

(No Model.)

H. L. BROWN.

AIR PUMP.

No. 360,413.

Patented Apr. 5, 1887.

Fig. 1.

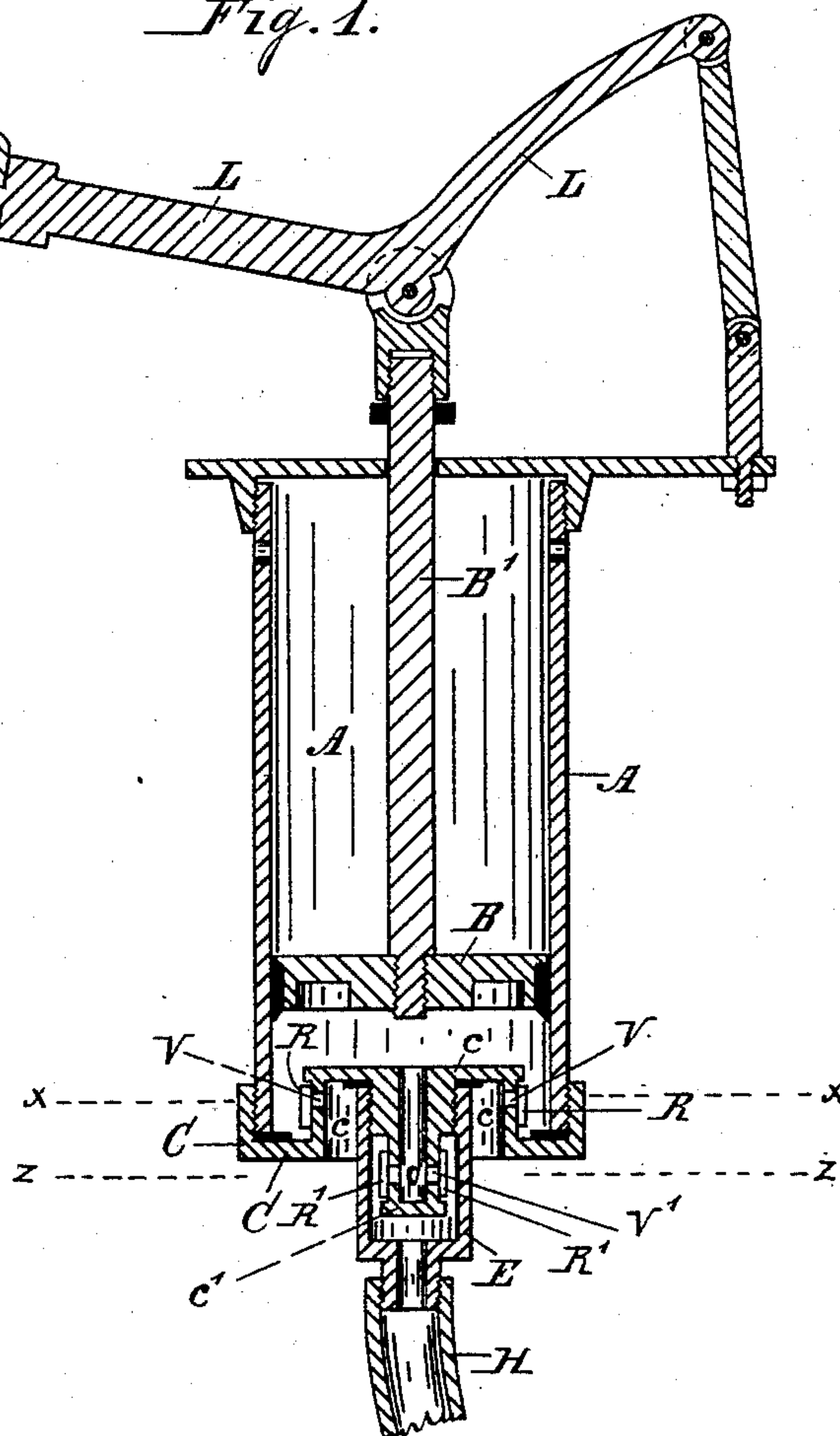


Fig. 2.

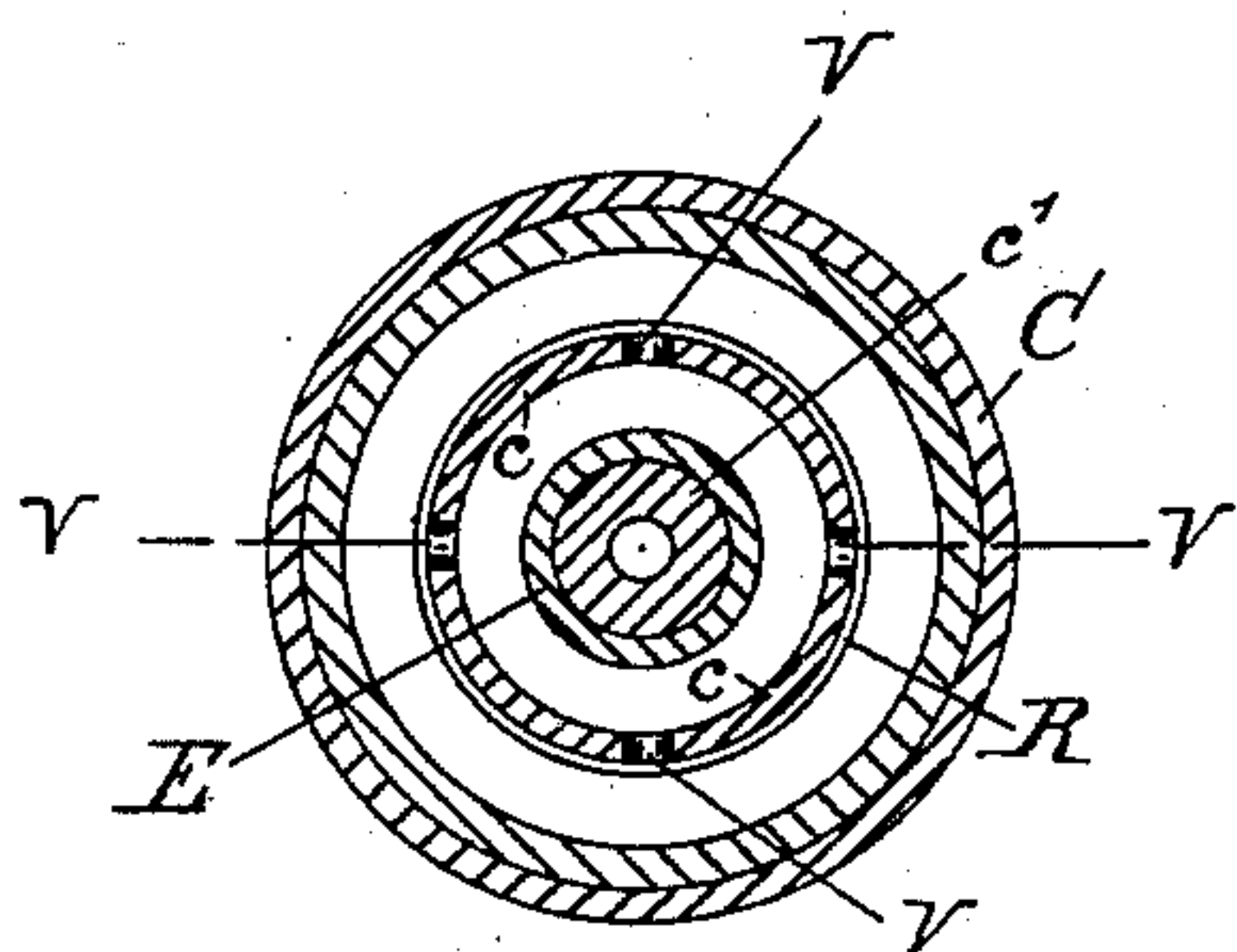
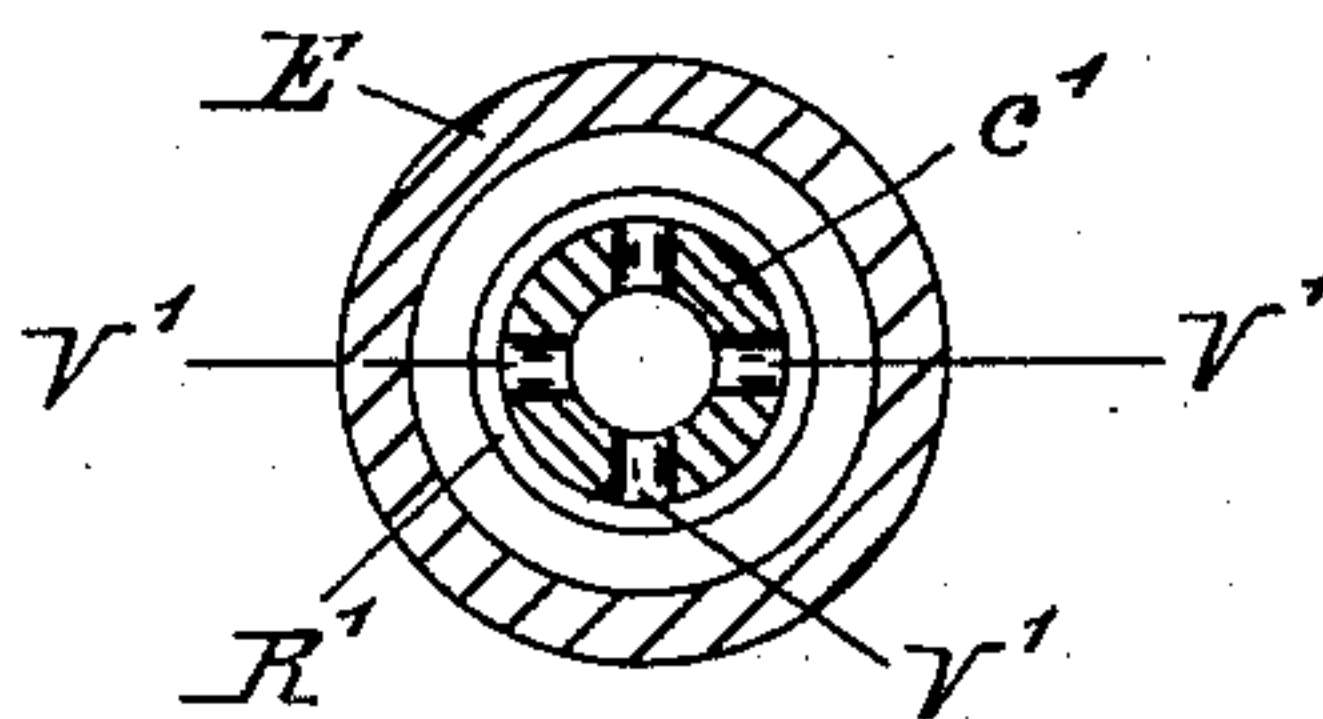


Fig. 3.



WITNESSES :

Frank J. Orens.
Theodore Langbein,

INVENTOR =

Henry L. Brown,
Per James B. Liggins & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

HENRY L. BROWN, OF INDIANAPOLIS, INDIANA.

AIR-PUMP.

SPECIFICATION forming part of Letters Patent No. 360,413, dated April 5, 1887.

Application filed July 29, 1886. Serial No. 209,404. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. BROWN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Air-Pumps, of which the following is a specification.

My invention relates to air-pumps such as are commonly used to force air into a vessel, cask, pipe, and the like; and the objects of my improvements are to provide an air-pump the valves of which are constructed in a manner so simple that even persons not possessing any mechanical skill or tools can repair and replace the same in a short time and at only a trifling expense. I attain these objects by the device illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section through my air-pump; Fig. 2, a horizontal section through the same on line *x x* on Fig. 1; and Fig. 3 a horizontal section through the same on line *z z* on Fig. 1, drawn to a larger scale.

Similar letters refer to similar parts throughout the several views.

A is the barrel or cylinder in which the piston B works. The piston B is attached to the piston-rod B', which is secured to and operated by a hand-lever, L, of the usual construction. The plate C, that forms one end of the cylinder A and contains the receiving and the discharging valves, is constructed in the following manner: At a little distance from the walls of the cylinder A the plate C terminates in a cylindrical projection or inverted cup, *c*, which extends upward into the cylinder A. In the walls of this cup *c* are a number of openings, V V. These openings are covered on the inside with an elastic band or ring, R, and form, in combination with said band, the receiving-valve that admits the air into the cylinder A. From the top plate of the cup *c* extends downward the hollow stem *c'*, which, being provided with a number of openings, V' V', in its walls, constitutes an air passage or discharge from the cylinder A. The openings V' V' are covered on the outside with an elastic band or ring, R', and form, in combination with said band, the discharging-valve. Screwed over the stem *c'*, and forming an air-chamber around the discharging-

valve, is the outlet-pipe E, which connects with the tube or hose H, that conveys the air to the vessel or cask, or the like, which is to be filled.

The device operates as follows: The upward motion of the piston B draws air from the atmosphere through the openings V V in the walls of the cup *c* into the cylinder A, the elastic band or ring R, that covers the inside of the openings V V in the walls of the cup *c*, allowing the air to pass in, while at the same time the elastic ring or band R', that covers the outside of the openings V' V' in the walls of the stem *c'*, prevents air from passing in through these openings. The downward stroke of the piston B accomplishes the opposite results. The elastic band R closes tight over the openings V V in the walls of the cup *c* while the air is forced out through the openings V' V' in the walls of the stem *c'*, the elastic band R' allowing the air to escape. The only parts that can get out of order in my air-pump are the elastic bands or rings R and R', that form the valves. To repair the pump, it is but necessary to unscrew the bottom plate, C, and the outlet-pipe E and insert new bands—a manipulation very simple and inexpensive, as elastic bands can be supplied at a trifling expense from nearly every hardware or drug store.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In an air-pump, the combination, with the cylinder A, having the removable bottom plate, C, formed with an inverted cup, said cup having openings V, of a rubber band encircling the cup and closing the openings, the hollow discharge-stem *c'*, formed integral with the cup C and projecting downwardly therefrom, said stem being formed with openings V', an elastic band, R', closing said openings, and the discharge-pipe E, removably secured to the stem, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY L. BROWN.

Witnesses:

THEODORE LANGBEIN,
FRANK J. ARENS.