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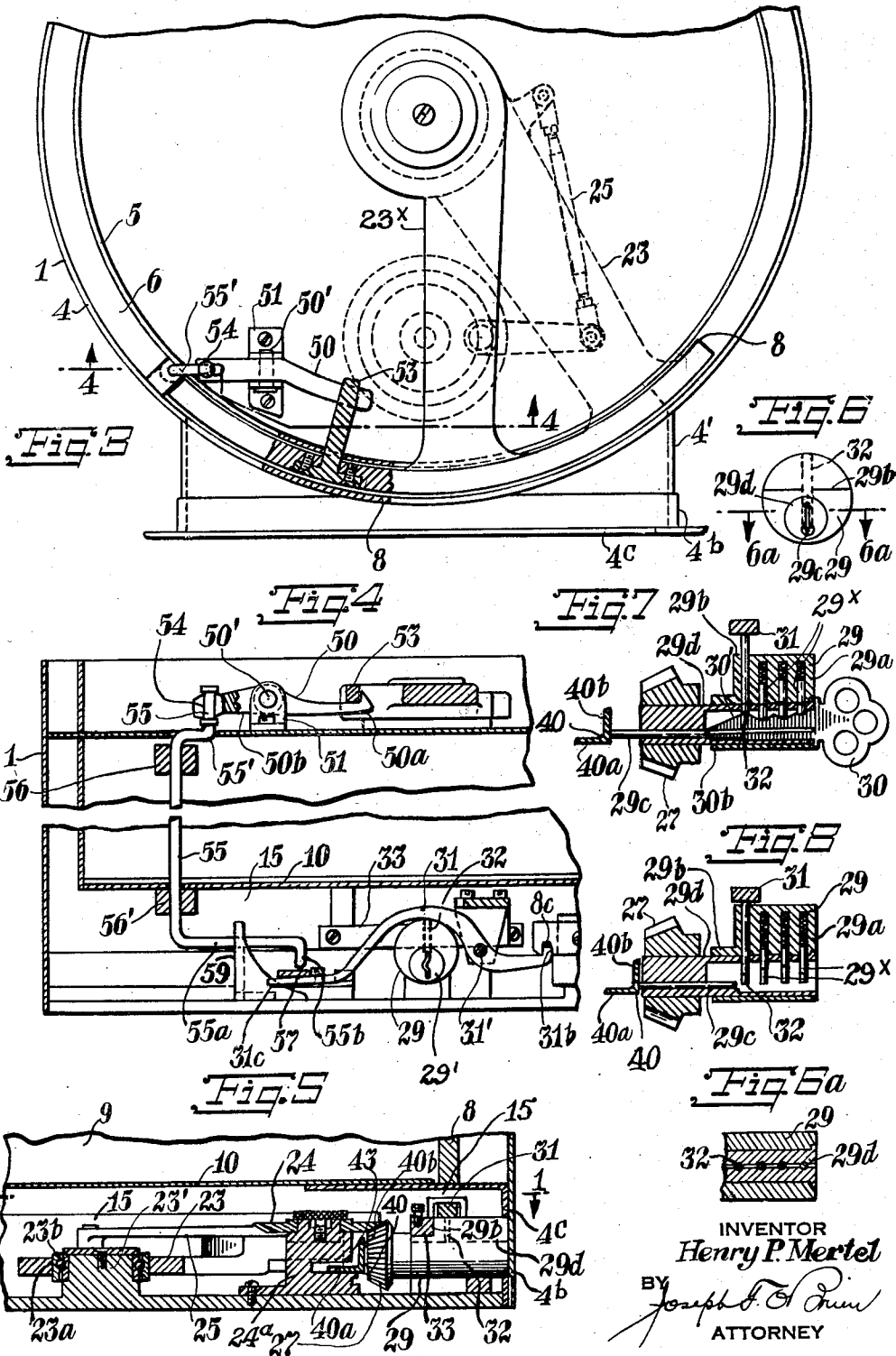
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TABERNACLE SAFE

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TABERNACLE SAFE

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5 Claims. (Cl. 312—33)

This invention relates to improvements in tabernacle safes and constitutes an improvement on the tabernacle safe illustrated and described in my Patent No. 1,951,432, issued on March 20, 1934.

In the tabernacle safe of my said Patent No. 1,951,432, I provided an arcuate door movable into open and closed position by rotation of a lock-spindle in a lock-casing of a key-actuated locking mechanism. This locking mechanism not only embodied means for releasing the lock-spindle for a turning movement in relation to the lock casing, and thus provided means by which the door is moved into opened and closed positions, but also provided means operable, upon insertion of the key into the lock, to disengage and release bolt mechanism, including one or more bolt members, from a locking connection with the door and also operable upon withdrawal of the key from the lock, to automatically cause a re-engagement of said bolts with the door, the parts being so arranged that insertion of the key into the lock released the bolt mechanism to release the door, a turning of the lock-spindle by the key locked the key therein, moved the door through opening and closing movements and operated to maintain the locking bolt or bolts in withdrawn position until the door, with its lock socket, was in closed position, whereupon withdrawal of the key from the lock would again automatically cause a locking engagement of the bolts with the door and, of course, would lock the lock-spindle.

- All of this locking and bolt mechanism engaged either the lower edge of the door or door-operating mechanism positioned below such lower edge of the door. While this mechanism provided, in closed position, a tight and immovable connection between the lower edge of the door and the door-way, I have found that it is possible, in a device of the character specified, by applying a strong pressure in the direction of opening, adjacent to the upper edge of the door, to procure a slight tilting movement of the door at such upper edge, which might possibly be used to permit the jimmying of the door.

In tabernacle safe constructions of the type shown in my former Patent No. 1,951,432, where a turning movement of the key and lock-spindle is used to swing the door to open and closed positions, the bolts are retained in released position until the key is turned back into registration with the lock tumblers or into locking position when and only when the key is withdrawable

from the lock and in said patented construction means is provided to partially eject the key from the lock. The doors in such constructions are supported on ball bearings and because of that fact and the fact that the bolts are retained in released position, as aforesaid, a re-bounce of the door from the door jamb frequently occurs when, in the closing movement thereof by the turning of the key, the forward edge of the door strikes the door jamb. It has been found necessary, therefore, in operation of these doors, to continue to exert a turning pressure on the key and to hold the door shut thereby until the rebounding movements are overcome so that the key will be partially ejected, as aforesaid, it being understood that in these safe constructions the key is irremovably locked in position in the lock-spindle during such turning thereof to move the door, and until registration of the key with the tumblers, the bolts are unfastened, and that when the key is released and partly removed or ejected, the bolts are immediately fastened. Consequently, it is desirable to prevent a re-bounce from taking place, particularly as the door must be locked and the key removed in accordance with the church rubric.

It is one of the objects of this invention to provide locking mechanism which will prevent the possibility of any tilting of the door in relation to door-way and which will supplement the aforesaid locking at the lower edge by providing a secure and immovable connection between the upper edge of the door and the door-way.

Another object of my invention is, in a device of the type specified, to provide, in combination with the locking mechanism hereinabove described, a novel bolt-operating mechanism releasable by said locking mechanism but resettable by engagement of the door-supporting mechanism to enable a locking engagement independently of said locking mechanism upon the movement of the door and a cooperating member thereon into closed position.

Another object of my invention is to provide, in a tabernacle safe, a door-bolting mechanism which will be capable of a releasing operation and a resetting movement without the use of springs.

Another object of my invention is to improve the bolting or latching construction described and shown in my said Patent No. 1,951,432, so as to permit the ball-bearing support of the door while avoiding the aforesaid re-bounce of the door from the jamb on a closing movement thereof and to accomplish this result by providing an

independent automatic locking mechanism for engaging and holding the door in closed position immediately upon contact of the edge of the jamb of the door-way.

Another object of my invention is, in a device of the type specified, to provide a pivoted bolt member on the door-way adapted, in the closed position of the door, to engage a bolt member at or near the top edge of the door; to provide, in combination therewith, a key-controlled locking mechanism having suitable tumbler mechanism and a rotatable spindle, and operable upon insertion of the key in the lock to release a bolt member on the door-way from engagement with a cooperating engaging member on the door, said door-way bolt member being thereafter released by movement of door-supporting mechanism during the opening movement of the door from control of the locking mechanism to permit a resetting movement for an independent locking engagement thereof, and thereafter by the movement of withdrawal of the key from the lock to place the operative elements for the bolt members in position again for key-controlled release by the movement of the key into the lock.

Another object of my invention is to provide, in combination with a key-controlled and tumbler-actuated locking mechanism, a bolting-mechanism for the door which will be engageable independently of said locking mechanism upon the movement of the door to closed position but will be releasable from control by said key-controlled tumbler-locking mechanism during the opening movement of the door so as to be set for such independent bolting-engagement, and which will, upon the movement of the door into said closed position, provide a secure, independent and automatic locking of the door and which furthermore, will, upon the removal of the key, automatically be again brought under control of a succeeding insertion movement of said key to enable a succeeding release by the key-controlled tumbler mechanism.

With these and other objects in view the invention comprises the combination of members and arrangement of parts so combined as to co-act and co-operate with each other in the performance of the functions and the accomplishment of the results herein contemplated, and comprises in one of its adaptations the species or preferred form illustrated in the accompanying drawings, in which:

Fig. 1 is a horizontal section of the lower portion of a safe door-way on the line 1—1 of Fig. 5, looking in the direction of the arrows;

Fig. 2 is a section on the line 2—2 of Fig. 1, looking in the direction of the arrows, and showing the lower bolt mechanism in locked position and the lower part of my independently-engageable bolt mechanism in reset position for release by the tumbler-lock mechanism;

Fig. 2^a is a fragmentary section showing the controlling connecting lever which is engageable between the independently-engageable bolt-mechanism and the key-operated tumbler-lock mechanism after being shifted upon opening of the door out of engagement with the former to permit the independent bolt-mechanism to assume engaging position;

Fig. 3 is a view in plan partly in section of the top or roof of a tabernacle safe showing my independently-engageable bolt-members at the top of the door;

Fig. 4 is a fragmentary vertical section showing

my independently-engageable bolt-mechanism with parts of the top and bottom of the safe, the controlling lever being again shifted to reset position;

Fig. 5 is a section on the line 5—5 of Fig. 1, looking in the direction of the arrows;

Fig. 6 is a view in rear elevation of the tumbler lock shown in Fig. 5, with the beveled gear removed therefrom;

Fig. 6^a is a horizontal section of the tumbler lock taken on the line 6^a—6^a of Fig. 6, looking in the direction of the arrows;

Fig. 7 is a vertical section on the line 5—5 of Fig. 1, showing the parts of the tumblers aligned and the spindle and bottom bolts in unlocked position with the key inserted in the lock; and

Fig. 8 is a section similar to Fig. 7, showing the key withdrawn and the tumblers, spindle and bottom bolts in locked position.

Referring now to these drawings which illustrate a preferred embodiment of my invention, I indicate a tabernacle safe which, in accordance with the preferred form of my invention, is cylindrical in conformation.

In the tabernacle safe of my former Patent No. 1,951,432, as well as in the present improved construction, the safe is of generally cylindrical conformation and I provide therein a main interior compartment 9 (Fig. 2), and below this compartment, I mount, in a compartment 15, one of two door-supporting members, together with key-controlled door-locking and moving mechanism engageable with the bottom edge of the door, while in a space above said compartment 9, I mount the other door-supporting member and releasable latch mechanism engageable with the upper edge of the door.

As illustrated, I provide a floor plate 10 which rests upon and is fastened to the upper surface of the annular floor-supporting flange 3^a (Fig. 1). The attachment of the floor plate 10 on the flange 3^a provides, directly beneath the same, a shallow compartment 15, and I utilize this compartment to mount my operating mechanism for moving and locking the door 8 which is provided at its heel portion with a reentrant member 8' which extends downwardly from the heel of the door and then forwardly toward the leading edge of the door in the plane of said door. The supporting and moving member 23 is attached to said reentrant member and the door is thus movable to open and closed positions when said member 23 is moved as hereinafter described, and this movement of the door is accomplished without the necessity of slotting or grooving the door-way.

In the preferred embodiment of my invention, I provide an external cylindrical wall 4 merging with a forwardly-projecting portion 4' at the outer end of which is provided an exterior door frame 4^b and the front of the compartment 15 is closed by panel member 4^c in which is mounted a suitable locking mechanism 29.

It is also desirable that the door, the door hangers, the door-operating mechanism and other internal parts of the safe be removable for the purpose of repair or for the purpose of refinishing the parts and that this may be accomplished without removal of the shell of the tabernacle from the altar. To this end, the various interior parts of the safe are mounted so as to be removable when the door is opened. The compartment 9 is, as shown, provided with an intermediate wooden sound-deadening lining 12

and with an ornamental silk lining 13 shown in section in Fig. 2.

In the preferred embodiment of my invention illustrated, the door-moving mechanism is provided below the door 8 in the compartment 15 and I utilize a mounting member 23 which is movable about the axis of the external cylindrical wall 4 to guide the movement of the lower edge of the door within the sheathing compartment 6 formed between said external cylindrical wall 4 and an internal cylindrical wall 5. The mounting member 23 serves as a part of the door-moving mechanism and also in the preferred embodiments of my invention illustrated, serves as a part of the locking mechanism. As shown, this member 23 is mounted on a pivot 23' and has a ballbearing 23^a (Fig. 5) disposed in a circular aperture 23^b between said member 23 and a shoulder on said pivot 23'. The door is also supported at its upper edge by another radial arm member 23^x (Fig. 3) which engages the door intermediate its front and rear edges and is mounted in a manner similar to that hereinabove described in relation to the member 23.

My door-moving mechanism is operable manually by means of the turning of a key, knob or like element and it is desirable to minimize the turning movement of this manually-movable key as much as possible. Therefore, said member 23 is connected at its outer end with the reentrant bracket 8' by screws 8^b and mechanism for moving this arm or member 23 to move the door to open and closed positions is provided which will enable opening and closing of the door by a relatively short manual movement of the operating element or key.

As shown, I mount a bevel-gear 24 eccentrically of the circle of movement of the member 23 and adjacent to the doorway and I project from this bevel-gear a radial arm 24' and pivotally connect one end of this arm 24' to a link 25 pivoted at its opposite end on a projection 23^c arranged adjacent to the pivot 23' of said member 23. Lock-controlled means for turning the bevel gear 24 to move the door is provided, and as shown, the beveled gear 24 meshes with a beveled gear 27 mounted on a lock spindle 29' of a locking mechanism which, upon operation of conventional lock tumblers and turning, is adapted to cause the turning of the gear 27, which, in turn, rotates the gear 24 to cause the movement of the members 24', 25 and 23 and a swinging of the door 8 within the sheathing compartment 6. In the form illustrated, the locking mechanism comprises a lock 29 having a front face block 29^a (Figs. 7 and 8) provided with a key spindle 29' rotatable in the casing or housing 29 upon the insertion of a key 30.

In the form of invention illustrated by my said Patent No. 1,951,432, said lock 29 was used in combination with a latching means which cooperated therewith to secure the lower edge of the door to the door-way. In accordance with the present form of my invention, I preferably employ the lock mechanism 29 in combination with a plurality of latching members engageable with the lower or bottom edge of the door-way and in addition to these latching members, I provide latching or bolting mechanism adapted to engage the upper edge of the door so that both the upper and lower edge will be securely fastened to the door-way.

The latching or bolting mechanism for the lower edge of the door-way comprises a latching or locking lever 31 pivoted at 31' and normally

swung on its pivot into engaging position by its own weight and the weight of the lever 57 (hereinafter more particularly described) so that when the door is closed the free end 31^b will engage a locking notch 8^c in the bracket 8'. The lock 29 is provided with a notch or elbow 29^b into which is fitted a lock-mounting bar 33 (Fig. 5) and said lock housing has mounted therein a rod 32 movable by the insertion of the key into the lock and mounted beneath the end of the lever 31. The rod 32 is adapted to be engaged by a vertical projection 30' (Fig. 7) of the key 30 to cause the upward movement of one end 31^c (Fig. 2) of the lever and the opposite end 31^b to be moved downwardly. The end 31^b which is drawn downwardly has a hook end which normally is pressed into engagement with the notch 8^c and when moved downwardly swings out of the notch 8^c in the heel bracket 8' and releases the door.

In the form of my invention shown, I also provide a horizontal latching lever 40 pivoted at 41 on the base of the gear-mounting pivot 24^a and normally having its end 40' pressed into engagement with a pin 43 on the door-moving lever 23 by a spring 42 stretched between the rear end of said lever and a fixed pin 42' suitably connected to the bottom of the safe. This lever 40 thus normally locks the door in locked position and serves as a secondary lock therefor. As illustrated, the lever 40 comprising an angle iron having a horizontal member or plate 40^a and a vertical member 40^b is shifted to release the pin 43 by the engagement of the end 30^b of the key with a slidable pin 29^c arranged in the lock spindle 29^d and the vertical member of said latching lever 40 serves as a bearing plate 40^b so as to permit turning of the key, lock spindle 29^d and pin 29^c in the lock-casing while maintaining contact with the lever in withdrawn position. It will be seen from the above that the insertion of the key 30 into the keyway of the lock causes the inward movement of the pin 29^c, which in turn engages and presses inwardly the latching-element 40 against the action of the spring 42, thus releasing the latch-bolt as hereinabove stated. The registration of the splits in the two parts of conventional lock tumblers 29^x enables release of the lock tumblers 29^x by the key (Fig. 7) and permits the turning of the key, during which turning it is engaged and held in the lock and in turn holds the pin 29^c in extended position, which by its engagement with the latching element 40 retains the same in unlatched position against the action of the spring 42. So soon, however, as the key is again turned into its insertion, tumbler-registering position, the latching element 40 will, through the pressure of the spring 42 be moved into latched position, and during such movement will press inwardly the rod 29^c which will, in turn, eject the key from the keyway in the lock 29. Such ejection of the key thus occurs upon the movement of the door into closed position and the movement of the latch into latching position and is desirable because keys of these safes often become broken in the lock, whereas in applicant's construction, even though the handle part of the key is broken off, the portion of the key which is within the lock will be ejected from the lock upon the closing of the door.

The latching mechanism for the upper edge of the doorway is also releasable by the aforesaid lock mechanism, and in the preferred embodiment of my invention illustrated, the lever 31 is extended at the end opposite the door-engaging end and is, upon being raised by insertion of the

key 30 and elevation of tumbler 32, adapted to release bolt mechanism mounted on the upper surface or roof of the cylindrical casing 1.

In accordance with my present invention, a locking bolt 50 is mounted on a pivot 50' in a bracket 51 mounted on the roof plate 52 of the tabernacle safe 1. The outer end of said bolt member 50 is provided with an engaging hook element 50^a adapted to engage, securely connect and lock with a member 53 mounted on the door 8 adjacent to the upper edge thereof. The opposite end 50^b of bolt member 50 is provided with a socket 54 within which is fastened the upper end of a connecting rod 55 which is bent at 55' to permit downward passage between the outer and inner walls 4 and 5 and within the compartment 6 formed therebetween. The rod 55 is mounted in suitable bearings 56, 56' and extends downwardly beneath the floor plate 10 and into the compartment 14 within which the locking mechanism is housed. The rod 55 has, at its lower end, an extension arm 55^a which is provided, at its outer end, with a nose 55^b adapted, in closed position, to extend directly over the outer end 57' of a laterally-swinging lever 57 which is pivoted at its rear end on a pivot 57^a and is adapted to have a slight lateral movement about its pivot and also an up-and-down movement. The lever 57 is preferably provided, adjacent to its outer end, with a weight 57^b and this lever 57 is moved vertically or upwardly by the end 31^c of the lever 31 which, upon the insertion of a key in the lock casing 29, is moved upwardly by the tumbler element 32. Obviously, such a movement vertically of the lever 57 will cause the elevation of the rod 55 and the lifting of the end 50^b of the bolt member 50 which moving about its pivot 50' will lower the opposite end 50^a thereof and release it from engagement with the door bolting member 53.

It will be seen from the above that the locking bolt at the upper edge of the door is thus released simultaneously with the insertion of the key and with the release of the other latching elements hereinabove described and covered in my Patent No. 1,951,432. All such locking mechanism of my said former patent are retained in releasing position during the movement in both directions of the door, and they are operative only to lock upon the release of the key.

I have found it desirable, however, in a device of the character specified, to provide preferably at the top of the door a locking bolt which will be capable upon the closing of the door of locking independently of the bottom operating and locking mechanism and with this end in view, I provide means operable upon the opening of the door for releasing the top-bolting mechanism from control by the lock mechanism and subsequently placing the same again under control of the lock mechanism upon and by the movement of the parts caused by the withdrawal of the key from the lock. In order to accomplish these ends without the use of springs, I provide, on the lever 57 an arcuate portion 57^c and I provide, on the door-supporting arm or member 23 a projection 58 which is adapted to engage the arcuate projection 57^c and to move the lever 57 laterally on its pivot so that its end will be moved laterally from beneath the nose 55^b of the rod 55, thus resulting in a dropping of said rod 55 and a resetting of the bolt member 50 into latching position so that upon the closing of the door the member 53 will automatically engage the nose

50^a and produce a locking engagement therewith.

It will now obviously be necessary, in order to enable a release of the bolt 50 upon the next succeeding insertion of the key, to reset the lever 57 beneath the nose 55^b of the rod 55, and in the embodiment illustrated, I provide means operable upon the withdrawal of the key and the resulting depression of the end 31^c of the lever 31 to shift the lever 57 back again beneath the nose 55^b of the rod 55, which is guided at its lower end in the forked guide-member 59. Thus the side edge of the end of the lever 57 during its depression or dropping with the lever-end 31^c is caused to engage a cam surface 59' upon a forked guide element 59 whereupon the end 57' of the lever will be shifted by said cam 59' laterally in the opposite direction so as again to extend beneath the nose 55^b of the rod 55. Thus, the lever 57 when so shifted beneath said nose 55^b will be in proper position when the key is again inserted into the lock to cause the lever to be raised vertically and this lever will in turn raise the nose 55^b and rod 55 to release the latch bolt 50 from engagement with the cooperating door-bolting member.

In the preferred form of my invention illustrated, a vertical post or screw 57^d is properly positioned on the floor of the compartment 15 to limit the shifting movement of the lever 57 by the cam 59.

My locking or bolting mechanism for automatically engaging the nose or hook 50^a of the bolt member 50 with the projection 53 on the door is brought under control of the key-locking means only after it has acted to lock the door and will thus prevent any possibility of a rebounding of the door during its closing movement.

My automatic bolting mechanism though being, as above indicated, brought under control of the key-actuated tumbler lock mechanism to enable a releasing movement thereof, has an independent engaging movement. It, therefore, is released simultaneously with the tumbler lock mechanism but being released from control of the key and tumbler lock mechanism during movement of the door engages separately and slightly before the operation of the completely controlled bolts of my former patent so as to hold the door in properly closed position and to permit the engaging operation of the pivoted lock bolts 31^b and 40' when the turning of the lock spindle by the key into aligned position with the tumblers releases the key and permits the same to be ejected by the action of the spring-pressed lever 40.

Having described my invention, I claim:

1. A tabernacle safe having a doorway, a door for opening and closing said doorway, door-locking mechanism mounted below said doorway and having a bolt-member engageable with the door at the bottom edge thereof, a key-controlled lock arranged beneath said doorway and adapted to be actuated by a key having vertical projections adapted to engage said door-engaging member to release said door-locking mechanism, latching mechanism engageable with said door at the upper edge thereof including a bolt-member, releasing means connected with said last-mentioned bolt-member and also operable by said key-controlled lock, and means operable during the movement of the door for disconnecting said last-mentioned bolt-member from operation by said key-controlled lock.

2. A tabernacle safe having a doorway, a door

for opening and closing said doorway, door-locking mechanism mounted below said doorway and having a bolt-member engageable with the door at the bottom edge thereof, a key-controlled lock arranged beneath said doorway and adapted to be actuated by a key having vertical projections adapted to engage said door-engaging member to release said door-locking mechanism, latching mechanism engageable with said door at the upper edge thereof including a bolt-member, releasing means connected with said last-mentioned bolt-member and also operable by said key-controlled lock, and means operable during the movement of the door for disconnecting said last-mentioned bolt-member from operation by said key-controlled lock, said bolt-members at the bottom and top edges of the door being operable by a common lever.

3. A tabernacle safe having a doorway, a door for opening and closing said doorway, door-locking mechanism mounted below said doorway and having a bolt-member engageable with the door at the bottom edge thereof, a key-controlled lock arranged beneath said doorway and adapted to be actuated by a key having vertical projections adapted to engage said door-engaging member to release said door-locking mechanism, latching mechanism engageable with said door at the upper edge thereof including a bolt-member, releasing means connected with said last-mentioned bolt member also operable by said key-controlled lock, said bolt-members at the bottom and top edges of the door being operable by a common lever, one of said bolt-members being retained in released position during the movement of the door while the other member is movable into locking and releasing positions.

4. A tabernacle safe comprising, in combination, a safe having a doorway, a door for opening

and closing said doorway, door-locking mechanism for said door including a tumbler-actuated locking mechanism adapted to be controlled by a key, a bolting-mechanism for the door having its releasing movement controlled by said tumbler-actuated locking-mechanism, means for removing said bolting mechanism from control by said tumbler-actuated locking mechanism during opening movement of the door, and means operable, upon the movement of the door to closed position after engaging operation of said bolting mechanism, to reset said bolting mechanism under control of said key-controlled tumbler-locking mechanism.

5. A tabernacle safe comprising, in combination, a safe having a doorway, a door for opening and closing said doorway, door-locking mechanism for said door including a bolt-member on the doorway and a bolt-engaging member on the door, lock mechanism provided with suitable tumbler mechanism adapted to be controlled by a key and a rotatable spindle releasable for rotary movement by operation of said key, said lock-mechanism being operable upon insertion of the key in the lock to release the bolt-member on the doorway from engagement with the bolt-engaging member on the door, means for releasing, by movement of door-supporting mechanism during the opening movement of the door, the said doorway bolt from control of the key and tumbler locking mechanism to permit a resetting movement for an independent locking engagement thereof, and means actuated by the movement of withdrawal of the key from the lock to place the operative elements for the bolt members in position again for key-controlled release by the movement of the key into the lock.

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