(No Model.) 3 Sheets—Sheet 1.

J. PUSCH.

APPARATUS FOR RACKING BEER.

No. 302,282. Patented July 22, 1884.

Fig. 1.

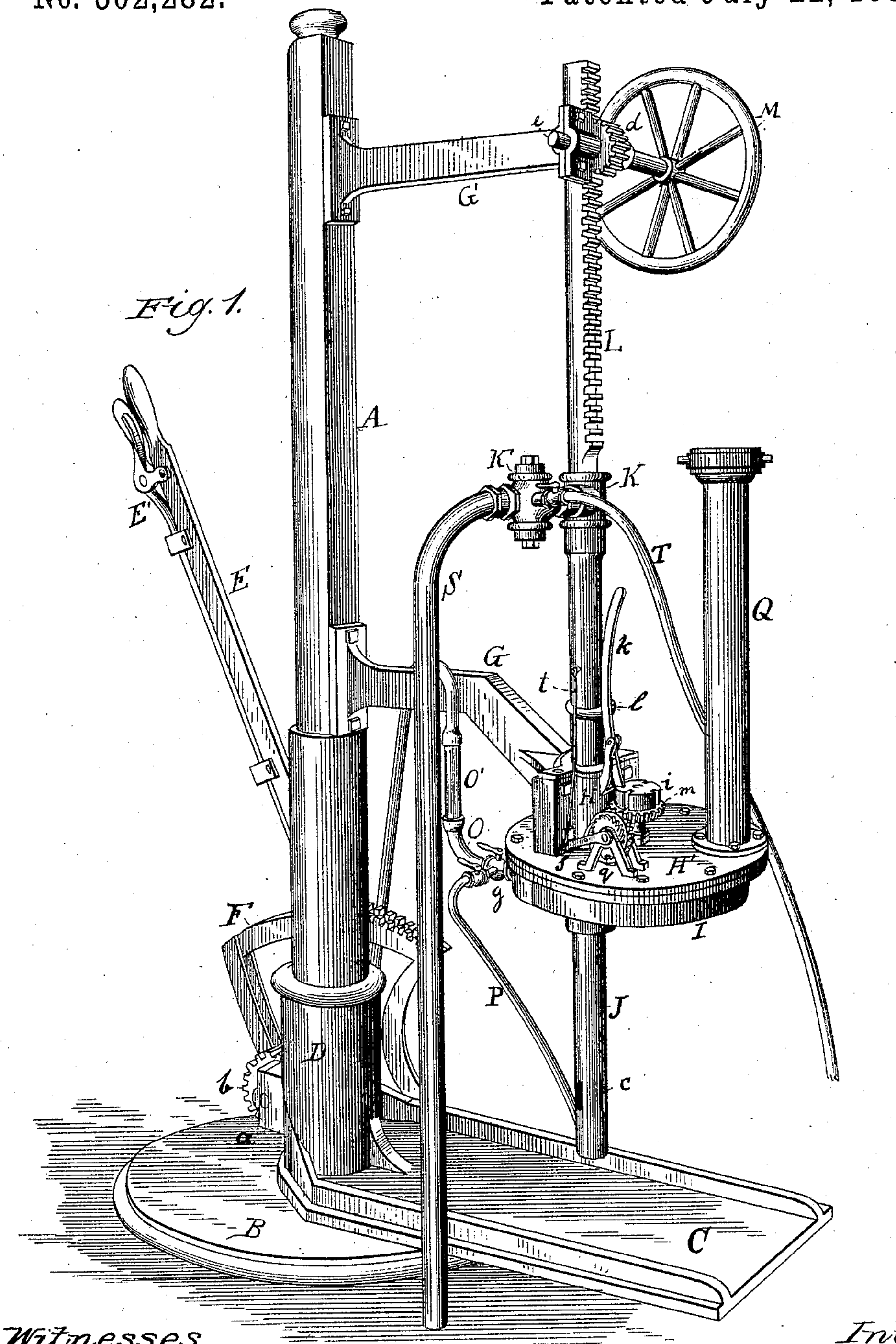

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Fig. 2.

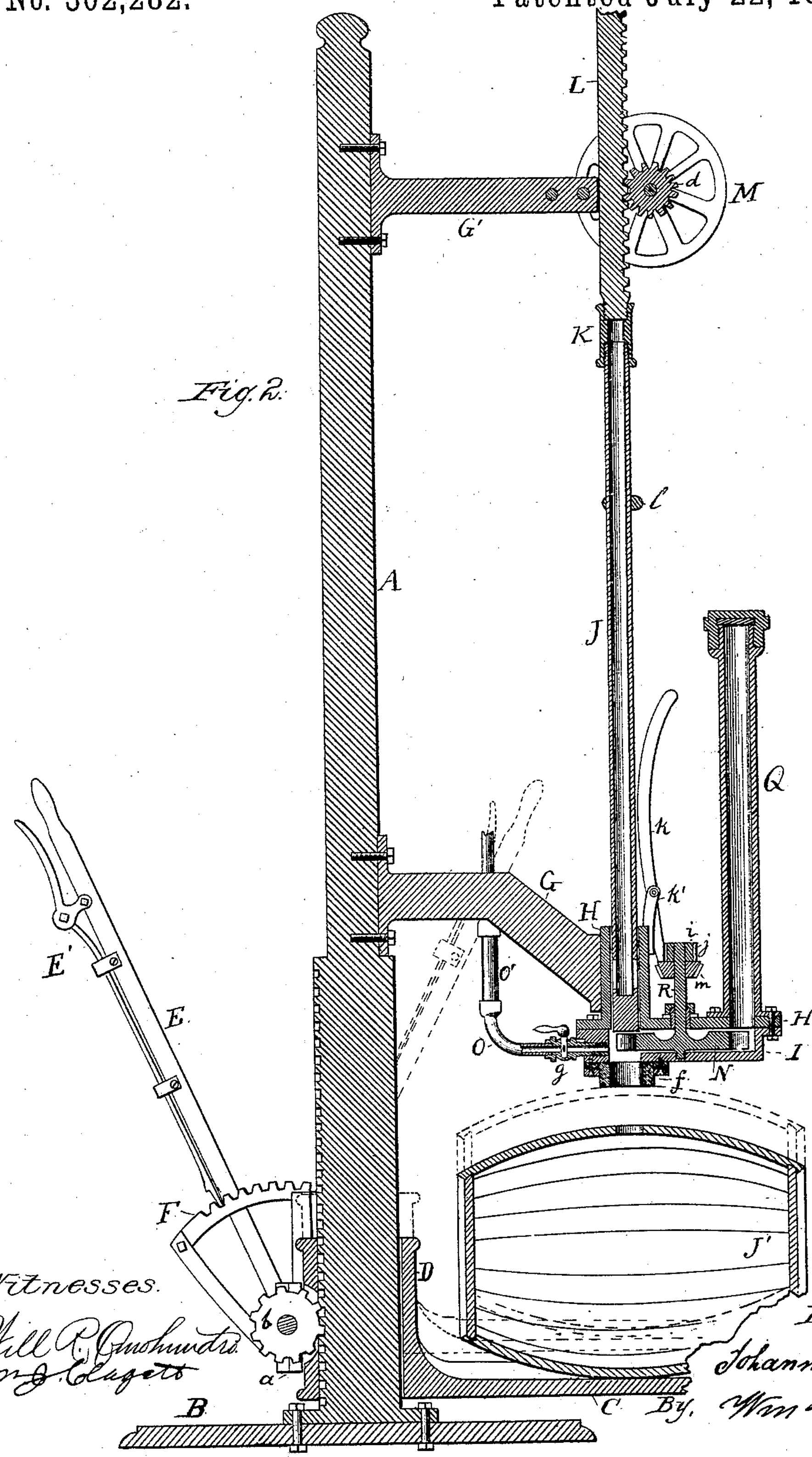

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Fig. 4

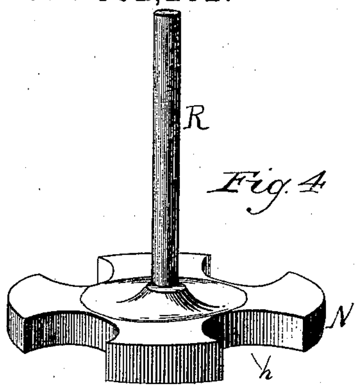


Fig. 5.

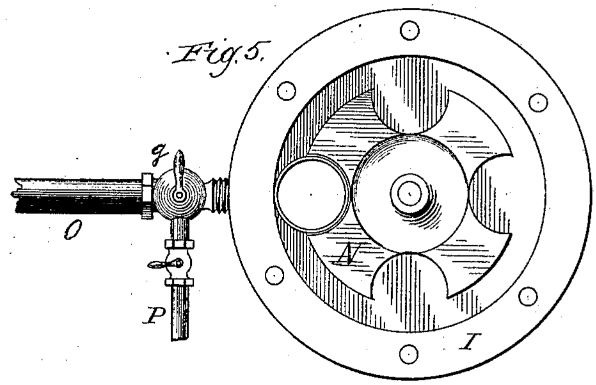


Fig. 6.

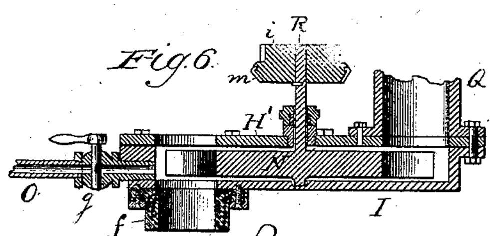
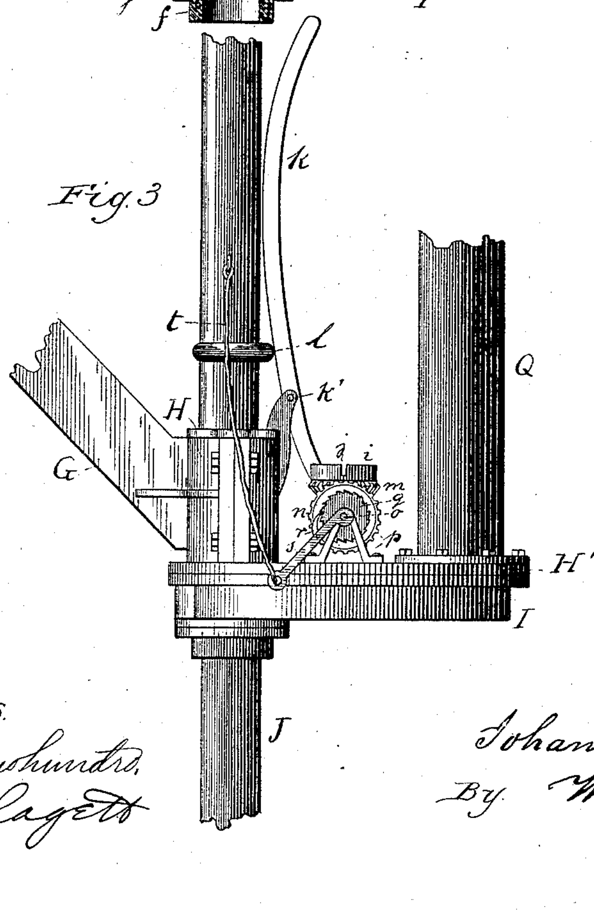


Fig. 3



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By Wm H Lotz
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UNITED STATES PATENT OFFICE.

JOHANN PUSCH, OF BLUE ISLAND, ILLINOIS.

APPARATUS FOR RACKING BEER.

SPECIFICATION forming part of Letters Patent No. 302,282, dated July 22, 1884.

Application filed August 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHANN PUSCH, a citizen of the United States of America, residing at Blue Island, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Racking Beer, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improved hermetic apparatus for racking beer, and is designed as an improvement on the apparatus described in Letters Patent No. 274,516, granted to me March 27, 1883.

As in the apparatus described in the above-named Letters Patent, the object of this invention is to effectually prevent the escape of the carbonic-acid gas contained in the beer during the process of racking; and the improvements herewith made consist, first, in the novel means employed in connection with the barrel-platform for raising and lowering the same; second, in the novel means for clearing the supply-pipes of all beer after the barrel is filled, and, third, in the novel bung-feeding mechanism, all as will be fully described and claimed.

Reference will be made to the accompanying drawings, in which Figure 1 is a view in perspective of the apparatus complete; Fig. 2, a vertical section of the same; Fig. 3, a view showing the bung-feeding mechanism, and Figs. 4, 5, and 6 details.

Like letters refer to like parts in each view.

A represents an upright or standard, upon which are supported the principal operative parts of the apparatus; and B, the base of the same. These parts are portable, and all the operative parts of the apparatus being above said base, the apparatus can be used in any room without said room being specially prepared for its reception, as was necessary with the apparatus above referred to, where the mechanism for raising and lowering the barrel-supporting platform C was situated below the floor. The lower portion of standard A is toothed, as shown in Fig. 2. Platform C, above referred to, has formed on its rear end a sleeve or collar, D, which encircles standard A, and is adapted to move vertically thereon. Upon the rear of sleeve D, or upon an extension of platform C, is formed a bracket or arm, *a*, in which a stud upon which is mounted a cog-wheel, *b*, has bearing. A lever, E, is secured at its lower end to this same stud, said lever being provided with an ordinary locking device, E′, which engages with the teeth of a segmental plate, F, which is also mounted on platform C. The operation of these parts will be readily understood. When the lever E is turned to the position shown in Fig. 2 in dotted lines, the teeth of cog-wheel *b* engage with teeth on standard A, and the platform C is raised, the locking device E′ of the lever holding the elevated parts in position.

Bolted to or made with the standard A are arms G G′. Secured to the outer end of arm G, or formed integral therewith, is a tube, H, upon the lower end of which is formed a horizontal extension, H′, circular in form. The extension or plate H′ is securely bolted to a plate, I, the arrangement of these parts being hereinafter described.

J is a hollow plunger, formed solid at its lower end, and provided near its lower end with perforations or openings *c*, through which beer enters the barrel, J′, to be filled. Plunger J passes through tube H and plates H′ and I, as shown, and is screw-threaded at its upper end, and has screwed thereon a coupling, K, into which is screwed an extension of a globular valve casing, K′.

Screwed into the upper end of coupling K is a toothed bar or rack, L, the teeth of which engage with the teeth of a pinion, *d*, mounted upon a shaft, *e*, which has bearings in a journal-box secured to the outer end of arm G.

To the outer end of shaft E is attached a hand-wheel, M. By turning the wheel M the plunger J may be raised or lowered. As before mentioned, the circular plates H′ I are bolted together, and there is sufficient space left between them to allow of the revolution of a disk, N, to be referred to, plate I being formed with a vertical flange to form this space, and with a horizontal flange to facilitate the joining of the two. Plate I is provided with an opening, which is immediately below the tube H, of which H′ is an extension;

and secured to the under surface of said plate I, below the opening referred to, is a rubber gasket, *f*, provided with a central orifice. A horizontal passage is formed through the plate, and a screw-threaded plug provided on its outer end with a globular valve-casing, *g*, is inserted therein, said casing being connected with a pipe or tube, O. Pipe O is provided with a glass gage, O′, and communicates with a compressed-air chamber. (Not shown.) A tube, P, is also connected to the casing *g*, said tube connecting with a waste barrel or tank. Both pipes O and P are provided with suitable faucets for shutting off the flow of beer. The disk N, described as situated between plates H′ and I, has formed upon its lower surface and at its center a pin or projection upon which it revolves, said pin having bearing in an opening made in plate I.

Upon the edge of disk N are formed four semicircular openings, *h*, said disk being of such a size that one of said openings will be under the tube H, of which H′ is an extension, and another under an opening made in plate H′, this last-named opening communicating with a tube, Q, mounted upon plate H′. In tube Q are placed a number of bungs, which by gravity are fed automatically to the openings in disk N. A vertical shaft, R, is cast upon or secured to the upper face of disk N, and passes up through an opening made in plate H′. Upon the upper end of this shaft is keyed a circular block, *i*, provided upon its circumference with four notches, *j*, into which the short end of a lever, *k*, enters. This lever *k* is pivoted in brackets or arms *k′*, secured to the tube H, and its upper or long end is curved, so as to be brought in contact with a flange or collar, *l*, formed at a suitable point on plunger J, and its short end being forced into notches of block *i* by suitable spring-pressure.

Keyed to shaft R at a point immediately below circular block *i* is a horizontal cog-wheel, *m*, which meshes with a vertical cog-wheel, *n*, mounted upon a horizontal shaft or stud, *o*, which is supported in suitable brackets or supports *p*, secured to plate H′. Upon the same shaft is keyed a ratchet, *q*, with which a pawl, *r*, engages, said pawl being secured to a crank-arm, *s*, as shown. One end of crank-arm *s* is secured to one end of shaft *o*, and at its outer or free end it is provided with an eye, into which is secured one end of a rubber band, (or spring,) *t*, the other end of said band or spring being secured in a hook or eye formed at a suitable point upon plunger J.

Screwed into the globular valve casing K′, hereinbefore referred to, are the supply-pipe S, through which beer under pressure is supplied to plunger J from any suitable cask, tank, or barrel, and also a tube, T, through which air is admitted to said plunger, for the purpose of allowing any beer contained in said plunger to pass to the barrel after said plunger has been withdrawn therefrom.

The operation of the apparatus is as follows: The bung-tube Q is filled with bungs, and the top of said tube closed to make it air-tight. The supply-pipe S is connected with the supply-tank, from which, by pneumatic pressure, the beer will rise through said pipe; the pipe O with a compressed-air chamber, tube P with a waste tank or barrel, and pipe T with a point from which air is fed to plunger J, the faucets of these pipes being all closed. The barrel to be filled is then placed upon the platform C, and said platform raised until the barrel is pressed tightly against the rubber gasket *f*, secured to the under face of plate I. Hand-wheel M is then turned and the plunger J lowered into the barrel, after which the faucets of pipes S and O are opened. Beer is then forced through pipe S under pressure, and is fed through the openings *c* in the lower end of plunger J into the barrel. The compressed air from the chamber with which pipe O communicates is under pressure sufficiently great to prevent the escape of the carbonic-acid gas from the beer. When the barrel is filled, beer will enter pipe O and be clearly visible through gage O′. As soon as the filling of the barrel is thus indicated, the faucet of the supply-pipe S is closed, and those of air-tube T and waste-pipe P opened, after which the plunger is raised. All the surplus beer in pipe O is thus carried off through pipe P and saved, and that remaining in plunger J is allowed to enter into the barrel by air from pipe T as the plunger is raised. As the plunger is raised the ring or flange *l*, formed thereon, comes in contact with the long arm of lever *k*, and the short arm of said lever is withdrawn from the notch in block *i*, and the free end of crank-arm *s* drawn up by rubber band *t*, which revolves the cogs *m* and *n* and block *i* a quarter-turn, and with them, through the medium of vertical shaft R, the disk N, which is also revolved a quarter-turn. This brings a bung in line with plunger J, and said plunger being again lowered, the bung is forced into the bung-hole of the barrel, after which the platform C is lowered, the barrel removed, and another barrel placed thereon, after which the same operation is again performed.

The advantages I claim for this invention over that described in the Letters Patent referred to are: First, the arrangement of the platform for supporting the barrel is such that the apparatus is adapted to use in any room; second, the addition of the air-supply pipe T and waste-pipe P serves to thoroughly cleanse the plunger, and at the same time catch all waste; and, third, the bung-feeding mechanism is greatly simplified and acts automatically.

Having thus described my invention, what I claim as new therein, and that for which I desire to secure Letters Patent, is—

1. In the apparatus described, the combination, with a hollow plunger and suitable

beer and air supply tubes, of a toothed standard, a barrel-carrying platform provided with a sleeve adapted to surround said standard, and means for operating said plunger and platform, as described and shown.

2. In the apparatus described, the combination, with a hollow plunger, of a beer-supply tube, a tube connecting with a compressed-air chamber, and a tube for supplying air to said plunger for cleaning the same, as described and shown.

3. In the apparatus described, the combination, with a hollow plunger, of a tube connecting with a compressed-air chamber and provided with a glass gage, and a waste-tube through which the overflow of beer is discharged into a suitable receptacle, as described and shown.

4. In the apparatus described, the combination, with a hollow plunger and means for operating the same, of an automatic bung-supply and means for operating the same in connection with said plunger, as described and shown.

5. In the apparatus described, the combination, with a hollow plunger and means for operating the same, of a perforated disk and a bung-supply tube, said tube adapted to automatically feed bungs to said disk, and the disk operated through suitable connection by the hollow plunger, as described and shown.

6. In the apparatus described, the combination, with hollow plunger J, provided with flange *l*, and perforated disk N, of lever *k*, notched block *i*, and intermediate gearing for operating said disk, as described and shown.

7. In the apparatus described, the combination, with hollow plunger J, provided with flange *l*, and perforated disk N, of lever *k*, notched block *i*, elastic band *t*, crank-arm *s*, and suitable intermediate gearing, as and for the purpose set forth.

8. In the apparatus described, the combination, with bung-feeding tube Q, perforated disk N, and hollow plunger J, provided with flange *l*, of lever *k*, notched block *i*, elastic band *t*, and crank-arm *s*, as described and shown.

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

JOHANN PUSCH.

Witnesses:
M. J. CLAGETT,
ADAM GEO. WHITE.