

No. 676,195.

Patented June 11, 1901.

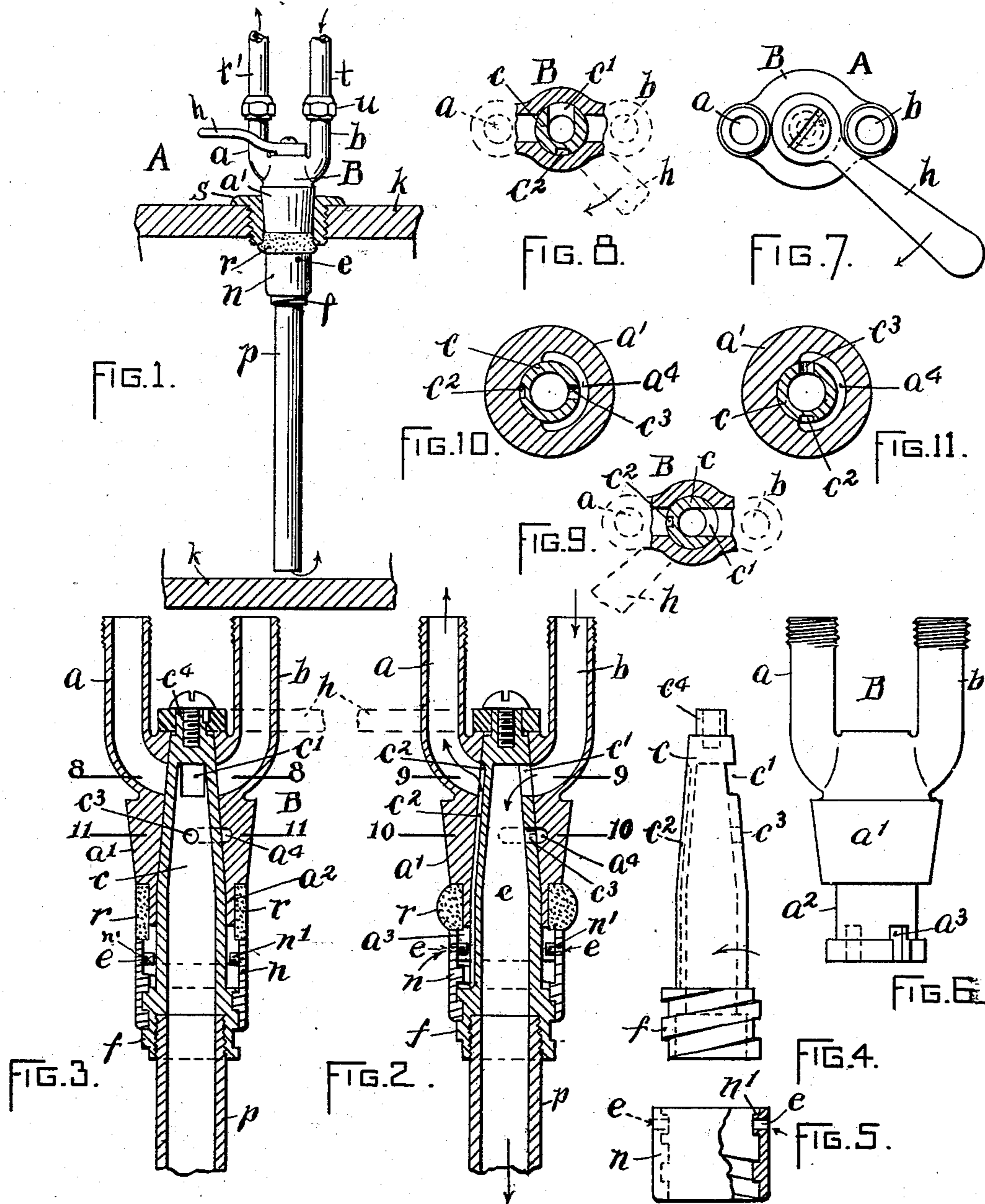
N. H. MEDBERY.

COMBINED PLUG AND VALVE FOR RACKING PURPOSES.

(Application filed Mar. 11, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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ATTY.

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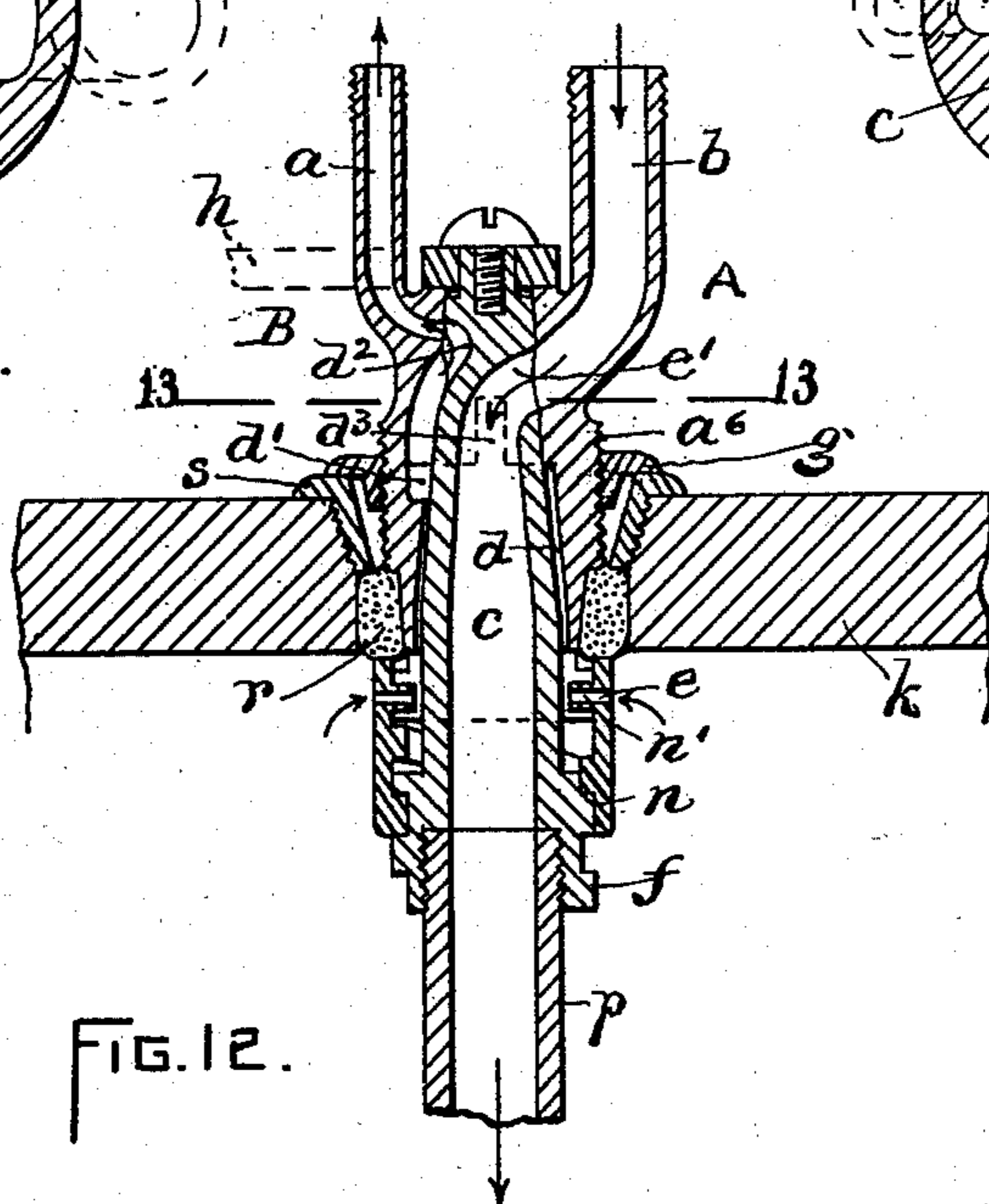
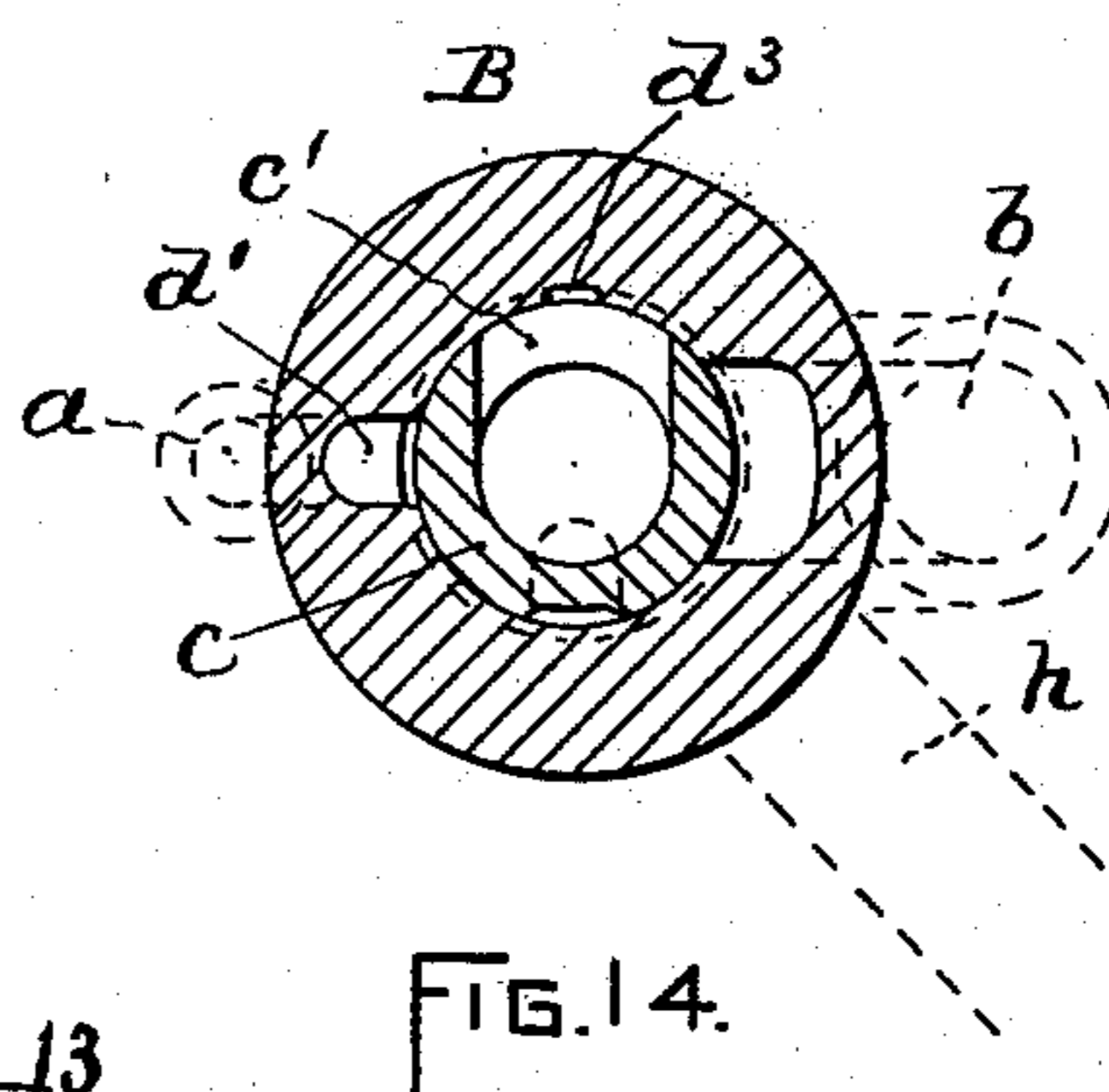
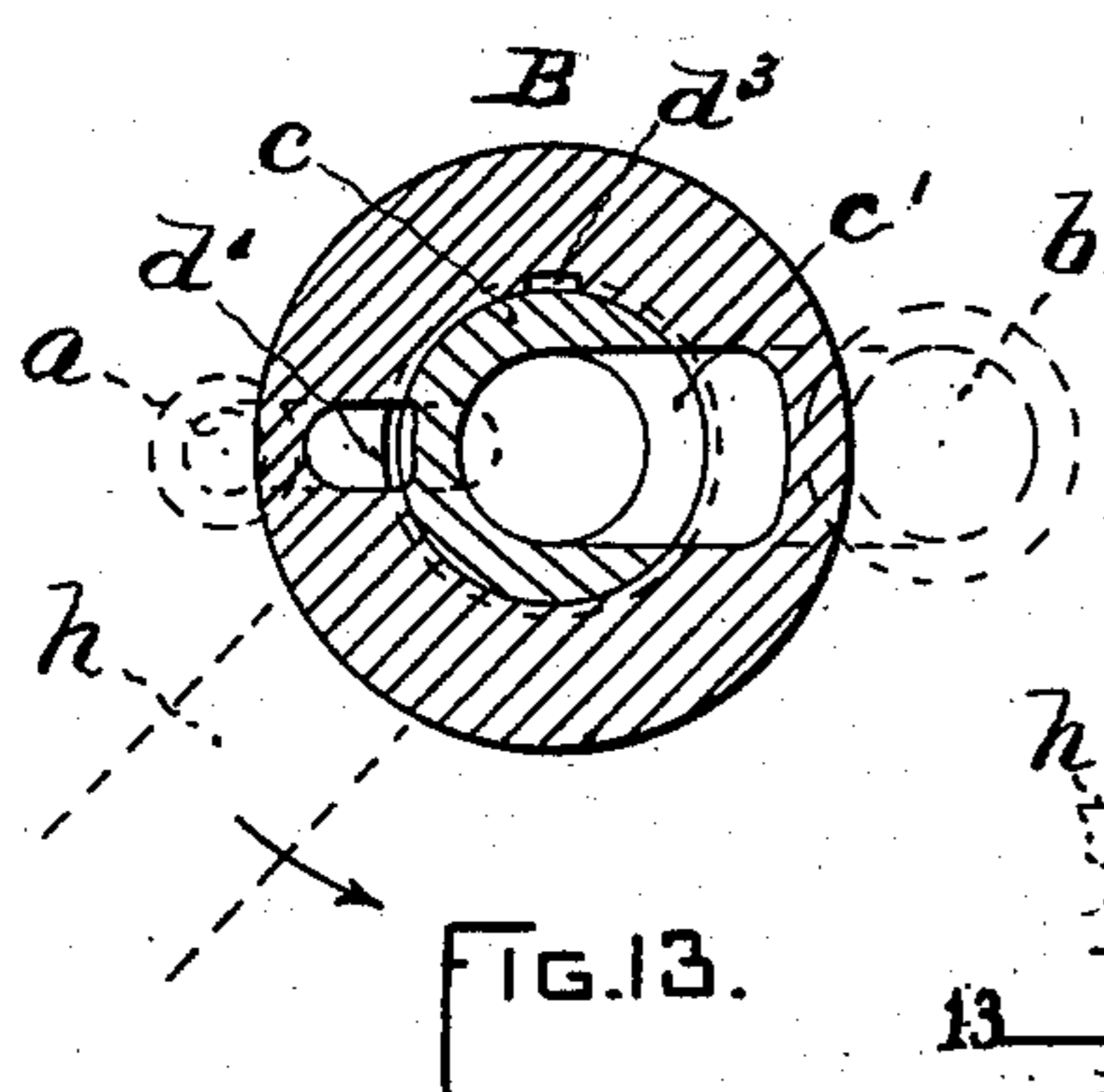
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(No Model.)

**2 Sheets—Sheet 2.**



WITNESSES:

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# UNITED STATES PATENT OFFICE.

NELSON H. MEDBERY, OF EAST PROVIDENCE, RHODE ISLAND.

## COMBINED PLUG AND VALVE FOR RACKING PURPOSES.

SPECIFICATION forming part of Letters Patent No. 676,195, dated June 11, 1901.

Application filed March 11, 1901. Serial No. 50,571. (No model.)

*To all whom it may concern:*

Be it known that I, NELSON H. MEDBERY, a citizen of the United States of America, and a resident of East Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in a Combined Plug and Valve for Racking Purposes, of which the following is a specification.

My invention relates to certain novel improvements in a combined plug and valve for racking purposes, the device being more particularly adapted to be employed in filling barrels, kegs, or other packages with beer or other liquid containing more or less carbonic acid gas or air.

The object I have in view is to provide brewers with a simple, efficient, inexpensive, and easily-manipulated device or racking attachment adapted to be readily inserted in the usual bung-hole of a barrel or keg, the construction and arrangement of the device being such that the single act of simply manipulating the handle or lever thereof through a short circular arc simultaneously opens the valve to permit the liquid to flow into the barrel and snugly secures the device in position and at the same time forcibly expands a rubber or yielding packing around the plug and against the adjacent surface of the bung-hole, whereby the latter is rendered air-tight during the racking operation.

In carrying out my invention I employ a plug or casing member having inlet and outlet ducts or passages at its upper end, a hollow revoluble valve seated in the plug member having ports arranged to communicate with said passages and provided with a coarse screw-thread at its lower end, an endwise-movable nut or sleeve engaging said screw-thread, and a compressible packing mounted in the lower portion of the plug and in engagement with said nut, all as will be more fully hereinafter set forth and claimed.

In the accompanying two sheets of drawings, Figure 1 is a side elevation of my improved racking attachment, showing the relative position and arrangement of the device when in use. Said figure also represents sectionally a portion of a barrel and its bung-hole. Fig. 2 is a corresponding central sectional view, in enlarged scale, the bung-hole

being omitted. Fig. 3 is a similar sectional view showing the valve closed, the packing being in the normal or non-expanded position. Fig. 4 is a side view of the valve member detached. Fig. 5 is a side view, in partial section, of the nut or bushing adapted to engage the lower portion of the valve. Fig. 6 is a side elevation of the valve-casing or body member. Fig. 7 is plan view corresponding with Fig. 3. Fig. 8 is a horizontal sectional view taken on line 8 8 of Fig. 3. Fig. 9 is a similar view taken on line 9 9 of Fig. 2. Fig. 10 is a horizontal section taken on line 10 10 of Fig. 2. Fig. 11 is a similar view taken on line 11 11 of Fig. 3. Fig. 12 is a vertical central longitudinal view similar to Fig. 2, showing my improved combined plug and valve in a modified form. Fig. 13 is a horizontal sectional view taken on line 13 13 of Fig. 12, and Fig. 14 is a similar sectional view showing the relation of the several ports or openings when the valve is closed.

The following is a more detailed description of my improved combined plug and valve or racking attachment and the manner of operating the same. I would first state, however, that the device is more especially adapted for barrels or kegs provided with a metal bung-hole or flanged sleeve of usual construction, as indicated in Figs. 1 and 12.

In the drawings, A designates my improved device as a whole. The body or valve-casing member B is hollow or annular and provided with two tubular branch connections *a b*, used for the passage of air and liquid, respectively. The part *a'* of the body immediately below said passages is slightly conical and in use constitutes the plug, its size and shape approximating that of the bung-hole opening. The casing is reduced in diameter at *a''* to receive the yielding or compressible packing material or substance *r*, as rubber. (See Figs. 2 and 3.)

Seated within the body B is the taper-fitted hollow valve or cock *c*, its upper end extending therethrough and having secured thereto the operating handle or lever *h*. As drawn the lower portion of the valve extends below the member B and is screw-threaded exteriorly at *f*. The valve has an upper port *c'* cut through its wall, arranged to register with the said opening or inlet-passage *b*. The op-

posite side of the valve has a shallow longitudinal groove  $c^2$  formed in its outer surface, adapted to register with the said air-passage  $a$  when the valve is open and the device in operation, as clearly shown in Fig. 2.

To the bottom of valve is fitted an outer annular nut or sleeve  $n$ , having oppositely-arranged inwardly-extending hubs  $n'$  at its upper end. These latter are fitted in corresponding guide-slots  $a^3$ , formed in the lower end of the body B. (See Figs. 2 and 6.) As thus constructed it will be seen that upon turning the valve the nut  $n$  will thereby be forced to move endwise, the slots preventing it from axial movement. The said hubs or pins  $n'$  are provided with central holes  $e$  in open communication with the outer air or with the air in the barrel when the device is in use.

At a point below the inlet-opening  $b$  the valve seat or body is provided with a shallow horizontal groove  $a^4$ , extending, say, one-half way around. (See Figs. 2 and 10.) The valve itself has a small hole  $c^3$  therethrough registering with said groove, as clearly shown in said figures. (See also Fig. 11.) This arrangement, together with the said continuously-open air-passages  $e$ , constitutes an air-vent for the valve when the latter is closed—that is to say, air can enter the upper end of the closed valve via the passages  $e$ ,  $c^2$ ,  $a^4$ , and  $c^3$ .

The manner of operation may be described as follows: Assuming the device to be first coupled to a suitable or flexible connection  $t$ , communicating with the tank or source of supply containing the liquid to be racked off, the operator next inserts the device into the usual bung-hole or bushing  $s$ , screwed into the barrel or keg  $k$ , followed by turning the handle  $h$  to the left to its limit, thereby at the same time both opening the valve and snugly compressing the packing around the bushing  $s$  by forcing the nut  $n$  upwardly from the normal position. (See Figs. 1 and 2.) At the same time, too, circulation is established within the valve and barrel by reason of the fact that the air freely passes from the barrel into the outer air or air connection  $t'$  via the open passages  $e$ , longitudinal groove  $c^2$ , and discharge-opening  $a$ . When in this position, however, (see Fig. 2,) air cannot enter the small openings  $c^3$  and  $a^4$ . When the package is filled with the liquid, the attendant simply swings the handle  $h$  to the right—say ninety degrees—thereby simultaneously closing the valve and retracting the nut  $n$ , the packing  $r$  then automatically returning to its normal position, the corresponding relation of the parts being indicated in Figs. 3, 8, and 11, after which the device is removed from the barrel. It will be apparent that as the extension-pipe  $p$  is lifted any liquid contained therein will immediately flow out into the barrel, since air is in communication with the interior of the closed valve through the small passages  $e$ ,  $c^2$ ,  $a^4$ , and  $c^3$ , as before stated.

I would add that when the charging-pipe  $p$  is simply inserted freely through the bung-hole and without a valve or packing attachment the air and gas in the barrel cause the inflowing beer or liquid to bubble and foam to a much greater extent, thus rendering it more difficult for the attendant to accurately determine when the barrel is properly filled. In my improved device the length of pipe  $p$  is such that it is adapted to discharge the beer or liquid at or near the bottom side of the barrel. (See Fig. 1.) This arrangement, together with the air-tight packing  $r$ , excludes the outer air, while that already in the barrel, as well as portions of carbonic-acid gas carried over by the liquid and set free therein, escape through the air-outlet passage or tube  $a$ , thus reducing to a minimum the tendency of the liquid to foam.

In Figs 12, 13, and 14 I have represented a modified construction of my improved combined plug and valve or racker attachment A. This arrangement embodies the functions and advantages possessed by the device represented in Figs 1, 2, 3, &c., before described. In lieu of providing the air-passages  $c^2$ ,  $c^3$ , and  $a^4$ , the same have been dispensed with and similar results attained by means of an annular space  $d$ , (communicating directly with the passages  $e$ ,) formed in the lower portion of the valve-body B, said space extending upwardly and opening into a vertical groove  $d'$ , adapted to register with a recess or pocket  $d^2$ , formed in the valve  $c$ , the latter recess in turn registering with the air-outlet tube or passage  $a$  when the valve is open. When the valve is closed, air circulation is produced therein through the said open passages  $e$ ,  $d$ , and  $d^3$ , the latter being a narrow recess registering with the valve-port  $c'$  when the latter is in the closed position, as shown in Fig. 14.

In some cases it is found desirable to provide the racking attachment with means for readily adjusting or regulating the distance of the lower end of pipe  $p$  from the bottom side of the barrel. In other instances it often happens that the size and angle of the bung-hole opening will be found to vary considerably, thereby permitting the devices to enter too far before being arrested by the adjacent sides of the valve-body. In order to overcome the disadvantages just referred to, I may provide the exterior of the cylindrical portion  $a^6$  with a fine screw-thread on which is fitted an annular nut having a flange  $g$ , adapted in use to rest upon the top of the bung-hole bushing  $s$ , as clearly shown in Fig. 12. By means of this arrangement the degree of expansion or compressibility of the packing  $r$  may be regulated as desired.

I do not claim, broadly, as my invention a device for drawing beer from a keg or barrel provided with a novel bushing or bung-hole adapted to receive a bung member arranged to be secured and packed therein, and having a removable valve-controlled slip-pipe passing through the bung, nor do I claim,

broadly, a device adapted to be secured to the bung-hole by one operation and in which device the beer and air controlling valve is opened or closed by a subsequent operation.

5 In my invention the device is particularly adapted to be employed in kegs or barrels provided with the usual bung-holes and bungs, the construction and arrangement of the parts being such that a single operation  
10 simultaneously secures and packs the device in the bung-hole and opens the liquid and air passages.

I claim as my invention and desire to secure by United States Letters Patent—

15 1. A racking or barrel-filling device, arranged to be inserted in and removably secured to the usual bushing or bung-hole of the barrel, the said device being provided with inlet and outlet passages, an axially-  
20 movable ported hollow valve registering with said passages, and a packing member connected with the device, the whole being constructed and arranged whereby a single short angular movement of the valve simultane-  
25 ously opens said passages, secures the device to the bung-hole and forms therewith an air-tight joint, substantially as described.

2. In a racking or barrel-filling device, adapted to be inserted in the usual bung-hole of a barrel, the combination of the body or 30 casing member provided with inlet and outlet passages for the liquid and air, respectively, an expansible packing *r* mounted on the lower portion of said casing, an axially-movable hollow valve seated in the casing 35 having ports arranged to register with said inlet and outlet passages and having a screw-thread formed on its lower portion, and a non-revoluble annular nut fitted to said screw-thread and in engagement with said pack- 40 ing, arranged whereby after inserting the device in the bung-hole the single act of turning the valve simultaneously opens said passages and forcibly expands the packing against the under side of the bung-hole, 45 thereby too at the same time securing the device in position and forming an air-tight joint, substantially as described.

Signed by me at Providence, Rhode Island, this 4th day of March, A. D. 1901.

NELSON H. MEDBERY.

Witnesses:

GEO. H. REMINGTON,  
HENRY P. MORGAN.