

Dec. 22, 1931.

H. M. SUNNES

1,837,501

TEMPORARY SAFE

Filed Dec. 14, 1925

2 Sheets-Sheet 1

Fig 1

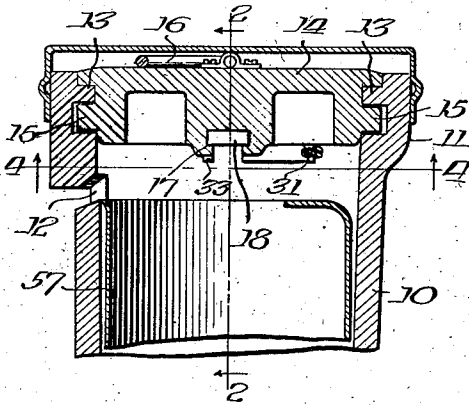


Fig 2

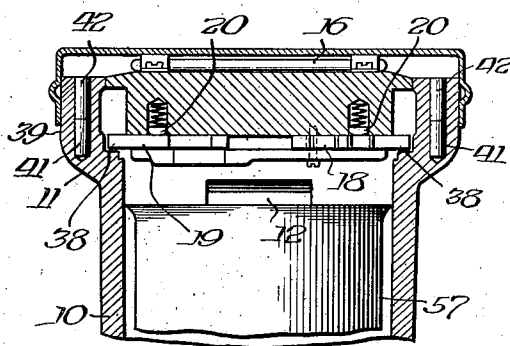


Fig 3

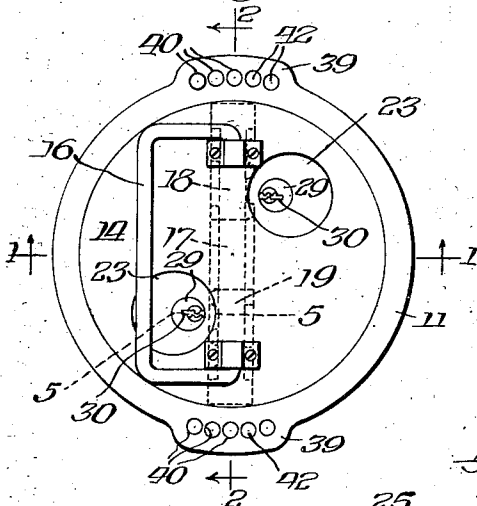


Fig 4

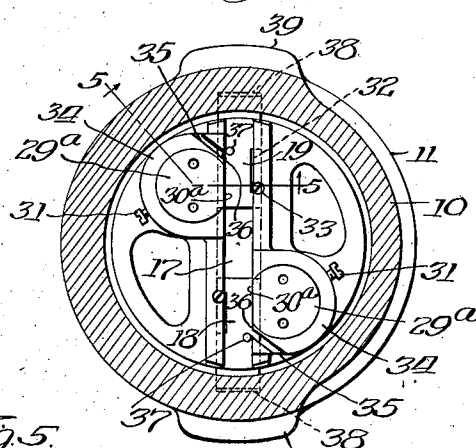
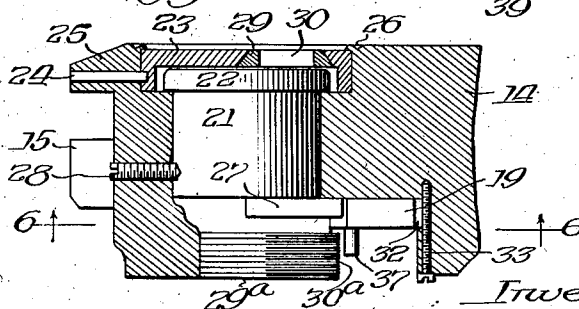


Fig 5



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2 Sheets-Sheet 2

Fig. 7

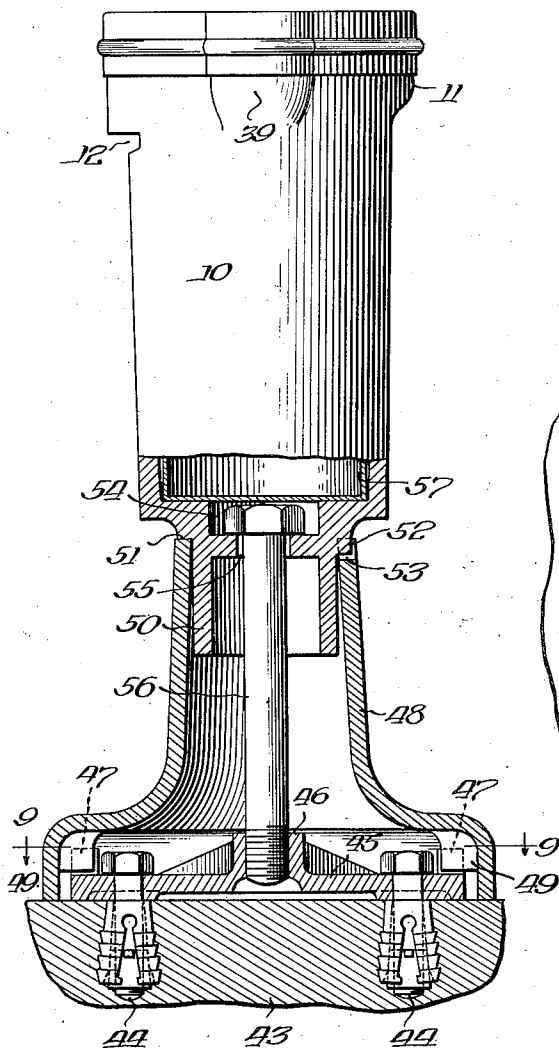


Fig. 8

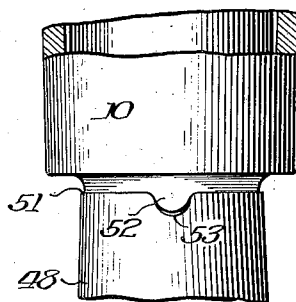


Fig. 9

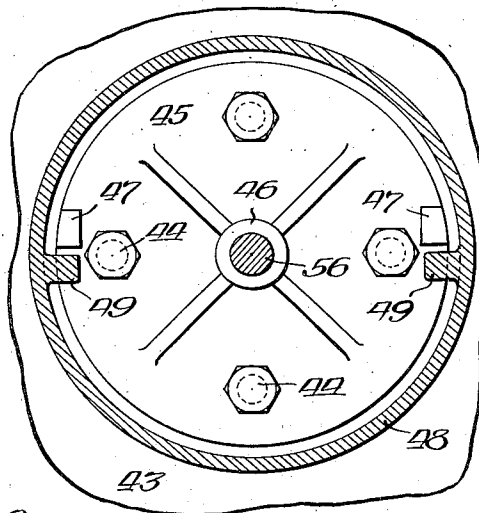
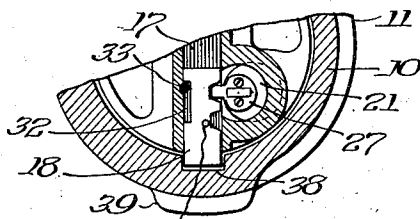


Fig. 6



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UNITED STATES PATENT OFFICE

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TEMPORARY SAFE

Application filed December 14, 1925. Serial No. 75,185.

My invention relates to temporary safes, and has for its object improvements in such devices. While the safes herein involved have many uses, they are particularly designed for use in places in which money is received from time to time, and which are not well protected against robbery.

Secured at a convenient place is a receptacle having a slot in its side thru which is inserted such money as is not needed in the ordinary transaction of business. The upper end of the safe is provided with a door which is normally closed but which may be opened for the removal of money which has been deposited. The object to be attained is not absolute safety, but the provision of means which will make the unauthorized breaking into the safe occupy such a length of time that the probable receipts will not compensate for the risks involved in the delay.

In the accompanying drawings:

Fig. 1 is an elevation, being a central section on line 1—1 of Fig. 3 thru the upper part of the safe with the door in locked position;

Fig. 2 is a similar section on lines 2—2 of Figs. 1 and 3;

Fig. 3 is a plan;

Fig. 4 is a section on line 4—4 of Fig. 1;

Fig. 5 is an enlarged section on lines 5—5 of Figs. 3 and 4;

Fig. 6 is a fragment corresponding to part of Fig. 4, but with some parts removed;

Fig. 7 is an elevation of the entire safe, the lower parts being in section;

Fig. 8 is an elevation of the central part of the safe at right angles to Fig. 7; and

Fig. 9 is a section on line 9—9 of Fig. 7.

In the said drawings, 10 is the body of a cylindrical safe which is secured by any appropriate means in a desired position. Near the top, the body is enlarged as shown at 11, and in the wall below the part 11 is a slot 12 thru which money may be inserted.

The upper end of part 11 is open and has inwardly projecting lugs 13. There are two of these lugs, each of which occupies a little less than one-quarter of the inner circumference of the opening. Arranged to fit in the opening is a door 14 having lugs 15 which correspond in size to the lugs 13, and are so

placed that they can pass between the lugs 13 to the space below them. When in this position, the door is in place to close the opening to the safe.

Secured on the top of the door is a handle 16 by which said door may be lifted or turned on its seat in the open end of the body of the safe. When the lugs on the door match the spaces between the lugs 13, then the door may be lifted from its seat and later returned thereto. When on its seat, the door may be turned so that the lugs 15 come under the lugs 13 to hold the door against removal. This kind of construction is common in many arts, and is sometimes referred to as a bayonet lock.

In the bottom face of the door or cover 14 is a transverse channel 17, and in opposite ends of this channel are bolts 18 and 19. Back of these bolts are spring pressed plungers 20 designed to produce friction so that the bolts will remain in the positions to which they are moved, and will not be displaced by jarring the safe.

In the upper face of the door are recesses which consist of two holes bored in the door for the reception of locks 21, (Figs. 5 and 6), which have heads 22 located in counterbores of the holes for receiving the lock bodies. The counterbores which receive the heads 22 are of larger diameter and deeper than the heads, and in these counterbores over the heads are located hardened steel caps 23 which are held from turning by pins 24 driven in the flange 25 of door 14. The caps 23 are a little more shallow than the counterbores in which they are located, and when they are in place they are riveted in as shown at 26 in Fig. 5.

Each lock body 21 has a barrel or tumbler of the ordinary kind for the reception of a key, and on the inner end of the barrel is an arm 27 for engaging notches in the adjacent bolt 18 or 19. The barrel is eccentrically placed in the body 21, and the body is set in its recess so that the barrel will be adjacent to the channel 17 for the bolts 18 and 19. Set screws 28 (Fig. 5) are used to hold the bodies 21 in proper position. Directly over the key slots in the barrels, the caps 23 are drilled and counterbored from the inside for receiving conical hardened steel disks 29 having

key slots 30 to match the key slots in the barrels.

The sockets or recesses for receiving the locks 21 are bored only part way thru the body of the door 14, and other holes are bored from the inside of the door to meet the holes for the locks 21. These holes bored from the inside are bored to match the axes of the key barrels and not those of the bodies 21. These latter holes are threaded and are closed by steel plugs 29a. The channel 17, as it appears in Fig. 1, corresponds in shape to the ordinary T-slot used in metal working machinery, and the lock bolts 18 and 19 rest on the lower lips of said channel. The holes bored for receiving the plugs 29a cut away these lower lips at the points where the plugs are located, and these plugs project under the bolts 18 and 19 toward the axis of the channel 17. A part of each plug is then cut away to match the lips under the bolts, and this leaves each plug with a flat side 30a facing toward the axis of the channel. Set screws 31 (Fig. 4) are then used to prevent the plugs being turned in their threaded seats.

Each bolt 18 and 19 has in its side a notch 32, (Figs. 4, 5 and 6), and in the lip under this notch is a screw 33 which projects into the slot or notch 32 and limits the length of the bolt movement. In the lower face of each boss 34, into which the plugs 29a are screwed, is a diagonal slot 35 which leaves a thin body of metal 36 between the plug and the slot. These slots 35 are cut to a depth nearly but not quite to the surface of the bolts 18 and 19. In said bolts are pins 37. These pins are located at the sides of the bolts and adjacent to the lips which are cut away to make space for the plugs 29a. These pins are located longitudinally on the bolts so that when said bolts are in locking position they will be outward beyond the slots 35 as shown in Fig. 4. When the bolts are moved to unlocking position, the pins 37 are moved past the slots 35 to a position adjacent to the flat sides 30a on plugs 29a.

As before explained, the lugs 13 in the interior of the enlargement 11 each occupy a little less than one-quarter of the inner circumference. The lugs 15 on the outside of the door 14 also occupy a little less than one-quarter of the outer circumference. When the door is rotated to a position in which the lugs 15 match the spaces between lugs 13, the door may be placed in or lifted from its seat in the enlargement 11. As shown in Figs. 1 and 2, the bolts 18 and 19 lie in a channel 17 which is at right angles to the centers of the lugs 15, that is, the axis of the channel 17 is in line with the spaces between lugs 15. In line with the spaces between lugs 13 there are notches 38 into which the bolts 18 and 19 project when they are moved to locking position by keys operating arms 27. These notches are so located that the bolts 18 and 19

can enter them only when the lugs 15 are under lugs 13. And when the bolts are in said notches the door 14 cannot be turned so as to permit it to be lifted. In fact, if one of the bolts is in a notch 38, the door cannot be turned for opening purposes.

Adjacent to the points at which the notches 38 are located, and in line with them, the enlargement 11 has bulges 39. In these bulges are drilled holes 40 (Fig. 3) which extend vertically downward beyond the notches 38. Dropped into these holes are hardened steel pins 41 (Fig. 2), and into the holes above the pins 41 are driven tightly fitting soft steel pins 42.

In Fig. 7 is shown a concrete foundation 43 provided with expansion bolts 44. Secured to this foundation by these bolts is a floor plate 45 provided with a central boss 46 and lugs 47 near its edge. Over the plate 45, and resting on the foundation and surrounding the plate, is a pedestal 48 having lugs 49 located near lugs 47. The relationship of these lugs to each other is such as to prevent the pedestal from being turned with respect to the plate 45.

The safe body 10 is mounted on the top of the pedestal 48, and has a lower extension 50 which projects down inside of the pedestal. The point of contact between the safe body and the pedestal is a shoulder 51 on the body which rests on the top of the pedestal. On one side of the shoulder 51 there is a projection 52 which fits into a recess 53 in the top edge of the pedestal. The purpose of this projection and recess is to prevent the safe body being turned with respect to the pedestal as long as the two are held together.

The body 10 is in the form of a cup, in the bottom of which is a recess 54 provided with a central hole 55. A heavy bolt 56 passing thru the hole 55 and having its head in recess 54, is secured in the boss 46. The construction is such that the bolt can be reached only when the door 14 is removed from the open upper end of the body 10. Inside of the body 10 is a light metal cup 57 which rests on the bottom of the body and has its upper edge adjacent to the slot 12. The cup 57 is simply a convenient receiver which may be removed when the door is opened.

As initially stated, the purpose of the present invention is not the production of an unbreakable safe, but the production of a temporary safe in which cash receipts will be fairly well protected during a few hours. A better understanding of the purpose of parts which have been described may be had by a brief explanation of the places where these safes are principally intended to be used, and the conditions of such use.

In a good many retail establishments only a few persons are employed, and such establishments sometimes take in a good deal of

money between the time of going to the bank on one day and going again on the next day. Such places are frequently subjected to daylight robberies, and success in such robberies is largely dependent upon quickly securing the money and quickly escaping. The purpose of the construction described is to delay such operations so that robbery becomes dangerous to the robber, no matter from what point he may attack.

The safes themselves are comparatively light and might be carried away in an automobile, but they are secured to a foundation in such a way that it would require considerable time to release them. The bolt 56, which holds the safe body to the foundation, cannot be reached except when the door 14 is removed, and if the door is open there is no occasion to reach the bolt. A pipe wrench cannot be used to turn the safe body or the pedestal with respect to the plate 45 and thereby unscrew the bolt 56 by indirect means. This is prevented by the lugs 47 and 49, and the enclosed connection between the plate and the foundation.

The safe body and pedestal are made of cast steel of a thickness sufficient to withstand attacks by a sledge hammer. Being of cast steel, they cannot be drilled to produce a hole large enough to remove money in the limited time at the disposal of robbers. Also, a torch cannot be used to cut a hole because the paper money inside is close to the metal to be burned, and the heat would destroy the money.

The door is heavy enough to successfully resist any short time attack, and is secured by two bolts operated by independent keys and independent locks. While it is not new to secure a safe by two locks, the keys of which are carried by different persons, the present case stands upon a somewhat different basis from such safes.

The safe will be located at some convenient point near the ordinary money drawer. As cash accumulates more than is necessary for the transaction of business, the cashier will push the surplus money thru the slot 12, from which point it will fall to the bottom of the cup 57. The cashier has the key for one lock, and while he can deposit money at any time, he cannot himself withdraw it. The other key is carried by a representative of the bank in which the proprietor deposits his account. At stated intervals the representative of the bank calls to collect money deposited in the temporary safe. But to collect the money, the cashier and the representative of the bank must both be present. Robbers may attack the place between calls by a messenger from the bank, and may compel the cashier to surrender his key, but that will not serve to open the safe. If they want to get the money in the safe, they must attack in other ways.

The locks 21 are vulnerable things, but they are covered by hardened steel caps which are riveted in and are held from turning by pins 24. When the door 14 is in place, the outside ends of these pins are covered by the safe body. Being of hardened steel, caps 23 cannot be drilled in a short time by any tools which robbers can or are likely to carry. The caps 23 are riveted in. The riveting can be chipped out without much trouble, but not in a short length of time, and time is an element in the safety of a temporary safe.

The small disks 29 over the lock barrels are also hardened steel and cannot be drilled in a short length of time. But by the use of a punch and sledge they can be driven in and the key barrels driven thru. In such a proceeding, the barrels will be driven onto the plugs 29a, and those plugs will be driven out of the bosses 34 into which they are screwed. But those bosses are cut away on the sides adjacent to the bolts 18 and 19, and slots 35 are cut in the bosses so as to leave a thin body of metal 36. Under such conditions, driving a plug 29a down will cause it to move laterally out of the open side, and such movement will bend the thin part 36 outward. At the time such a thing occurred, the corresponding pin 37 in adjacent lock bolt would be outward toward its notch 38, and the outward bending of part 36 would move said part into the path of pin 37, and this in turn would prevent the bolt from being withdrawn from locking position. It will thus be seen that the open side of boss 34, the slot 35 and the pin 37 co-operate to prevent the safe being opened by driving in the lock by use of sledge and punch.

In locks of the kind here illustrated, the key can be inserted and withdrawn only when the barrel is in a particular position. The parts are so arranged that the keys may be inserted and withdrawn when the bolts 18 and 19 are in locking position. They are also so arranged that each bolt is withdrawn from locking position in something less than a complete turn of the corresponding key. The notches 32 in the locking bolts are of such length that the inward movements of the bolts are arrested by contact with pins 33 as soon as said bolts are free from their notches 38, and before the operating key has made a complete revolution. As a consequence of this construction a key can be removed from its lock only when the corresponding bolt is in locking position. The purpose of this arrangement is to prevent either the cashier or the representative of the bank leaving the safe unlocked when removing his key.

As shown in Figs. 2 and 3, the hardened steel pins 41 are located close together around the ends of the bolts 18 and 19. The object of this construction is to prevent the drilling of small holes in the shell at the axes of these

bolts and driving them back with punch and hammer. The prevention here referred to is a delaying means which makes it impracticable rather than impossible to attack the safe in this way.

What I claim is:

1. In a temporary safe, a safe and a door, door locking means supported in the metal of the door and including a key operated lock and a bolt, means by which force applied to the lock to break open the safe will displace metal adjacent to the lock so as to hold the bolt in locked position.

2. In a temporary safe, locking devices including a lock and bolt operated thereby, a plug back of said lock and held in a support weakened on one side, a door containing said lock and furnishing the support for the said plug and a projection on the bolt adjacent to the weakened support, said parts being so arranged that upon the lock being driven in by force the weakened part of the support will be moved into the path of said projection so as to retain said bolt in locked position.

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