S. DAHLBERG.

AIR COMPRESSING PUMP.

APPLICATION FILED MAR. 20, 1909.

929,401. Patented July 27, 1909.

Fig. 3.

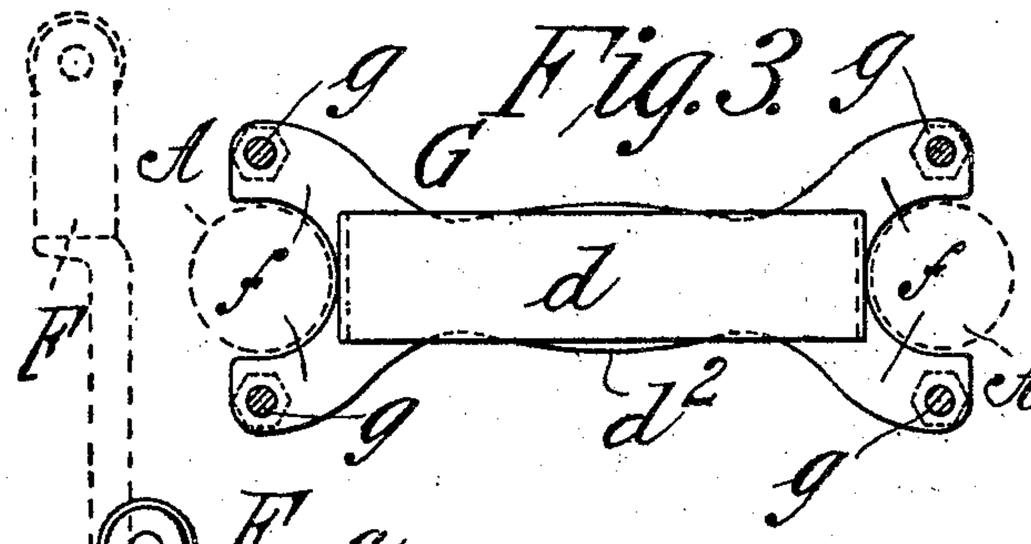
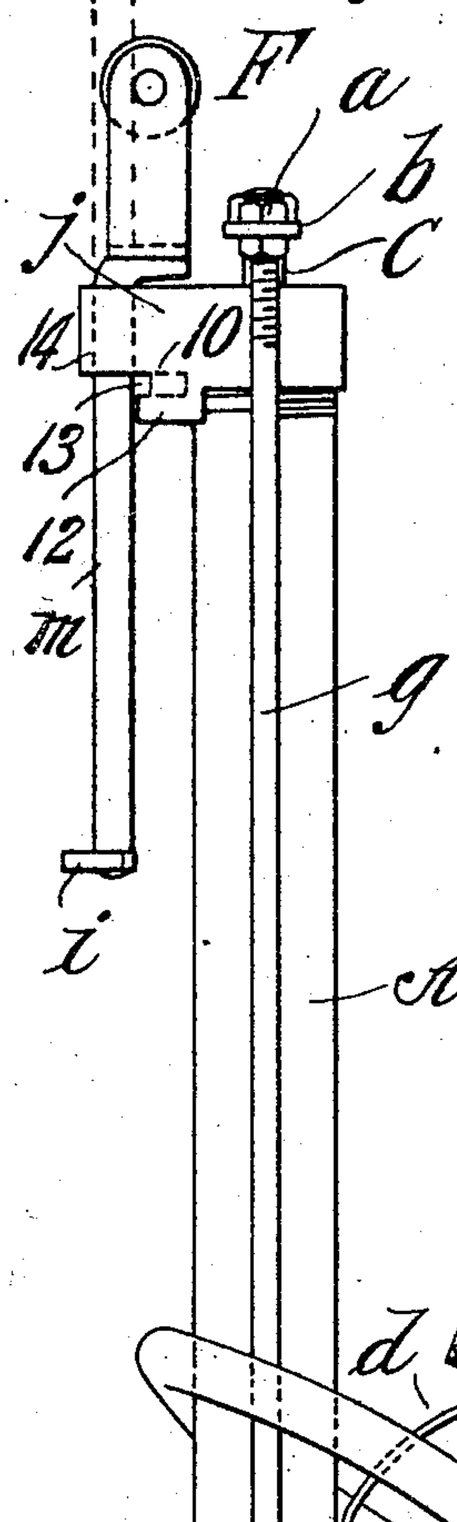
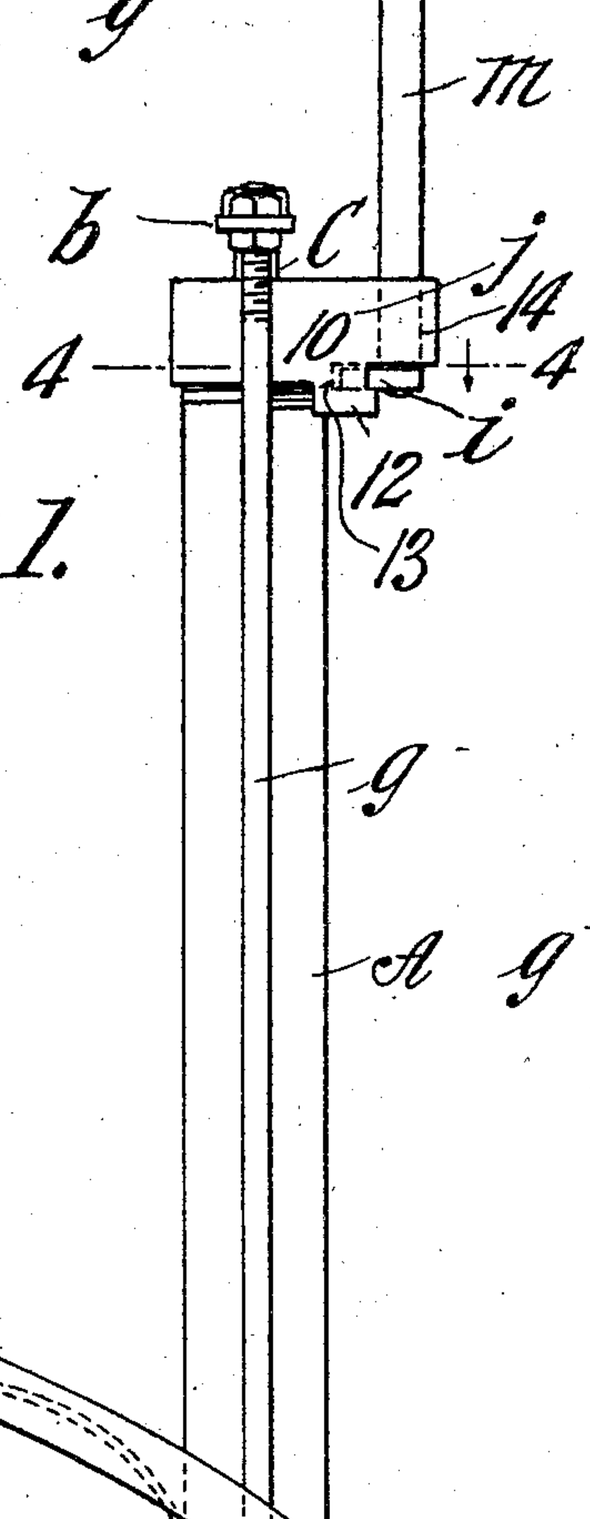


Fig. 2.

Fig. 1.





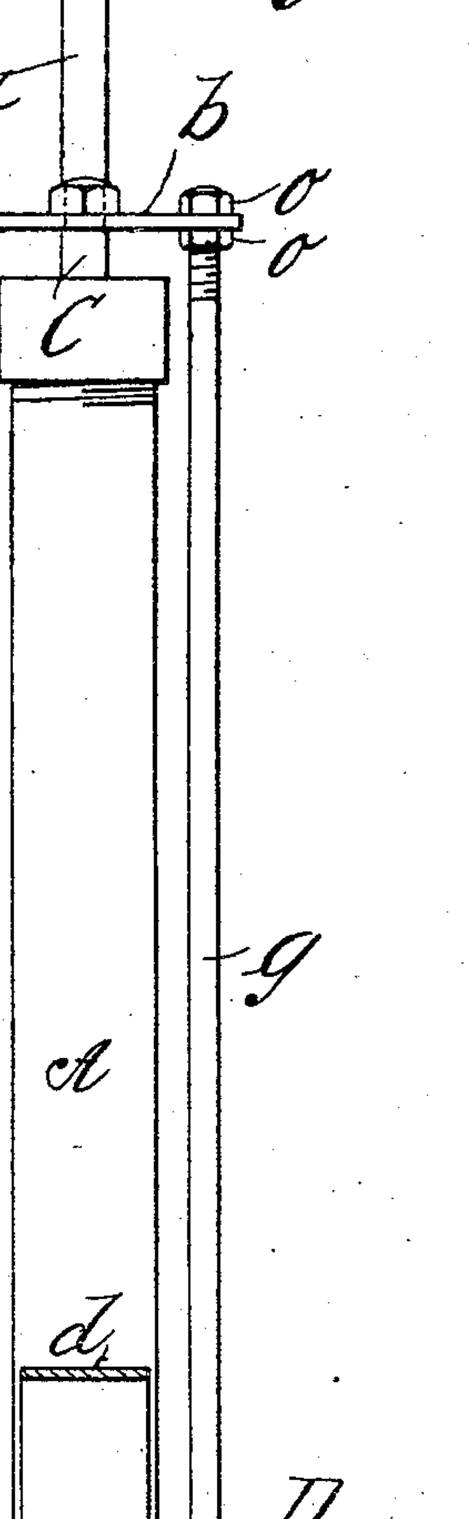
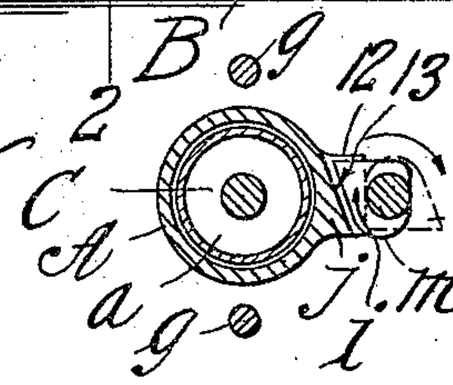


Fig. 4.



WITNESSES:

H. L. Sprague

A. M. Mowry.

INVENTOR,

Sven Dahlberg,

BY

W. G. Bellows

ATTORNEY.

UNITED STATES PATENT OFFICE.

SVEN DAHLBERG, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR OF THREE-TENTHS TO GUSTAF N. TEGNELL, OF SPRINGFIELD, MASSACHUSETTS.

AIR-COMPRESSING PUMP.

No. 929,401. Specification of Letters Patent. Patented July 27, 1909.

Application filed March 20, 1909. Serial No. 484,814.

To all whom it may concern:

Be it known that I, SVEN DAHLBERG, a citizen of the United States of America, and resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Air-Compressing Pumps, of which the following is a full, clear, and exact description.

This invention relates to air compressing pumps, especially available for the inflation of pneumatic tires for the wheels of automobiles and other vehicles of the general character of, and for improvements on, the pump shown and described in Letters Patent of the United States granted to me Nov. 24, 1908, No. 904,940.

A leading object of this invention, for improvement in an air pump comprising a plurality of separated cylinders and a foot-operated yoke for actuating the piston rods of the cylinders, is to so arrange the connections between the yoke and the piston rods as to leave the space between the upper portion of the cylinders free and clear for the accommodation of the knee portion of the operator's leg, whereby the movements of the latter for operating the pump in a powerful manner may be most comfortably performed.

Other objects are to improve the construction of the means for holding and steadying the pump by the hand or hands of the operator while the pumping action is being performed by the foot; and generally to improve, simplify, and cheapen the construction of the apparatus.

The invention is described in conjunction with the accompanying drawings and set forth in the claims.

In the drawings:—Figure 1 is a front elevation of the air pump, one of the steadying handles being shown as moved to and locked in its elevated position, while the other steadying handle is, by full lines, shown as in its lowered position. Fig. 2 is a sectional elevation of the pump as seen at right angles to Fig. 1, the portions in section being as taken on the line 2—2. Fig. 3 is a plan view of the foot-operated yoke. Fig. 4 is a partial horizontal sectional view on line 4—4, Fig. 1, to represent certain details of construction.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A A represent two vertical separated and parallel pump cylinders which are supported and connected together by a base B of suitable construction and design, each cylinder having, as understood, a piston *a* therein,—the piston rod C for each piston extending above the top of each cylinder.

The air inlet way, the internal valves and the outlets for the compressed air understood as located in the base or lower portion of the pump and having connection with the flexible tube D are or may be of any usual or approved construction and arrangement and, forming no part of the present invention, are not here shown or described.

Each piston rod C has at its upper end which is above the upper end of the cylinder, a transversely arranged rigid bar *b* which has its middle portion secured to the upper extremity of the piston rod, and which extends at opposite sides of the piston rod at right angles to a line between the centers of the cylinders.

G represents the yoke comprising separated upper and lower portions *d*, *d*² to be engaged by a person's foot, the lower yoke member being arranged between the cylinders and having, as shown in Fig. 3, bifurcated extremities *f* to embrace the front and rear sides of the cylinders while freely playing vertically relatively thereto.

g g represent vertically arranged rods in pairs and respectively connected with the opposite extremities of the transverse bars *b* carried at the upper ends of the piston rods and connected at their lower ends with the portions of the lower member of the yoke which are located at the front and rear sides of the cylinders. The connections of the rods *g g* with the extremities of the lower yoke member and with the end portions of the transverse bars *b* of the piston rod are, as indicated in the drawings, by means of nuts *o o* in pairs engaged with the screw threaded extremities of the rods and tightened at opposite sides of the parts *b* and *d*².

The double cylinder pump comprising the parts in arrangement as described and shown, is one affording an unobstructed space between the upper portions of the cylinders for the accommodation of the knee of the operator who by his foot, in engagement with the yoke is operating the pump.

In the pump as here shown, a pair of steadying handles are provided as appurte-

nances of the cylinders to enable a person, while operating the pump by foot movement, to steadily hold the pump body without having to stoop more than may be comfortable. These handles carried at the upper end of straight vertical stems are raised, and locked in their elevated positions, when the pump is to be used, but are susceptible of being lowered in a considerable extent so that when the pump is not in use the handles are located but little above the tops of the cylinders; and it will be pointed out that each cylinder has at its upper portion a lateral extension *j* comprising upper and lower members 10 and 12 with a separating edgewise opening recess 13 therebetween,—there being a vertical aperture 14 through the lateral extension which practically crosses the said recess, and through which the handle carrying stem may freely vertically move. Each handle stem is provided at its lower end with a lug, dog, or button *i*, having essentially no projection radially from the stem at one side thereof, but having a material extension beyond such stem at the opposite side thereof, so that under a rotative movement in one direction of the stem the lug may acquire an engagement in said recesses above the lower member 12 for maintaining the handle in its elevated position,—it being understood that by partially rotating the handle carrying stem to swing the lug clear from its engagement with the member 12 on which it had been supported, the handle carrying rod or stem may be downwardly slid through the guiding aperture 14 therefor to bring the handle down closely to the top of the cylinder for economy of space in transportation or when the pump is to be stowed away.

I claim:—

1. In an air pump, a base, a pair of separated vertical cylinders supported by and rising above the base having their movable piston rods extending above the upper ends of the cylinders, and each provided with a bar affixed thereto and extending at opposite sides of the piston rod at right angles to a line between the cylinders, a movable yoke arranged between the cylinders, comprising separated upper and lower portions to be engaged and operated by a person's foot, and pairs of vertically arranged rods connected to the opposite extremities of said transverse bars and connected at the lower portions to the extremities of said yoke.

2. In an air pump, a base, a pair of separated vertical cylinders, supported by and rising above the base, movable piston rods extending above the upper ends of the cylinders and each provided with a transversely arranged bar which has its middle portion secured to the upper extremity of the piston rod and which extends at opposite sides of the piston rod at right angles to a line between the cylinders, a yoke comprising separated upper and lower portions to be engaged by a person's foot, the lower yoke member being arranged between the cylinders and having bifurcated extremities to embrace the front and rear sides of the cylinders, and pairs of vertically arranged rods connected with the opposite extremities of said transverse bars, and connected at their lower ends with portions of the lower member of the yoke which are located at the front and rear sides of the cylinders.

3. In an air pump of the character described, a pair of vertical separated pump cylinders supported and connected together at their lower portions and having an open and unobstructed space between their upper portions, a yoke to be engaged and operated by a person's foot, between the cylinders, connections between the piston rods of the respective cylinders and the said yoke, having their locations outside of the space between the cylinders, and means for holding the base connected cylinders against movement while the foot yoke is being operated.

4. In an air pump, a supporting base and a vertical cylinder rising thereabove having a piston rod the upper end of which projects above the cylinder, said cylinder having at its upper portion a lateral extension comprising upper and lower members with a separating recess therebetween, and a vertical aperture intersecting said recess, a handle provided rod vertically playing through said aperture and provided at a lower portion thereof with a lug adapted, under rotative movement in one direction of the rod, to acquire an engagement in said recess between the separated upper and lower members of said extension and adapted under rotative movement of the rod in a reverse direction to be free from such engagement to permit vertical movements of the rod.

Signed by me at Springfield, Mass., in presence of two subscribing witnesses.

SVEN DAHLBERG.

Witnesses:
GUSTAV N. TEGNELL,
WM. S. BELLOWS.