Aug. 7, 1923.

1,464,008

L. R. LE TANG

LOCKING MECHANISM

Filed July 28, 1921

2 Sheets-Sheet 1

Fig. 1.

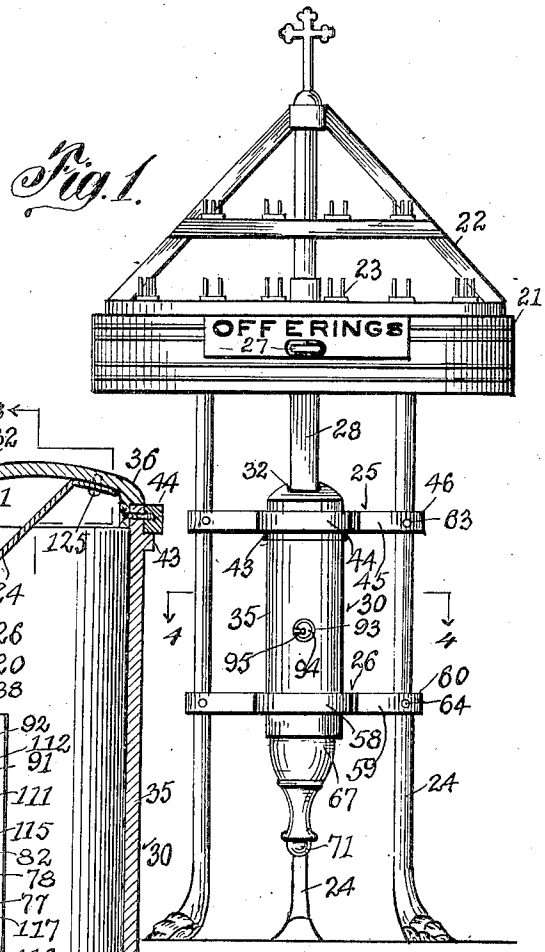


Fig. 2.

Fig. 3

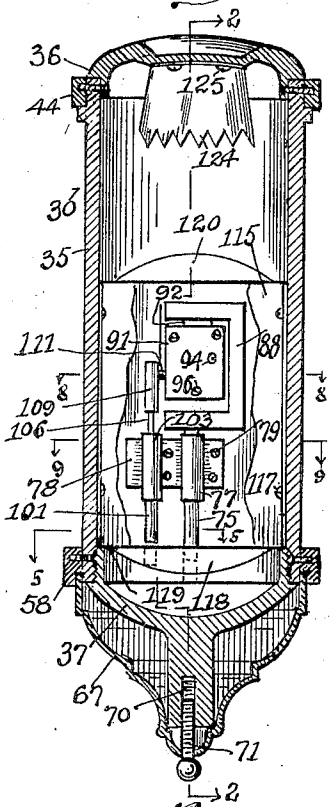


Fig. 5.

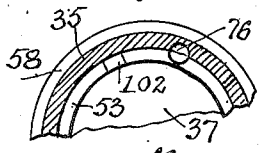
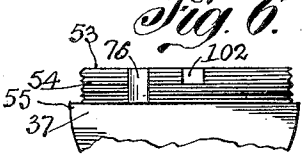


Fig. 6.



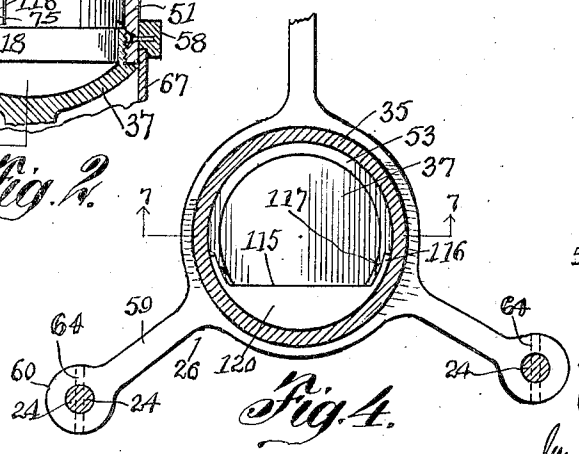


Fig. 4.

INVENTOR

Leo R. LeTang,

by P. F. Herbert

His Attorney.

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L. R. LE TANG

LOCKING MECHANISM

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Fig. 12.

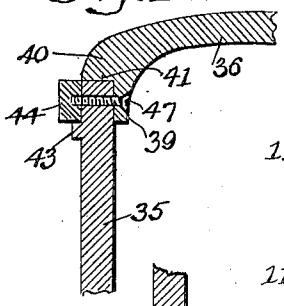


Fig. 13.

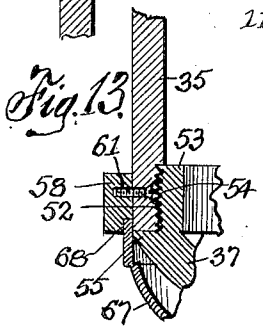


Fig. 14.

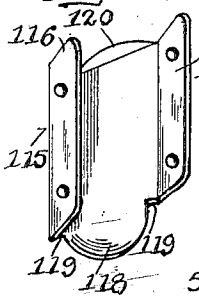


Fig. 7.

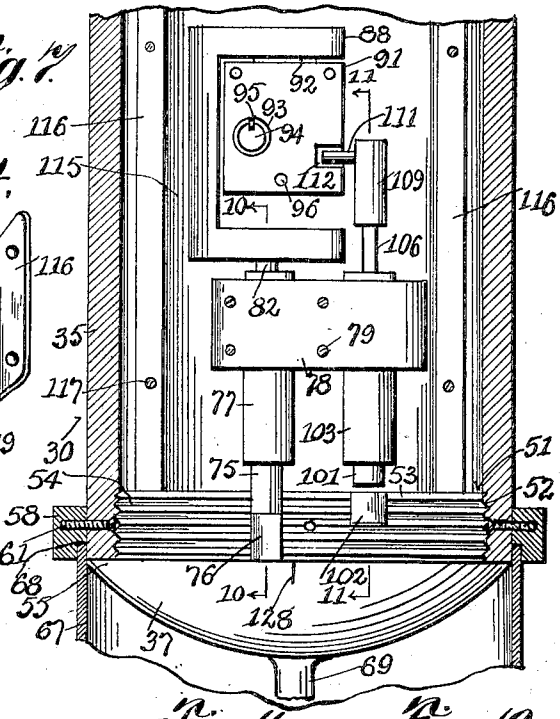


Fig. 11.

Fig. 10.

Fig. 8.

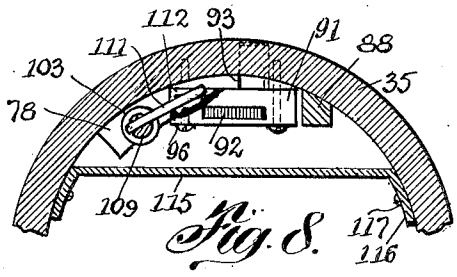
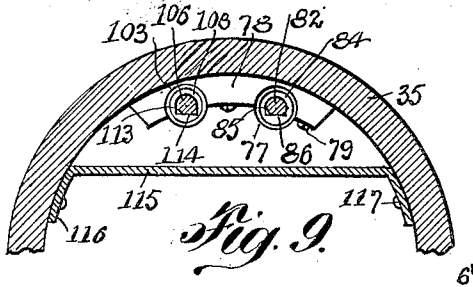
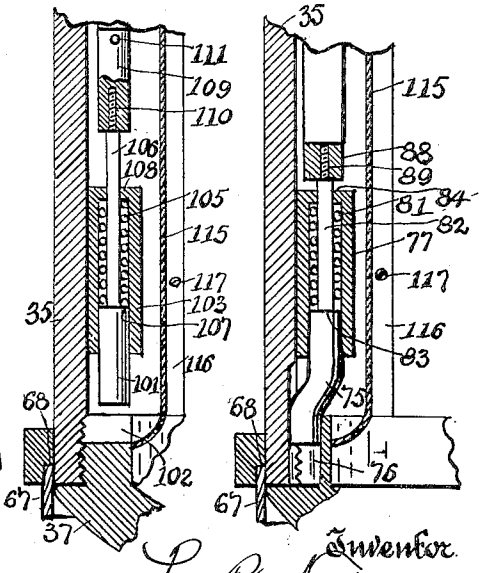


Fig. 9.





Inventor.

Leo R. Le Tang,

by R. R. Herbold

His Attorney.

Patented Aug. 7, 1923. 1,464,008

UNITED STATES PATENT OFFICE.

LEO R. LE TANG, OF CINCINNATI, OHIO.

LOCKING MECHANISM.

Application filed July 28, 1921. Serial No. 488,226.

To all whom it may concern:

Be it known that I, LEO R. LE TANG, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Locking Mechanism, of which the following is a specification.

I have exemplified my invention as applied to a votive stand. Quite a number of thefts have taken place recently from the coin-receptacles of votive stands, as well as from poor boxes, and it is the object of my invention to provide a new and improved locking mechanism applicable to such coin-receptacles, to poor boxes, and to receptacles of various kinds.

It is the object of my invention further to provide novel means whereby unlawful access to the interior of boxes or receptacles is made extremely difficult or precluded; further, to provide primary locking mechanism which is normally urged into locking relation; further, to provide auxiliary locking mechanism which is made effective by removal of a portion of the primary locking mechanism; and, further, to provide novel means for connecting the parts of a receptacle for rendering unlawful access thereto difficult or prohibitive.

The invention will be further readily understood from the following description and claims, and from the drawings, in which latter:

Fig. 1 represents a front elevation of my improved mechanism shown in connection with a votive stand.

Fig. 2 is an axial section of my improved mechanism, in the plane of the irregular line 2—2 of Fig. 3, partly broken away.

Fig. 3 is an axial section of the same, taken in the plane of the irregular line 3—3 of Fig. 2, partly broken away.

Fig. 4 is a cross-section of the same taken on the line 4—4 of Fig. 1.

Fig. 5 is a cross-sectional detail of the same, taken on the line 5—5 of Fig. 3.

Fig. 6 is a side elevation of the closure for the receptacle, partly broken away.

Fig. 7 is a front elevation of my improved device, partly broken away, with the body of the casing in axial section on the line 7—7 of Fig. 4, to illustrate the interior mechanism.

Fig. 8 is a detail in cross-section, taken on the line 8—8 of Fig. 3.

Fig. 9 is a detail in cross-section, taken on the line 9—9 of Fig. 3.

Fig. 10 is an axial section of the primary bolt mechanism taken on the line 10—10 of Fig. 7.

Fig. 11 is an axial section of the auxiliary bolt mechanism, taken on the line 11—11 of Fig. 7.

Fig. 12 is a sectional detail showing the connection between the body of the container and one of its end walls.

Fig. 13 is a sectional detail showing the connection between the body of the container and its closure; and,

Fig. 14 is a perspective view of the inner shield.

The votive stand, to which my invention is exemplified as applied, comprises a body 21, and a superstructure 22, carrying suitable candle-holders 23, the body being supported by legs 24 connected by braces 25, 26. The votive stand is provided with a coin-opening 27, for offerings, communicating with a coin-chute 28, the coin-chute communicating with a coin-receptacle 30 for directing the coin received through the coin-opening into the receptacle. The receptacle 30 may exemplify any money box or receptacle in whatever relation employed. The lower end of the coin-chute is received in a slot 31 in the coin-receptacle, and is held in place by a flange 32 supported on the wall of the slot.

The coin-receptacle is exemplified as comprising a body 35, an end wall 36, and a closure 37. The body is shown cylindrical, and the body, end wall and closure are preferably formed of metal of substantial thickness and of a character to render tampering with the same difficult. The receptacle may for instance be composed of steel.

The end wall is provided with an inwardly extending annular flange 39, (see Fig. 12) which is received inside of the end of the body, and with a laterally extending annular flange 40 forming a shoulder 41 received against the end face of the body.

The body is adjacent to its upper end provided with an annular bead 43. A ring 44 surrounds the upper end of the body and the depending annular flange of the end wall. This ring is shown formed as part of the upper brace 25 between the legs of the stand, the upper brace having a series of arms 45 rigid therewith, corresponding in number with the legs of the stand, there

being for instance three. The outer ends of the arms 45 are provided with bearings 46 about the legs.

The end wall is secured to the body, for instance by means of screws 47 passing through flange 39, the upper end of the body and the ring, the head of the screw being preferably inside the receptacle, and its outer end terminating inside the outer face of the ring.

The body is provided with an opening 51, the wall of which is threaded as shown at 52, (see Figs. 7 and 13). The closure 37 is provided with an inwardly extending annular flange 53 having external threads 54 received within the threaded wall of the opening in the body. The closure further has an outwardly laterally extending annular flange 55 received against the end of the wall of the opening, shown at the lower end of the body.

A lower ring 58 surrounds the lower end of the body and the upwardly extending annular flange of the closure. This ring may be part of the lower brace 26 between the legs of the stand and have arms 59 extending therefrom which terminate in bearings 60, about the legs. The lower end of the body and the ring are preferably secured together, as by means of screws 61 received through the lower end of the body and into the lower ring, preferably from the inside of the body. The outer end of the screws terminate in advance of the outer wall of the ring. The internal threads 52 are interrupted by holes in which the heads of the screws 61 are countersunk beyond the depths of the threads.

When the parts are assembled, the bead 43 preferably contacts the upper ring 44. The bearings 46, 60, of the braces of the stand are rigidly secured to the legs as by means of pins 63, 64, received through the respective bearings and the legs.

A shield 67 of cup-form is arranged to be received about the closure and the lower edge of the body, and encompasses the joint between the lower edge of the body and the laterally extending flange 55 of the bottom or closure. Its inner edge is received in an annular rabbet 68 in the ring 58. The bottom or closure is provided with a depending lug 69, provided with an axially threaded bore 70 at its lower end, for receiving a screw 71 for securing the shield in place.

For ornamental purposes the shield and head of the screw as well as the upper face of the top may be finished in burnished brass and the rings and legs may be given a white finish.

It will be noted that the securing means between the upper end of the body and the top and between the lower end of the body and the closure or bottom are surrounded by protective rings. The rings and the ends of the body are secured together by concealed fastening means which terminate inside the outer face of the rings, the fastening means being concealed within the rings.

I provide locking means within the receptacle for the releasable closure of the receptacle, the locking means being held in place by fastening devices which terminate within the outer surface of the receptacle. Exemplifying these locking means, I provide a bolt 75 which is arranged to be received in a hole 76 extending across the threads between the closure and the wall of the opening therefor, for forming a keeper for the bolt, preferably so arranged that the bolt when engaged in the keeper straddles the threads between the closure and the wall of the opening to securely lock the closure to the body. This arrangement is clearly shown in Figs. 5, 6, and 10. The bolt has reciprocating movement in a bearing 77, fixed to the inner face of the wall of the body, as by locating the same in a bearing-piece 78, secured to the wall of the body by means of screws 79, received through the bearing-piece and threaded into the wall of the body but terminating inside of the outside surface of said wall, so that the outside of the wall remains integral. The bolt is exemplified as urged into locking relation by means of a helical spring 81, surrounding a reduced shank 82 of the bolt, and located between a shoulder 83 on the bolt and a shoulder 84 on the bearing. (See Figs. 9 and 10.) The shank is preferably integral with the bolt, and means are provided for preventing turning of the bolt, as by providing the shank with a flat side 85 coacting with a complemental flat edge 86 on the shoulder 84.

The bolt is preferably provided with a yoke 88 which is shown threaded to the bolt, as shown at 89. The yoke encompasses a lock 91. The bolt 92 thereof is arranged to make contact with the yoke for moving the same. The lock may be any usual good lock adaptable for the purpose, provided preferably with a tube 93 and shank 94 having a key-slot 95 therein. The lock is secured to the wall of the receptacle from the inside of the receptacle, as by means of screws 96 passing through the casing of the lock and threaded into the inner portion of the wall of the receptacle, the screws terminating in advance of the outer face of the wall of the receptacle, so that the outer surface of the wall remains integral.

The tube of the lock is the only portion of the lock which extends to the outer surface of the receptacle, this being necessary for the insertion of a key for operation of the lock. The bolt 92 of the lock is caused to operate the yoke 88, which in turn operates the bolt 75 in the arrangement shown. When the bolt 92 of the lock is withdrawn, that is,

placed in its ordinary unlocked relation, the bolt 75 operated thereby is placed in locked relation. The locked relation of the bolt 75 is urged by the spring 81. This spring is within the receptacle and in protected relation therein so as to normally cause locked relation of the bolt 75. The walls respectively in the body and the closure to form the hole 76, which forms the walls of the keeper for the bolt 75, are brought into registry with each other at each revolution of the closure in unthreading the same, and the bolt is urged into engagement with those walls each time such registry is effected.

In opening the closure, the bolt 92 of the lock 91 is caused to be moved outwardly, which would correspond to its normal locked relation, which thereby moves the yoke and the bolt 75 into unlocked relation.

Auxiliary to this main locking and unlocking mechanism, a bolt 101 is normally held in unlocked relation, but is arranged to be urged into a notch 102 in the flange 53 of the closure, the walls of which notch form a keeper for the bolt. The bolt is axially movable in a bearing 103 formed on the bearing-piece 78, and is normally urged toward the closure by means of a helical spring 105, which surrounds a shank 106 rigid with the bolt between a shoulder 107 on the bolt and a shoulder 108 formed on the bearing 103, flat sides 113, 114, preventing turning of the extension.

An extension 109 of the bolt has threaded connection 110 with the bolt, and is prevented from turning, as by soldering the connection, and is provided with a laterally extending pin 111, which is received in a slot 112 in the casing of the lock 91. The bolt 101 is held in withdrawn relation from its keeper by means of the pin connection with the wall of the slot 112 so long as the lock 91 is in position. Should, however, the lock 91 be forced away from the wall of the casing, or removed, for instance, by the act of driving in the tube 93 of the lock, the bolt 101 will immediately become effective to lock the closure from the inside of the receptacle by engagement of the bolt in its keeper 102, urged thereto by the spring 105, for holding the closure in locked relation in the receptacle. If the bolt 101 should rest against the end of flange 53, the turning of the closure in unthreading the same will cause entering of the bolt 101 into the keeper 102 at each revolution of the closure.

The slot 112 extends through the front wall of the lock 91, the pin 111 being adjacent to the inner face of the wall of the receptacle and free of connection with the lock, except that the lock 91 holds the bolt 101 in unlocked relation. Displacement or removal of the lock 91 will cause the bolt 101 to engage its keeper.

In order to shield the locking parts from contact by the coin in the receptacle, I provide a shield 115, which may be a sheet of metal inclosing the locking parts, and provided with flanges 116 through which screws 117 are received and threaded into the inner portion of the wall of the receptacle, the outer ends of these screws terminating inside the outer surface of said wall. The shield preferably has an apron 118 which depends sufficiently to cover the keepers in the closure, the apron being received inside the annular flange 53 and having shoulders 119, which are close to the end of said flange when the closure is in closed relation. The upper end of the shield is preferably slanted upwardly with its upper edge rounded, as shown by the flange 120, to contact the inner face of the wall of the receptacle.

A coin deflector 124 is received across the coin-slot in the top of the receptacle, and is secured to the inner face of said top, as by screws 125 threaded into the top and terminating within the outer face of the top. There is a coin-passage 126 between the coin-deflector and the wall of the receptacle above the slanting top of the shield which deflects the coin away from the locking mechanism.

If it is desired to obtain legitimate access to the interior of the receptacle, the key for the lock 91 is employed for moving the bolt 92 of the lock outwardly and thereby withdrawing the bolt 101 out of range of the closure. The screw 71 is turned for releasing and removing the shield 67, giving access to the closure. The closure is then turned and unthreaded from its engagement with the body of the receptacle and the money in the receptacle removed. The closure is then returned by threading the same into its opening in the receptacle, returning the shield 67, and again causing insertion of the bolt 75 into its keeper by the manipulation of the lock 91.

In order to facilitate registry of the two parts of the keeper 76, the closure 37 and the adjacent portion of the wall of the body of the receptacle may be provided with marks which are in registry when the parts of said keeper are in registry within the receptacle, one of said marks being shown on the closure at 128 in Fig. 7.

All of the closing means for the receptacle and the locking means therefor are held in place by concealed connections, so that removal of the receptacle from the stand and opening of the receptacle by ordinary means is precluded. If an attempt should be made to gain access to the receptacle by forcing in the tube 93 and removing the lock 91, the movement of the lock away from the wall of the receptacle to which it is secured will cause release of the pin 111 from the slot 112

in the lock, whereby the auxiliary bolt 101 is released and brought into action for locking the closure, so that even if the lock were removed, the closure would be still locked by the auxiliary mechanism, and, furthermore, the removal of the lock would leave the bolt 75 in locked relation. Access to the interior of the receptacle is therefore rendered extremely difficult, so difficult in fact that access into the receptacle would be precluded. The presence of the shield 115 inside the receptacle is an additional safeguard for protecting the locking mechanism.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. In locking mechanism, the combination of a body, a closure therefor, a primary bolt coacting with said closure, a bearing on the inside of said body in which said primary bolt reciprocates, a lock secured at the inside of said body, said lock comprising a lock-bolt, a yoke about said lock, said yoke having attachment with said primary bolt and arranged to be operated by said lock-bolt, an auxiliary bolt coacting with said closure, and releasable connecting means between said auxiliary bolt and said lock to normally hold said auxiliary bolt in unlocking relation to said closure and arranged to release said auxiliary bolt by removal of said lock.

2. In locking mechanism, the combination of a body, a rotatable closure for said body, connecting means between said closure and said body brought into connecting relation by rotation of said closure, a primary bolt to lock said closure, a lock to operate said primary bolt, an auxiliary bolt for said closure, and releasable means between said auxiliary bolt and said lock to normally hold said auxiliary bolt in unlocking relation.

3. In locking mechanism, the combination of a body, a rotatable closure for said body, connecting means between said closure and said body brought into connecting relation by rotation of said closure, a primary bolt, an auxiliary bolt, bearings on the inside of said body in which said bolts reciprocate, a lock secured on the inside of said body, said lock comprising a lock-bolt, connecting means between said primary bolt and said lock-bolt to operate said primary bolt and releasable connecting means between said auxiliary bolt and said lock to normally hold said auxiliary bolt in unlocking relation and to cause its locking relation by release of said releasable connecting means.

4. In locking mechanism, the combination of a body, a rotatable closure for said body, connecting means between said closure and said body brought into connecting relation by rotation of said closure, a primary bolt, an auxiliary bolt, bearings on the inside of said body for said bolts, said closure provided with keeper means for said bolts, spring means to normally urge said bolts into coaction with said keeper means, a lock secured on the inside of said body, said lock comprising a lock-bolt, connecting means between said primary bolt and said lock-bolt to operate said primary bolt, and releasable connecting means between said auxiliary bolt and said lock to normally hold said auxiliary bolt in unlocking relation and to cause its locking relation by release of said releasable connecting means.

5. In locking mechanism, the combination of a body, a closure therefor, a primary bolt, an auxiliary bolt, keeping means on said closure for said bolts, a lock on the inside of said body, connecting means between said lock and said primary bolt whereby to operate said primary bolt by means of said lock, said lock having a key-tube exposed outside said body, the body of said lock provided with a slot opening toward the inner face of said body, and a pin on said auxiliary bolt received in said slot to normally hold said auxiliary bolt out of range of said keeping means and arranged to slip out of said slot by inward movement of said lock.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

LEO R. LE TANG.

In presence of:
LOUIS T. MURPHY,
DELMA WERNSING.