Dec. 29, 1925. 1,567,203

C. STEINKAMPER

JACK

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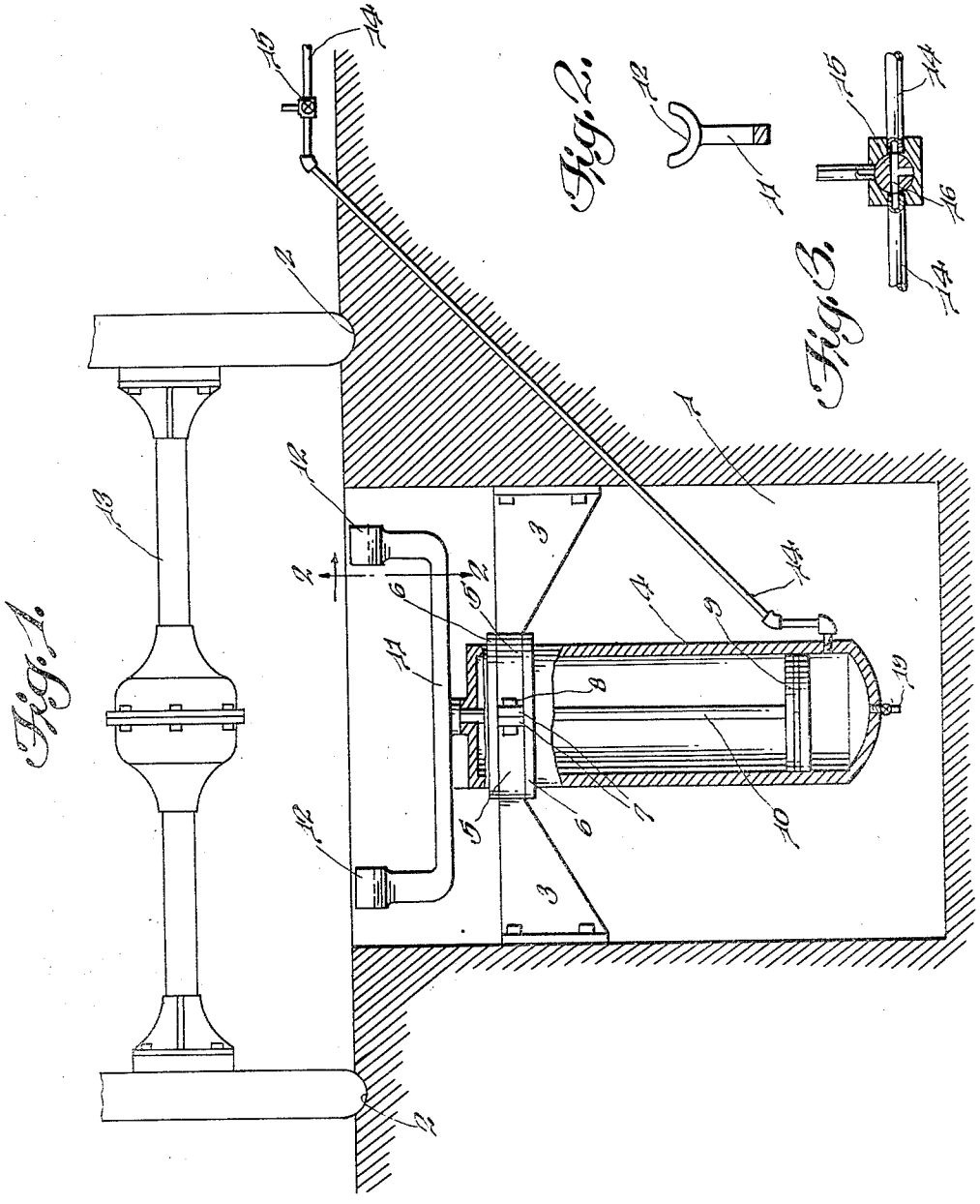


Fig. 1.

Fig. 2.

Fig. 3.

INVENTOR.
Carl Steinkamper
BY Arnold W. Ehrlich

ATTORNEY.

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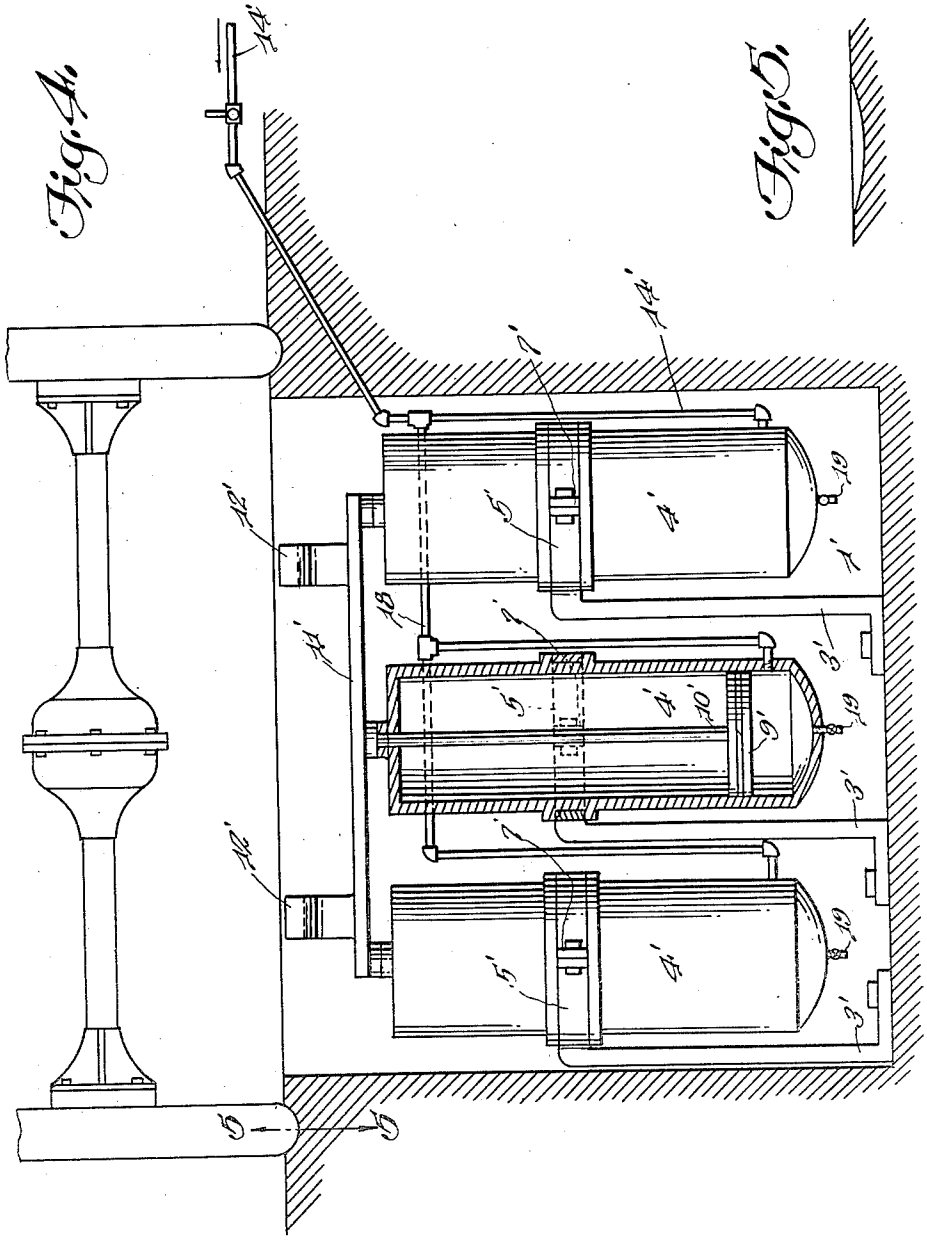
C. STEINKAMPER

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Fig. 4.

Fig. 5.



INVENTOR.

Carl Steinkamper

BY Arnold & Brlick

ATTORNEY.

Patented Dec. 29, 1925. 1,567,203

UNITED STATES PATENT OFFICE.

CARL STEINKAMPER, OF CHICAGO, ILLINOIS.

JACK.

Application filed January 5, 1925. Serial No. 691.

To all whom it may concern:

Be it known that I, CARL STEINKAMPER, a citizen of the United States, residing at 1430 Wellington Avenue, Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Jacks, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to new and useful improvements in jacks and more particularly to a jack operated by fluid pressure which is especially adapted for use in raising motor vehicles and the like for doing repair work. The main object of the present invention is the provision of a fluid operated jack which is disposed beneath the surface upon which the vehicle is positioned so that either end of the vehicle may be moved to a raised position through engagement of the jack with the axles of the vehicle.

Another object of the invention is the provision of a fluid operated jack which may be readily operated by a single person and is so positioned that the same may be readily engaged with either axle of the vehicle for raising either end of the vehicle, and in addition thereto suitable means may be provided whereby the vehicle is retained in proper position for engagement by the jack.

With the above and other objects in view the invention consists in the novel features of construction, the combination and arrangement of parts hereinafter more fully set forth, and pointed out in the accompanying drawings, in which,

Figure 1, is a vertical section through the device, parts thereof being illustrated in cross section.

Figure 2, is a detail transverse section on the line 2—2 of Figure 1.

Figure 3, is a longitudinal section through the control valve.

Figure 4 is an elevation, partly in section, of a modified form of the invention, and

Figure 5, is a detail section on the line 5—5 of Figure 4.

In carrying out my invention it is preferred to have a suitable pit 1 formed in the earth beneath a garage floor, or positioned beneath the second floor of an enclosure, or on the other hand this pit may be formed in the earth outside of an enclosure, but it is preferred to have the same located within an enclosure to protect the same from the weather. Upon opposite sides of the pit 1 I form receiving cavities 2 of such size and shape that the ordinary sized pneumatic vehicle wheel may be readily positioned therein and retain the vehicle in proper position so that one of the axles thereof may be readily engaged by the lifting jack.

Secured to opposite walls of the pit 1 and arranged in opposed relation are the brackets 3 which are designed to support the cylinder 4 by having the arcuate arms 5 formed on the inner ends of the brackets and positioned between the annular ribs 6 formed on the cylinder. The ends of the arms 5 are provided with perforated ears 7 adapted to be arranged in abutting relation and securely connected by means of the clamping bolts 8.

Mounted for reciprocating movement in the cylinder 4 is the piston 9 having the rod 10 connected thereto and extending through the upper end of the cylinder. The outer or upper end of the rod 10 has a cross arm 11 attached thereto and each end of the arm 11 has an arcuate bearing member 12 arranged thereon which is adapted to engage with the axle 13 of a vehicle positioned above the pit. In order to actuate the piston 9 a supply pipe 14 is connected to the lower end of the cylinder at a point beneath the piston when the same is positioned at the completion of its inner stroke so that fluid pressure may be admitted to the cylinder for raising the piston therein and consequently raising the cross arm 11. The pipe 14 may be connected to any suitable source of supply and positioned therein is a three-way valve 15 for controlling the supply of fluid to the cylinder.

In Figure 1 the device is illustrated as ready for use and when it is desired to raise the arm 11, the valve 15 is moved to bring the longitudinal bore 16 therein into alignment with the two sections of the pipe 14 upon opposite sides of the valve so as to permit the fluid pressure to enter the cylinder 4 and move the piston 9 upwardly therein. When the piston has reached the limit of its upward stroke, or the vehicle has been raised as far as desired, the fluid pressure is cut off. When it is desired to lower the arm 11, the valve 15 is rotated to permit the escape of pressure, from the cylinder, through the outlet 17 which communicates

with the longitudinal bore 16, thus allowing the fluid pressure to be relieved from beneath the piston 9.

From the above it will be readily apparent that I have provided a simple and efficient device which can be quickly and readily operated for raising and lowering vehicles by the use of fluid pressure and the simplicity of operation permits of the same being readily operated by a single person.

In Figure 4 I have illustrated a slightly modified form of the invention with the same principle of operation involved, but illustrating the use of a number of cylinders and piston rods operating for raising and lowering a single cross arm. This form of the invention is especially adapted for use on heavy trucks and the like wherein the weight is such as to require a heavy fluid pressure and also requires the distribution of the raising power instead of resting all the weight on a single piston rod.

In Figure 4 it will be noted that I have shown three cylinders 4′ having pistons 9′ working therein and having rods 10′ connected thereto, the upper ends of which project through the upper ends of the cylinders. The rod 10′ of the center cylinder has attached to its upper end a cross arm 11′ and the upper ends of the rods 10′ in the end cylinders are attached to the cross arm 11′ at a point adjacent each end thereof, with bearing members 12′ carried by the upper surface of the cross arm at a point adjacent each end thereof. The cylinders 4′ are supported in the pit 1′ by means of the brackets 3′ which are attached to the floor of the pit and engaged with the central portions of the cylinders in almost the same manner as in the preferred form of the invention.

Each bracket 3′ has an arcuate arm 5′ at its upper end adapted to engage between the annular ribs 6′ on the cylinders 4′ and connected to the ends of the arms 5′ are the clamping members 7′. The supply pipe 14′ is connected to the lower end of each cylinder 4′ through the branch pipes 18 and a valve 15′ is positioned in the pipe 14′ and operates in the same manner as in the preferred form of the invention. Each cylinder, both in the preferred form and in the modified form of the invention, is provided at its lower end with a drain cock 19, whereby water or other liquid that might accumulate in the cylinders may be readily drained therefrom. The operation of the modified form of the invention is carried out in the same manner as that set forth for the preferred form.

It will be apparent that I have provided a device which will be inexpensive to install and operate, but will be of great value for use in repairing motor vehicles, due to the time and labor saved through the use of my improved device.

While I have shown and described the preferred forms of my improved fluid jack it will be readily apparent that various changes and alterations may be carried out without departing from the spirit of the invention or the scope of the appended claims.

Having thus described my invention, what I claim is:

1. A device of the character described, including cylinders, spaced ribs carried thereby, a support bracket adjacent the cylinder having an arcuate arm fitted between said ribs, an arcuate clamping member fitted between the ribs and having its ends connected to the ends of the arcuate arm for supporting said cylinder, a crossbar at one end of the cylinder, arcuate bearing members carried thereby and means connected to the cross-arm for moving the same relative to the cylinder, and manually controlled means for actuating said first means.

2. A device of the character described, including a cylinder, spaced ribs formed thereon intermediate its ends, a supporting bracket adjacent the cylinder means embracing the cylinder between said ribs and having connection with the bracket whereby to support the cylinder in an upright position, a piston movable in the cylinder, a piston rod connected thereto and movable through one end of the cylinder, a cross-arm having connection with the rod for movement therewith, arcuate bearing members carried by said cross-arm, and manually controlled means for reciprocating said piston in the cylinder whereby to move the cross-arm toward and away from one end thereof.

In witness whereof, I hereunto subscribed my name this 15th day of December A. D., 1924.

CARL STEINKAMPER.