(No Model.)

A. B. MARSHALL.

AIR PUMP FOR BICYCLES.

No. 545,300. Patented Aug. 27, 1895.

Fig 1

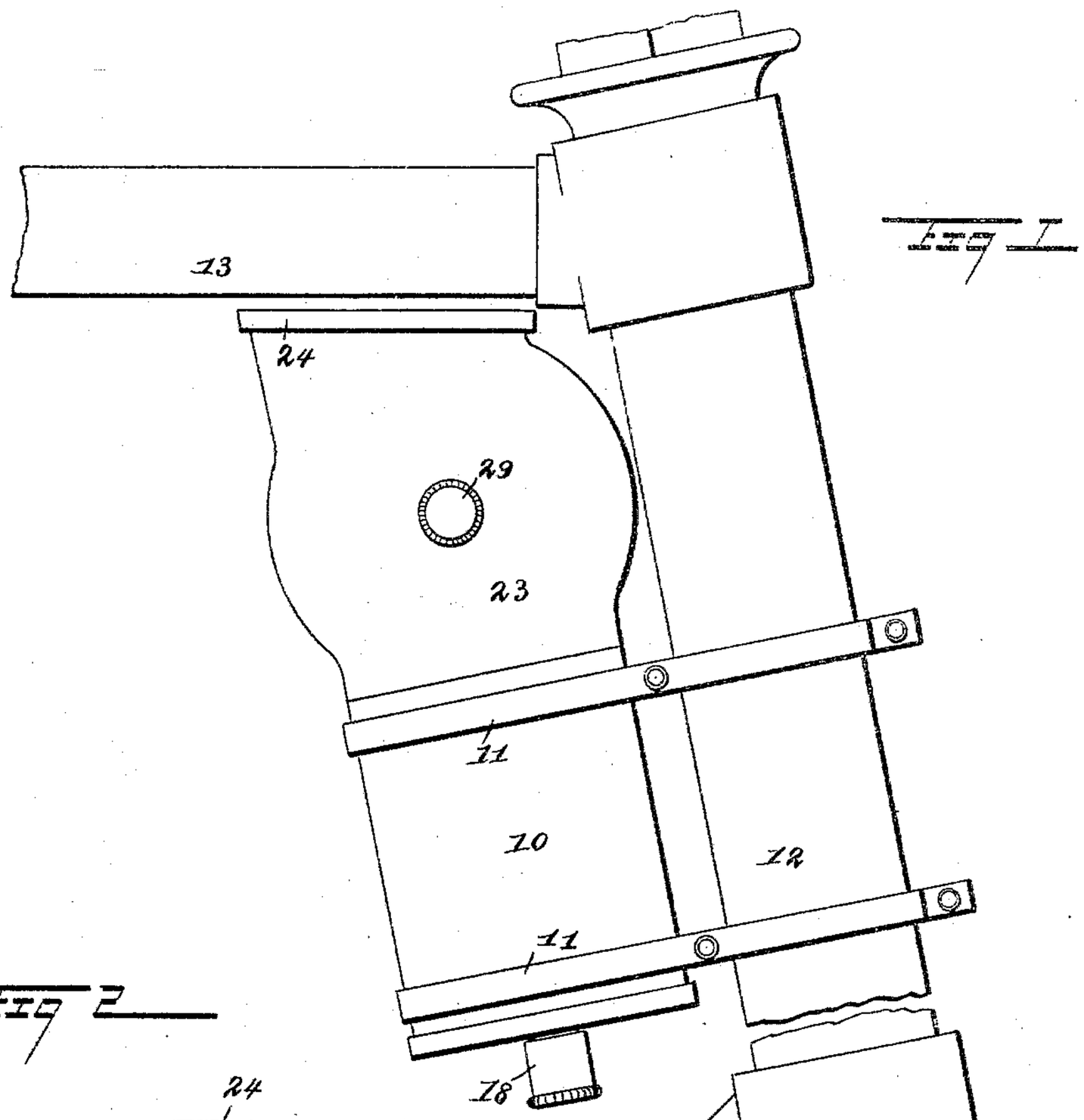
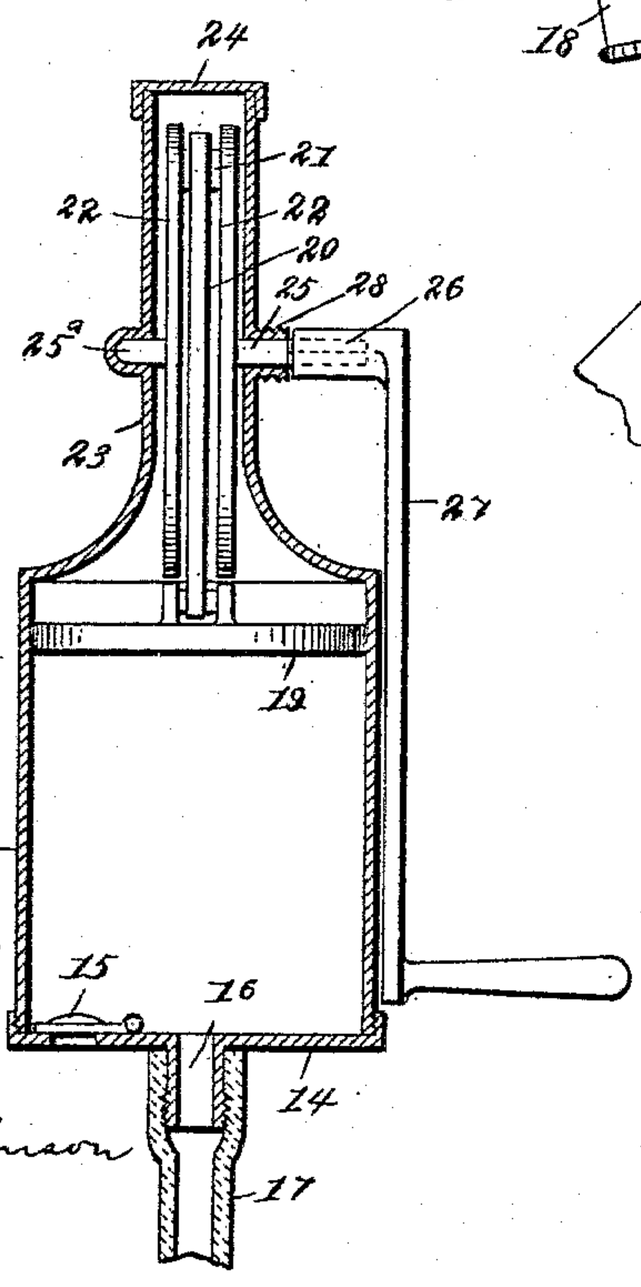


Fig 2



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UNITED STATES PATENT OFFICE.

AQUILA B. MARSHALL, OF NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS TO EDWIN E. DICKINSON, OF SAME PLACE, AND CHARLES B. BOYNTON, OF NEWARK, NEW JERSEY.

AIR-PUMP FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 545,300, dated August 27, 1895.

Application filed August 23, 1894. Serial No. 521,099. (No model.)

To all whom it may concern:

Be it known that I, AQUILA B. MARSHALL, of New York city, in the county and State of New York, have invented a new and Improved Air-Pump for Bicycles, of which the following is a full, clear, and exact description.

My invention relates to improvements in air-pumps such as are adapted for use in filling pneumatic tires. It is customary to pump the tires full of air either by the means of push-pumps or by hand-pumps, which are carried in the tool-bag of the machine, and in either case the filling of the tires is a good deal of a nuisance.

The object of my invention is to produce an extremely simple and easily-operated pump which is dust-proof, and which is carried on the machine in position for use and is always ready for use; also, to construct the pump so that connections may be easily made between it and either tire of the machine; and, further, to provide a detachable crank for working the pump, and means for covering the crank-axle with an air-tight cover when the pump is not in use.

To these ends my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in both the views.

Figure 1 is a broken side elevation of a bicycle-frame provided with my improved pump, and Fig. 2 is a vertical cross-section of the pump.

The pump is provided with a suitable cylinder 10, which is held by means of metallic straps 11 to the head 12 of the bicycle-frame 13; but other means of fastening the pump may be used, and it may be attached to other parts of the machine, if desired, although it is preferably secured to the head, as in this position it is entirely out of the way and may be conveniently used. The cylinder has preferably a detachable bottom 14, which is provided with an ordinary inlet-valve 15 and with a nipple 16, to which a pipe 17 may be coupled, which pipe is adapted to connect with the ordinary air-valve of a pneumatic tire. When not in use, the pipe 17 is removed and the nipple 16 is covered by a screw-cap 18, which excludes the dust.

In the cylinder 10 is a reciprocating piston 19, which works in the usual way to suck in the air at one stroke and expel it on the return stroke, and the piston connects by a pitman 20 with the crank 21, connecting the two disks 22, which are secured to the axles 25 and 25^a, and the axle 25 is squared at one end, as shown at 26, to receive a crank 27, by which it and the disks may be turned and the pump operated. The crank is detachable and may be carried in the tool-box or pocket when not in use. The box 28, in which the crank turns, is screw-threaded, so that when the crank is removed the axle may be covered by a cap 29, which screws on the box 28, and thus excludes the dust. The disks 22 are held in the reduced or flattened upper end 23 of the cylinder 10, and this part of the cylinder is covered by a removable cap 24, which enables the parts of the pump to be easily reached when necessary.

When the pump is to be used, the caps 18 and 29 are removed, a hose or pipe 17 coupled to the nipple 16 and to the tire to be filled, the crank 27 is applied to the axle 25 and is then turned, thus turning the disks 22 and reciprocating the piston 19, which acts in the usual way to force the air through the pipe 17 and into the tire.

It will be seen that when this pump is not in use it is absolutely dust-proof, and that when coupled to the tire it is also dust-proof, and can be very quickly connected with the tire and very easily operated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a bicycle, of a pump secured thereto and comprising a cylinder having a reduced upper end and an inlet valve and discharge nipple in its bottom, crank disks mounted in the reduced upper end of the cylinder, a piston in the cylinder and connected with the crank disks, and a crank detachably secured to the axle of the crank disks, substantially as described.

2. The herein-described air pump, comprising a cylinder reduced and flattened at one end and provided at the other with an inlet valve and discharge nipple, a cap for the nipple, a piston in the cylinder, crank disks journaled in the flattened portion of the cylinder and operatively connected with the piston, a detachable crank for the axle of the crank disks, and a cap to cover the crank axle, substantially as described.

3. An improved air pump for bicycles, comprising a cylinder having a flattened upper end, and provided in its bottom with an inlet valve and a discharge nipple, the flattened portion of the cylinder being provided with bearings, one of which is externally screw threaded to receive a cap, crank disks, each provided with an axle fitting in said bearings, the axle of the screw threaded bearing projecting therethrough, a piston in the cylinder, a pitman connecting the piston with the crank disks, and a crank adapted to fit upon the projecting axle of the crank disks, substantially as herein shown and described.

AQUILA B. MARSHALL.

Witnesses:
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