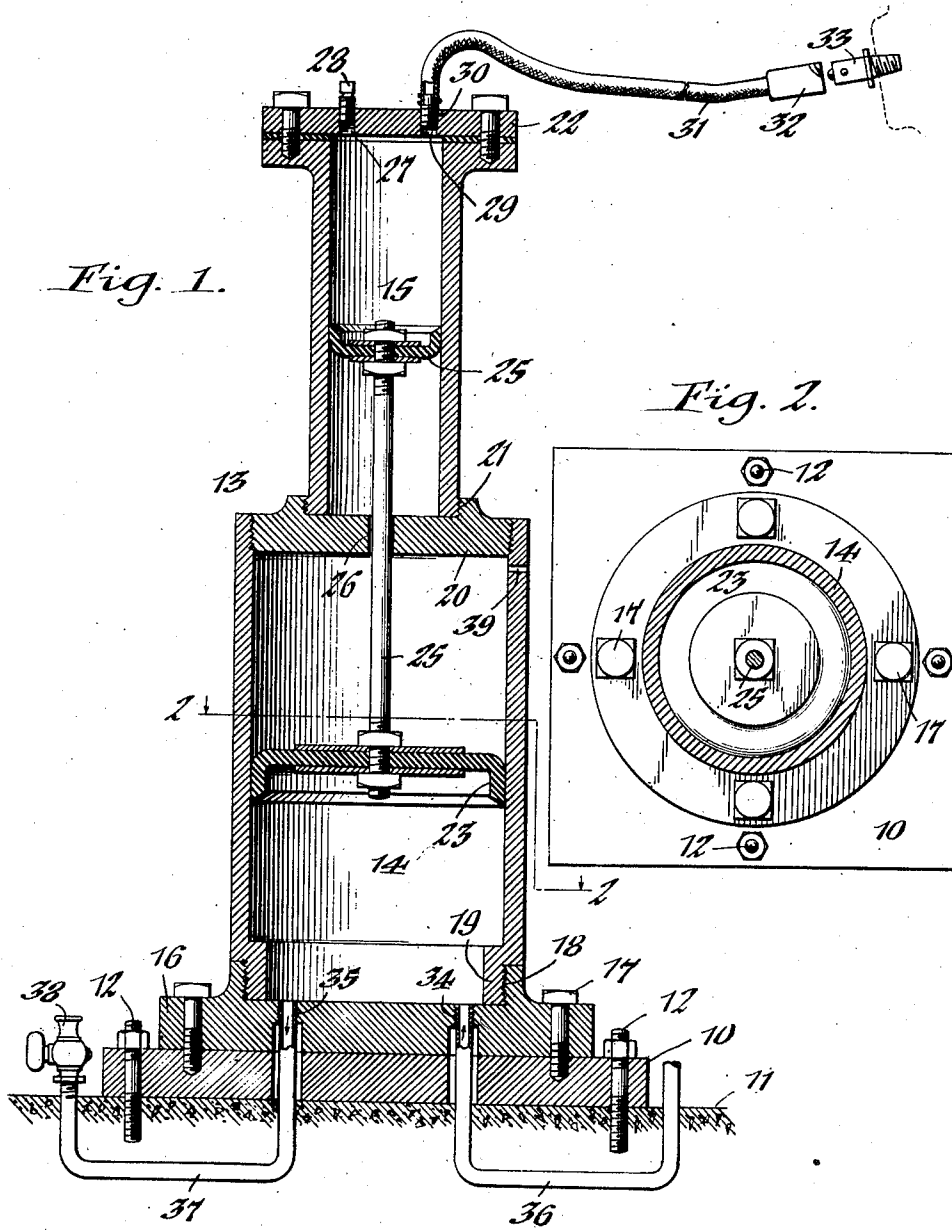


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H. J. BONEBERG
LUBRICATING APPARATUS
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LUBRICATING APPARATUS.

Application filed April 10, 1923. Serial No. 631,233.

To all whom it may concern:

Be it known that I, HAROLD J. BONEBERG, a citizen of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Lubricating Apparatus, of which the following is a specification.

This invention relates to a lubricating apparatus which is more particularly adapted for use in public garages for injecting grease into the various bearings of an automobile.

One of the objects of the invention is to provide a stationary apparatus of this character in which compressed air is employed for expelling the grease from the same.

Other objects are to provide a simple and inexpensive lubricating apparatus which is strong and durable in construction, and which is reliable and efficient in operation.

In the accompanying drawings: Figure 1 is a vertical longitudinal section of a lubricating apparatus embodying my improvements. Figure 2 is a horizontal section, on a reduced scale, taken in the plane of line 2-2, Fig. 1.

Similar characters of reference refer to like parts in both figures.

The improved lubricating apparatus is mounted on a fixed base or support 10 secured to the concrete flooring 11 by bolts 12 or other appropriate fastenings. The apparatus proper consists of an upright differential cylinder, designated generally by the numeral 13, including a comparatively large working or compression cylinder 14 and a somewhat smaller supplemental cylinder or barrel 15 surmounting the latter in axial alinement therewith and forming a container for receiving a lubricant, such as grease. The lower end of the working cylinder is closed by a flanged head 16 which also serves as a means for fastening the apparatus to the base 10, bolts 17 being employed for this purpose. This flanged head is preferably provided in its upper side with a threaded socket 18 and the opposing end of the cylinder 14 has an externally-threaded neck 19 adapted to engage said socket. Interposed between the opposing upper and lower ends of the respective cylinders 14, 15 is an intermediate head or partition 20 which is externally threaded, as shown in Fig. 1 for securing it in place in the top of said first-named cylinder. In its upper side the intermediate head is provided with an internally-

threaded socket 21 in which the lower end of the upper cylinder 15 is seated. The latter is closed at its top by a suitable head 22 bolted or otherwise fastened to its flanged upper end.

Operating in the differential cylinder is a differential piston including a main piston 23 and an auxiliary piston 24 arranged for sliding movement in the cylinders 14 and 15, respectively. These pistons may be cup-shaped and are connected to move in unison by a rod 25 which passes freely through an opening 26 in the intermediate head 20.

The upper head 22 of the grease cylinder is provided with a filling opening 27 normally closed by a screw-plug 28 or other closure and a discharge passage 29 in which a suitable coupling 30 may be located for attaching thereto one end of a flexible hose 31. The other end of the latter is shown provided with a hollow coupling 32 adapted to be removably fitted over a bearing nipple 33 of well known construction. An example of the type of hollow coupling employed is shown in United States Letters Patent No. 1,365,984, dated January 18, 1921 and granted to Arthur V. Gullborg.

The lower head 16 of the compression cylinder 14 is provided with an inlet 34 for admitting air under pressure and an air outlet or exhaust 35. Conduits 36, 37 are applied to the inlet and outlet, respectively, the former being adapted for connection with an air compressor, not shown, while the latter is provided at its end with a pet cock 38.

In order to permit the apparatus to function properly, the cylinder 14 is provided near its upper end with a vent 39.

In filling the grease barrel 15, the pet cock 38 is opened and the plug 28 in the upper head 22 is removed, after which grease is injected into said barrel under pressure. Upon completing this operation, the pet cock is closed and the plug is screwed into place, thus rendering the apparatus ready for use.

An automobile requiring lubrication is brought within reach of the lubricating apparatus and compressed air is admitted to the working cylinder of the latter which acts on the piston 23 therein to move it upwardly, the piston 24 moving in a corresponding direction and forcing the grease from the barrel 15 into the flexible conduit 31 and thence into the bearing requiring lubrication. The differential arrangement of the cylinder and piston results in the dis-

charge of the grease from its barrel at a comparatively high pressure, thereby insuring a thorough lubrication of all the bearing points.

5 The capacity of the grease barrel is such that several automobiles may be lubricated from a single charge of grease. Furthermore, the work of the operator is reduced to a minimum, it being only necessary for him
10 to connect and disconnect the hose 31 to and from the bearing nipples, as the grease is expelled automatically from the barrel. In addition to these advantages, this lubricating apparatus is very strong and durable
15 in construction, its parts being so organized that they may be readily dismembered when necessary.

I claim as my invention:

20 A lubricating apparatus of the character described comprising a supporting base, a working cylinder mounted on said base, said cylinder being internally threaded at its upper end and provided at its lower end

with an externally-threaded neck, a head for the lower end of said cylinder attached to the supporting base and having a threaded
25 socket in its upper side for receiving the threaded neck of said cylinder, a supplemental cylinder closed at its upper end surmounting said main cylinder and forming
30 a container for the lubricant, an intermediate head located between the opposing ends of said cylinders and engaging the threaded end of the main cylinder, said intermediate
35 head having a socket in its upper side for receiving the lower end of said supplemental cylinder, pistons slidable in said cylinders, and a rod connecting said pistons and passing through an opening in the intermediate
40 head, the closed upper end of said supplemental cylinder having a grease-filling opening and a grease-discharge opening, and the lower head of said main cylinder having an inlet for compressed air and an air outlet.

HAROLD J. BONEBERG.