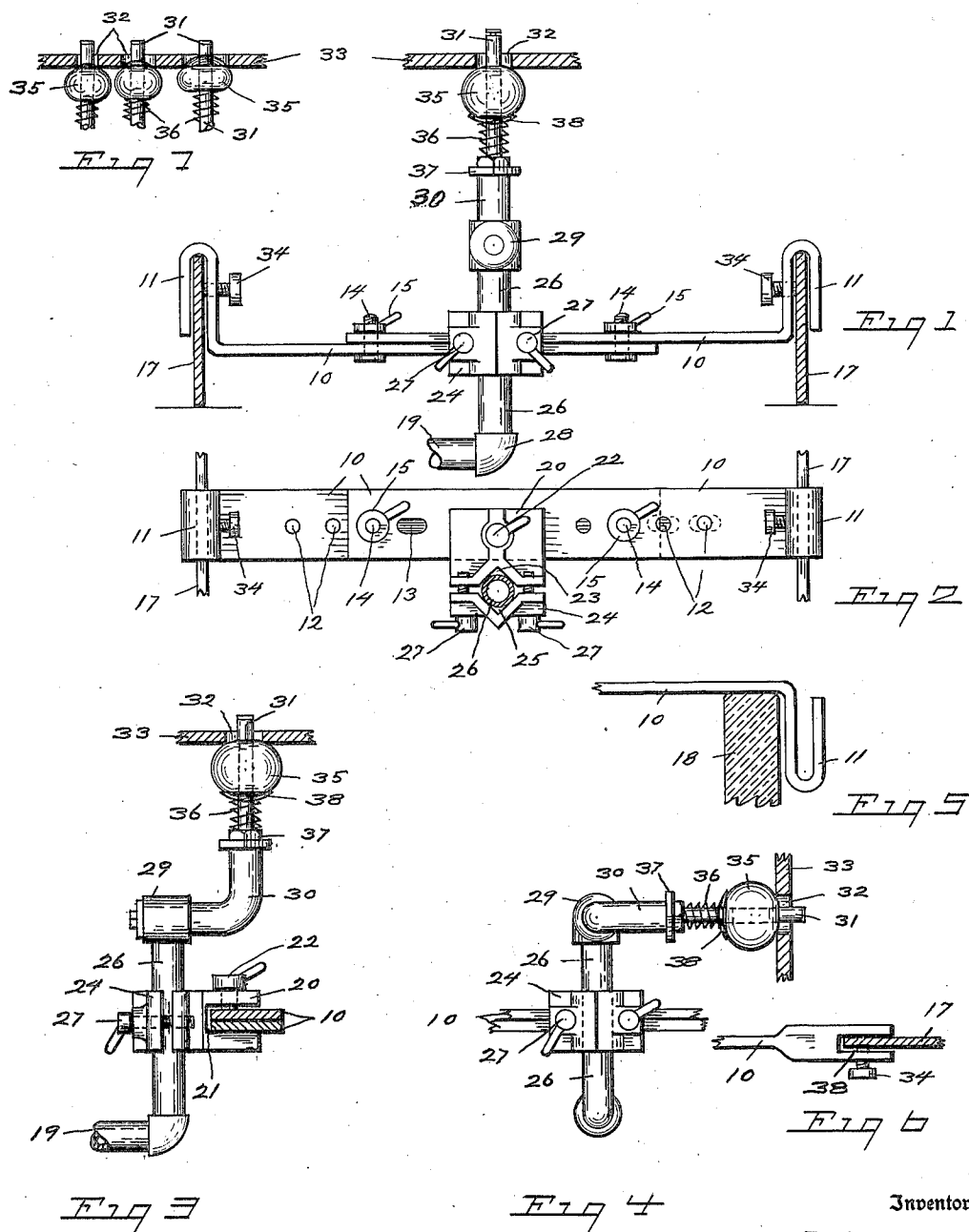
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ADJUSTABLE CLEANER STAND

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ADJUSTABLE CLEANER STAND

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This invention relates to a combined service hose nozzle for cleaning and flushing devices and the adjustable stand or support for retaining the same in operative relation with the automobile crank case or pan, and the device may also be used for many other purposes where a pipe has to be supported in an adjustable manner.

The present method is either to hold the nozzle of the service hose in the drain hole by hand, or to provide threaded bushings adapted to be threaded into the tapped drain hole, but this method requires a great quantity of bushings of different sizes, as nearly every make of automobile has a different size of drain hole, and also some of the drain holes are located in the side of the casing or pan and not in the bottom.

To prevent drip and loss of the cleaning fluid it is important that a tight joint be maintained between the nozzle and the drain hole, and also that the stand or support shall be adjustable to take care of the various heights of crank case from the ground, and various widths of greasing pits or elevators.

And further such a device must be readily and quickly adjustable and not require the attention of the attendant after being set in place.

In the present invention, all of these features have been taken care of and a simple device has been designed that shall be cheap to manufacture, durable and efficient, containing few parts and those rendering it fully adjustable.

With these and other objects in view my invention consists in certain novel construction and combination of parts as will hereinafter be fully described and claimed, and further illustrated in the accompanying drawing which forms a part hereof and in which like figures of reference refer to corresponding parts in all of the views, and it is understood that slight changes may be made without departing from the spirit of the invention.

In the drawing:

Figure 1 shows a front elevation of the device mounted upon the side plates of a greasing pit, with the nozzle of a service hose inserted into the bottom drain hole of a crank case, and effecting a tight joint therewith.

Figure 2 is a top plan view of the same.

Figure 3 shows a side elevation of the same with the supporting arms shown in section.

Figure 4 shows the application of the device to the side drain hole of a crank-case.

Figure 5 is a partial view of one of the supporting arms, showing the application of the device to the side wall of a greasing pit.

Figure 6 is a partial detail view of a similar supporting arm, but formed with a bifurcated end for engagement with a floor board or the like.

Figure 7 is a detail view showing the application of the stopper ball to drain holes having different diameters.

Referring to the drawing:

The device comprises a pair of supporting arms 10 which are shown as rectangular in cross-section, but which may be of any desired size and shape, and these arms 10 are formed upon one of their ends with a vertical hook 11, or return bend at right angles to the body portion and are provided with the set screws 34. This body portion is formed adjacent to the hooked end 11 with a series of spaced holes 12; and adjacent to the inner ends with a series of spaced slots 13 which when the arms 10 are assembled together, one upon the other as shown in the drawing, these holes 12 and slots 13 will register with each other and be adapted to receive the locking bolts 14 which are retained therein by the wing nuts 15.

In this manner the two parts of the arms 10 are retained together in an adjusted position with the hooked ends 11 in the proper position for engagement with the sides of the pit or the side plates 17.

For attaching the supporting means for the service hose 19 to this frame, there is provided a clamp 20 having a slot 21 formed in the rear thereof which is placed over the arm 10 and held thereon by a set screw 22 which is threaded into said clamp in such a manner that said clamp may be placed anywhere upon either or both of said arms 10.

The front of said clamp 20 is provided with a vertical V-slot 23 having a cap 24 also with a V-slot 25 for the reception of the pipe 26 of the service hose 19; the cap 24 being clamped upon the pipe 26 by the wing bolts 27 which are threaded into the body of the clamp 20 and pass through the cap 24; this construction allowing the pipe 26 to be moved for proper adjustment.

The lower end of the pipe 26 is provided with a fitting 28 to which the service hose 19 is attached, and the upper end of said pipe 26 is provided with a fitting 29 to which is attached in a freely swiveling manner the elbow pipe 30, so that said elbow pipe 30 may have free turning movement within the fitting 29 to allow the nozzle 31 to be moved into either a vertical or horizontal position, or upon any desired angle to enter drain holes either in the bottom or side as shown in Figure 4.

The upper end of this elbow pipe 30 has at-

tached thereto the nozzle 31, upon which is mounted a rubber ball 35 of larger diameter than that of the largest drain hole, and a coil spring 36 is also mounted upon the nozzle 31 between 5 the rubber ball 35, a washer 38 being placed between the ball 35 and the spring 36; while the other end of the spring 36 is in contact with the bushing 37 or collar on the nozzle 31.

10 It is understood that while the ball 35 is indicated as being of rubber, that it may be of any suitable resilient material that is oil proof, and that this ball may be readily renewed or replaced with another of a different diameter, or that these 15 balls may be of different shapes, such as cones, etc., to form a self-adjusting plug for the drain hole.

In the use of the device, the drain plug having been removed from the crank-casing drain hole 32, and the stand having been fitted to and supported upon the pit sides or upon the ground, the 20 nozzle 31 is inserted into the drain hole 32 and forced upward compressing both the rubber ball 35 and the spring 36, and bringing the ball 35 into tight engagement with the edges of the drain hole 32 to effect a tight joint. 25

The pipe 26 having thus been raised within the clamp 20, the cap 24 is then secured upon the pipe 26 by the bolts 27, and the device is ready for use.

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

1. In a combined support and injection device for crankcase cleaners, the combination with the 5 drain opening in the crank-case and the injection device including a nozzle, of means for adjusting the width of said support, means for adjusting the injection device upon the support both in a perpendicular and lateral manner, means for 10 varying the angle between the nozzle and the injection device, and self-adjusting means for effecting a tight joint between said nozzle and said drain opening.

2. In a device for conveying fluid to and from 15 a gear casing and in combination with the drain opening of the casing and a service pipe, of a support for said service pipe comprising an adjustable support formed with hooked ends having securing means, a clamp adjustably mounted 20 on said support and means for securing the same, means for adjustably securing said service pipe in said clamp, a nozzle mounted on said service pipe and adapted to swivel thereon, a resilient, self-adjusting plug carried by said nozzle, 25 and means for forcing said plug into the drain opening to effect a tight joint.

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