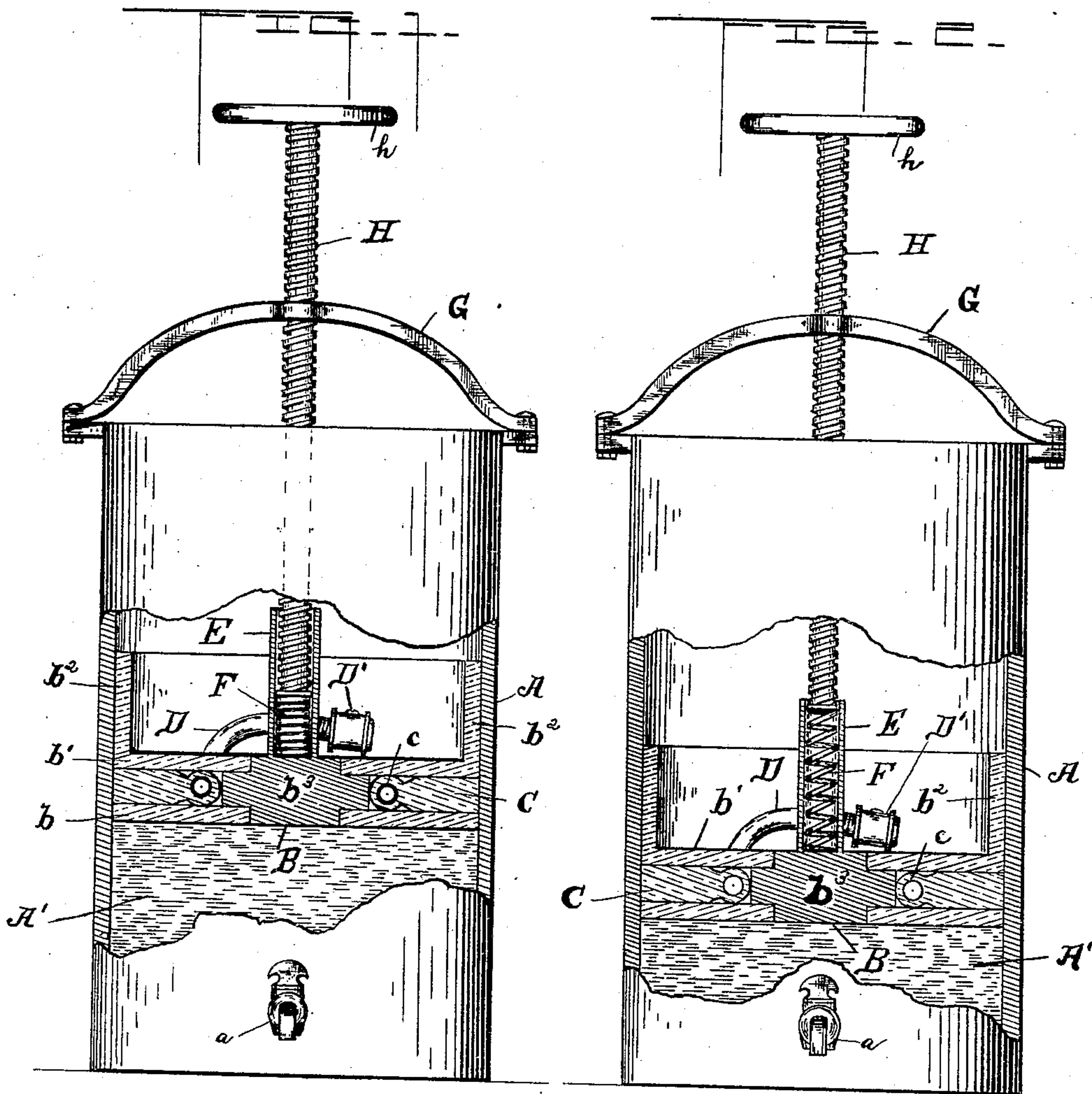


(No Model.)

A. CIRKEL.
APPARATUS FOR STORING, HANDLING, AND TRANSPORTING LIQUIDS.
No. 486,690.

Patented Nov. 22, 1892.



Witnesses:

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UNITED STATES PATENT OFFICE.

AUGUST CIRKEL, OF BOYD, WISCONSIN.

APPARATUS FOR STORING, HANDLING, AND TRANSPORTING LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 486,690, dated November 22, 1892.

Application filed February 23, 1892. Serial No. 422,506. (No model.)

To all whom it may concern:

Be it known that I, AUGUST CIRKEL, a citizen of the United States, residing at Boyd, in the county of Chippewa and State of Wisconsin, have invented certain new and useful Improvements in Apparatus for Storing, Handling, and Transporting Liquids; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in apparatus for storing, handling, preserving, and transporting liquids, particularly mineral waters, aerated drinks and beverages, illuminating-oils, &c.; and the object of the invention is to provide simple and efficient means whereby such liquids may be readily handled, stored, transported from place to place, divided, subdivided or transferred from vessel to vessel, and withdrawn in small quantities or in bulk without loss of strength or quality by contact with the air.

The invention is specially adapted to dispensing drinks and beverages or other liquids for consumption, as in such cases a small measure or glassful at a time may be drawn off without exposing the remaining portion of the liquid to the air.

The invention will first be described in connection with the accompanying drawings, and then pointed out in the claims at the end of this description.

Referring to the drawings, in which similar letters of reference are used to denote corresponding parts, Figure 1 is a sectional side elevation of a cask or vessel embodying my invention, showing the power-storing spring compressed; and Fig. 2 is a similar view showing the spring expanded.

A in the drawings denotes a suitable cask or vessel, which may be of any desired form and dimensions, though preferably cylindrical in cross-section, and may be arranged in an upright position, as shown. This vessel has an open top and closed bottom and is provided with a faucet *a* at the bottom.

Within the cylinder A is fitted a movable partition or piston B, composed of two circular disks or plates *b b'*, (one of which is provided with a circumferential flange or pro-

jection *b²* to support and guide the piston in its movements back and forth and prevent it from tipping,) secured to a hub or central portion *b³* and an elastic packing-ring C, which latter may consist of a solid ring, but is preferably composed of an outer solid ring and an inner hollow ring *c*, connected with the outer air behind the piston by means of an air tube and cock D D', the tube D being passed through an aperture in the hub or disk *b'*, so as to connect with the hollow ring *c*, whereby the latter may be inflated for the purpose of forcing the solid ring C, of rubber or other suitable material, tightly against the interior of the cylinder A. From the upper side of this piston projects a tube E, in which works a spiral or other suitable spring F. This tube serves as a housing for the spring and a guide for the foot of the screw and prevents distortion and displacement of the spring when the apparatus is in use.

G is a cap or yoke, which may be secured to the top of the vessel in any suitable manner and in which works a screw-rod H, having the hand-wheel *h* and adapted to be operated in a manner similar to the ordinary common screw letter-press for the purpose of forcing the piston B downward and compressing the spring F, which in turn exerts its force upon the liquid in the air-tight chamber below the piston. The spring F is interposed between the piston and the lower end of the adjusting-screw H, so as to provide a yielding resistance between the piston and the end of said screw, but has no direct connection with the screw-rod, which merely bears thereon, as indicated, when the screw is turned down.

The piston B, with its rubber ring C, forms an air-tight chamber or compartment A' below the piston, which is adapted to be amplified in proportion to the amount of liquid introduced, the pressure of the incoming liquid being exerted against the under side of the piston when forced into the vessel through the cock or faucet *a*, the adjusting-screw H being turned back toward the top of the vessel to permit this to be done.

When it is desired to fill the vessel, the screw H is turned back the desired distance and the liquid is then forced into the com-

partment A', through the cock or faucet *a*, against the piston, driving the latter back until the spring F is compressed by contact with the depending screw. When the vessel
 5 is empty, the piston will be down and the liquid may be forced in under the piston without coming in contact with the air, and as the piston recedes the capacity of the liquid compartment is gradually increased to
 10 receive the incoming liquid. In this manner various kinds of liquids may be stored and transported from place to place or transferred from vessel to vessel and divided, subdivided, handled, and rehandled, and with-
 15 drawn in whole or in part without exposure to the air.

Ordinarily in dispensing beverages or liquids for consumption in small quantities the recoil of the spring F will exert sufficient
 20 force to drive out the liquid through the open faucet, so that a number of glasses or small measures may be withdrawn without turning the screw-rod, the liquid at the same time being constantly under pressure, and when the
 25 pressure of the spring is reduced the screw-rod may be again turned, so as to compress the spring for further action.

It will be understood, of course, that the invention is adapted to be used in a variety of
 30 ways and for various purposes. Other adjusting devices may also be employed for depressing the piston—as, for instance, a sliding rod or plunger and a plate or bow spring. The vessel may also be filled by drawing up
 35 or pulling back the piston, so as to permit the liquid to flow into the chamber A' through the cock or faucet *a*, connecting with a source of liquid-supply, the liquid being adapted to

fill the space behind the piston as the latter is drawn up. 40

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

1. In combination with the cylinder provided with the air-tight compartment having
 45 the faucet therein, the movable head or piston working in said cylinder and provided with the centrally-disposed tube projecting upwardly therefrom, the adjusting rod or screw having its lower end or foot arranged
 50 to work in said tube, and the spring interposed between the piston-head and the foot of the screw, said tube being adapted to house and retain the spring in proper position therein and also to serve as a guide for the screw, 55 substantially as described.

2. An apparatus for storing, handling, transporting, and dispensing liquids, comprising the cylindrical vessel having open
 60 top and closed bottom with faucet therein, the movable head or piston working in said vessel, provided with a circumferential guiding and supporting flange, and centrally-disposed tube projecting upwardly therefrom, the
 65 spring housed in said tube, and the adjusting rod or screw supported above the piston with its lower end or foot resting upon said spring within said tube, substantially as described.

In testimony whereof I affix my signature in
 70 presence of two witnesses.

AUGUST CIRKEL.

Witnesses:

A. J. KOCH,
 HERMAN BAER.