

**No. 646,438.**

**Patented Apr. 3, 1900.**

**C. LAMPITT, A. J. CARLILE & C. SIMKIN.**

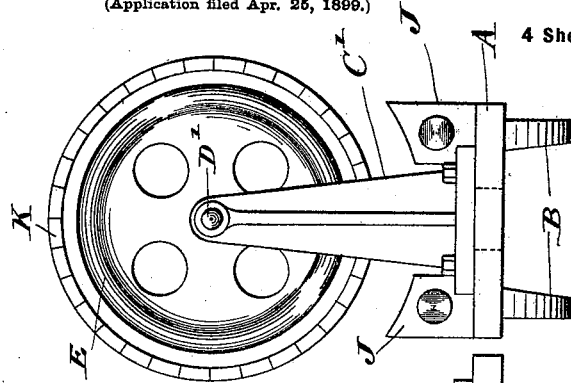
### APPARATUS FOR SWEETENING CASKS.

(Application filed Apr. 25, 1899.)

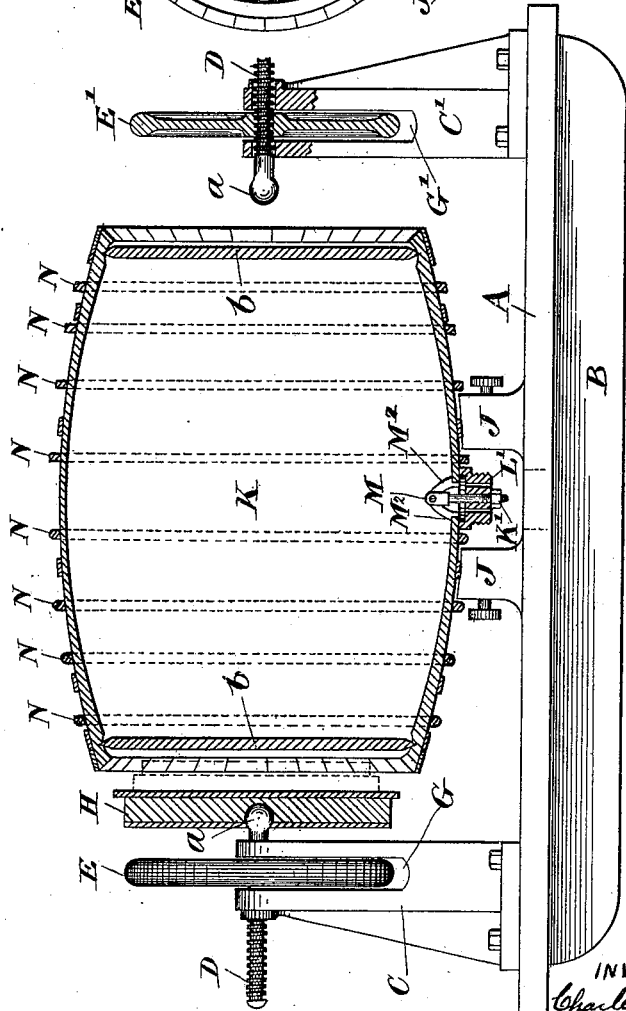
(No Model.)

**4 Sheets—Sheet 1.**

**FIG 2**



# FIG 1



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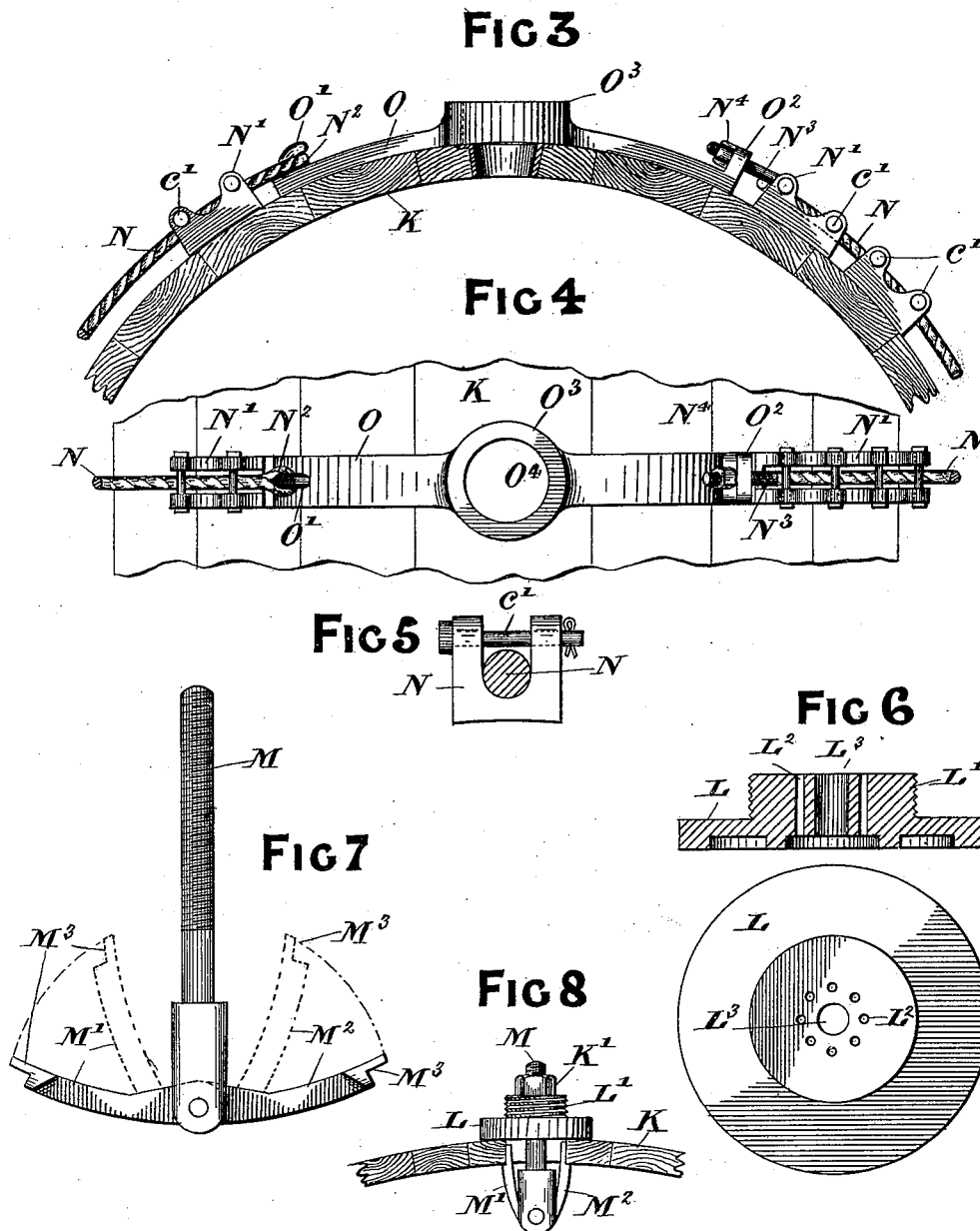
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**4 Sheets—Sheet 2.**



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4 Sheets—Sheet 3.

FIG 10

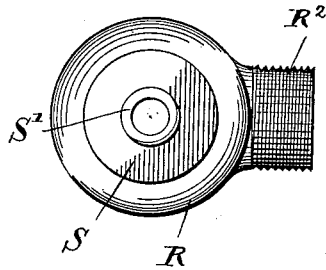


FIG 11

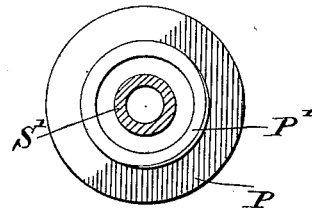
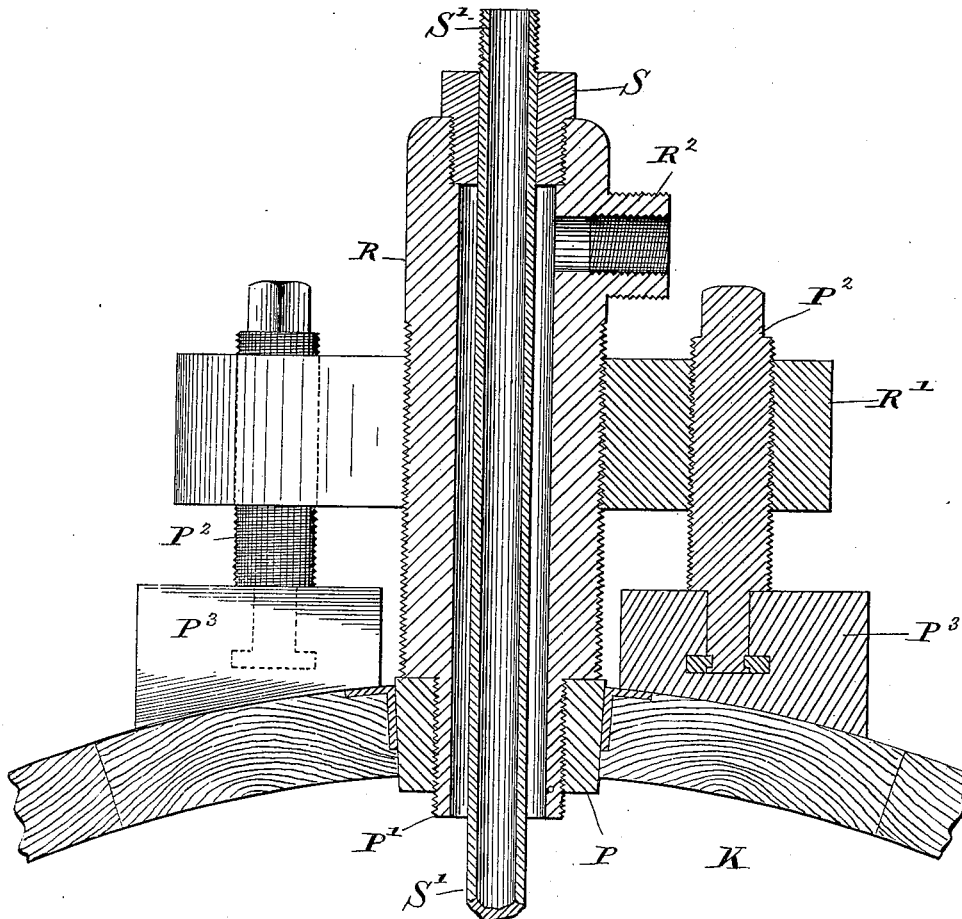


FIG 9



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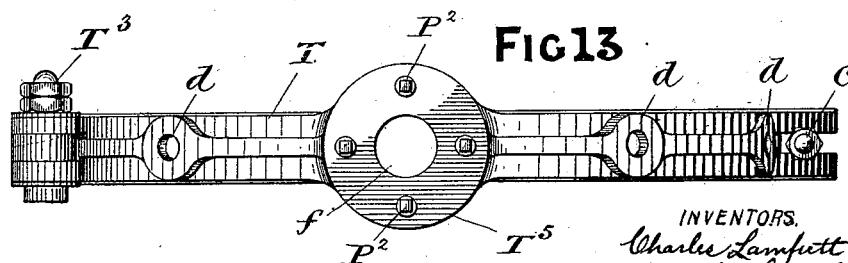
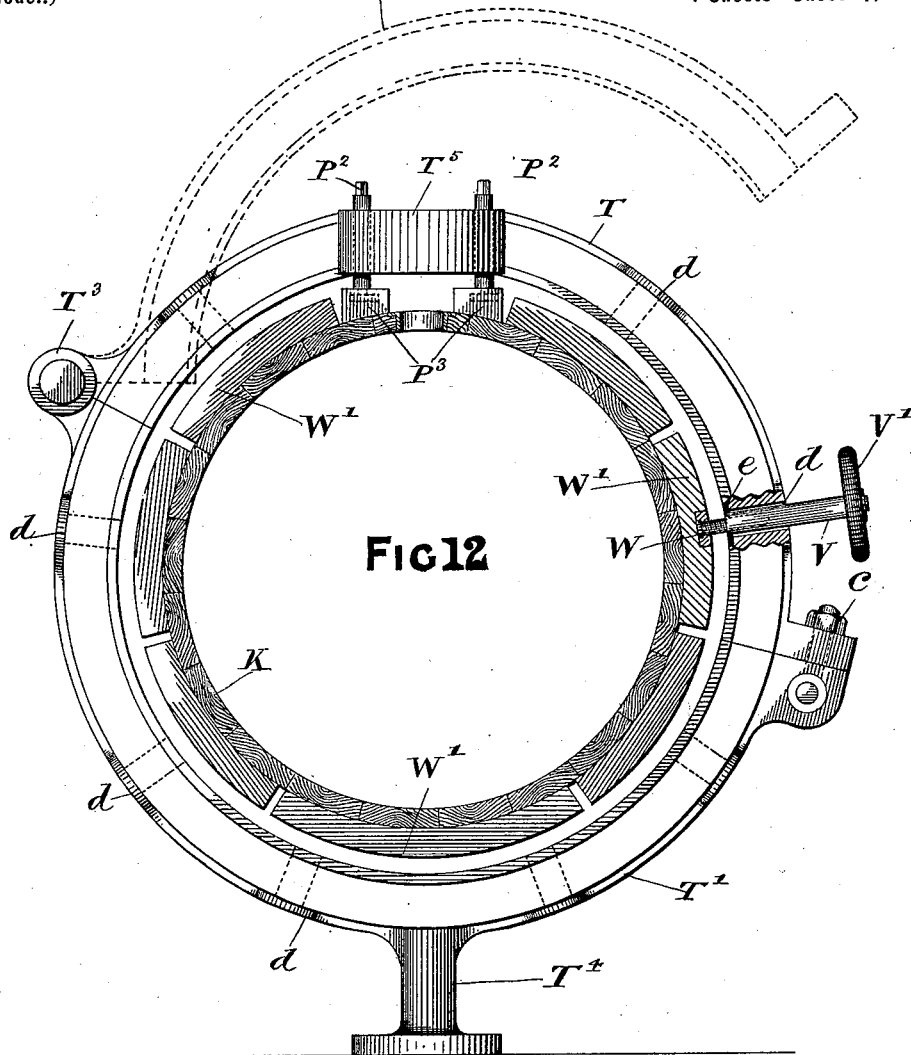
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(Application filed Apr. 25, 1899.)

(No Model.)

4 Sheets—Sheet 4.



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# UNITED STATES PATENT OFFICE.

CHARLES LAMPITT, OF LONDON, ARTHUR JOHN CARLILE, OF BURTON-ON-TRENT, AND CUTHBERT SIMKIN, OF LONDON, ENGLAND.

## APPARATUS FOR SWEETENING CASKS.

SPECIFICATION forming part of Letters Patent No. 646,438, dated April 3, 1900.

Application filed April 25, 1899. Serial No. 714,408. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES LAMPITT, residing at 8 Crescent road, Wood Green, London, ARTHUR JOHN CARLILE, residing at 270 Branstone road, Burton-on-Trent, in the county of Stafford, and CUTHBERT SIMKIN, residing at 7 Southampton row, London, England, subjects of Her Majesty the Queen of Great Britain, have invented certain new and useful Improvements in Apparatus for Sweetening Casks, (and for which we have applied for grant of patent in Great Britain, No. 20,478, dated September 28, 1898,) of which the following is a specification.

Our invention relates to an improved system and apparatus in connection therewith for the utilization of ozonized air or electricized, allotropic, nascent, active, or excited, or otherwise pure oxygen or other similar or like gases under great pressure in the sweetening or cleansing of casks or barrels that have been used for the storing or holding of beer, wine, and other liquors or liquids and have become unsweet through exposure to atmospheric influence after use and technically known as "stinkers." It is well known by brewers, wine-makers, and others that such casks or barrels when in the condition stated are absolutely useless for refilling with such or like liquors until the said vessels have been cleansed or sweetened, and various means have been tried for effecting the said sweetening—such as steaming, boiling, firing, and the like—all of which have proved ineffectual, the most successful being that of treating them with ozonized air under pressure; but, so far as we are aware, such means have never been employed (prior to our invention) exceeding a pressure of fifty pounds or sixty pounds to the square inch, which, while insufficient to effect the said cleansing or sweetening after a lengthy period of use, has yet been sufficient to burst the cask or barrel under treatment; but by means of the apparatus hereinafter described and shown we are enabled to charge a cask or barrel with such gases as hereinbefore mentioned up to a pressure of from one hundred and twenty pounds to one hundred and fifty pounds to the square inch without in any way injuring the said vessel, and we have found by repeated ex-

periments that by such pressures the impurities named may be forced entirely through the pores of the timber of which the said vessels are made and the cask rendered sweet in the space of from three to four minutes, and so attain the object of our invention, which we now seek to protect by Letters Patent in the United States of America.

In order that our invention and the manners in which we purpose carrying the same into effect may be fully understood, we have hereunto appended four sheets of drawings, of which—

Figure 1, Sheet 1, is a side elevation, partly in section, of a cask or barrel and the machine or apparatus according to our invention, Fig. 2 being an end elevation of same as it would appear when viewed from right to left. Fig. 3, Sheet 2, is an enlarged view representing a portion of a cask or barrel in section, illustrating one method in which we purpose binding or grasping the circumference of the vessel at various parts of its length. Fig. 4 is a plan view of Fig. 3, while Fig. 5 is an enlarged view of a section of the said binding or grasping medium. Fig. 6 is an enlarged central section and plan of one form of bung-hole-closing and gas-admitting device according to our invention, while Fig. 7 is a further enlarged elevation of the anchor-bolt, showing its two positions when opened and closed for use in connection with Fig. 7 in the manner illustrated by the smaller view, Fig. 8. Fig. 9, Sheet 3, is a much-enlarged part-sectional view of part of a cask or barrel and an alternative bung-hole-closing and gas-admitting device, Figs. 10 and 11 being plan views of the upper and lower ends, respectively, of the central portion of Fig. 9. Fig. 12, Sheet 4, is a cross-sectional view of a cask or barrel, illustrating an alternative device for grasping and binding the circumference of same at various parts of its length, Fig. 13 being a plan or top view of the said device.

Similar letters of reference are used throughout the several views when referring to the same or like parts.

Referring to Figs. 1 and 2, we carry our invention into effect by casting or otherwise producing of any suitable material or materials a base or stand A, arranged to stand and

be fixed upon a concrete or other substantial bed, and to further the stability of the said base we may provide upon the undersurface of same two or more longitudinal webs B, dipping into and inclosed by the said bed.

Upon each end of the base A we bolt or otherwise fix standards C and C', bored at their upper ends to permit the free passage of, preferably, square threaded shafts D and D', upon which are mounted wheels E and E', the naves or bosses of which are threaded internally to mesh with the threads of shafts D and D'. The said wheels E and E' dip into spaces G and G' in standards C and C', which provides that by the rotation of the said wheels within the said spaces the threaded shafts D and D' may be caused to travel horizontally in either direction, according to the direction of rotation of the said wheels. The inner ends of the shafts D and D' are each connected by a cup-and-ball or other universal joint *a* with a circular metallic or other disk H, (shown in section at the left, but omitted at the right of Fig. 1,) the inner faces of which may, if desired, be faced with wood or other yielding material, the diameters of the said disks being such as to closely fit within the chimes of the largest cask of the several sizes for which the apparatus is intended, but for casks of smaller size, when the diameter of its head is less, the said disks are adapted to have screwed or otherwise fixed thereon disks capable of fitting in like manner within the chimes of the said smaller casks, the said universal joints *a* upon the inner ends of D and D' permitting the said disks to conform with any irregularity that may obtain in the position of the heads of the cask being treated. The said stand or base A is provided with any number of standards J, (preferably four,) so shaped as to permit the cask K under treatment to rest firmly thereon, and when this is placed in position the wheels E and E' would be rotated until the disks H firmly abut against the heads *b b* of the cask, the said disks thus serving to protect the said heads against the internal pressure of the gas with which the cask is subsequently charged.

In Figs. 6, 7, and 8, Sheet 2, we illustrate one form of device (forming part of our invention) for closing the bung-hole of the cask and admitting gas under pressure to same, which consists of a circular metal cast or wrought metallic plate L, adapted to fit closely upon the bung-hole stave and cover the bung-hole, the upper surface of the said plate having a nosing L', threaded externally to receive a suitable force-pump provided with a non-return valve or valves, suitable gas-passages L<sup>2</sup>, and a central passage L<sup>3</sup> being provided, extending entirely through plate L and nosing L', the said central passage being for the reception of the anchor-bolt, Fig. 7, which consists of a threaded rod M, the lower end of which has pivotally connected thereto the inner ends of a pair of arms M' and M<sup>2</sup>, the

ends of which are reduced or cutaway at M<sup>3</sup>. To secure the plate L in position, assuming that the rod M is passed up through the passage L<sup>3</sup>, the arms M' and M<sup>2</sup> would be raised toward rod M, so that arms M' M<sup>2</sup> and rod M may be passed down through the bung-hole until the shoulders of the arms M' and M<sup>2</sup> are below the inner surface of the bung-hole of the cask K, when the said arms would fall outwardly by the action of gravity with their portions M' and M<sup>2</sup> resting against the walls of the bung-hole, when by the means of a nut K', screwed upon rod M, the bung-hole stave would be firmly gripped between the arms M' and M<sup>2</sup> and the plate L, thus closing the bung-hole air-tight, as shown in Fig. 8, when the air-pump may be screwed upon nosing L', and gas under any pressure may be forced into the cask through the passages L<sup>2</sup>.

To prevent the cask from bursting bulge-wise, we surround the cask circumferentially with any number of adjustable wire or other ropes, chains, or bands N, suitably disposed along the length of the cask. We arrange the said ropes, chains, or the like in the manner illustrated by Figs. 3, 4, and 5, in which we provide that each rope or chain N is in one piece, one end of which may be formed to provide an eye or loop, while its opposite end is connected to a threaded bolt, the remainder of the said rope or chain N being passed through any number of carriers N', constructed substantially as shown, each formed upon its under surface to approximately fit the convexity of the cask K, the said rope or the like N being retained therein by the means of bolts *c'*, the said carriers being arranged as near as possible to each other along the rope, chain, or the like N, any number of the latter being then passed around the circumference of the cask, a suitable metal casting O, adapted to approximately fit the convexity of the cask, being provided for each rope or the like, upon one end of which is a hook O', adapted to receive a loop or eye N<sup>2</sup> upon one end of N and a lug O<sup>2</sup> upon its opposite end adapted to receive a threaded bolt N<sup>3</sup> upon the opposite end of the rope or the like N, when by the means of a nut N<sup>4</sup>, screwed upon bolt N<sup>3</sup>, the said ropes or the like may be so tightened around the cask as to protect the latter against rupture from the internal pressure of the gas, and in respect of the said rope or the like, which may surround the cask at the center of its length, the said metal casting O may be formed at its center with a nosing O<sup>3</sup>, upon which may be seated the plate L of the bung-hole-closing device, Figs. 6 and 7, the said nosing O<sup>3</sup> having a central passage O<sup>4</sup> to permit the gas to pass through the holes L<sup>2</sup> and the anchor-bolt through the hole L<sup>3</sup>, a suitable resilient washer being interposed between nosing O<sup>3</sup> and the cask K and between nosing O<sup>3</sup> and the plate L, if necessary. By the use of a suitable number of such ropes, chains, or the like N, each borne by a suitable number of carriers N', we are enabled to

entirely grasp and surround and protect every part of the circumference of the cask and the heads of same by means of the disks H, which enables us to charge the cask with the gas or  
 5 gases stated at the enormous pressure of from one hundred and twenty pounds to one hundred and fifty pounds to the square inch without fear of bursting the cask, the said gas or  
 10 gases by penetrating the pores of same entirely removing therefrom the impurities and unsweetness previously mentioned, which has not been possible by the lower gas-pressures hitherto employed.

As an alternative arrangement we may dispense with the bung-hole-closing and gas-admitting device previously described and in lieu thereof employ the device illustrated by Figs. 9, 10, and 11. In this arrangement we  
 15 drive into the bung-hole of the cask K a wood or other sheave P, having a central bore into which we screw the lower and externally-threaded end P' of a tubular metallic casting R, the body of which has an external screw-  
 20 thread of the same pitch as the thread on end P', which passes through and is screwed into a metallic or other block R', in which is provided two or more internally-threaded holes, with which engage threaded plugs P<sup>2</sup>, formed  
 25 at their upper ends so as to receive and be rotated by a spanner, while their lower ends engage with and are adapted to rotate within metallic or other blocks P<sup>3</sup>, formed upon their  
 30 under surfaces to fit the convexity of the cask K, and when the chains, ropes, or the like N, previously described, are formed in two parts  
 35 one end of each may be linked, hooked, or otherwise connected to the blocks P<sup>3</sup>, while their opposite ends may be connected, as previously stated, with the casting O.

The tube R has near its upper end a hollow nosing or boss R<sup>2</sup>, communicating with the interior of casting R, and may be threaded internally or externally, or both, for the reception of the suitable valve-governed force-  
 40 pump previously mentioned, so that the said gas or gases may be thereby passed through R into the cask K. The upper end of casting R is threaded internally to receive a plug S, through which passes and is brazed, screwed,  
 45 or otherwise firmly connected thereto a tube S', which passes entirely through the tube R and reaches nearly to the opposite side of the bulge of the cask K, the upper end of tube S' being threaded externally to receive and be  
 50 closed by a suitable exhaust cock (not shown) for the purpose of exhausting the gases and any moisture that may remain in the cask after treatment. In this arrangement the  
 55 blocks P<sup>3</sup> would be firmly held in contact with the cask K, partly by the tension of the rope or the like N and partly by the plugs P<sup>2</sup>, the tube R being firmly held in position partly by its connection with the sheave P and partly by its connection with the block R'.

65 In treating casks of large dimensions or as an alternative arrangement we may dispense

with the before-mentioned chains, ropes, bands, or the like N and in lieu thereof provide a like or any desired number of devices, such as shown in Figs. 12 and 13, which consists of a pair of approximately semicircular  
 70 metal castings T and T', pivotally connected together at a point T<sup>3</sup> and adapted to open, as indicated by the dotted outline of T, to facilitate fixation upon the cask K and be connect-  
 75 ed at their free ends when closed by the means of a bolt and nut c, while the portion T' is provided with a suitable footing T<sup>4</sup> for supporting the whole. At suitable intervals along the  
 80 semicircular castings T and T' are provided holes d, through each of which passes a hollow rod V, adapted to be rotated in the said holes by the means of wheels or handles V' and secured in position by a flange e, the inner ends  
 85 of the said tubes V being provided with female threads, with which engage threaded bolts W, the free ends of which are connected to metallic or other blocks W', shaped internally to fit the cask K and externally to cor-  
 90 respond with the internal formation of castings T and T'. By this arrangement, the frames T T' having been placed around the cask in the positions described with relation to the ropes or the like N, the handles V' would be rotated in a direction to cause the  
 95 blocks W' to firmly abut against the cask K, thus securing this circumferentially in the same manner as the carriers N', previously described. The central one of the set of frames T T' employed, or that covering the  
 100 bung-hole of the cask, may have its section T so arranged as to provide a plate or block T<sup>5</sup>, having a central hole f, the said block serving as an equivalent for the nosing O<sup>3</sup> in Figs. 3 and 4, so as to receive the device,  
 105 Figs. 6 and 7, or as an equivalent for the block R', so as to receive the tube R, Fig. 9, and if the latter, as shown, the said portion T<sup>5</sup> may have internally-threaded holes for receiving like threaded plugs P<sup>2</sup> and their  
 110 blocks P<sup>3</sup>, as shown in Figs. 12 and 13.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

1. In combination, a base or stand A, standards G, G', thereon threaded shafts D, D', on said standards, wheels E, E', on the shafts for operating them, disks H adapted to support the heads of the barrel, universal joints  
 120 between the shafts and the disks and binding means extending around the body of the barrel, substantially as described.

2. In combination with the barrel, the carriers N', the bands N supported thereby, the casting O and the connections to said casting consisting of the hook O' and the screw-bolt N<sup>4</sup>, substantially as described.

3. A bung-hole-closing device consisting of a plate L having an externally-threaded nosing  
 130 ing L' and gas-passages L<sup>2</sup> and central aperture L<sup>3</sup>, the anchor-bolt M, pivoted arms M',

4  
M<sup>2</sup> connected to the bolt and having shoulders M<sup>3</sup> and a nut K' fitting on the anchor-bolt.

4. In combination, in a bung-hole-closing  
5 and gas admitting and exhausting device, a  
tube R having a threaded gas-inlet R<sup>2</sup>, a sheave  
P fitting on an externally-threaded part of the  
tube R, a block R' fitting an externally-thread-  
ed part of the tube R, a threaded plug S carried  
10 by the tube and having a tube S' adapted to re-  
ceive an exhaust-cock, threaded plugs P<sup>2</sup> ex-

tending through the block R' and blocks P<sup>3</sup>  
connected to the plugs substantially as de-  
scribed.

In witness whereof we have hereunto set 15  
our hands in presence of two witnesses.

CHARLES LAMPITT.

ARTHUR JOHN CARLILE.

CUTHBERT SIMKIN.

Witnesses:

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