Aug. 7, 1923. 1,464,458

F. L. WHARTENBY

LOCK FOR CLOSURES OF BURIAL VAULTS

Filed June 16, 1921 2 Sheets-Sheet 1

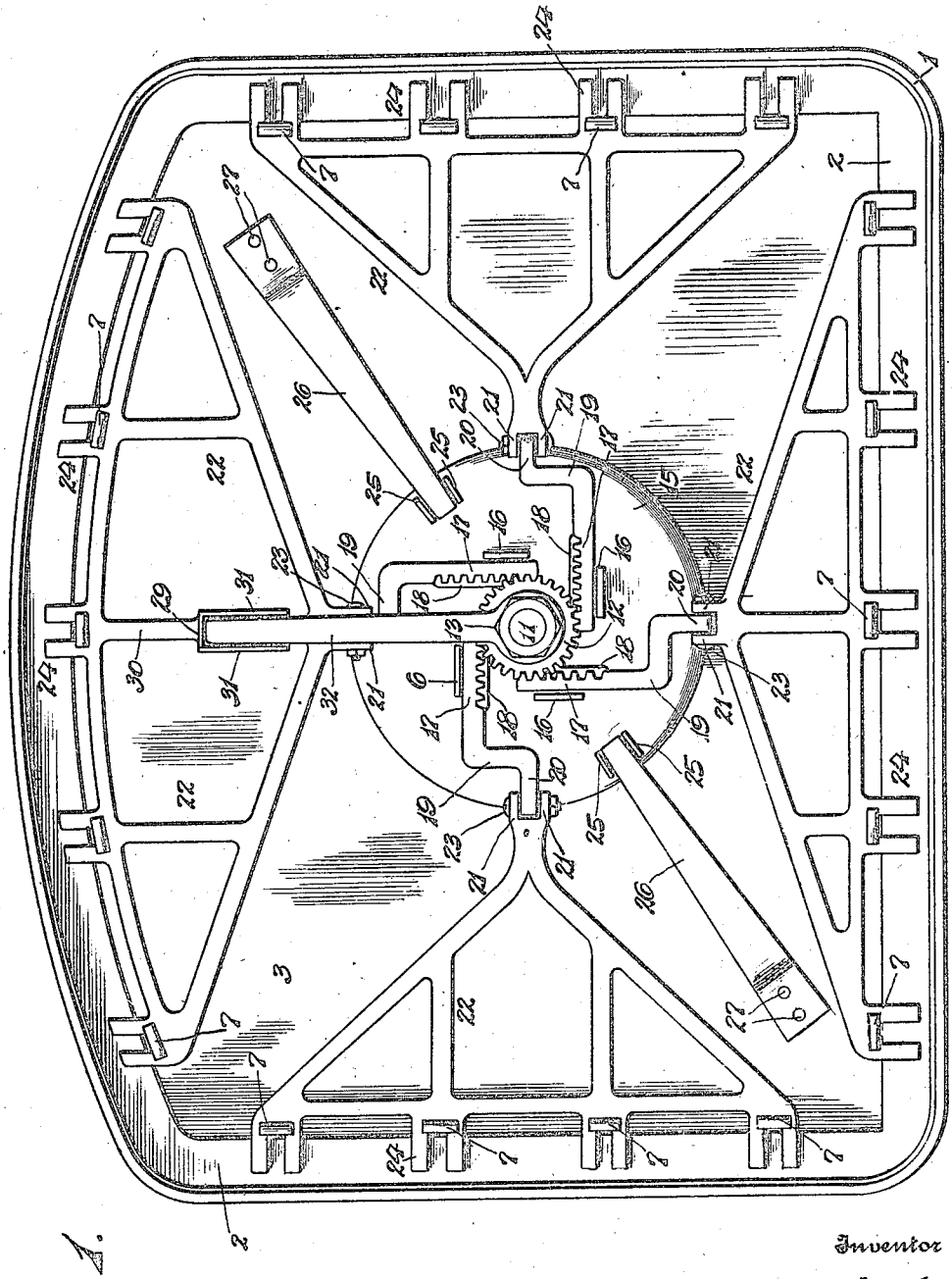

Fig. 1.

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Fig. 4.

Fig. 2.

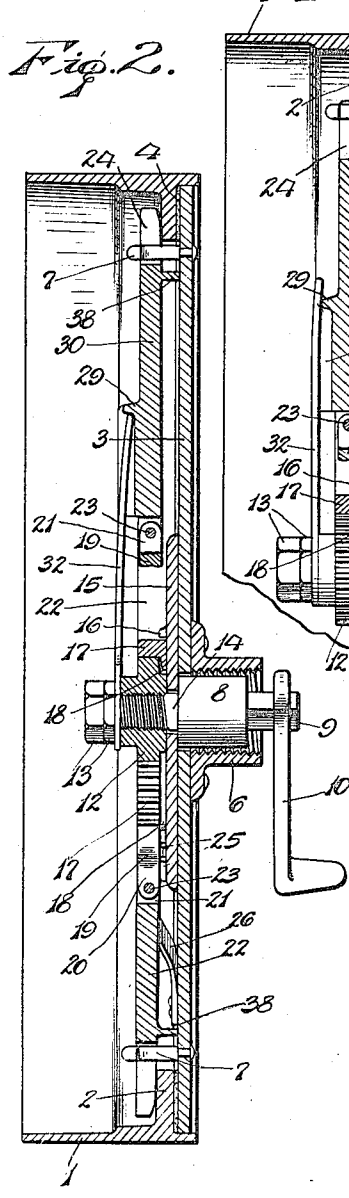
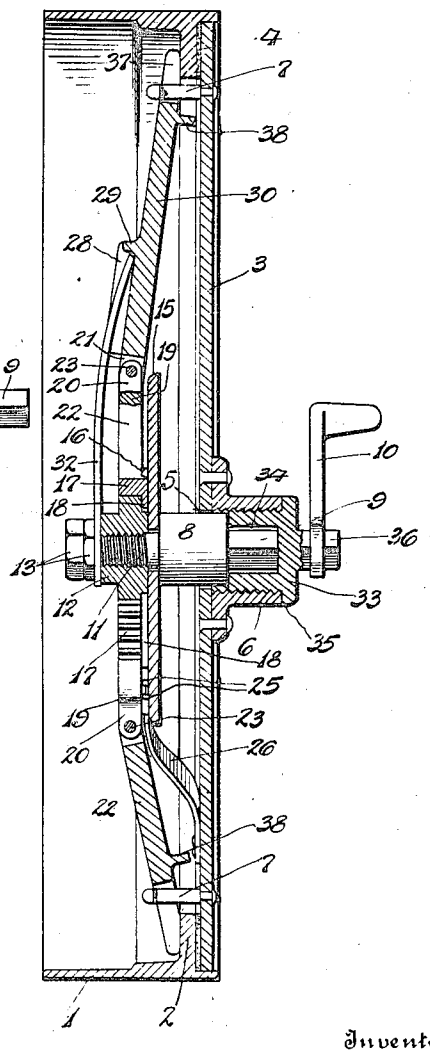


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK LESLIE WHARTENBY, OF UPPER SANDUSKY, OHIO.

LOCK FOR CLOSURES OF BURIAL VAULTS.

Application filed June 16, 1921. Serial No. 478,094.

To all whom it may concern:

Be it known that I, FRANK L. WHARTENBY, a citizen of the United States, residing at Upper Sandusky, in the county of Wyandot and State of Ohio, have invented certain new and useful Improvements in Locks for Closures of Burial Vaults, of which the following is a specification.

This invention relates to means for locking the closures of burial vaults and has for its object the provision of a simple mechanism by the use of which the closure will be effectually sealed when locked in place and cannot be withdrawn. The present invention seeks particularly to simplify the construction of the mechanism disclosed in Letters Patent, No. 1,288,455, granted to me December 17, 1918, thereby reducing the cost of production and also increasing the efficiency of the seal.

In the accompanying drawings—

Figure 1 is an elevation of the inner side of the closure showing the same locked in position in the vault;

Fig. 2 is a longitudinal vertical section showing the bolt frames projected to engage the inner side of the flange on the vault body;

Fig. 3 is a similar view showing the parts in the final locked position;

Fig. 4 is a similar view showing the parts arranged in their initial positions to permit the insertion of the closure into the open end of the vault with the bolt frames retracted so as to clear the flange.

In the drawings, the reference numeral 1 indicates the end of a vault body having the usual sealing flange 2 therein and 3 indicates the closure which is adapted to seat against the said flange within the open end of the body, a gasket 4 of lead or other suitable material being placed against the outer side of the flange to prevent leakage when the closure is locked in place. The door or closure 3 is provided at its center with an opening 5 and upon its outer side concentric with said opening is secured an internally threaded ferrule or barrel 6. T-shaped studs or keepers 7 are provided at intervals on the inner side of the closure adjacent the edges thereof and are so located that they will lie close to the flange 2 when the closure is in place in the open end of the vault, the heads of the keepers being disposed inwardly beyond the flange, as clearly shown. Within the barrel or ferrule 6, I loosely mount a shaft 8 which is provided at its outer end with an angular extension or stem 9 adapted to be engaged by a wrench or other turning tool 10 and is provided at its inner end with a reduced stem or extension 11 upon which is secured a pinion 12. This pinion is illustrated as provided with an internally threaded bore or hub engaging external threads on the extension or stem 11 and held thereon so as to turn therewith by lock nuts 13. The base of the stem or extension 11 immediately adjacent the end of the main portion of the shaft 8 is smooth, as shown at 14, and upon this smooth portion of the stem is mounted a disc or base plate 15 having straight sided lugs or ribs 16 upon its inner face, these lugs or ribs being disposed tangentially relative to the pinion 12 and spaced therefrom to form guides for the racks 17 at the inner ends of the bolts, guiding flanges 18 being formed on the bolts at the sides of the racks to fit between the outer side of the pinion and the inner face of the disc and thereby prevent the racks falling inwardly from the disc. It will be readily noted, more particularly upon reference to Figs. 2, 3 and 4, that the racks 17 are effectually held in place and guided by the pinion, the flange 18 and the rib or projection 16, so that the operative engagement of the racks with the pinion will be maintained at all times. The racks and pinion are so relatively proportioned that a quarter turn of the pinion will move the racks outwardly so that the bolts will be engaged with the sealing flange of the vault body and when the bolts are retracted so as to clear the flange and permit the insertion of the closure the end of each rack will be in juxtaposition to the inner side and flange of a meeting rack. The bolts consist each of the inner member 19 upon which the rack is formed and the outer end of which is offset or bent so as to bring its terminal into radial alinement with the pinion and is then turned outwardly, as shown at 20, to engage between the lugs 21 on the outer bolt frame 22 and be pivotally connected therewith by a pivot pin or bolt 23. The outer portion 22 of the bolt is preferably of a skeleton form, as shown in Fig. 1, and is substantially triangular in outline so that its outer end will be prolonged and substantially equal to the length of the adjacent edge portion of the flange with which it is to cooperate. The outer end of each bolt

frame is constructed with a plurality of forks 24 which are adapted to engage the T-shaped studs or keepers 7, the branches of the fork passing at opposite sides of the shank of the keeper and engaging under the head of the same, as will be readily understood.

At diametrically opposite points of the disc 15 on the inner face thereof, I provide spaced lugs 25 between which is engaged the inner end of a leaf spring 26, the outer end of which is riveted to the inner side of the closure, as indicated at 27. Upon one of the bolt frames 22, I provide a locking pocket 28 which may be conveniently formed by a flange or rib 29 disposed transversely to one arm 30 of the frame and parallel flanges 31 on the side edges of said arm. A locking spring 32 is secured upon the stem 11 by the lock nuts 13 and has its free end in position to engage within the said pocket 28 and abut the transverse flange 29. The mechanism also includes a cap nut 33 which is constructed with a socket 34 in its inner end adapted to fit over the angular stem 9 and is externally threaded to engage the internal threads of the ferrule or barrel 6, an annular shoulder 35 being formed at the outer end of the external threads to abut the outer end of said ferrule, as shown in Fig. 3. Upon the outer side of the cap nut is formed an angular stem 36 corresponding to the stem 9 and adapted to be engaged by the same turning handle or wrench 10.

The operation of the device will, it is thought, be readily understood. Before the closure is inserted in the open end of the vault, the bolts are retracted so that, as the closure is placed in position, the ends of the bolts will clear the edge of the flange 2, as clearly shown in Fig. 4. The bolts are beveled on their outer edges at their extremities, as indicated at 37, and are supported in spaced relation to the closure by lugs or rests 38 on the outer sides of the bolts. After the closure has been placed within the open end of the vault and against the gasket 4, the handle 10 is engaged upon the stem 9 and a quarter turn imparted to the shaft 8 whereby the pinion 12 will be turned and through its engagement with the racks 17 will project the bolts so that the ends thereof will extend over the inner side of the flange 2, as shown in Fig. 2. The handle 10 is then withdrawn from the stem 9 and the cap nut 33 is engaged in the end of the ferrule or barrel 6 so that the inner end of the cap nut will bear against the outer end of the shaft 8 around the base of the stem 9. The handle 10 is then engaged over the angular stem 36 of the cap nut and the cap nut is rotated, whereupon it will ride inwardly in the ferrule or barrel through its threaded engagement therewith and will push the shaft 8 inwardly, as will be readily understood on reference to Fig. 3. This inward sliding movement of the shaft will, of course, carry the disc 15 and all the parts mounted upon the stem 11 of the shaft inwardly away from the door or closure 3 and the outer portions of the bolts will rock upon their pivotal connections 23 with the inner portions of the bolts, the outer extremities of the bolts bearing upon the sealing flange 2 as a fulcrum and, by their engagement with the heads of the keepers 7, drawing the closure into firm contact with the gasket 4 and compressing the same so that the vault will be hermetically sealed and an air and liquid-tight joint produced. When the bolts are in their retracted positions, the free end of the locking spring 32 will bear upon the flange 29 but when the bolts are projected, this flange 29 will ride under and beyond the end of the spring which will then slip into the pocket 28 produced by said flange and the flanges 31 and will abut the inner side of said flange, as shown in Figs. 2 and 3, so that the bolts cannot then be retracted and the vault will, consequently, be rendered burglar proof.

It will be readily noted from the foregoing description, taken in connection with the accompanying drawings, that I have produced a very simple structure which may be very easily operated and by the use of which the vault may be rapidly closed, and, when closed, will be effectually sealed and will resist all tampering therewith.

Having thus described the invention, what is claimed as new is:

1. The combination of a grave vault having a sealing flange on its inner side around its entrance opening, a closure adapted to fit within said opening and against said flange, an internally threaded barrel secured upon the outer face of the closure, a shaft mounted loosely in said barrel, a bolt support carried by said shaft at the inner side of the closure, a plurality of jointed bolts mounted on said support and adapted to engage the inner side of the said flange, interengaging members on the shaft and the bolts whereby turning of the shaft will project the bolts, keepers on the closure engaged by the bolts near their outer ends, and a cap nut to engage the internally threaded barrel and bear against the outer end of the said shaft whereby turning of the said cap nut will cause the same to ride inwardly in the barrel and move the shaft and the bolt support thereon inwardly away from the closure to rock the outer portions of the bolts and to effect binding engagement between the bolts, the keepers, the flange, and the closure.

2. In mechanism for the purpose set forth, the combination of a closure, a shaft mounted therein for sliding and turning movement, a bolt support on the shaft at

the inner side of the closure and movable inwardly from the closure with the shaft, a pinion fixed to said shaft at the inner side of said support, guiding ribs on said support disposed tangentially with respect to the pinion and in spaced relation thereto, and locking bolts provided at their inner ends with racks meshing with said pinion and disposed between the pinion and the respective guiding ribs, said racks being provided with longitudinal guiding flanges engaging between the support and the outer side of the pinion.

3. In mechanism for the purpose set forth, the combination of a closure, a bolt support, means carried by the closure for moving said support inwardly away from the closure, a plurality of bolts mounted upon said support, means for projecting the bolts, a pocket on the inner side of one of the bolts, and a locking spring at the inner side of the bolts carried by the means for projecting the bolts and having its free end arranged to ride over the outer end wall of the pocket and enter the pocket in abutting engagement with the end wall thereof, said free end of the spring bearing constantly against the inner surface of the bolt.

4. In mechanism for the purpose set forth, the combination with a closure, of a bolt support arranged at the inner side of the closure, means carried by the closure for moving said support inwardly away from the closure, leaf springs secured upon the closure radially beyond the bolt support and having their free ends bearing upon the inner face of said support, and a plurality of bolts carried by said support.

In testimony whereof I affix my signature.

FRANK LESLIE WHARTENBY. [L. S.]