(No Model.)

L. BUTLER.

BUNG OR PLUG.

No. 353,202. Patented Nov. 23, 1886.

Fig 1

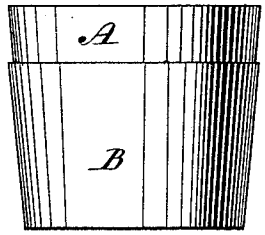


Fig 2

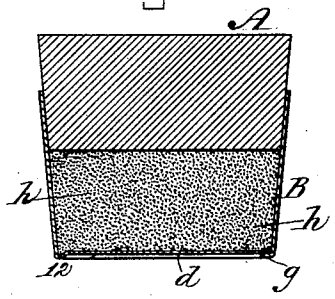


Fig 4

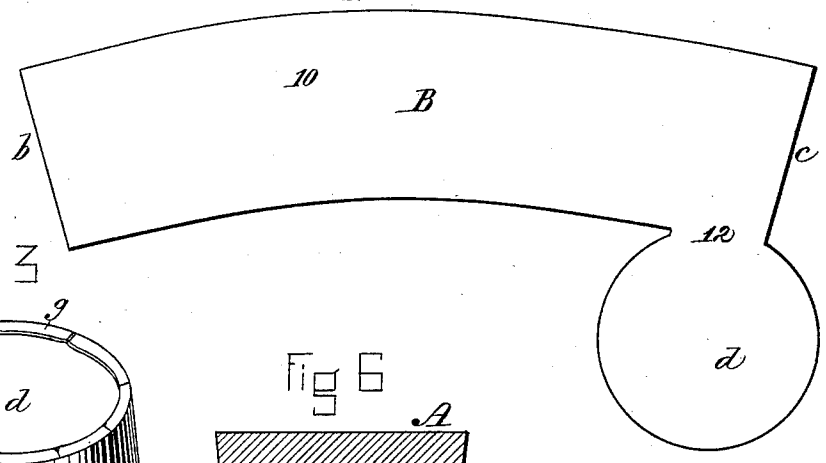


Fig 3

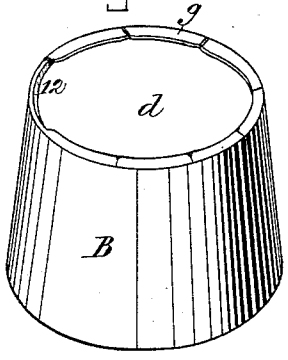


Fig 6

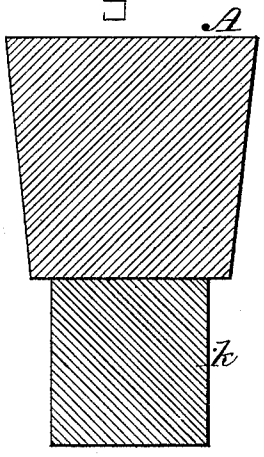
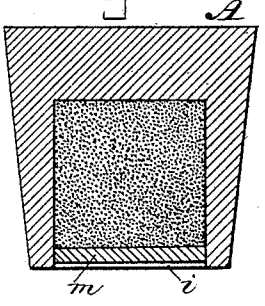


Fig 5



WITNESSES

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UNITED STATES PATENT OFFICE.

LEANDER BUTLER, OF BOSTON, MASSACHUSETTS.

BUNG OR PLUG.

SPECIFICATION forming part of Letters Patent No. 353,202, dated November 23, 1886.

Application filed July 17, 1886. Serial No. 208,309. (No model.)

To all whom it may concern:

Be it known that I, LEANDER BUTLER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an improved bung or plug for applying alkali, either alone or together with an acid, to malt or other liquors in barrels, casks, or other receptacles, for the purpose of increasing the life or effervescence of the same, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of a barrel-bung having my improvement applied thereto. Fig. 2 is a vertical section through the center of the same. Fig. 3 is a perspective view of the charge-container detached from the bung and inverted. Fig. 4 is a plan of the same, representing the form in which it is first cut from a single piece of paper or other suitable material, to be afterward made up into the form shown in Fig. 3; Figs. 5 and 6, sectional views representing modifications of my invention.

My invention has for its object to facilitate the application of bicarbonate of soda or other alkali, either alone or together with a suitable acid, to malt and other liquors in barrels for the purpose of increasing the life or effervescence of the same; and to this end my invention consists in a bung or plug having attached thereto or confined therein a suitable charge or quantity of bicarbonate of soda or other alkali, either alone or together with tartaric or other suitable acid, whereby a considerable saving in time and labor is effected, as the substance with which the liquor is to be treated is applied thereto at the same time that the bung or plug is being driven into the barrel or cask, thus avoiding two separate operations, as heretofore, and preventing any loss or escape of carbonic-acid gas from the barrel or cask, which would occur if the bung were applied thereto after the introduction into the liquor of the substance with which it is treated.

In the said drawings, A represents a barrel-bung, to the under side of which is secured a charge container or receptacle, B, of the form seen in Fig. 3, which is preferably composed of thick paper, but may be of thin wood or bark or other suitable material. This container B is made of a single piece cut in the form shown in Fig. 4, the two ends *b c* of the portion 10 being afterward glued together, forming the frustum of a cone, while the circular portion *d*, which forms the bottom of the container and is connected with the portion 10 at 12 to form a hinge, is turned upward on the inside of the said container. The lower edge of the container is then crimped or turned inward by means of a suitable die, to form a lip or flange, *g*, which supports the bottom *d* when pressed down thereon, as seen in Figs. 2 and 3. Within the shell or container thus formed is then placed a suitable quantity, *h*, of bicarbonate of soda or other alkali, either alone or together with tartaric or other suitable acid, after which the lower portion of the bung A is fitted into the open mouth of the container and securely fastened in place therein by means of gluten or in any other suitable manner, thus allowing the bung to be freely handled without any liability of the loss of the contents of the container B. When the bung thus provided with a charge of the substance with which the liquor is to be treated is driven into the barrel, the concussion of the blow or blows thereon will cause the bottom *d* of the container B to be driven out past the flange *g*, which readily yields or gives way, leaving the bottom hanging by the hinge 12, when the loose contents *h* will be dislodged and discharged into the liquid contents of the barrel or other receptacle, as desired, and mix therewith, no loss whatever of the carbonic-acid gas evolved being sustained, as the bung is driven tightly into place simultaneously with the application to the liquor of the substance with which it is to be treated, a desideratum hitherto unattained; and it will be obvious that as the container B is securely attached to the plug, and the bottom *d* of the said container, when forced downward as described, is prevented from becoming entirely detached from the main portion by the hinge 12, there is no liability whatever of any portion of the container or bung dropping into the barrel, which it is very desirable to avoid, as the introduction of any small pieces of foreign substances into the liquid contents of the barrel would be objectionable on account of their liability to clog the faucet and obstruct the free flow of the liquid therefrom.

Instead of placing the substance with which

the liquor is to be treated within a receptacle or container, B, attached to the bottom of the bung or plug, as described, it may be placed within a cavity, *i*, formed in the under side of the bung, as seen in Fig. 5, and held therein by means of a thin disk, *m*, of cork or other suitable material, which will prevent the contents of the cavity *i* from falling out during any ordinary handling of the said bung, but be easily dislodged, together with the substance in the cavity, by the concussion of a blow or blows upon the top of the bung in the operation of driving it into the barrel; or the substance may be molded into lumps or pieces *k* of any suitable shape, and secured, as seen in Fig. 6, directly to the bottom of the bung, by means of a glutinous substance, or in any other suitable manner; or a portion of the lump *k* may extend up into a shallow cavity in the bung, and the remainder project down below the bottom thereof.

I do not, therefore, wish to confine myself to any particular method of attaching or applying to the bung or plug the substance with which the beer or other liquor is to be treated, as this may be accomplished in any manner which may be found most desirable without departing from the spirit of my invention. I prefer, however, to attach the substance with which the liquor is to be treated to the bung in a loose form, for the reason that when it is discharged into the barrel or receptacle in this state it more readily dissolves and permeates the liquor than is the case when it is tightly compressed into a lump or cartridge.

From the foregoing it will be apparent that by the employment of my improvement a considerable saving in time and labor may be effected where large quantities of malt or other liquors are to be treated, while a neat, clean, and convenient method of applying the substance is afforded and waste of material avoided.

I am aware of the United States Patent of J. C. G. Hupfel, No. 212,800, dated March 4, 1879, in which a tubular stock is employed, having a measuring-cup containing a charge of salt, which is injected into a barrel by a sliding piston which is actuated by compressed air or other motive, and is released by a trigger. My improved bung or plug, however, differs entirely from this, as it contains no discharging mechanism, the substance for charging the liquor in the barrel with carbonic-acid gas being merely attached to or connected with the bung or plug or confined within a cavity in the bottom of the same, in such manner as to be detached or dislodged and discharged into the barrel by the force of the blow upon the bung or plug in driving it into the bung-hole; and it will be obvious that my improved device thus presents the advantages of extreme simplicity of construction combined with cheapness, great efficiency, and freedom from liability to get out of order.

I claim—

1. A barrel bung or plug having connected with or confined within its lower portion a substance for treating malt or other liquors adapted to be discharged into the barrel by the force of a blow or blows upon the top of said bung or plug, substantially as herein described.

2. The combination, with a bung or plug, of a container or receptacle composed of paper or other suitable material, attached to the bottom of the bung or plug, said receptacle containing a substance for treating malt or other liquors and having a bottom adapted to be forced downward without being entirely detached from the main portion of the container by the concussion produced by driving the bung or plug into the barrel, whereby the contents of the container is dislodged and discharged into the barrel, substantially as set forth.

3. The combination, with a bung or plug, A, of a container or receptacle, B, attached to the bottom thereof and containing a substance for treating malt or other liquors, and having an inwardly-turned lip or flange, *g*, and a bottom, *d*, connected therewith by a hinge portion, 12, and supported by the flange *g*, whereby when the bung is driven into the barrel or receptacle the bottom *d* will be forced out past the flange *g*, without being entirely detached from the main portion of the container, and the contents of the latter simultaneously dislodged and discharged into the barrel or other receptacle, substantially as herein described.

4. The herein-described method of applying to malt or other liquors a substance for charging the same with carbonic-acid gas, the same consisting in attaching the said substance to or connecting it with the bottom of a bung or plug, or placing it within an open cavity in the bottom of the same, then inserting the said bung or plug within the bung-hole of the barrel, and finally discharging the substance into the barrel by a blow or blows delivered on the top of the bung or plug, whereby the substance is detached therefrom, substantially as set forth.

Witness my hand this 14th day of July, A. D. 1886.

LEANDER BUTLER.

In presence of—
P. E. TESCHEMACHER,
W. J. CAMBRIDGE.