

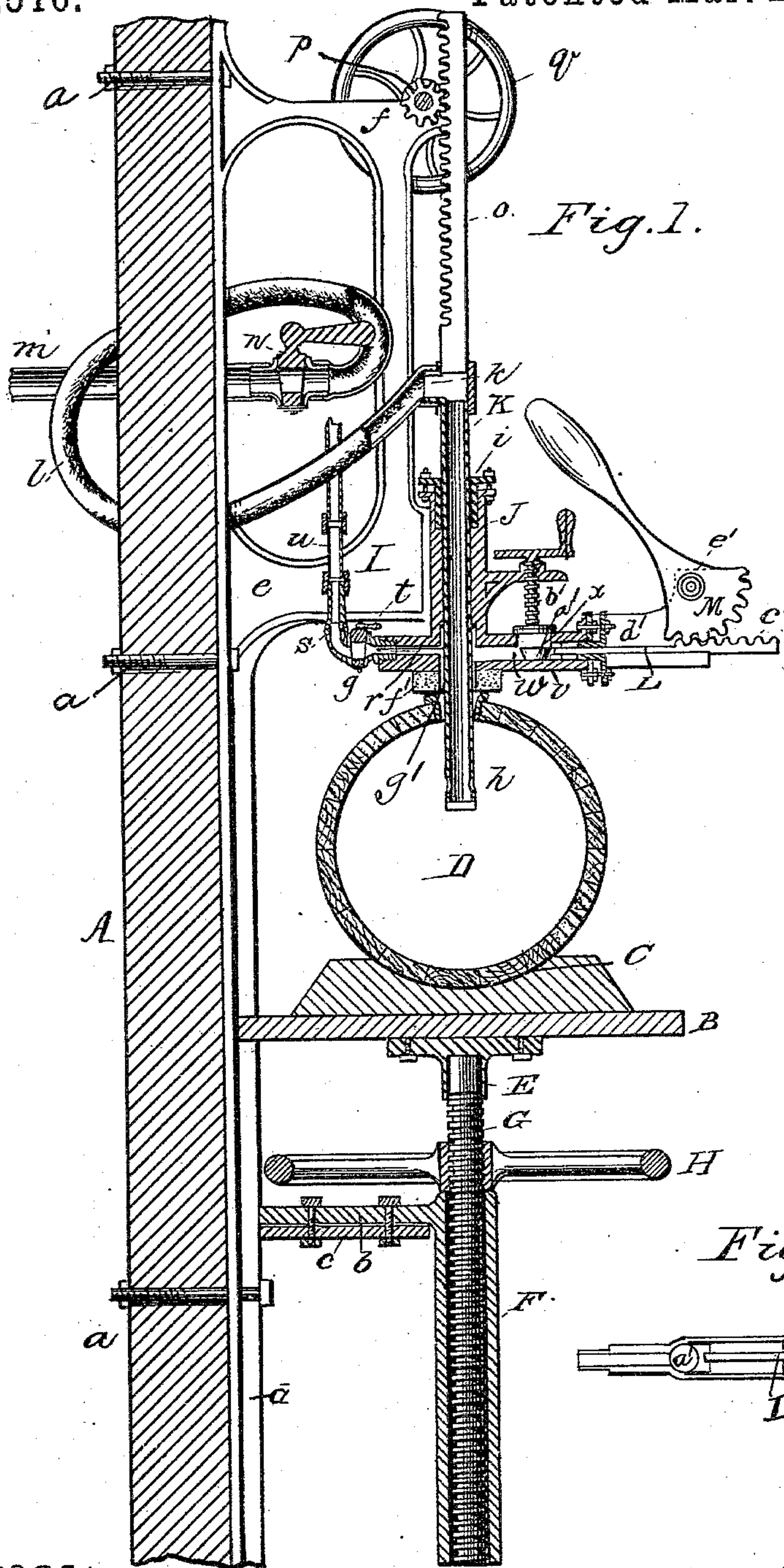
(No Model.)

J. PUSCH.

HERMETIC APPARATUS FOR RACKING BEER.

No. 274,516.

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Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## HERMETIC APPARATUS FOR RACKING BEER.

SPECIFICATION forming part of Letters Patent No. 274,516, dated March 27, 1883.

Application filed November 13, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHANN PUSCH, of Blue Island, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hermetic Apparatus for Racking Beer; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention consists in certain improvements in apparatus for racking beer, as will be hereinafter described and claimed.

In the drawings, Figure 1 represents a vertical section of my improved apparatus in operation. Fig. 2 represents a plan view of a bung-pushing device to be presently described.

In racking beer the great desideratum is to prevent the escape of the carbonic-acid gas contained therein. As this gas escapes from the beer such beer becomes flat, and to render it salable artificial means have to be resorted to to give "body" and tone to the beer; and it is the object of my improvements to produce an apparatus whose several parts can be easily operated and by means of which the barrels may be rapidly placed in position, filled, and removed, and the escape of the carbonic-acid gas present in the beer entirely prevented.

To this end A represents a suitable framing, standard, or support, to which my apparatus is secured by bolts or other suitable means, *a*.

B represents a table or platform having a recessed upper face, C, within which the barrel D to be filled rests. To the under face of the table B is attached a downwardly-extending sleeve or tube, E.

F represents a tube or pipe, which is bolted or otherwise attached by an arm or extension, *b*, to a bracket, *c*, extending from the standard A.

G represents a worm or screw, which engages at its upper end within the tube E, and

H represents a hand-wheel having central screw-thread of opposite pitch to the pitch of the thread on the worm. By turning this hand-wheel H in either the one direction or the other the worm will be raised or lowered, as the case may be, and thereby raise or lower the table

or platform B, which is guided in its vertical movement within a flange, *d*, in the lower end of a bracket, I, on the framing or standard. This bracket has two horizontal arms, *e f*, attached to or formed integrally with the lower one, *e*, of which is a vertical tube, J, having at its lower end a horizontal tubular extension, *g*, having a vertical orifice, *g'*, for a purpose to be presently described.

K represents a hollow plunger having solid lower end and perforations or openings *h* near its lower end.

*i* represents a packing within which this hollow plunger slides within the tube J. At the upper end of this plunger is an exteriorly-screw-threaded nozzle or union, *k*, to which one end of a flexible pipe or tube, *l*, for supplying beer to said tube J, is attached. The other end of this pipe or tube *l* is attached to another pipe, *m*, connecting with the beer-supply. A stop-cock, *n*, serves to regulate the flow of beer through these pipes or tubes *l m* to the hollow plunger K. A toothed rack, *o*, extends upwardly from the top of the plunger K, with which a pinion, *p*, journaled in the arm *f* of the bracket I, gears. A hand-wheel, *q*, is keyed or otherwise attached to the shaft of the pinion *p*, by turning which the rack *o* will be either raised or lowered as it is desired to either force the plunger K down through the tube J toward or into the barrel or raise it therefrom. The rack being secured to said hollow plunger, any movement of said rack will cause a corresponding movement of the plunger. On reference to the drawings it will be observed that the diameter of the vertical orifice in the extension *g*, through which the hollow plunger passes, is slightly in excess of the diameter of the passage in the tube J. This is for the purpose of allowing a small quantity of beer ascending therethrough when the barrel is full, and passing from thence through the passage *r* to the air-escape pipe or tube *s*, attached at one end to said extension *g*. This pipe or tube *s* is provided with a stop-cock, *t*, and a glass tube, *u*, and connects with a chamber above, (not shown in the drawings,) which, by means of an air-pump, is filled with air under a pressure in excess of the pressure of carbonic-acid gas, in order that the carbonic-acid gas in the



beer will be prevented from rising and escaping from the beer while being racked, for purposes to be presently described.

*v* represents a plate or horizontal extension 5 of the tube J, which is provided with a horizontal slot or passage, *w*, and in its upper face with a vertical slot or opening, *x*, through which the bung *a'* is pushed by the plunger *b'* (which in the drawings is shown as operated 10 by a screw, but may be of any other desired form) down onto the top face of the lower portion of said extension *v*, as shown.

*L* represents a bung-pusher, which has at its outer end a rack, *c'*. A flanged plate or arm, *d'*, 15 is secured at its rear end to the extension *v*, and a toothed segment, *M*, is pivoted at *c'* in or to the outer end of this arm *d'*. By raising the arm or handle of this toothed segment the teeth thereon will engage with the teeth *c'* of 20 the rack on the bung-pusher and force said bung-pusher inward, and as said pusher passes inward it will push the bung rearwardly until the vertical orifice in the extension *g* is reached, down which said bung will be forced to the 25 barrel at the proper time in the manner to be presently described.

The beer-supply pipes *l m* having been connected with the hollow plunger K, and the air-escape pipe connected with a compressed-air 30 chamber and with the hollow extension *g*, if the lower end of the plunger extends below the bottom plate of the extension *g*, the pinion *p* is turned by means of the hand-wheel *q*, which will raise the rack and the thereto-attached 35 plunger clear of the bottom of the extension *g*. Then the barrel D, whose bung-hole is provided with a metal bushing, is placed within the recessed portion C of the platform B.

*f'* is a rubber gasket attached to the lower 40 face of the extensions *g v*, and having a central orifice. By turning the wheel H the screw G will be raised, and as said screw rises it will force upward the platform and the barrel resting thereon until the bushing is pressed firmly 45 against the rubber gasket attached to the under face of the extensions *g v*. In this position the barrel is held firmly and securely during the operation of filling. The hand-wheel *q* is then turned until the pinion *p* has 50 forced the rack *o* and hollow piston K down to the position indicated in the drawings. When the hollow piston K has been passed down through the tube J, and its lower end has entered the barrel to be filled, the cock *n* in the 55 beer-supply pipe is opened, which will allow the beer from the source of supply to pass through said pipe *l m*, to and through the hollow piston K, and out through the perforations or openings *h* therein, into the barrel. At the same 60 time the cock *t* in the air-escape pipe *s* is opened, which will afford free communication between the interior of the barrel at one end and a chamber (not shown in the drawings) at the other end, in which is contained air under 65 pressure in excess of the pressure of carbonic-acid gas. As is well known, much of the carbonic-acid gas in beer is now dissipated and

lost during the usual processes employed in racking beer. Consequently just in proportion as said gas disappears so does the beer 70 become less marketable or desirable as a beverage, and it has been necessary to doctor or treat the beer in order to restore the vitality lost in the racking—a necessity involving not only loss of time, but an additional expense, 75 besides laying the brewer open to the charge of selling an adulterated article. It is the object of this arrangement to avoid all such objections, as by connecting the barrel, by means of said pipe *s*, with a chamber containing com- 80 pressed air, as described, on the beer passing into the barrel, the ascent and escape therefrom of the carbonic-acid gas will be prevented by the more solid volumes of the compressed air. Thus the carbonic-acid gas will be retained in 85 the beer, which will thus retain its life and avoid the necessity of its subsequent treatment. When the barrel has become filled with beer a small quantity will rise up through the bung-hole and pass up the orifice through which the 90 hollow plunger moves up through the tube or pipe *s* to the glass indicator-tube *u*, immediately on seeing which the attendant will close both cocks *n* and *t*, and by turning the hand-wheel *q* raise the hollow-plunger K out of the 95 barrel. The small quantity of beer in the tubes will, as the plunger K rises, flow down into the barrel and fill the space left in the barrel by the displacement of said plunger. Then by raising the handle of the toothed segment *M* the 100 racked bung-pusher will be pushed rearwardly and will force the bung to a position in line with the opening through which the plunger moves. The bung having been placed in position, the plunger is again caused to descend, 105 and as it descends it will force the bung down through the vertical orifice *g'* to and press it firmly within the bushed bung-hole, and thus close the barrel. Then the plunger is again drawn up, the hand-wheel H turned to lower 110 the screw G and the platform and barrel thereon, and the barrel removed. Another barrel can then be placed upon the platform and the same method followed as above described for filling another barrel. 115

By this invention barrels can be rapidly placed in position, filled, closed, and removed, and the carbonic-acid gas retained within the beer.

Having thus described my invention, what I 120 claim therein is—

1. In a beer-racking device, the combination of a vertically-adjustable barrel-support, a vertically-sliding hollow plunger connected with a beer-supply, a vertical hollow tube to 125 receive and guide said plunger in its vertical movements, an air-escape pipe connecting at one end with the lower end of said tube, and at its other end designed to connect with a compressed-air chamber, and a horizontally-sliding bung-pusher, substantially as and for the purpose set forth. 130

2. In a beer-racking device, a bracket or support, I, having tube J, provided with hollow



extension *g*, vertically-adjustable hollow plunger *K*, air-escape pipe *s*, and beer-supply pipes *l m*, substantially as and for the purpose set forth.

5 3. The combination, with a bracket or support, *I*, having arms *e f*, of pinion *p*, rack *o*, tube *J*, hollow plunger *K*, and a beer-supply pipe connecting with said plunger *K*, substantially as and for the purpose set forth.

10 4. The combination, with horizontally and vertically slotted plates *g v*, of toothed bung-pusher *L*, flanged plate *d'*, and toothed segment *M*, pivoted to said plate *d'*, substantially as and for the purpose set forth.

5. The combination, with the tube *J*, of the 15 horizontally-slotted plate or extension *v*, having vertical slot *x*, the plunger *b'*, bung-pusher *L M*, extension *g*, having a vertical orifice, and means for forcing the bung down to the barrel, substantially as described. 20

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

JOHANN PUSCH.

Witnesses:

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ROBT. BROWN.