

May 16, 1933.

C. R. BUCHET

1,908,685

CAR LIFT AND GREASING DEVICE

Filed Jan. 25, 1930

3 Sheets-Sheet 1

Fig. 1

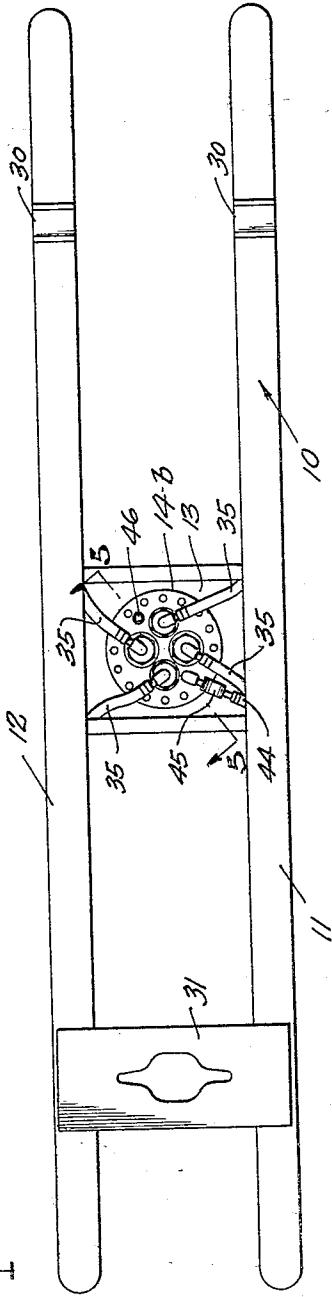
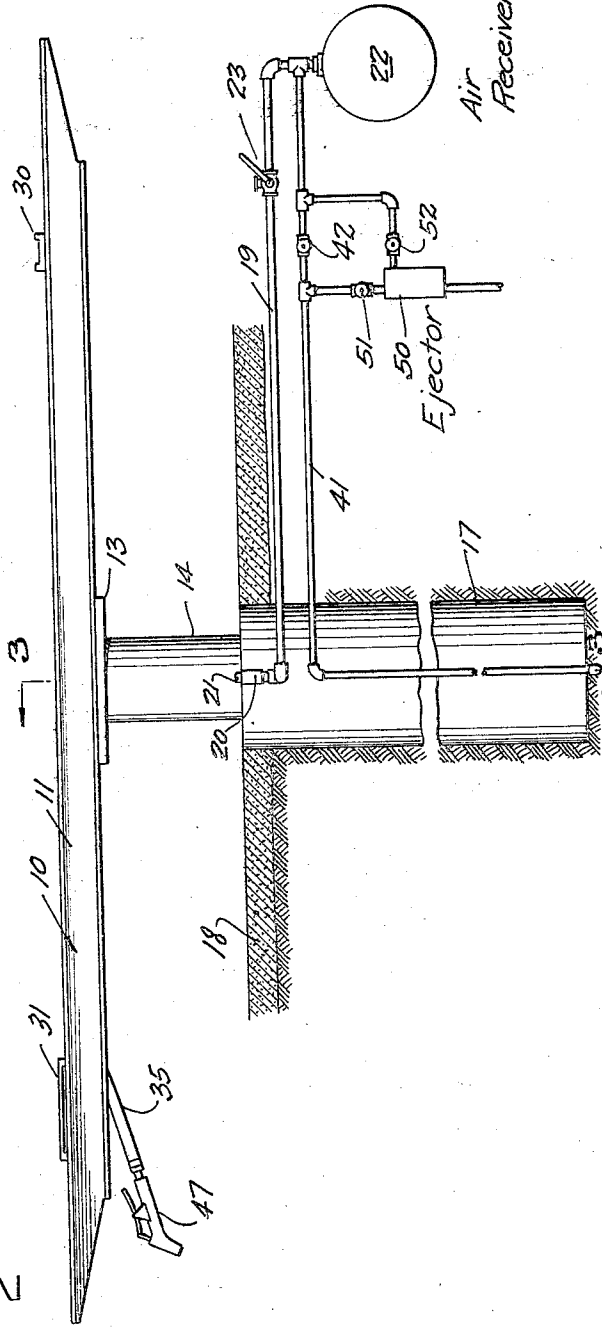


Fig. 2



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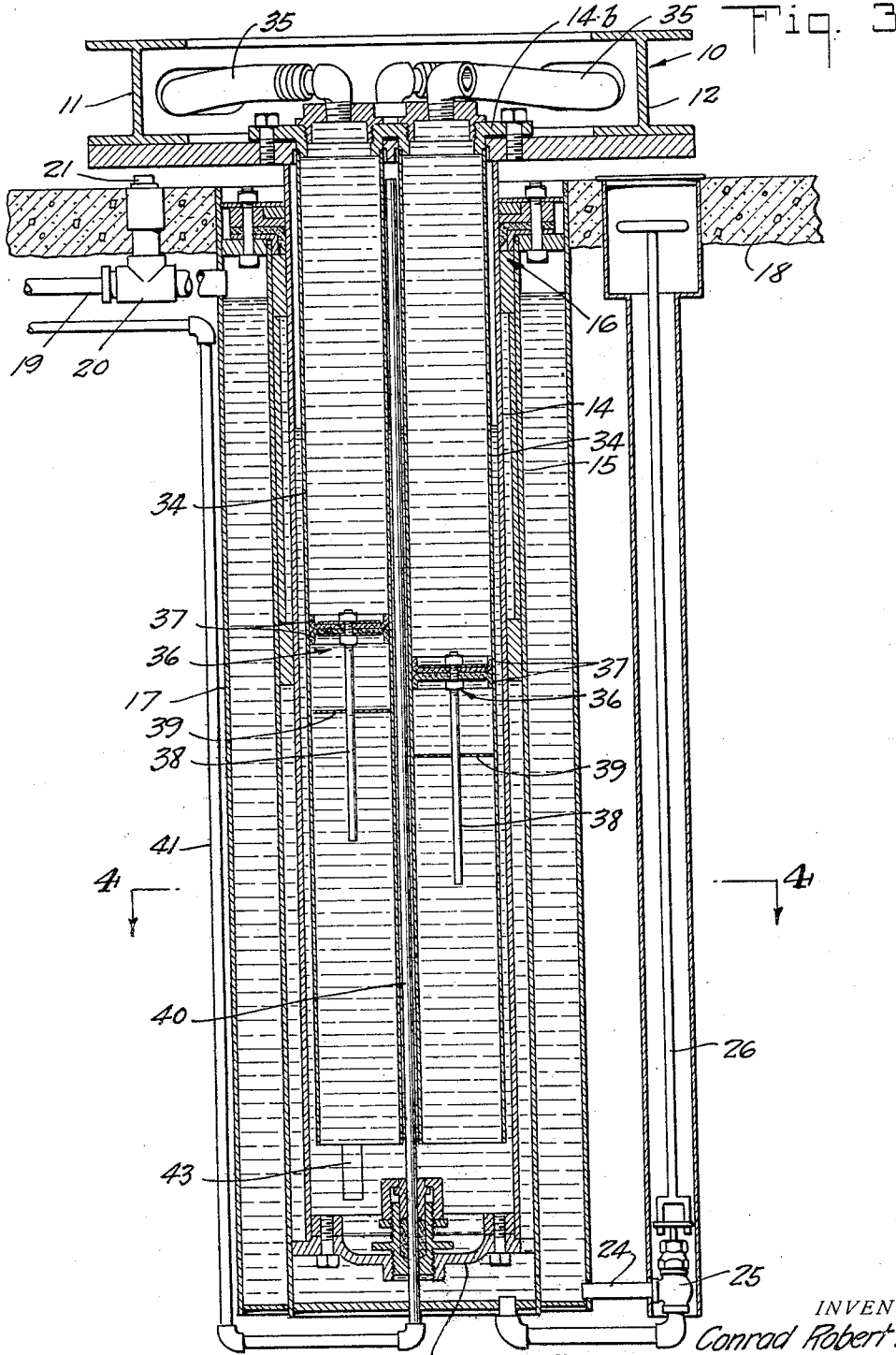


Fig. 3

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Fig. 4

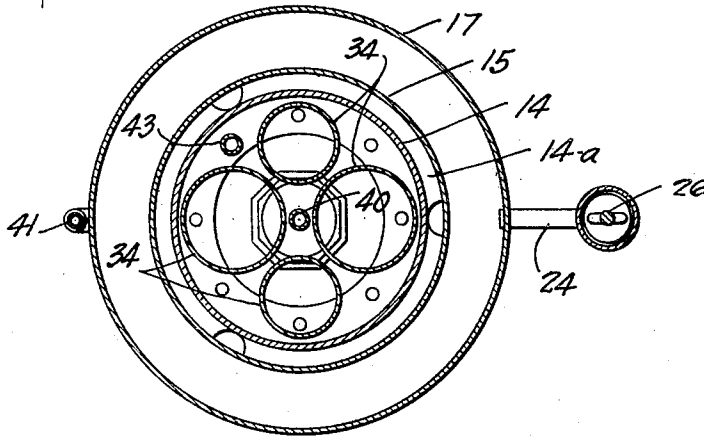
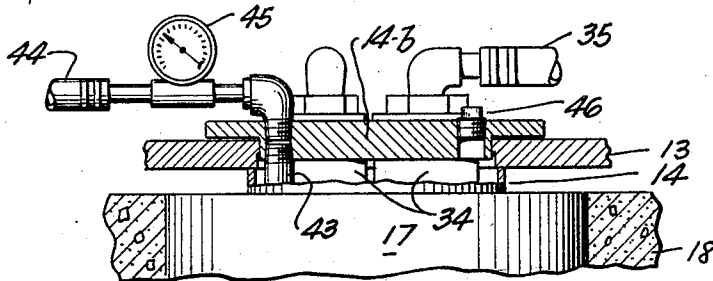


Fig. 5



INVENTOR  
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## UNITED STATES PATENT OFFICE

CONRAD ROBERT BUCHET, OF LOS ANGELES, CALIFORNIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO ADJUSTO EQUIPMENT COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA

## CAR LIFT AND GREASING DEVICE

Application filed January 25, 1930. Serial No. 423,297.

This invention relates to a device for elevating an automotive vehicle a distance above ground to allow convenient access to its running gear, such as for purposes of lubrication, inspection and repair. Such devices sometimes use mechanical means for lifting the car, but often employ hydraulic means, and it is to this latter type that this invention appertains. Different lubricants are used at different points on a chassis and it has heretofore been the custom to provide a locker for storing these. It is a primary object of this invention to provide a car lift in which the lubricants used may be housed and in which the greasing appliances form an integral part of the structure. Other objects include the provision of such a device which is safe and convenient to use and which may be economically constructed and installed.

These objects together with other objects and corresponding accomplishments are obtained by means of the embodiment of my invention illustrated in the accompanying drawings in which:—

Fig. 1 is a plan view of a car lift and greasing device built in accordance with my invention and installed ready for use; Fig. 2 is a side elevation partly diagrammatic of the structure shown in Fig. 1; Fig. 3 is a section on an enlarged scale as seen on line 3—3 of Fig. 2; Fig. 4 is a section as seen on line 4—4 of Fig. 3; and Fig. 5 is a section on an enlarged scale as seen on line 5—5 of Fig. 1.

Referring with more particularity to the drawings, a structural iron frame work 10, comprising a pair of parallel beams 11 and 12 attached to a center plate 13, is secured to a hollow plunger 14, slidable within a cylinder 15, suitable guiding and sealing means generally denoted by 16 being provided at the upper end of the latter. Cylinder 15 is secured within a second cylinder 17 preferably placed in the ground with its top flush with a concrete slab 18, laid on top of the ground. Cylinder 17 forms an oil reservoir, the space between it and cylinder 15 being filled with oil to the level of the air inlet pipe 19. This latter is provided with a T

20 and plug 21 for replenishing the oil supply for lifting. Pipe 19 is connected to an air receiver 22 (see Fig. 2) which may be connected to an air compressor (not shown) and is provided with a three-way valve 23. At the bottom of the reservoir is a discharge pipe 24 connected to the bottom of cylinder 15 through a needle valve 25, arranged to be conveniently manipulated by a rod 26 leading to the surface of slab 18.

The operation and use of a device as just described is well known. The frame 10 is lowered to the ground and the car driven astraddle over it until the front axle is positioned over blocks 30 and the rear axle over plate 31. The valve 23 is then manipulated to admit air pressure to the surface of the oil in reservoir 17. The oil is forced out of the reservoir through pipe 24 and valve 25 into cylinder 15 beneath the head 14a of the plunger, serving to raise the plunger and frame with the car thereon. When the car reaches the desired height, valve 23 is closed, locking the air pressure in the reservoir and holding the plunger elevated. When it is desired to lower the car, valve 23 is opened to the atmosphere, allowing the air from reservoir 17 to escape and permitting the oil to return from cylinder 15 through pipe 24 into the reservoir. Valve 25 serves to regulate the speed at which oil passes from the reservoir to the cylinder or vice versa and accordingly the speed at which the plunger is raised or lowered, and the valve opening is adjusted by rod 26.

The upper end of plunger 14 is closed by a head 14b held in position by cap screws and having secured to it a plurality of tubes 34, extending nearly to the bottom of the plunger. The head has an opening over each tube, closed by a plug provided with an elbow to which is attached a hose 35. These are adapted to lay along the side members 11 and 12 of the frame. Each of tubes 34 has a plunger 36 formed with two cup leathers 37 secured on a travel limiting rod 38 and guide plate 39. Extending through a packing gland in head 14a is an air tube 40, reaching nearly to the top of the plunger when it is in its lowered position. Piping 41 serves to

connect this air tube with the air receiver 22, a control valve 42 being provided. A pipe 43 is secured in head 14b, extending nearly to the bottom of the plunger, and has a hose 44 similar to hoses 35 connected to it, a metering device 45 being interposed. A plug 46 is mounted in head 14b, permitting access to the inside of the plunger for replenishing the cylinder 15 with gear oil.

Each hose is provided with a valve or other means to control the outflow of fluid through it, those on the hoses 35 being of a type to coact with greasing connections usually provided on automotive vehicles and preferably including a "booster" as indicated by 47. Such devices being well known in the art and forming no part of the present invention will not be further described.

The operation of the car lift having been previously described, the operation of the greasing device will now be described. Each of tubes 34 is filled with a desired lubricant, such as cup grease or universal joint grease, plungers 36 being at the bottom, the filling being done by removing the plugs in head 14b. The space within the plunger surrounding tubes 34 is filled with gear oil by removing plug 46. Air pressure is then admitted by opening valve 42. Obviously, the pressure will be applied to the gear oil and to the grease within tubes 34, plungers 36 serving to separate the liquids. Oil or grease may now be discharged as desired by manipulating the valves at the ends of the hoses, previously described.

To conveniently return plungers 36 to their initial positions when it is desired to replenish the grease in tubes 34, an ejector 50 is provided. By closing valve 42 and opening valves 51 and 52, a partial vacuum may be created in plunger 14 (below plungers 36) which will cause the latter to travel downward.

It will be noted that withdrawal of lubricant from any of the lubricant chambers will not affect the elevation of the hoist or device. The fluid transmission system for lifting is unaffected by withdrawal of lubricant and vice versa. However, the parts are grouped and interrelated to form a compact unit, in which the cylinder 17 constitutes a reservoir cylinder for motive fluid, cylinder 15 a hydraulic jack cylinder and tubes 34 grease dispensing cylinders.

What I claim is:—

In a car lift and grease dispenser wherein there is a reservoir cylinder for motive liquid, a hydraulic jack cylinder disposed within said reservoir cylinder, a hollow plunger reciprocatingly mounted within said hydraulic jack cylinder, said plunger being partially filled with lubricating liquid, means on said plunger to engage a car to lift the latter: the combination of said hydraulic jack cylinder and said plunger; a plurality of dispensing

cylinders within said plunger and open at their lower ends to the space within said plunger, floating pistons in said dispensing cylinders influenced to move by pressure applied to the lubricating liquid in said plunger and to discharge lubricating liquids contained in said dispensing cylinders, means to supply a motive fluid under pressure to the lubricating liquid contained in the bore of said plunger and to withdraw said motive fluid, and selectively operable controllable means for controlling the discharge of liquid from said dispensing cylinders by action of said pistons thereon and from said hollow plunger.

In witness that I claim the foregoing I have hereunto subscribed my name this 10th day of January, 1930.

CONRAD ROBERT BUCHET.