PATENT SPECIFICATION

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Complete Accepted: Oct. 6, 1921.

COMPLETE SPECIFICATION.

Improvements relating to Spirit Decanters and similar Receptacles for Liquids.

We, JOHN GRINSELL & SONS LIMITED, a corporation duly incorporated under the laws of Great Britain, and JAMES REGINALD HUGH GRINSELL, a subject of the King of Great Britain, both of Victoria Works, Tower Street, Birmingham, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention has reference to spirit-decanters and similar vessels of the type in which the stopper is held in the mouth or neck of the vessel by holding-down devices (such as studs or radial projections on the stopper adapted, by rotating the said stopper, to be engaged with hooks or like formations on or in the vessel) and a key-operated lock is provided for securing such holding-down devices in co-engagement.

The present invention consists in improved stopper-locking devices of the above mentioned type in which the stopper is automatically locked on completion of the rotational movement that is imparted thereto for engaging the holding-down devices, and it consists essentially in a combination of parts comprising a lock having a vertically-disposed spring bolt, which is mounted on the neck of the vessel, and a cam-ended staple which is carried on a radial arm from the stopper and is provided with an underside recess that serves to receive the nose of the bolt; this staple being so arranged that during the rotational movement of the stopper for engaging the holding-down devices, its cam will first displace the bolt against its spring and then, on completion of such rotational movement when the holding-down devices are fully engaged, permit the bolt to be lifted into connection with said staple-recess, thus automatically establishing a lock between the stopper and the vessel which can only be released by depressing the bolt by means of a key.

The accompanying drawings show one application of the invention to a spirit decanter.

Figure 1 is an elevation showing the stopper locked in engagement with its holding-down devices.

Figure 2 is a vertical section of the mouth of the vessel on the dotted line x, Figure 1; the stopper and parts mounted thereon being shown in elevation.

Figure 3 is a horizontal section of Figure 1 on the dotted line x^1, showing the lock and the holding-down devices in plan.

Figure 4 shows the stopper (in elevation) removed from the decanter mouth (in section).

Figure 5 is an elevation showing the stopper in the act of being rotated in the direction of the arrow for effecting the engagement of the rotary or movable members of the lock and holding-down devices with the complementary fixed members.

The same letters of reference indicate corresponding parts in the several figures.

In the system shown in the said drawing, the mouth of the decanter is furnished with a metal mount or ferrule a, which is cemented or otherwise permanently fixed thereto, and carries on its front side, a lock b, having a vertically-disposed bolt b^1, which is actuated by a spring that tends to maintain the same in a position wherein its upper end projects above the top edge of the mount, as

shown in Figures 2, 4, and 5. The bolt thus has a self-engaging action, whilst its withdrawal or disengagement is effected by the key of the lock.

On the top of the mount are a pair of rigid and permanently-attached hooked lugs *c*, *d*, which constitute the fixed members of the devices for holding down the stopper when inserted and locked within the mouth of the vessel; the same being disposed diametrically opposite to one another, and equivalent from the bolt; and they have openings or entrances at c^1, d^1, to provide for the engagement and disengagement of the complementary studs *e*, *f*, on the stopper by the partial rotary movement of the latter.

These studs *e*, *f*, project radially from the periphery of a metal collar or mount *g*, which is cemented or otherwise permanently fixed round the shank h^1 of the stopper *h*, and also carries a staple-piece *i* that is supported by an arm i^1 and serves as an engagement for the bolt of the lock b^1. This piece *i* is disposed equidistant the radial studs and, in the construction shown, it has a cam-end i^2 for displacing the bolt downwardly during the initial rotational displacement of the stopper, and a recess i^3 on its underside into which the bolt springs after the cam i^2 has cleared the same.

To effect the locking of the stopper against both rotational and lifting displacement, it is inserted into the mouth in such a position (see Figure 5) that the cam end is to the right of the nose of the bolt b^1. The staple-piece is then held by its supporting arm i^1 in the same radius as the bolt-nose, whilst the radial studs *e*, *f*, on the stopper lie upon the edge of the mount *a*, to the right of the respective entrances to their complementary hooked lugs *c*, *d*. A partial rotation of the stopper in the left-handed direction will cause the cam-end of the piece *i* to ride over and depress the bolt, and at the same time, take the studs *e* *f*, into the lug-entrances, whilst the completion of this locking movement of the stopper in the direction of the arrow in Figure 5 will take the said studs fully under their respective hooks and simultaneously bring the staple recess i^3 over the bolt-nose, which then is automatically shot, by its spring, into engagement with the said recess. The stopper and its holding-down studs are thus securely held against rotational displacement whilst the engagement of the solid parts of the lugs on the neck-mount over the said stops affords positive security against the stopper being lifted, raised, or eased within the mouth, even to such a small extent as would enable the contents of the vessel to be shaken out in drops.

On the other hand, when the bolt is withdrawn from the staple piece by means of a key, the stopper can be freed from the holding-down hooks by a partial rotation of the same in the right-handed direction. As an alternative form of holding-down device, the stopper may carry hooked lugs so formed and arranged that they can be engaged, by the partial rotation of the stopper, with radially-outstanding studs, projections or the like on the periphery of the mount on the vessel-neck; these elements being respectively so arranged on the stopper and mount that they come into full engagement when the two members of the lock are brought, by the stopper rotation, into fastening or locking relationship with one another.

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. A stopper-locking system of the type referred to, comprising a lock, which is attached to a mount or ferrule on the neck of the vessel, and has a vertically-disposed spring-actuated bolt, in combination with a staple-member supported on a radial arm or projection from the stopper and formed with a cam end for displacing the said bolt during rotation of the said stopper; the underside of the said staple member being provided with a recess that is engaged by the spring bolt when or after the holding-down devices have been effectively co-engaged by completion of the rotational movement of the stopper in the locking direction.

2. The improved means for locking stoppers against rotational and lifting displacement, as herein described with reference to the accompanying drawing.

Dated this 5th day of October, 1920.

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Fig. 1

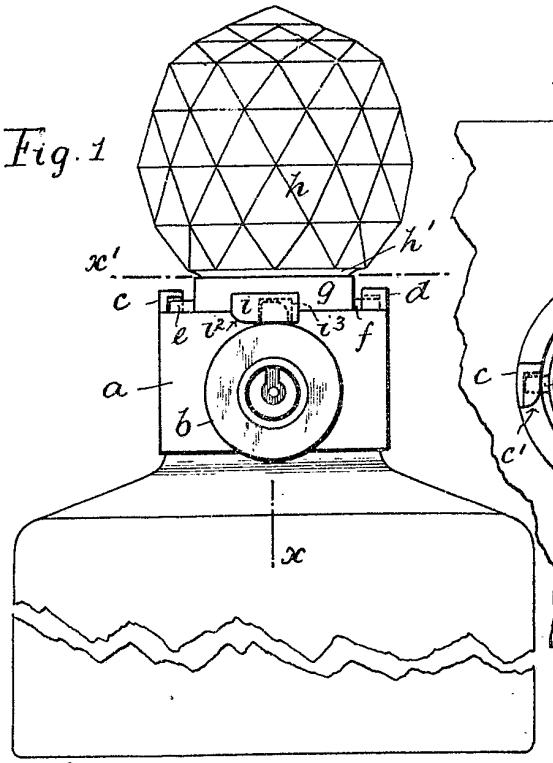


Fig. 3.

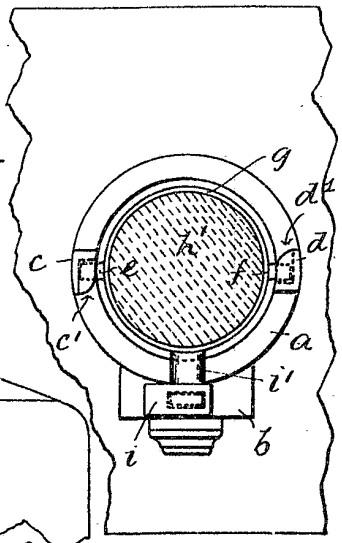


Fig. 2.

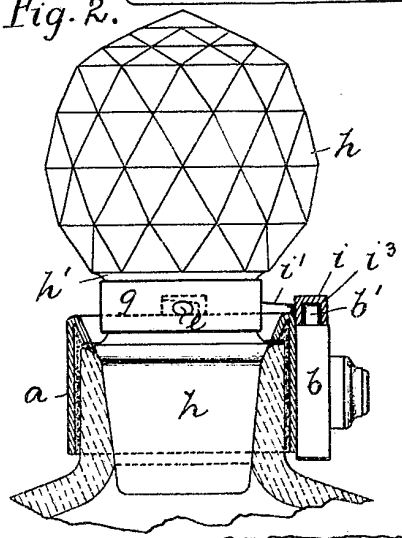


Fig. 4

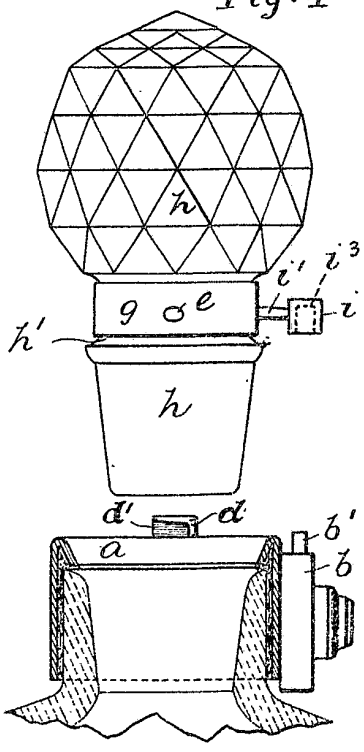
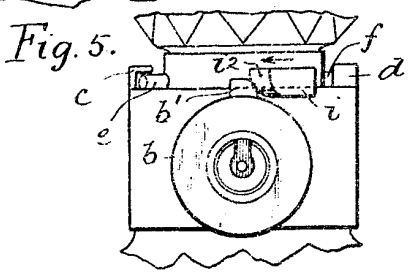


Fig. 5.



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