

May 9, 1933.

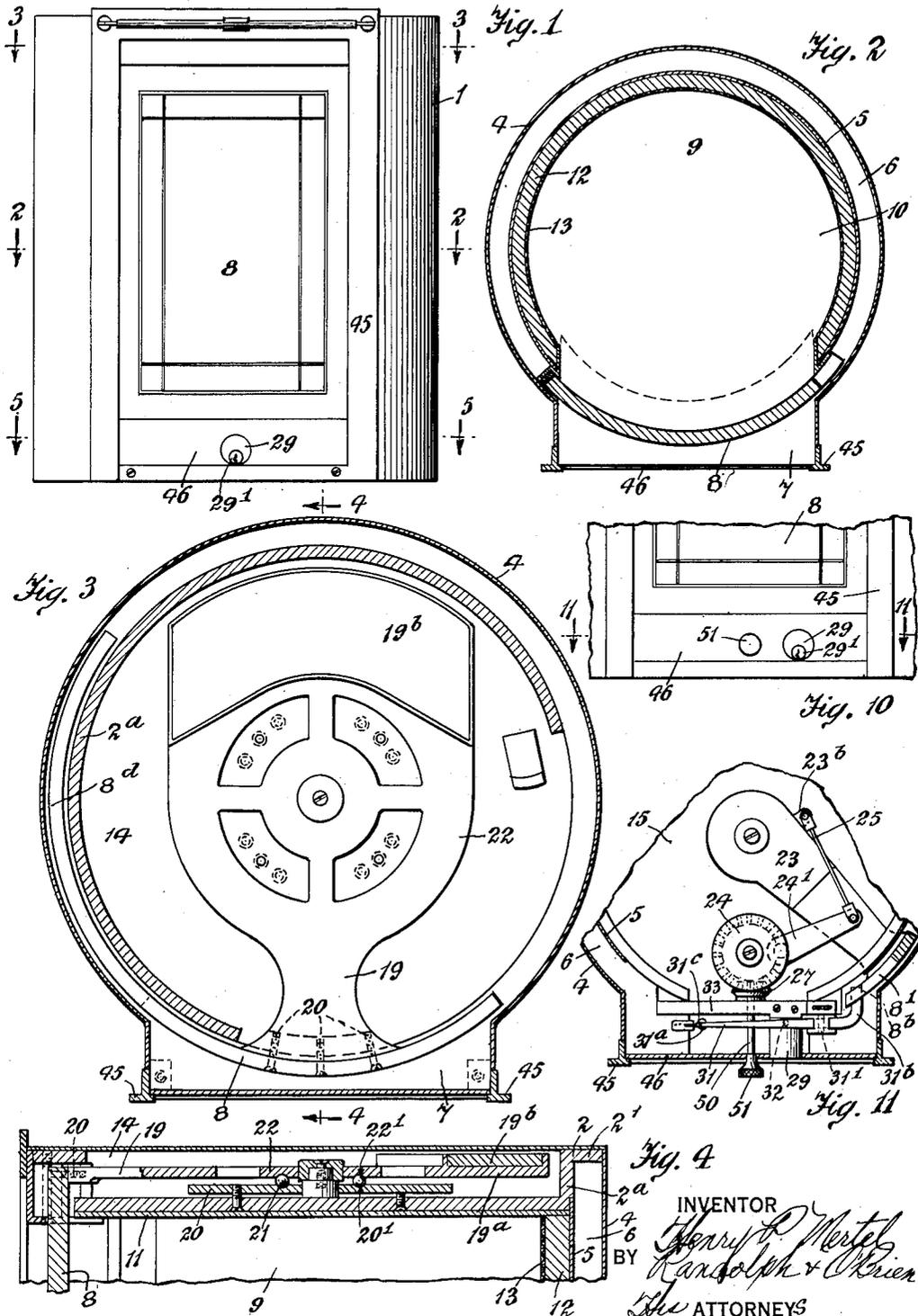
H. P. MERTEL

1,907,850

TABERNACLE SAFE

Filed April 19, 1930

3 Sheets-Sheet 1



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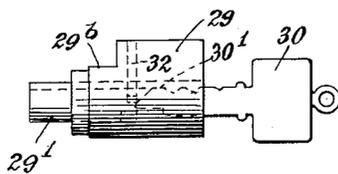
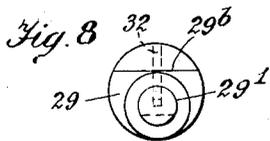
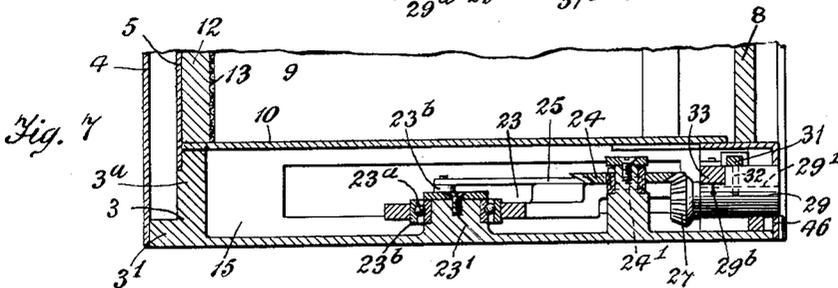
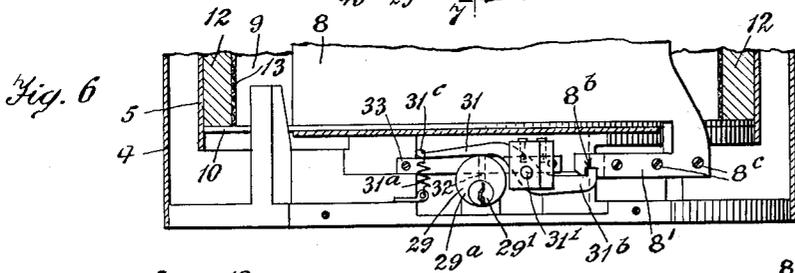
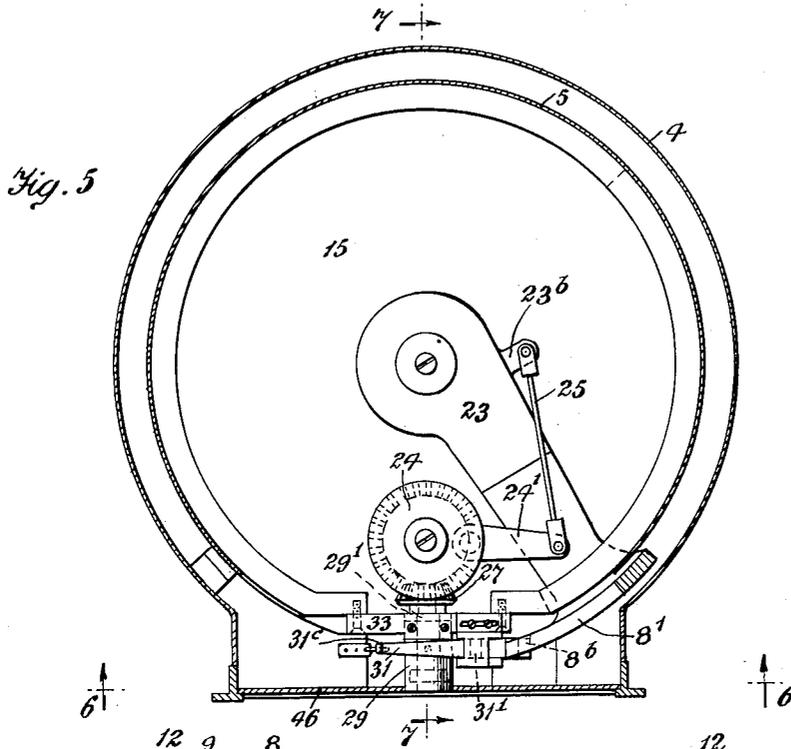
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TABERNACLE SAFE

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3 Sheets-Sheet 2



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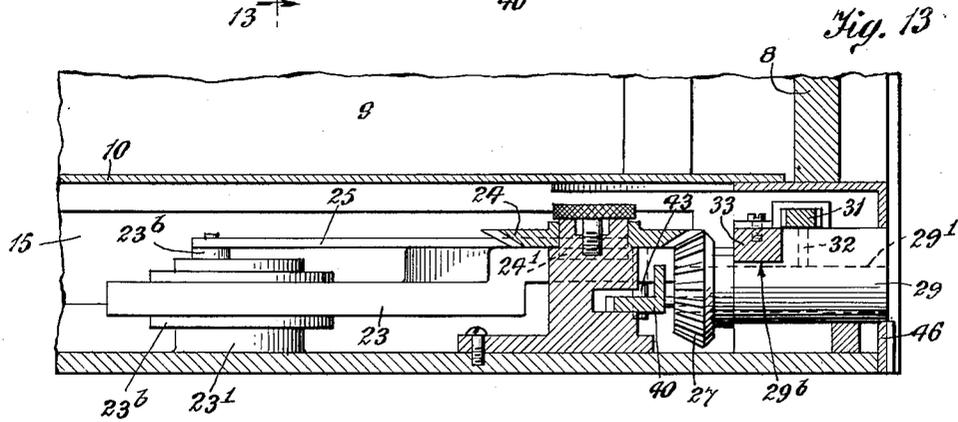
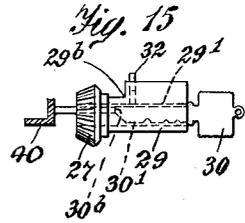
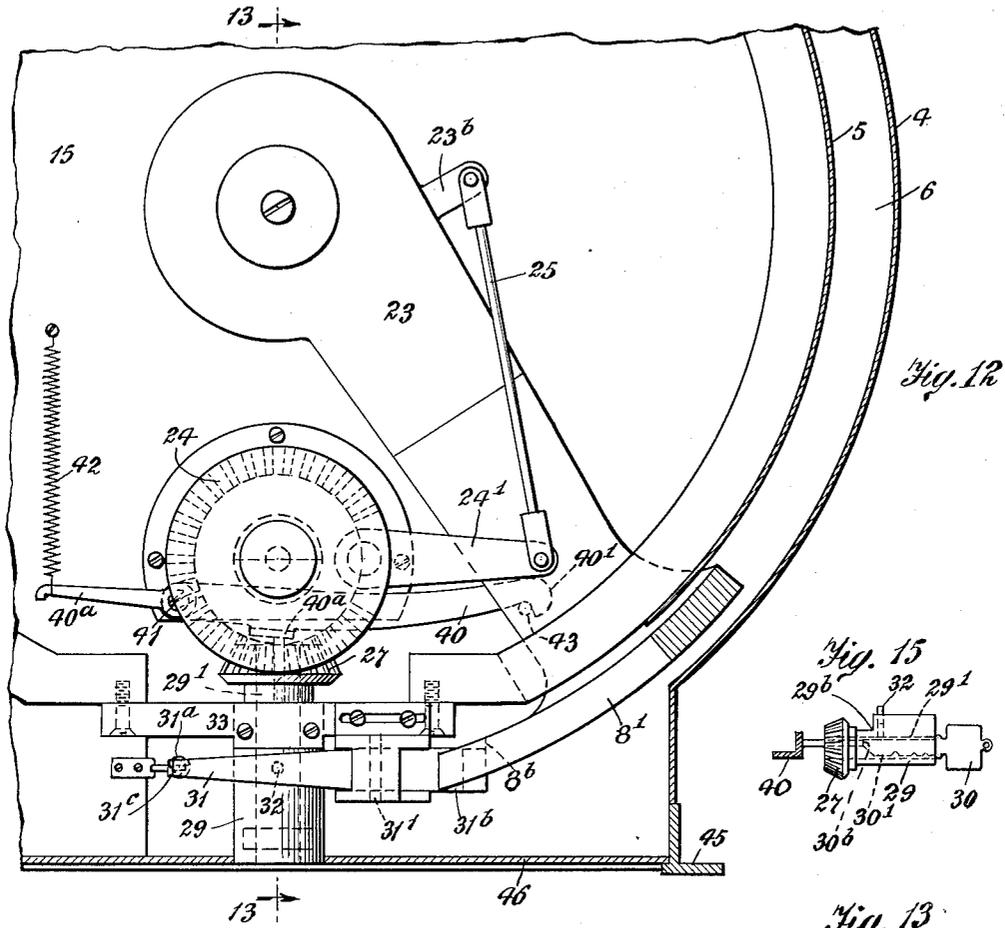
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1,907,850

TABERNACLE SAFE

Filed April 19, 1930

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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TABERNACLE SAFE

Application filed April 19, 1930. Serial No. 445,565.

This invention relates to improvements in tabernacle safes.

My present invention is an improvement on the tabernacle safe shown and described in my co-pending application, Serial No. 410,230, filed November 27, 1929.

One of the objects of this invention is to provide a balanced door construction in a safe having a single door supported on a radially-extending pivotally-turning ball-bearing arm such as shown and described in my said co-pending application and to this end, I preferably extend the pivotal door-supporting arm radially or diametrically on the side of the pivot opposite to the door and mount on this extension of the pivotally-swinging door-supporting arm at the side of the pivot opposite to the door a counter-weight substantially equal in weight to the door.

Still another object of my invention is to provide an improved form of locking mechanism including a key-operated latch-member and latching-notch which will enable the effective locking of the door while being completely concealed and without having any latches, sockets or apertures in any of the edges of the doorway or of the door proper, it being understood that such sockets or apertures are objectionable in altar tabernacle safes, and to this end, I provide a latching locking notch in a heel bracket connected or integral with the rear edge of the door, extending below the doorway and preferably having a reentrant portion extending forwardly in the plane of the door and spaced below the same where it is engaged with key-actuated latch or locking mechanism to lock the door.

Still another object of my invention is to provide, in a safe of the type specified, a door-locking or latching mechanism comprising a pivoted lever or levers arranged to be normally retained in locking engagement and to be releasable therefrom by insertion of a key into a lock.

Still another object of my invention is to provide a further balancing and non-tilting arrangement of the door by utilizing a reentrant heel bracket of the type hereinabove

described for engagement of door-moving or opening and closing mechanism, thus producing a construction in which any tendency of the door-moving mechanism to tilt the door in its opening and closing movement is avoided.

Still another object of my invention is to provide an improved simple and compact form of door-moving mechanism operable by the manual turning of a spindle after the unlocking of the door which is preferably accomplished by insertion of a key.

Still another object is to provide double locking or latching levers for my door, both operable on the insertion of a key into the lock, one being disposed in a vertical plane and operable by vertically-disposed projections on the key and the other being disposed in a horizontal plane and operable by the end of the key upon its projection horizontally into the lock.

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 cooperate 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 front elevation of a tabernacle safe embodying my invention;

Fig. 2 is a section on the line 2—2 of Fig. 1, looking in the direction of the arrow;

Fig. 3 is a section on the line 3—3 of Fig. 1, looking in the direction of the arrow;

Fig. 4 is a section on the line 4—4 of Fig. 3, looking in the direction of the arrow;

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

Fig. 6 is a section on the line 6—6 of Fig. 5, looking in the direction of the arrow;

Fig. 7 is a section on the line 7—7 of Fig. 5, looking in the direction of the arrow;

Fig. 8 is a front elevation of the lock employed by me showing, in dotted lines, the position of the key-engaging element of the door-locking mechanism;

Fig. 9 is a side elevation of a lock also

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showing, in dotted lines, the position of said key-engaging element and the movement-limiting means for the key;

Fig. 10 is a fragmentary front elevation of the lower portion of the doorway showing a slightly modified form of door-moving and locking mechanism;

Fig. 11 is a section on the line 11—11 of Fig. 10, looking in the direction of the arrow;

Fig. 12 is an enlarged section of another modified form of door-latching or locking mechanism;

Fig. 13 is a section on the line 13—13 of Fig. 10, looking in the direction of the arrow;

Fig. 14 is a separated view of the additional pivotal latching lever employed by me; and

Fig. 15 is a fragmentary detail partly in elevation and partly in section.

Referring now to these drawings, which illustrate a preferred embodiment of my invention, 1 indicates a tabernacle safe which, in accordance with the preferred form of my invention, is cylindrical in conformation and comprises a shell or body portion composed of a top annular frame member comprising a ring 2, a bottom annular frame member, comprising a ring 3, each having outwardly-projecting horizontal flanges 2', 3' and inset vertical flanges 2^a, 3^a. The outer edges or perimeter of the flanges 2', 3', are connected together by an outer metallic shell 4 and the vertical flanges 2^a, 3^a are connected together by an inner wall 5 which, as shown, is fitted within seats in side edges of such vertical flanges 2^a, 3^a respectively. The arrangement of the walls 4 and 5 on the top and bottom members 2 and 3 provide a narrow annular compartment 6 between the walls 4 and 5. The walls 4 and 5 are generally cylindrical in conformation with an opening formed therein at the front portion to provide a doorway 7 and I utilize the cylindrical compartment 6 between the walls 4 and 5 as a sheathing compartment for a door 8 adapted to close the door-opening 7 formed in said walls 4 and 5 respectively.

In tabernacle safes of the type under consideration, it is necessary, in order to comply with the rubric of the Catholic Church in which these tabernacle safes are utilized to have the interior surfaces of the compartment used for the eucharist, including the surfaces of the doorway of said compartment, free of groove slots and the like and, in the embodiment shown in my aforesaid co-pending application, I have provided a main interior compartment 9, the surfaces of which are free of grooves. By my present invention, I also free the doorway from any lock-bolts or latches as well as from grooves, slots or the like, notwithstanding the fact that I utilize mechanism for mounting, moving and

locking the door and I, furthermore, provide a construction in which any tendency to tilt the door during movement by the mechanism will be avoided. As illustrated, I mount my door-supporting, door-moving and door-locking mechanism in compartments 14 and 15 above and below the said main compartment.

In my co-pending application, the door-moving mechanism was connected to the door through an opening below the main compartment which communicates with the door-sheathing compartment 6 out of registry and to one side of the door opening. The engagement of the door in such manner has a tendency to tilt the door during its movement by mechanism or arms so connected and, in the present embodiment of my invention, I relieve the stress due to this tilting tendency by providing the heel of the door with a reentrant bracket which extends beneath and in the plane of the door but below the floor or saddle of the doorway and I also preferably utilize this reentrant bracket as one of the cooperating elements for locking my door and thus provide completely concealed locking mechanism and also avoid all bolts, sockets or the like extending through or mounted on the edges of the door or doorway, and when I utilize an extension 8^d on the front of the door at the top thereof, the door when in open position is completely free of sockets, bolts or other exposed locking mechanism, and also of grooves, locks and the like.

As illustrated, I provide a floor plate 10 which rests upon and is fastened to the upper edge of the annular vertical flange 3^a, a ceiling plate 11 which is fastened to the lower edge of the flange 2^a and this compartment 9 is preferably provided with an intermediate wooden lining 12 and an internal surface lining 13 of silk. The attachment of the floor plate 10 on the flange 3^a provides, directly beneath the plate, the shallow compartment 15 and similarly the arrangement of the flanges 2^a provides above said compartment 9 another shallow compartment 14, and I utilize these compartments 14 and 15 to mount my supporting, door-moving and lock mechanism for the door 8.

By the use of my reentrant bracket hereinabove specified, I avoid any groove in the bottom plate 10 and still provide means for connecting the door below said bottom plate with concealed door-moving mechanism, and, as illustrated, I provide the heel of the door with a reentrant bracket 8^c which, in the closed position of the door, extends beneath the floor plate 10 and has connected thereto a door-moving radial arm 23 which, in the preferred construction, is also a partial supporting member. This connection will thus be entirely concealed in any position of the door either open or closed.

In the preferred embodiment of my inven-

tion, the door is preferably hung or suspended from the end of a supporting element mounted above the ceiling plate to swing pivotally. Thus a radial arm 19 is pivotally mounted above the door and doorway and connected by screws 20 with the upper edge of the door 8 intermediate the side edges thereof.

The door is, as in my co-pending application, preferably provided at its upper edge with an extension element 8^d which is preferably of similar dimensions to the door and is adapted, when the door is in closed position, merely to extend within the sheathing compartment 6 but when the door is in open position, this extension 8^d closes the operating groove at the upper edge or top of the doorway in which the door moves.

In the preferred embodiment of my invention, I provide the door-hanger or suspension arm 19 within the compartment 14 with ball-bearing elements, each preferably comprising a base member 20 comprising a substantially circular plate having ballbearing grooves 20' provided with balls 21, a movable top plate 22 similarly provided with grooves 22' fitting over the balls 21.

Doors of the type under consideration are heavy and in order to facilitate the movement thereof and to balance the load on the ball-bearing hanging element, I provide an extension 19^a on said element to the side of the pivot or axis about which the ballbearing hanger turns and mount on said extension 19^a a counterweight 19^b.

Said movable member 22 is arranged over the stationary member 20 and has connected thereto and preferably formed integral therewith the radial arm 19 so as to form a ball-bearing pivotally movable and counter-balanced supporting hanger for the door.

In the preferred embodiment of my invention, 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 cylindrical walls 4 and 5 to guide the movement of the lower edge of the door within the sheathing compartment 6, to serve as a part of the door-moving mechanism and also in one of the embodiments of my invention to serve as a part of the locking mechanism. As shown, this member 23 is mounted on a pivot 23' and has a ballbearing 23^a disposed between a circular aperture 23^b therein and said pivot 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 member as much as possible. Therefore, said member 23 is connected at its outer end with the reentrant bracket 8' by screws 8^c 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.

As shown, I mount a bevel-gear 24 eccentrically of the circle of movement of said member 23 and adjacent to the doorway and I project from this bevel-gear a radial arm 24' and connect this arm by means of a link 25 pivoted at opposite ends with a projection 23^b arranged adjacent to the pivot of said member 23. Lock-controlled means for turning the bevel gear 24 to move the door is provided, and as shown, the bevelled gear 24 meshes with a bevelled pinion 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 bevelled pinion 27, which, in turn, rotates the pinion 24 to cause the movement of the members 24, 24', 25 and 23 and a swinging of the door 8 within the sheathing compartment 6.

In the form of my invention shown in Figs. 6 to 9, the locking mechanism comprises a lock 29 having a face plate 29^a provided with a key spindle 29' rotatable in the housing upon the insertion of a key 30 in combination with latching means cooperating therewith to lock the door. In accordance with my present invention, I provide a latching or locking lever 31 pivoted at 31' and normally swung on its pivot into engaging position by pressure of a spring 31^a on the end 31^c so that when the door is closed the free end 31 will engage a locking notch 8^b 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 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' of the key 30 to cause the upward movement of one end 31^c 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 by the spring 31^a into engagement with a notch 8^b and when moved downwardly swings out of the notch 8^b in the heel bracket 8' and releases the door.

It will be seen from the above that in the said embodiment of Figs. 5 to 9, the latch lever will be immediately withdrawn upon the insertion of the key 30 into the lock and the engagement of the vertical projection 30' with the pin or rod 32 and that this insertion movement will, therefore, withdraw the latch from the notch or socket 8^b in the lower or bottom edge of the bracket 8, it being understood that the movement of the door-moving mechanism will be arranged to cause the notch 8^b in the bracket to register with the latch when the key slot in the spindle is in substantially vertical position and when the pin 32 is in registry with the projection 30' of the key and also that when the key is withdrawn, the

spring-pressed lever end 31^c will be permitted to move downwardly and the latching end 31^b will be moved into the notch 8^b. The locking mechanism per se is conventional and need not be described except to say that the arrangement is such that the key cannot be withdrawn until the key groove reaches vertical position and is in registry with the pin 32.

In Figs. 10 and 11, I have shown a slightly modified form of my invention in which the lock and operating spindle are separate and independent, and in this embodiment the lock and key will perform its function of releasing the pivoted lever in all respects similar to that hereinabove described but instead of moving the door by a turning movement of the key, I provide a separate spindle 50 connected to the bevel pinion and provide said spindle 50 at its outer end with a knob 51.

In the form of my invention shown in Figs. 12 to 14, I also provide an additional horizontal latching lever 40 pivoted at 41 and normally having its end 40'' engaged and moved by spring 42 to swing the lever about its pivot and to move the end 40' thereof into engagement with a pin 43 on the door-moving lever 23. This lever thus normally locks the door when it is moved to locked position and serves as a secondary lock therefor. As illustrated, the lever 40 is shifted about its pivot to release the pin by the end 30^b of the key and is provided with a bearing plate 40^a so as to permit turning of the key in the lock while maintaining the lever in withdrawn position.

In the preferred embodiment of my invention, I provide an exterior door frame 45 and the front portion of the compartment 15 is closed by a panel member 46 in which is mounted the locking mechanism 29.

Having described my invention, I claim:—

1. A tabernacle safe embodying, in combination, a safe having a wall substantially cylindrical in conformation and having a vertical axis, said wall having an opening there-through to form a doorway, door-supporting mechanism arranged to swing about said axis, a door mounted on said door-supporting mechanism and movable therewith about the said axis of said cylindrical wall to open and close said doorway, a counter-weight for said door-supporting mechanism on the side of said axis opposite to said door, mechanism for moving said door mounted below the doorway, a bracket extending below the body of the door and engageable with a portion of said door outside the confines of said doorway, and means for connecting said bracket and door-moving mechanism.

2. A tabernacle safe embodying, in combination, a safe having a wall substantially cylindrical in conformation and having a vertical axis, said wall having an opening there-through to form a doorway, door-supporting

mechanism arranged to swing about said axis, a door mounted on said door-supporting mechanism and movable therewith about the said axis of said cylindrical wall to open and close said doorway, a counter-weight for said door-supporting mechanism on the side of said axis opposite to said door, mechanism for moving said door mounted below the doorway, a reentrant bracket connected to the heel of the doorway and extending around and beneath the saddle of the doorway in the plane of a portion of the body of the door, and means for connecting said reentrant bracket and door-moving mechanism.

In witness whereof, I have signed my name to the foregoing specification.

HENRY P. MERTEL.