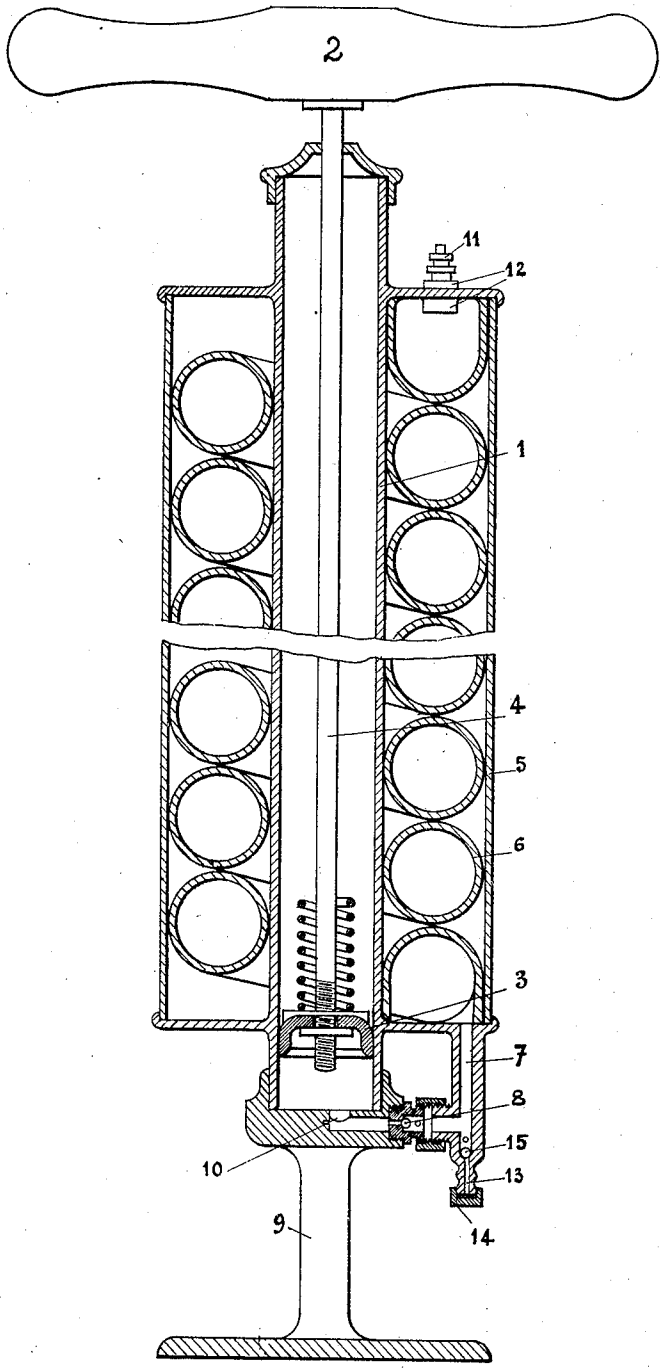
Nov. 10, 1931. L. SPIRA 1,831,756

AIR PUMP

Filed Aug. 16, 1929



Leopold Spira, by:
D Singer. Atty.

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UNITED STATES PATENT OFFICE

LEOPOLD SPIRA, OF ZURICH, SWITZERLAND

AIR PUMP

Application filed August 16, 1929, Serial No. 386,332, and in Switzerland August 17, 1928.

The subject of the present invention is a pneumatic pump which is distinguished by the fact that the pump barrel is over a part at least of its length surrounded by a jacket standing away from the barrel, the hollow space between the jacket and the barrel serving as air vessel.

On the drawing annexed a constructional example of the subject of the invention is shown in a longitudinal section.

In the pump barrel 1, a piston 3, with rod 4, can be moved to and fro by means of a removable handle 2; around the pump barrel and standing away from it, a jacket 5 is provided so that between the pump barrel and the jacket 5, a hollow space forms. In this hollow space a spiral tube 6 is arranged which serves as air vessel. This tube 6 is in communication by its lower end, through an air duct 7, a valve 8 and an air duct 10, provided in the foot 9 of the pump, with the lower end of the pump barrel 1. In the cover 12 of the jacket 5, an opening for the exit of air is provided which is in communication with the upper end of the tube 6.

The air duct 7 can, after taking off a seal 14, be brought by a duct 13 directly into communication with the outer air, a valve 15 being arranged between the ducts 7 and 13. This duct 13 serves the purpose of being able to fill the air vessel of the pumps from any source of compressed air, for example from a motor, without actuating the pump. In this case the valve 8 prevents the entry of air into the pump barrel 1.

The spiral tube 6 serves as an air vessel, produces the effect that the air compressed in it by the pumping passes out not jerkily but evenly from the air exit opening AA, which is of importance in all cases where a uniform pressure is required, for example for paint spraying devices and the like.

The spiral tube 6 can also be dispensed with, in which case the entire hollow space between the pump barrel and the jacket forms the air vessel.

The pump described has the advantage over other known transportable pumps with air vessel that in it the air vessel and pump which are otherwise separated are combined in one casing. The direct supply duct from outside to the air vessel permits of the pump being used as desired, by hand, or the air vessel being filled by means of a source of compressed air, for example a motor. The removable handle permits of rational packing in a compact space.

I claim:

1. A pneumatic pump of the class described, comprising a pump barrel, a jacket through which the barrel extends and forming an air chamber, a plunger arranged for operation in the pump barrel and a T-duct, one arm of which is in communication with the lower end of the air chamber and is provided with a valved discharge nozzle, the other arm of the duct communicating with the lower end of the barrel and having a check valve arranged to close against back pressure from the air chamber.

2. A pneumatic pump as claimed in claim 1, including a standard on which the pump barrel is supported, which standard has a bore forming a portion of the arm of the T-duct which communicates with the lower end of the pump barrel, and also including a nipple connected to said standard and coupled to the other arm of the duct, the said check valve being arranged in the said nipple.

In testimony whereof I have hereunto set my hand this 8th day of July, A. D. 1929.

LEOPOLD SPIRA.