

R. F. KREITER.
PUMP.

APPLICATION FILED OCT. 17, 1908.

937,246.

Patented Oct. 19, 1909.

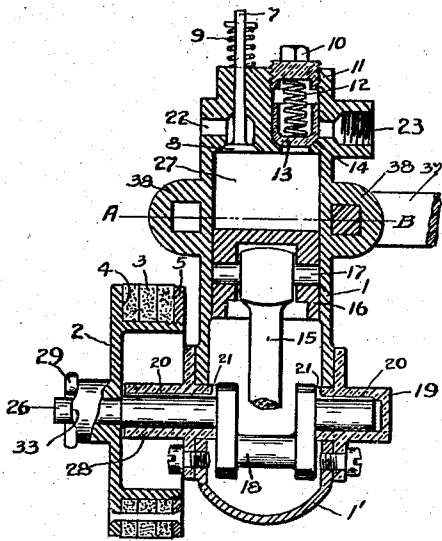


Fig. 1

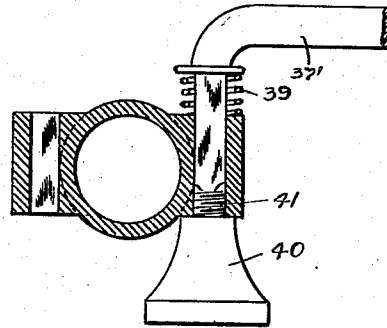


Fig. 2

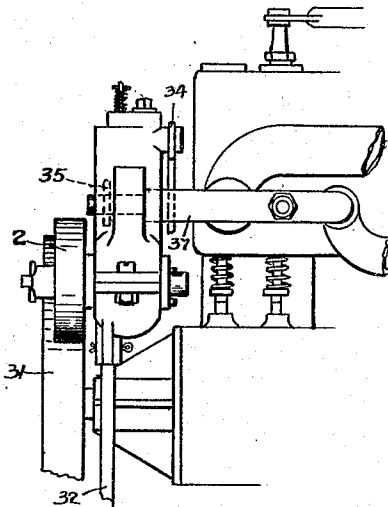


Fig. 3

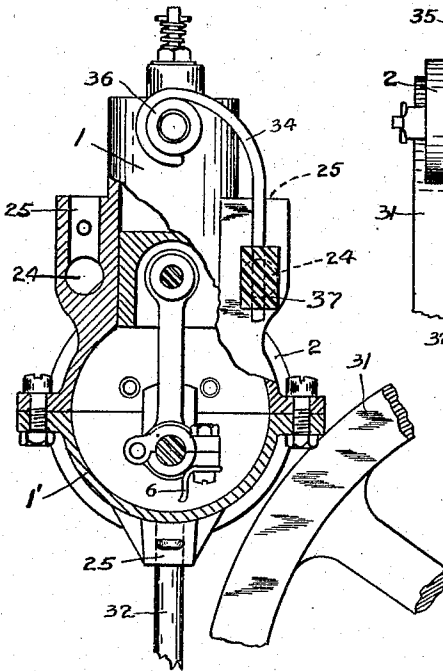


Fig. 4

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PUMP.

937,246.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed October 17, 1908. Serial No. 458,193.

To all whom it may concern:

Be it known that I, RICHARD F. KREITER, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented new and useful Improvements in Pumps, of which the following is a specification.

My invention relates to new and useful improvements in pumps and more particularly to pneumatic pumps.

The object of the invention is to provide a device of this character which may be attached to an automobile and which will effectually fill the space desired to be filled with compressed air, such as pneumatic tires.

Another object of the invention is to provide a device of this character which may be mechanically operated.

A further feature resides in the provision of means whereby the device may be so adapted as to fit on and be operated by an automobile.

A still further feature resides in the provision of means whereby the machinery contained in said pump will be constantly oiled while the machinery is in operation and one in which all the parts where wear may occur will be protected from dust, grit and other foreign substances.

Finally the object of the invention is to provide a device of the character described that will be compact, strong, durable, efficient and one in which the parts will not be likely to get out of working order.

With the above and other objects in view, which will appear as the nature of the invention is more fully understood, the invention has relation to certain novel features of construction and operation an example of which is given in this specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a sectional side view showing the lower end of connecting rod broken away. Fig. 2 is a sectional view taken on the line A. B. of Fig. 1. Fig. 3 is an elevation of the pump complete showing one method of attachment to an automobile and method of providing same. Fig. 4 is a partial sectional end view of the pump having the same means of attachment as in Fig. 3 and showing a segment of the fly wheel.

Referring more particularly to the drawings, wherein like numerals of reference refer to corresponding parts in all drawings, the numeral 1 designates the upper portion

of the outer casing of my air compressor and 1' designates the lower section thereof. These sections are secured together in such a manner as to exclude all dust and other foreign substances.

2 refers to the casing of the friction wheel which operates the air pump. 3 refers to the packing of said friction wheel and is made, preferably, of compressed paper. This packing fits in an annular groove provided on the circumference of said wheel. This wheel is also provided with a central hub for the purpose of receiving a shaft 26 and is held rigidly on said shaft by means of a pin 29, set screws or other suitable means.

The aforesaid filling is first put on the wheel while it is in unfinished condition and then the cap 5 is screwed onto 2 which completes the wheel. There are various methods by which this wheel may be held against turning on the shaft. My preferred method is as follows: The outward end of the hub is provided with two diametrically opposing depressions, having their corresponding sides gradually sloped to intermediate high points 33 in the hub. The pin 29 passes through a hole in the shaft and fits snugly in these depressions which are so shaped that when the wheel starts to turn on shaft 26 the sloping sides of these depressions pass under the pin and gradually tighten the wheel by forcing it back against a shoulder on the crank shaft. This keeps the wheel always rigid with the shaft while in motion and prevents the usual wear and play of the wheel.

7. refers to a valve stem which projects through the casing 1 and is attached to valve 8 at its lower end and is held in normal position by spring 9. Plug 10 engages the wall of casing 1 at 11 and carries a spring 12 which holds valve 13 normally against seat 14.

Connecting rod 15 is attached at one end to a piston 16 by means of pin 17 and at its other end is rotatably connected to wrist pin 18. One end of shaft 26 is covered by cap shaped boxing 19 which is screwed or bolted to the main casing and is so constructed that if it is desired for any reason to reverse the friction wheel shaft and place the friction wheel upon the other side of the pump, this may be readily done as this boxing and its opposing boxing 28 will fit on either side of the pump. These boxings

are so snugly fitted into the casing as to exclude all dust and foreign matter not only from the bearings but also from the inside of the casing. A groove 20 runs along the upper portion of the boxing cap 19 and the boxing 28 along which oil is fed through openings 21 for the purpose of lubricating the bearings. Opening 22 is an air inlet to air chamber 27, while opening 23 is an air outlet into the tube which leads to the tires.

24 designates points of attachment for attaching my device to any automobile and 25 designates points to which suitable means 32 for manually pressing friction wheel 2 against fly wheel 31 of the automobile may be attached.

6 designates a cup shaped device which is intended for the purpose of throwing oil up over the various parts while the crank shaft is in motion.

The operation of my device is as follows: The inflater is first attached to some convenient part of the automobile near enough to allow the friction wheel 2 to come in contact with the fly wheel 31 of the automobile, which sets in motion the drive shaft 26 and causes connecting rod 15 to rise and fall. This connecting rod being so connected to piston 16 raises and lowers said piston. When piston 16 is lowered it causes a partial vacuum to be formed and the air presses valve 8 downwardly admitting air through opening 22 into air chamber 27. When the piston reaches its lowermost point the pressure of the air is relieved on valve 8 which spring 9 lifts back to its original position by aid of the air which is now being compressed by the movement of piston 16. This cuts off the possible escape of air in this direction but when the air in chamber 27 is sufficiently compressed it lifts valve 13 and allows the air to escape through opening 23 to which may be attached a tube leading to the tire of the automobile. This movement of the piston may be repeated until the tire is sufficiently inflated. Special attention is called to the method of oiling also the fact that shaft 26 may be reversed and thereby allow the air compressor placed on either side of the fly wheel of the automobile thus making my device adjustable to any style of automobile. Also special attention is called to the plurality of points 25 to which operating attachment may be fastened as well as to points 24 provided for attaching the pump to the automobile. When the shaft 26 is revolved cup 6 throws oil over all the bearing and a portion of which passes through openings 21 into grooves 20, thereby making a constant self lubricating device, oil having been put into the cup of casing 1'. The clamp 37 is bolted to the engine at any suitable point and has its other end cylindrical. This end passes through hole 24 on one side

of the pump and the latter is secured thereon by a cotter pin 35 or some similar means. The pump is thus held pivotally attached to the machine and the friction wheel 2 is normally held from the fly wheel of the engine by means of the spring 34 which passes through a hole in the clamp 37 and around the boss 36 at its other end. To put the pump in operation pressure is exerted against rod 32 in the direction of the fly wheel which forces the friction or drive wheel 2 against the fly wheel 31 of the automobile. The friction wheel is held against the fly wheel until a sufficient amount of pressure is had in the automobile tire when pressure is released upon rod 32 allowing the pump to be drawn away from the fly wheel by means of spring 34 to its normal position.

Another method of attaching my inflater to the automobile is shown in Figs. 1 and 2 wherein the numerals 38 designate ears which are provided with square holes. The clamp 37' is provided at its free end with a squared shank which fits in said hole, thus making the inflater slidable upon said shank. A spring 39 forces the inflater away from the fly wheel and a hand wheel 40 which screws over a threaded end 41 of the squared shank forces the inflater toward the fly wheel. The inflater can also be belt driven or chain driven or gear driven in which case it should be rightly fastened to the motor. These methods of driving the inflater would be necessary on machines where the fly wheels are not readily accessible and some other part of the motor is used as a driving means.

What I claim is:—

1. In a pump of the character described, the combination with a casing and the operative means, as described, carried thereby, of laterally extending lugs, carried by the said casing provided with openings extending therethrough, means for attaching said pump to a stationary body, the free end of said means being so shaped as to fit into said openings, means for forcing said pump out of its normal relation to said stationary body, and means for restoring said normal relation.

2. In a pump, a casing comprising a cylinder and a crank chamber, a crank shaft extending through said chamber, reversible bearings in which said shaft operates, longitudinal grooves in said bearings, a drive wheel carried by said shaft, inlet and outlet passages to said cylinder, valves for controlling the same, a piston in said cylinder, means for imparting motion from said crank shaft to said piston, laterally extending lugs carried by the said casing provided with openings extending therethrough, means for attaching said pump to a stationary body, the free end of said means being so shaped as to fit into said openings, means

for forcing said pump out of its normal relation to said stationary body, and means for restoring said normal relation.

3. In a pump as described, the combination with a casing, of a piston to operate in the cylinder thereon, inlet and outlet passages leading to said cylinder, means for operating said piston, laterally extending lugs carried by said casing provided with openings extending therethrough, means for attaching said pump to a stationary body, the free end of said means being so shaped as to fit into either of said openings, a driving member, means for normally releasing the operative means of said pump from contact with the driving member, and means for forcing the operative means of said pump into contact with the driving member.

4. In a pump as described, the combination with a casing and a cylinder carried

thereby of a piston to operate in said cylinder, inlet and outlet passages leading to said cylinder means for operating said piston, laterally extending lugs integral with said casing, a non-cylindrical hole extending through each of said lugs, means for attaching said pump to a stationary body, an intermediate portion of which is so shaped as to fit in said hole and the free end of which is provided with means for forcing said pump out of its normal relation to said stationary body, means for restoring said normal relation.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RICHARD F. KREITER.

Witnesses:

WM. A. CATHEY,
E. C. GUY.