A. W. LEE.

AUTOMOBILE PUMP.

APPLICATION FILED MAY 17, 1917.

1,250,474. Patented Dec. 18, 1917.

FIG. 1

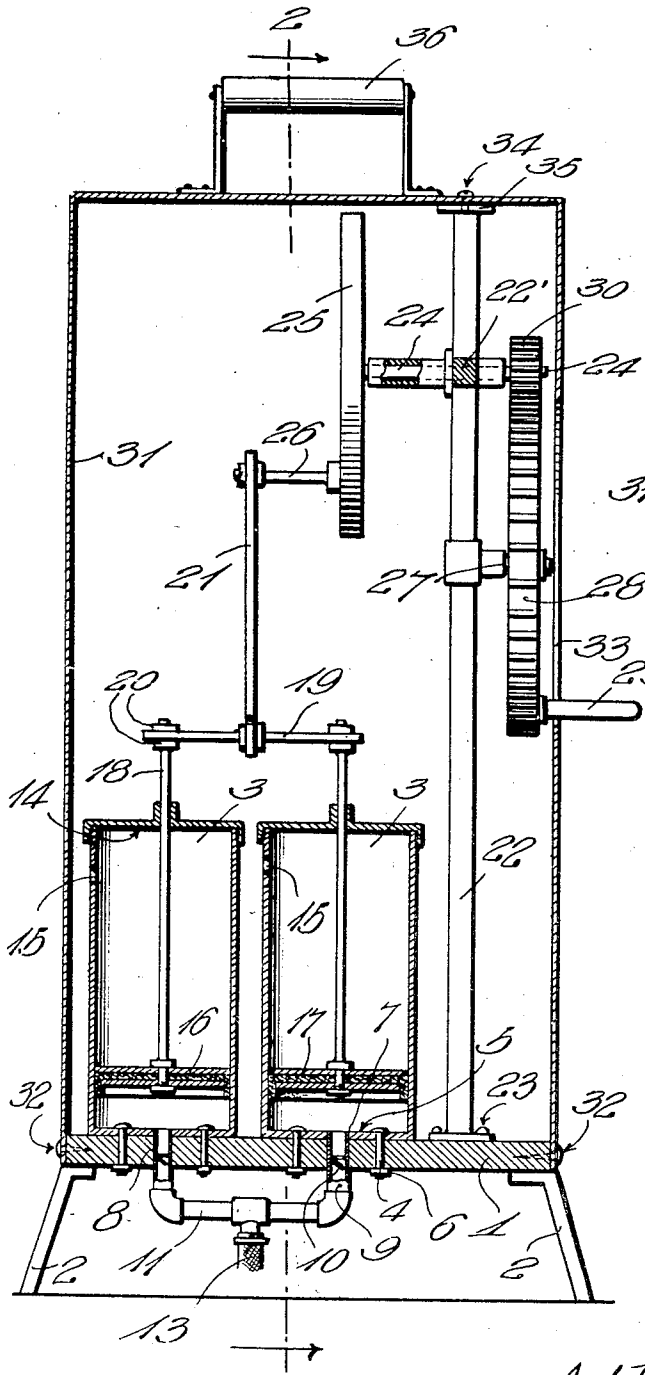
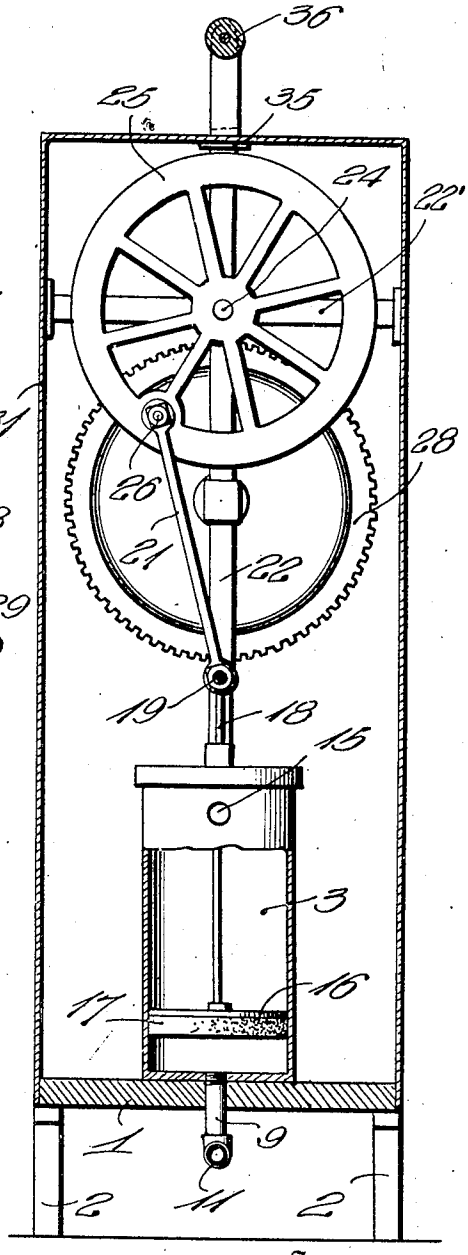


FIG. 2



Witness

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AUTOMOBILE-PUMP.

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To all whom it may concern:

Be it known that I, ATHA W. LEE, a citizen of the United States, residing at Bingham Canyon, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Automobile-Pumps; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in automobile pumps adapted for inflating pneumatic tires.

The primary object of the invention is to provide a simple and efficient double cylinder pump having a novel compact arrangement of gears for operating the pistons.

Another object of the invention is to provide a double cylinder air pump as will be described in which all of the moving or working parts are inclosed to protect them against dirt, water and the like.

A still further object is to provide an air pump in which the working parts are protected against dirt and water and in which the casing may be removed for repairing any broken parts.

With these and numerous other objects in view my invention resides in the novel features of construction, the combination and arrangement of the several parts as will be hereinafter more fully described in the specification and claims and illustrated in the accompanying drawings which form a part of this application.

In the drawings:

Figure 1 is a vertical sectional view of the invention; and,

Fig. 2 is a section on the plane of the line 2—2 of Fig. 1.

The present embodiment of my invention as illustrated in the accompanying drawings includes a base 1 formed from any desired material and of any suitable shape, being preferably rectangular and formed from wood. The base is adapted to be supported on suitable legs 2 which are preferably disposed at the corners thereof and inclined outwardly and downwardly to their lower ends to provide a substantial support.

Disposed on the upper face of the base 1 is a pair of parallel horizontally spaced vertically disposed single acting pump cylinders 3 which are detachably secured to said base by means of bolts or the like 4 which extend through apertures in the base 1 and are threaded to receive thereon nuts 6. The cylinders are provided at said lower ends 5 with centrally disposed outlets 7, vertically alined with openings 8 in the base and through said openings and connected to the walls of the outlets are short pipes 9 which extend below the lower face of said base. The pipes 9 are provided with suitable outlet valves 10 and with extensions 11 to which a flexible tube or hose 13 is adapted to be connected to conduct air from the cylinders to the tire to be inflated.

The cylinders 3 are provided adjacent their upper ends or heads 14 with apertures 15 for the purpose of allowing air to be drawn into said cylinders. Disposed in said cylinders 3 are pistons 16 which are provided with cup leathers 17 which permit the passage of air downwardly past the pistons into the lower ends of the cylinders but prevent air from returning to the upper ends of said cylinders. The heads 14 of the cylinders 3 are centrally apertured to receive therethrough piston rods 18 which are connected in any suitable manner to the pistons. The upper ends of the piston rods 18 are screw threaded for a purpose to be hereinafter set forth.

The upper ends of the piston rods are connected by means of the horizontally disposed cross bar 19 which is provided at each end with vertically extending apertures through which the threaded ends of the piston rods extend. For the purpose of retaining said cross bars on the upper ends of said piston rods lock nuts 20 are threaded on said ends, being disposed above and below the ends of said bar.

For a purpose to be hereinafter set forth, a substantially vertically disposed connecting link 21 is provided having its lower end pivotally connected to the cross bar 19 at a point substantially midway the length of said bar.

Adjacent the cylinders 3 is a vertically disposed standard 22 having its lower end secured to the base by suitable fastening elements 23, said standard being provided adjacent its upper end with a shaft 24 mounted thereon in any suitable manner, said shaft having on one end a fiber wheel 25 adjacent the periphery of which is secured a crank pin 26 and to the outer end of which is pivotally connected the upper end

of the aforesaid connecting link 21 whereby when the wheel is rotated, motion will be imparted through the connecting link to the pistons in the cylinders. The standard 22 is provided adjacent its upper end with a cross bar 22′ which is secured in any suitable manner to the vertical side walls of the casing 31 and is formed integrally with said standard.

Spaced below the shaft 24 and suitably mounted on the standard is a stub shaft 27 on which is mounted a fiber driving gear 28, adjacent the periphery of which is a detachable operating handle 29, said driving gear being adapted to mesh with a pinion 30 non-rotatably mounted on the end of the shaft 24, said arrangement of gears providing means for reciprocating the pistons in said cylinders by revolving the driving gear 28.

For the purpose of protecting the gears and other working parts from the weather and other possible injury and to also serve as an auxiliary support for the standard 22 I have provided a substantially rectangular casing 31, preferably formed from galvanized iron, said casing being formed with an open lower end into which the base 1 is received and detachably secured by fastening elements 32. The casing is also provided with a circular opening 33 in one of its sides, said opening being so disposed as to expose a portion of the driving gear 28 and to permit the handle 29 to extend outwardly to be grasped by the operator.

The upper end of the standard 22 is detachably secured to the upper end of the casing 31 by means of suitable fastening elements 34 which extend downwardly through said casing and are threaded into a collar or flange 35 on said upper end of the standard. As a means for easily transporting the pump a suitable handle 36 is attached to the upper end of the casing in any desired manner.

It will be readily seen that in operation the flexible tube is connected to the inflating valve of a tire and that upon rotating the driving gear 28, motion is imparted through the several gears and connecting rods to the pistons and that air will then be forced through said flexible tubes to the tire. Should any of the working parts become useless or broken in any way the handle 29 may be removed, the fastening elements 32 at the lower end of the casing removed and fastening elements 34 at the upper end of the casing taken out and then the whole casing 31 may be removed from the base to permit repairing of the pump.

From the foregoing description taken in connection with the accompanying drawings the construction and operation of my improved automobile pump will be readily understood but it is also to be understood that within the scope of the appended claims, numerous changes may be made without sacrificing the principal advantages.

I claim:

A device of the class described comprising an elevated base, supporting legs for said base, a pair of single acting cylinders on said base, outlets in the lower ends of said cylinders, said base being provided with openings alined with said outlets, valved pipes leading from said outlets through said openings, pistons in said cylinders, rods on said pistons and extending upwardly through the heads of said cylinders, a cross bar connecting the upper ends of said rods, a connecting link pivoted at one end to said cross bar midway its length, a vertically disposed standard secured at its lower end to said base, a cross bar on said standard, a shaft on said standard, a wheel on one end of said shaft, a crank pin on said wheel, said pin being pivotally connected to said link, a pinion on the opposite end of said shaft, a stub shaft on said standard, a driving gear on said stub shaft and meshing with said pinion, a substantially rectangular casing for said gears and cylinders, said casing having an open lower end, means for detachably fastening said end to the edges of said base, fastening elements passing through the upper end of said casing and detachably connecting the standard thereto, said last named cross-bar having its opposite ends detachably secured to said casing, said casing having a circular opening in one side to partially expose the driving gear, and a detachable operating handle on said driving gear and projecting through said opening.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ATHA W. LEE.

Witnesses:
ERNEST R. PEPPAS,
J. L. HUCHEL.