July 4, 1933. E. E. BELL 1,916,406

DOOR FOR CASH PROTECTORS

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Fig. 1.

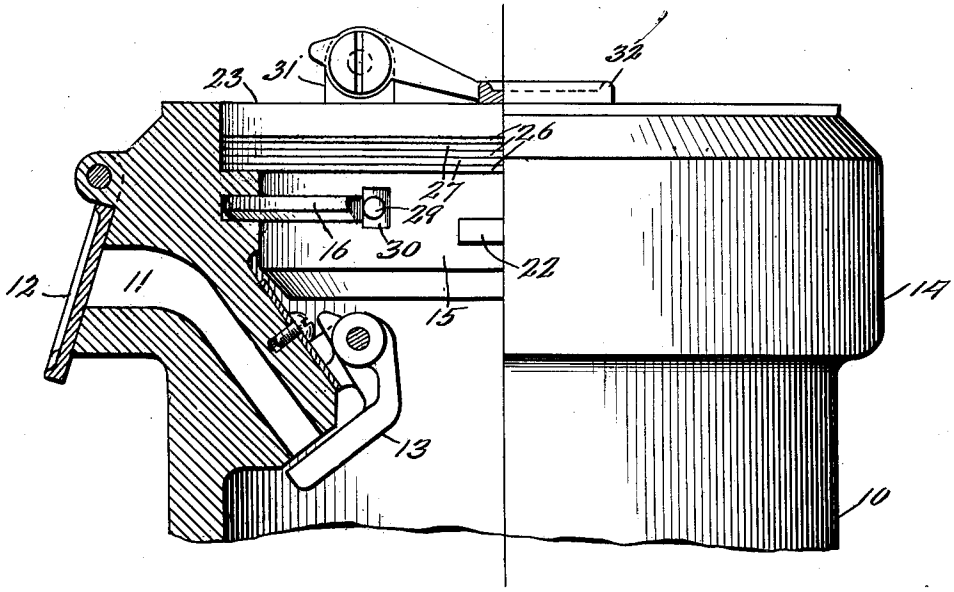
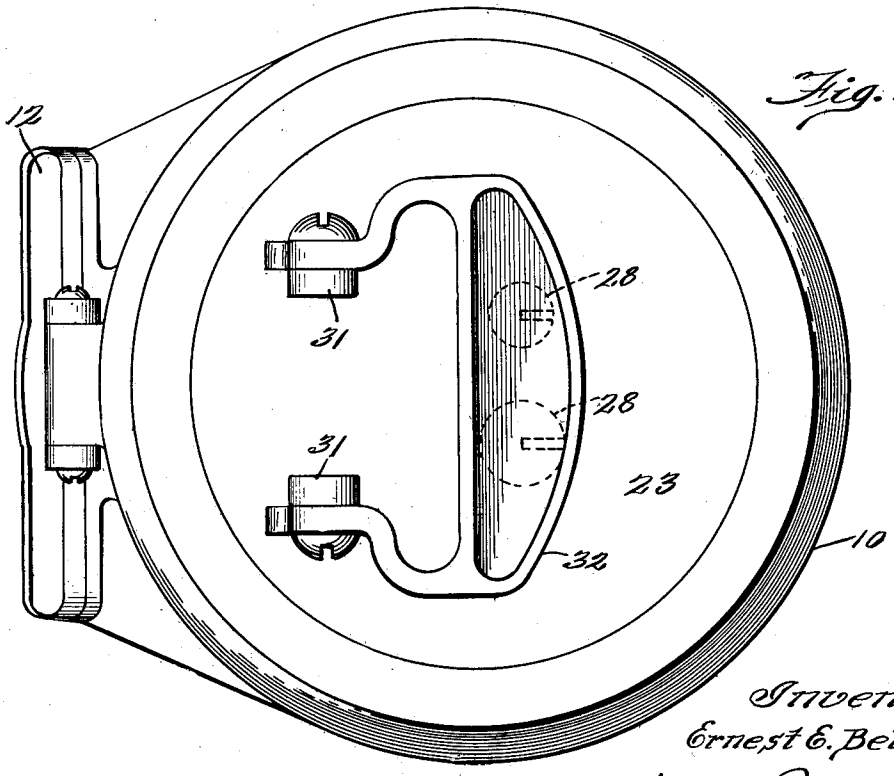


Fig. 2.



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Fig. 5.

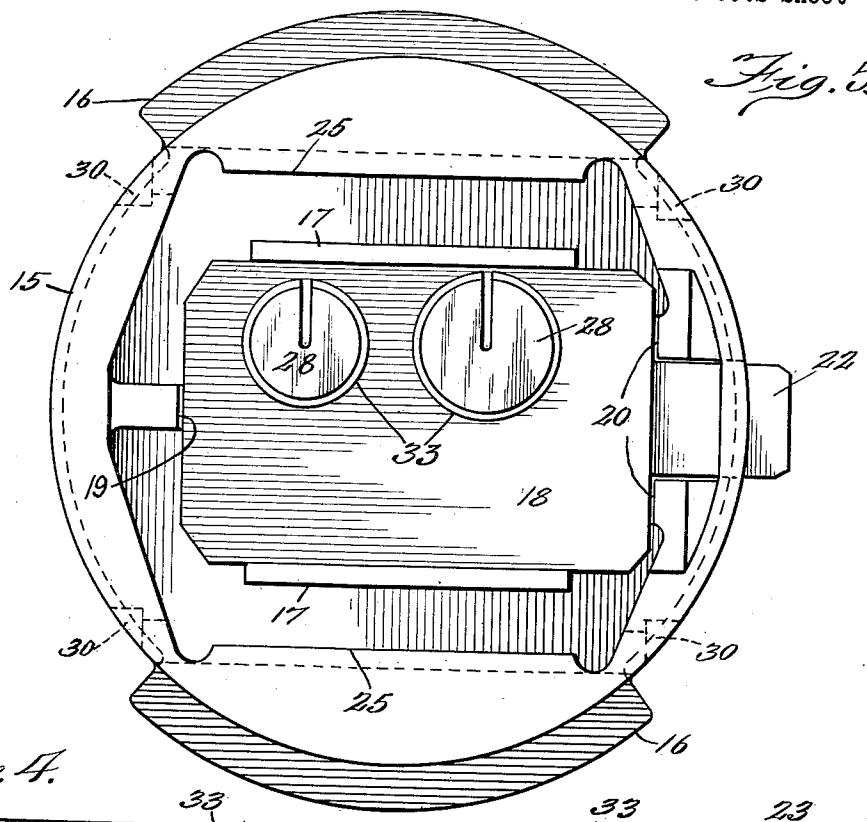


Fig. 4.

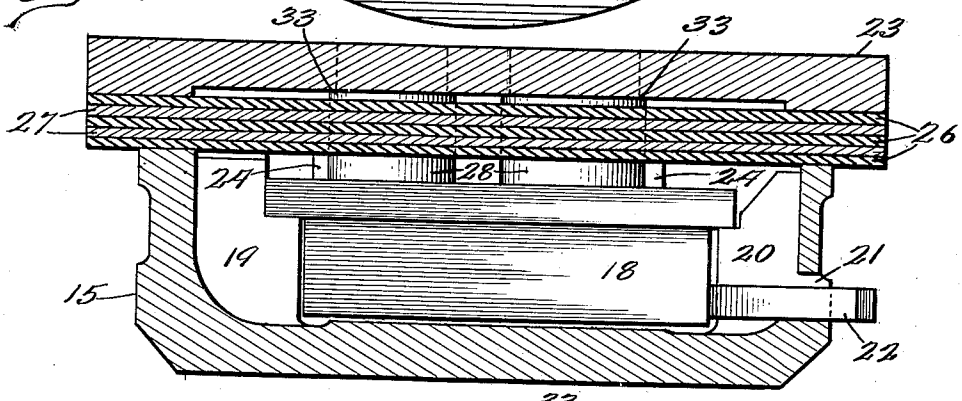
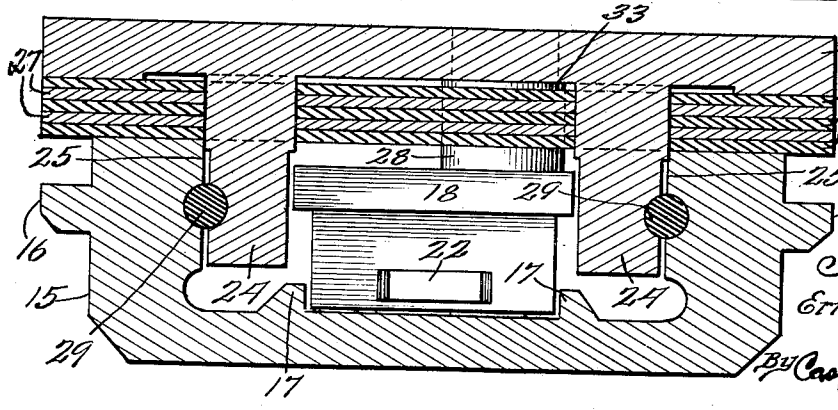


Fig. 3.



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UNITED STATES PATENT OFFICE

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DOOR FOR CASH PROTECTORS

Application filed August 27, 1928. Serial No. 302,178

My invention relates to doors for temporary safes, commonly called cash protectors, and has for its object the production of a door which is highly resistant to safe breaking operations.

In the accompanying drawings

Fig. 1 is an elevation, partly in section, of the upper end of a cash protector, with the door in locking position;

Fig. 2 is a plan of Fig. 1;

Fig. 3 is an enlarged vertical section of the door detached, the view corresponding to that of Fig. 1;

Fig. 4 is a similar section at right angles to the section of Fig. 3; and

Fig. 5 is a plan of the door with the upper part removed.

The cash protector body 10 is made of some highly resistant metal, such as cast steel, and is in the form of a deep cup, the upper end of which is to be closed by the door of the present invention. At one side near the top is a slot 11 thru which cash or other valuables may be inserted at any time. Hinged lids 12 and 13 cover the ends of this slot.

The upper end of the body 10 is enlarged as shown at 14 in Fig. 1, and in the interior of this enlarged portion are cut grooves to form a bayonet-joint arrangement for connection between the cash protector body and the door therefor. As bayonet-joint connections are well known, the present description will be confined to the door which fits into the grooves.

The lower part of the door is a shallow cup-shaped body 15 having on it wings 16 which interlock with the grooves in the part 14 of the body 10. Each wing extends thru an arc of a little less than one-quarter of a circumference and the wings are arranged to come under similar inwardly extending wings integral with the body 10.

In the lower part of the cup 15 are ribs 17 which form a guide for positioning a lock body 18. Lugs 19 and 20 serve further for the proper location of the lock, and for supporting it at a desired elevation, as shown in Fig. 4. Also, in the wall of the cup 15 is a slot 21 for the passage of the bolt 22 of the lock 18.

The upper part of the door is a composite body, the principal portion of which is a cover plate 23 having depending lugs 24 thereon. The outside faces of the lugs 24 lie adjacent to the wall faces 25 of the cup 15.

The inner face of the cover 23 is lined with laminæ composed of alternate layers of hardened steel plates 26 and soft steel plates 27, which plates are provided with rectangular openings to receive the lugs 24. These plates and the cover 23 are also apertured for the reception of the key receiving shanks 28 of the lock 18.

After the lock is in place, the cover and laminæ are clamped to the cup 15, and horizontal holes are drilled at joints between the lugs 24 and walls 25. Hardened steel pins 29 are then driven into these holes to lock the cup and cover together with the laminæ under compression between them. To facilitate such drilling, small recesses 30 are cast in the outside walls of cup 15. These recesses also furnish space for riveting the ends of pins 29 should that be deemed advisable.

Those parts of the shanks 28 of the lock which project thru the cover 23 are of slightly smaller diameter than the main body of the shanks so that shoulders are left at 33. The apertures in the cover 23 for these shanks are of the diameters of the reduced parts of the shanks so that when the cover is clamped in place as before described, such clamping serves to clamp the lock between the shoulders 33 above and the lugs 19 and 20 below.

On the top face of the cover 23 are lugs 31 which may be either integral with the cover or be secured thereto. Pivoted to the lugs 31 is a handle 32 for turning the door in its seat and for lifting it when released. When not in use for turning or lifting the door, the handle covers the key slots in the shanks 28.

The cover 23 may or may not be of hardened steel. If it is material which may be drilled, then a safe breaker who drills thru it comes to the upper hardened lamina which he cannot drill.

If the space represented as occupied by the laminæ 26—27 should be occupied by one

hardened steel plate, then it would be somewhat brittle, and a brittle plate might be broken by a sledge and drift pin. It is found, however, that a composite plate composed of alternate thin plates of hard and soft steel constitutes a resilient body of great resistance.

The door, taken as a whole, interlocks with the safe body and is highly resistant to safe breaking operations. These things mean that the part of the door which interlocks with the safe body must be machined to make a good fit, and that the exposed portion must be very difficult to cut with tools. By making the door in two parts, one of which consists of the cover and laminæ and the other one of which consists of the cup 15, I not only provide an easy way of embedding the lock within the interior of the door, but I am enabled to use a tool-resistant exterior and at the same time use malleable iron or other machinable material for those parts which must be machined. Also, while hard steel is resistant to cutting, softer metal is more resistant to shock, and a door formed of the two kinds of metal combine the two qualities.

What I claim is:

1. The combination with a safe, of a door body arranged to interlock with the body of the safe, said door body having a chambered interior for the reception of a lock, a cover for the chamber of the door body, interlocking means for securing the cover to the door body, and laminated plates secured between the body and the cover by said interlocking means.

2. In a device of the class described, a door body providing a space for the reception of a lock, a lock therein, a cover plate having projections extending into said space adjacent to said lock, said projections lying adjacent the walls of said space, and pins inserted in said walls and projections at the joints between them.

3. A door body in the form of a shallow cup and providing guides for the location of a lock therein, a lock in said guides, a cover plate having projections extending into said cup on opposite sides of said lock and in contact with the inner faces of the walls of the cup, and locking pins located at the joints between the walls and projections and extending into both of them.

4. The combination with the body of a safe, of a door body provided with exterior projections arranged to interlock with the body of the safe and with an interior chamber having guides for the location of a lock, a lock located in said guides, a cover having projections extending down into said chamber on each side of said lock, laminæ inserted between the door body and the cover, and interlocking means securing the door body, the laminæ and the cover together, the cover and the laminæ being provided with openings for permitting the operation of the lock.

5. The combination with the body of a safe providing interlocking connections for a door, of a door body of relatively soft metal adapted to have its interior machined for the reception of a lock and its exterior machined to match the interlock of the safe body, a cover of material highly resistant to cutting operations and serving to enclose a lock supported in the door body, and means for securing the cover to the door body, said securing means being applied to that part of the door body which is enclosed and covered by the safe body when the door is interlocked therewith.

6. In a safe, an exposed member composed of a body of resistant metal and provided with inwardly projecting lugs, an inner member composed of a second body of metal, an intermediate body of metal composed of laminæ consisting of alternate hardened and soft steel plates with apertures for the passage of said lugs therethru, and interior interlocking means for securing said lugs to the interior body with the intermediate body under compression between the exterior and interior bodies.

7. In a safe door, an outer wall of resistant metal, an inner wall of less resistant metal, an intermediate body consisting of alternate plates of hard and soft metal, and means for securing the three bodies together to form a single composite wall.

8. A safe door comprising a portion of relatively soft and machinable material adapted to fit within a safe body, an outer exposed portion of a material highly resistant to cutting operations, and shock-resisting mean cooperating with the door for enabling the latter to withstand sudden blows.

9. A safe door comprising a portion of relatively soft and machinable material adapted to fit within a safe body, an outer exposed portion of a material highly resistant to cutting operations, and yieldable means cooperating with the door for enabling the latter to withstand sudden blows.

10. In a safe having side walls, a door having an inner member made of soft machinable material, means on said member cooperating with said walls to form an interlock therewith, said door having an outer member of resistant material, an element between said inner and outer members comprising alternate plates of hard and soft material and means for clamping said parts of the door together.

11. In combination with a safe having walls, a door having an inner machinable member interlocking at times with said walls, an outer member having an exposed resistant portion, a drill and shock resisting element between said inner and outer members

comprising alternate plates of hard and soft metal.

12. A safe door comprising a portion of relatively soft and machinable material adapted to interfit with a safe body, locking mechanism within said portion, a series of plates of alternating hard and soft material upon said lock mechanism and an exposed cover of resistant metal.

13. A safe door comprising a body portion of machinable material, locking mechanism mounted within said portion, a shock resistant unit covering said locking mechanism and a drill proof member covering said shock resistant unit and forming the exposed face of said door, and means for securing said parts together in assembled relation.

14. A safe door comprising a body portion of machinable material, a member of resistant material covering said body portion, and locking mechanism mounted within said body portion, a part of said body portion underlying said lock to provide a support and preventing the lock from being driven out of the door.

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