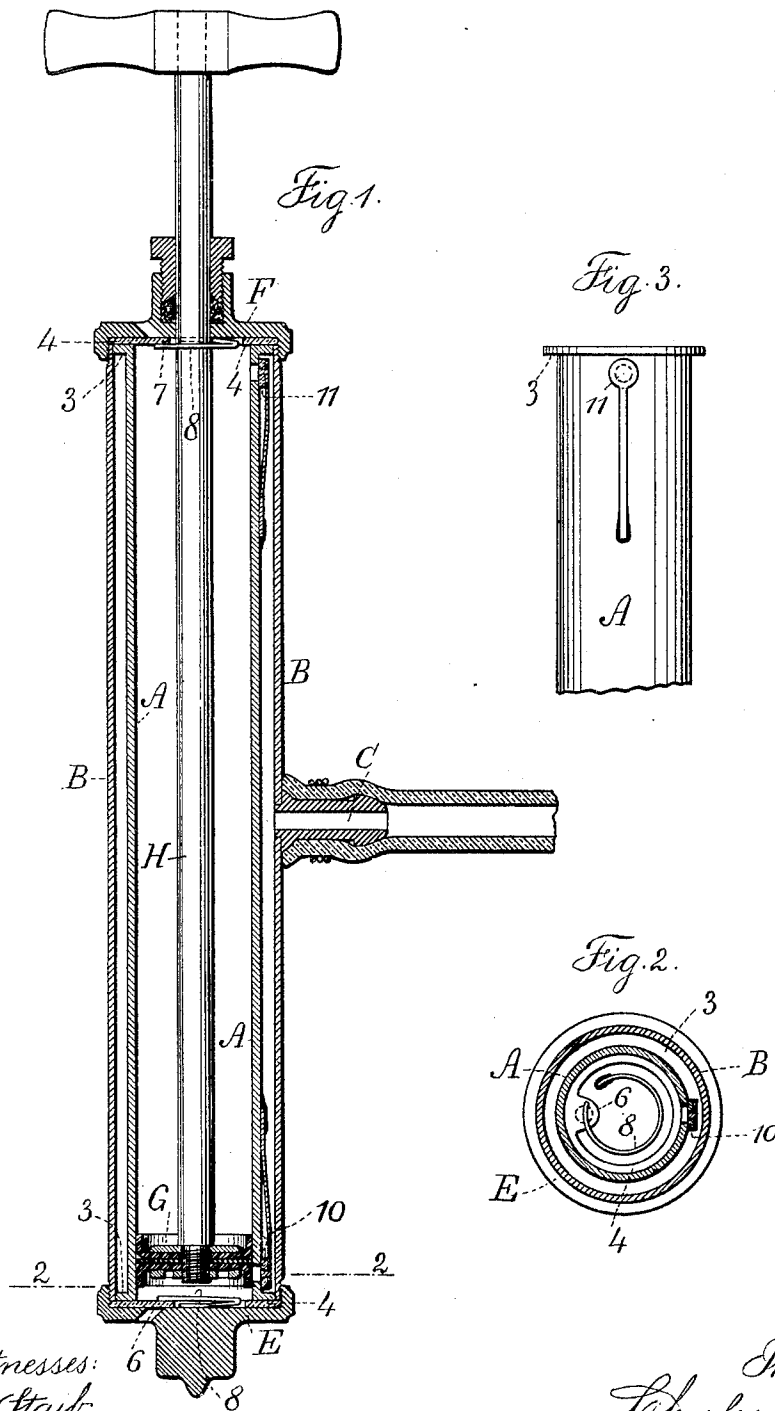


(No Model.)

C. DISS.
AIR PUMP FOR PNEUMATIC TIRES.

No. 586,736.

Patented July 20, 1897.



Witnesses:
J. Staub
Chas. H. Smith

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UNITED STATES PATENT OFFICE.

CHARLES DISS, OF BROOKLYN, NEW YORK.

AIR-PUMP FOR PNEUMATIC TIRES.

SPECIFICATION forming part of Letters Patent No. 586,736, dated July 20, 1897.

Application filed December 7, 1896. Serial No. 614,735. (No model.)

To all whom it may concern:

Be it known that I, CHARLES DISS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Air-Pumps for Pneumatic Tires, &c., of which the following is a specification.

Bicycle-tires sometimes require additional inflation while in use, and it is common to provide a pump to be carried by the cyclist for inflating the tire. Such pumps, however, have usually been single-acting, and considerable time is necessarily employed in the inflation of the tire, and in addition to this the cycle-pump is advantageously light and hence it is liable to be indented or otherwise crippled for use.

The object of the present invention is to provide a double-acting pump with a surrounding case by which the pump-barrel is protected from indentation or injury, and at the same time an air-chamber is provided between the pump-barrel and the case, and the case is removable, so as to give access freely to the valves for cleaning or repair.

In the drawings, Figure 1 is a longitudinal section of the improved air-pump. Fig. 2 is a cross-section at the line 2 2 of Fig. 1, and Fig. 3 shows one end of the pump-cylinder with a valve upon it.

The pump-cylinder A is of suitable size, and it is provided with end collars or flanges 3, fitting closely within the exterior cylinder or case B, but the pump-cylinder is easily removable from the case, and the discharge-pipe C extends out from the case B at any convenient place, and it is usually provided with a flexible tube and a nozzle to fit the air-valve of the cycle.

The heads E and F are screwed upon the ends of the case and there is a washer 4 at each end, so that by screwing on the head the washer is confined against the end 3 of the pump-cylinder and against the end of the case B, so as to make the parts air-tight at these places, and the piston G is provided with a double-cup leather, and the rod H passes through the gland or stuffing-box at the head F, so as to make an air-tight connection at this point.

The inlet-valves 6 and 7 are upon the inner surfaces of the heads E and F, and they are

preferably made as part of the leather or rubber of the washers 4, as illustrated in Fig. 2, and these valves open inward and may each be provided with a spring 8 to press the valve to its seat, the seat being formed by the interior surface of the head E or F, the air-inlet being a hole through such head.

The valves 10 and 11 are upon the exterior surface of the pump-cylinder A and preferably in the form of a spring-tongue with an enlarged end, and the flexible surface of rubber or leather in contact with the exterior of the pump-cylinder, the spring-tongue being soldered or otherwise firmly attached at the distant end from the valve, so as to hold the valve to its seat, but to allow the valve to yield by the pressure of the air within the pump-cylinder when the piston is reciprocated.

It will now be understood that the valves 6 and 7 are easy of access by taking off the heads E and F, and the valves 10 and 11 being upon the exterior surface of the pump-cylinder A can be cleaned or repaired when the cylinder A is drawn out from the case B, and the parts can be easily put together, and they are rendered air-tight by the washers when the heads are screwed into position.

This air-pump being double-acting is adapted to the rapid inflation of the pneumatic tire, and it is not liable to get out of order, and it is easily repaired, because the valves are accessible, and it will be understood that any concussion that might dent or injure an ordinary pump-cylinder is received by the case B, and the pump-cylinder itself is thereby protected.

These air-pumps, although primarily intended for use in a house or factory, may be made sufficiently small to be carried conveniently on the cycle.

I claim as my invention—

1. The combination in a pneumatic pump, of a cylinder having end collars and valves on the exterior of such cylinder and near the ends, a case surrounding the pump-cylinder and the collars and forming an air-chamber between the case and pump-cylinder, heads screwed upon the case and washers intervening between the heads and the ends of the case and pump-cylinder, and inlet-valves within the heads, substantially as set forth.

2. The combination in a pneumatic pump, of a case, a pump-cylinder and end collars within the case, valves on the exterior of the pump-cylinder and near the ends, heads
screwed upon the case, washers intervening
between the heads and the ends of the pump-cylinder and valves formed of the material of the washers and covering the holes through

the respective heads, substantially as set forth. 10

Signed by me this 4th day of December, 1896.

CHARLES DISS.

Witnesses:

GEO. T. PINCKNEY,
ELLA E. POHLÉ.