July 23, 1957 J. C. REID 2,800,090

EARTH COOLED BASEMENT LOCK BOX

Filed May 17, 1956 2 Sheets-Sheet 1

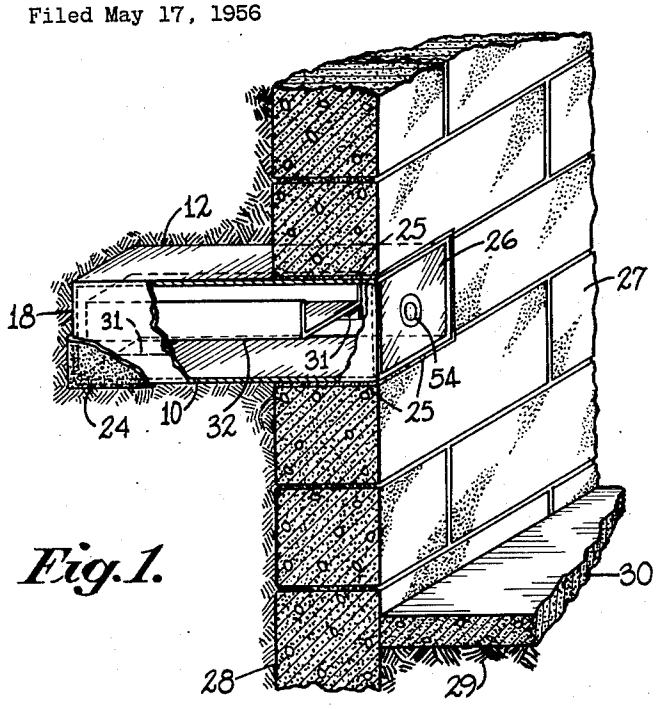


Fig. 1.

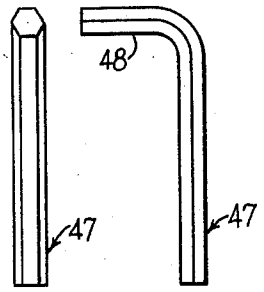


Fig. 3. Fig. 3a.

Fig. 4.

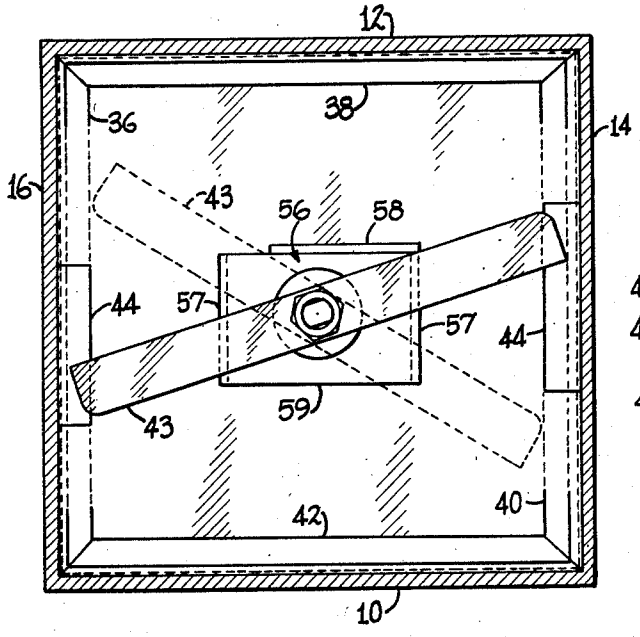
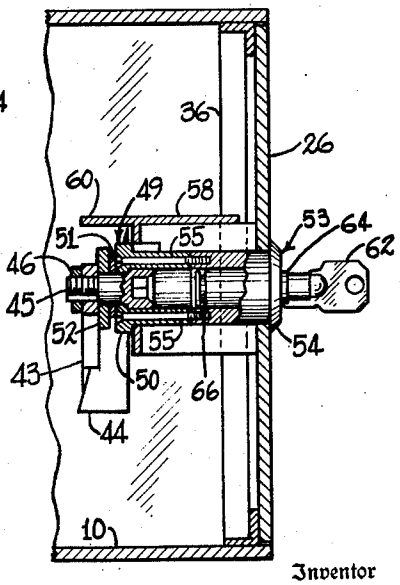


Fig. 2.



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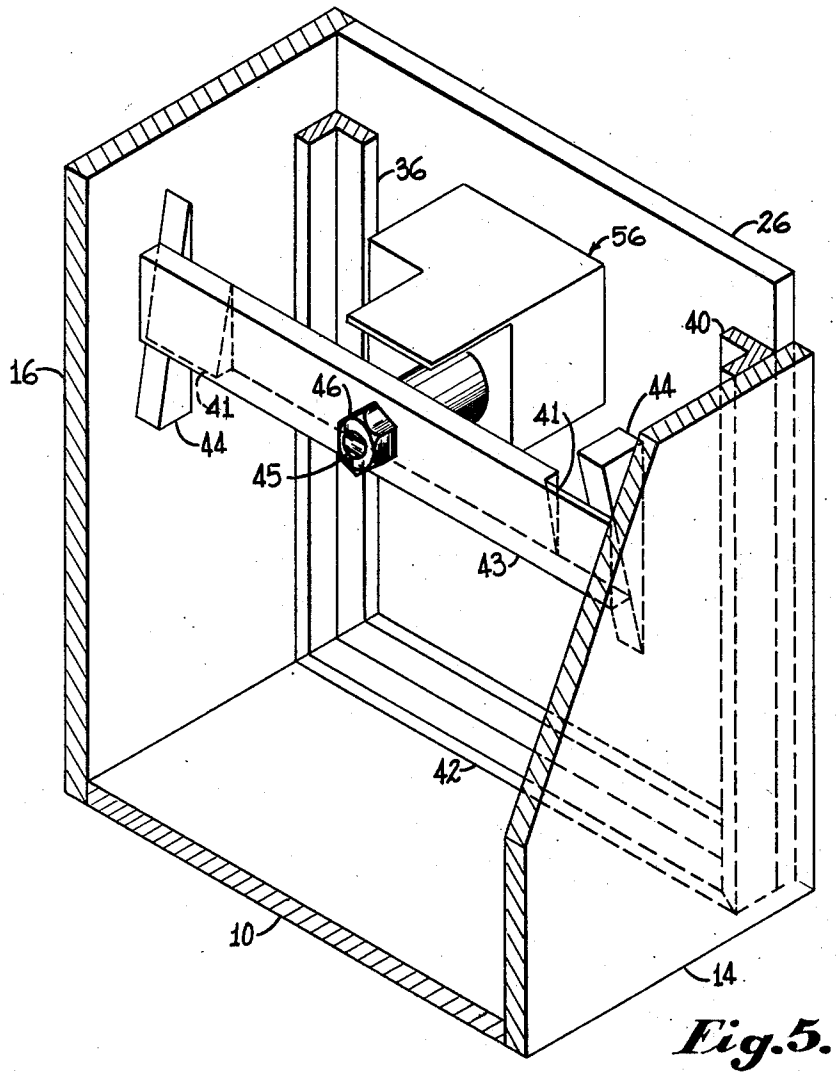


Fig. 5.

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EARTH COOLED BASEMENT LOCK BOX

Johnson C. Reid, Omaha, Nebr.

Application May 17, 1956, Serial No. 585,577

3 Claims. (Cl. 109—59)

This invention relates to a combination lock box and basement wall in which the lock box is permanently mounted in the basement wall to make its removal by thieves difficult and further in which substantial portions of the lock box are in contact with the earth.

Heretofore fire-proof storage has been accomplished primarily only by expensive insulated safes. Uninsulated lock boxes have been in popular use, but such lock boxes subject the papers and contents to danger of scorching from the heat of a fire whereby the contents are destroyed as completely as if they were directly on fire.

I am aware that the mounting of a lock box permanently in a basement wall by cementing the lock box into the wall has been known heretofore. However the extent of the previous concepts has been limited to the advantage of preventing easy removal of the lock box by thieves.

It is therefore an object of my invention to provide a combination lock box and basement wall in which the substantial outer portions of the lock box protrude outwardly of the outer side of the basement wall and extend into heat-conductive contact with the earth whereby the earth conducts heat away from the lock box.

I have discovered that the extent of the removal of heat by the earth is so surprisingly great as to preserve the contents of the lock box even at times when a house burns down with burning timbers falling into the basement near the door of the lock box.

I am also aware that the building of lock boxes in basement walls has been known heretofore. However such lock boxes have been substantially only an extension of the basement itself. For example, in the patent to Cisor, Patent No. 1,863,040 issued June 14, 1932, a large chamber is shown double the size of a safe. The purpose of this chamber is to provide an area into which the safe can automatically be withdrawn by a coil spring and cable assembly. The safety from fire is attained by the automatic withdrawal of the safe completely from the fire area. In my concept safety from the fire is economically obtained through a proportion of direct contact between the safe or lock box and the earth so that the earth can conduct heat away from the lock box whereby it is this conducting of heat away which I rely on to economically protect the contents of the lock box rather than the automatic withdrawal of the safe from the fire area.

Others have endeavored to protect from the danger of fire by enclosing the safe in a relatively large mass of reinforced concrete, masonry or other such material. For example in the patent to Ernst, 1,954,667, issued April 10, 1934, a mass of concrete is used. In the Ernst concept thieves are prevented from gaining access to the safe with tools or explosives by means of a giant mass of concrete which is for this reason in the ground. The concrete is fireproof except for the danger of explosion of concrete which can happen in fires.

However my concept is in the provision of an inexpensive and readily installed lock box suitable for a home and with the outer surface of the lock box in substantially direct contact with the earth as damp conducts heat away.

Other and further objects and advantages of the present invention will be apparent from the following detailed description, drawings and claims, the scope of the invention not being limited to the drawings themselves as the drawings are only for the purpose of illustrating a way in which the principles of this invention can be applied.

Other embodiments of the invention utilizing the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings:

Fig. 1 is a broken away wall section in perspective showing the lock box built into the wall with a portion of the outer wall of the lock box broken away showing the tray inside;

Fig. 2 is a vertical cross-section view of the lock box locking mechanism from the inside;

Fig. 3 is a rear elevation of the key for locking the lock box;

Figure 3*a* is a side elevation of the key of Figure 3;

Fig. 4 is a side-elevation in cross-section showing the lock mechanism; and

Fig. 5 is a cross-section in perspective showing how the locking bar holds the lock box door in place.

This application is a continuation-in-part of applicant's application Serial No. 183,246 filed September 5, 1950, now abandoned.

The general shape of the lock box of this invention is a rectangular prism with one openable end.

The exterior of the lock box generally comprises a top **12**, bottom **10**, sides **14** and **16**, rear member **18** and an openable end or door **26**. All the outside members are preferably made of heavy steel electrically welded so as to be waterproof. The outside is coated with a rust-preventing moisture-proof covering such as tar or the like **24**.

The lock box is designed dimensionally so as to fill the space of one-half a cement block and is made to become a cemented inpart of the basement side wall with its openable end flush with the inside wall surface **27** and the opposite end protruding from the outside wall surface **28** into the earth **29** above the basement floor **30**.

Cement **25** is disposed between the lock box **12** and adjacent cement surfaces to firmly anchor the lock box to the wall.

On the interior of the lock box, and attached to sides **14** and **16**, are two longitudinally disposed guides or brackets **31** which support the removable tray **32**. The tray comprises a rectangular shaped bottom and four vertical sides.

Four pieces of angleiron or the like **36**, **38**, **40** and **42** are attached to the inner perimeter of the openable end and from a door-jamb or seat for the door.

A locking bar **43** has two notches **41** in its opposite ends. The notches are on the door side of the bar and each have a surface the surfaces having opposite inclinations. The inclinations are other than ninety degrees with respect to the axis of rotation of the bar. The inclined surfaces of the locking bar **43** engage with the inclined surfaces of the triangular shaped locking lugs or wedge members attached to the sides of **14** and **16**. The locking lugs or wedge members **44** each have a surface facing away from the door, the surfaces having opposite inclinations. The inclinations are other than ninety degrees with respect to the axis of rotation of the bar and are parallel with the surface on the respective ends of the bar. The locking bar **43** is mounted on the inner end of a key shaft or axle member **45**, which latter is provided with an

irregular head, and the locking bar **43** is held fast by a nut **46**.

A suitable key or removable handle is designed to fit into the outward end of the key shaft **45**. This key is hexagonal or non-round and is bent to a 90-degree angle. It is large in size and easily facilitates a large amount of torque on the locking bar **43**. The shaft **45** is journaled within the key shaft housing **49**, the locking bar **43** being separated from the housing **49** by a thrust washer **51** and a spacer **52**. The housing **49** is cylindrical in shape, having an annular shoulder **50** at its inner end.

A still further tubular shape lock housing **53** is provided having an annular shoulder **54** on its outer end. The shoulder **54** is disposed against the outer surface of the door **26**, with the cylindrical body of the housing **53** disposed within and protruding from the inner side of a hole through the door **26**.

The housing **49** is provided with a plurality of longitudinally disposed holes in its outer wall through which screws **55** are disposed engaging corresponding internally threaded holes in the inner end of the housing **53**.

Clamped between the annular shoulder **50** of the housings **49** and **53** are the door **26** and the lock mechanism enclosure **56**. The lock mechanism enclosure **56** is box-shaped and comprises two sides **57**, a top **58**, and a rear member **59**.

The rear member **59** is provided with a hole the walls of which are disposed against the annular shoulder **50** of the housing **49**. The top member is provided with a protruding edge **60** which extends into the path of the locking bar **43** and serves as a stop for the bar.

A still further key **62** is provided to fit a lock plug **64** which latter can be inserted and journaled within the hole in the tubular housing **53**. The plug **64** is provided with a bolt which removably engages with a nib **66** on the inner circumference of the hole in the tubular housing **53**, thus locking it in place when the key **62** is removed.

In operation, the lock box is opened first by inserting the key **62** in the plug **64**, removing the plug **64**, then inserting the key **47** in the locking bar shaft **45** and disengaging the locking bar **43**. The vault is closed by reversing this procedure.

It is very important that the lock box be disposed very closely adjacent the surrounding earth at its outer end without any substantially insulating material between the earth and substantial portions of the area of the outer portions of the lock box, for otherwise the heat conduction contact of the earth cannot have its proper effect.

It is also very important that the lock box be cemented in and anchored firmly into an aperture in the basement wall whereby it cannot be carried off by thieves as would otherwise be possible through the simple removal of the whole box rather than opening the door of the box at the scene of the robbery.

This is very important inasmuch as the lock box is of a size to be easily carried away and must depend upon its being anchored as a main deterent to thieves in contrast to the heavy and expensive safes now in use.

From the foregoing description, it is thought to be obvious that a earth cooled basement lock box constructed in accordance with my invention is particularly well adapted for use, by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof, and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice, except as claimed.

1. In combination: a vertical basement outside wall of a building having an aperture extending therethrough, said wall having earth disposed against its outer side; and a metal lock box disposed in said aperture, said lock box having an openable door at its inner end and having locking means for locking said door, said lock box having the outer portion thereof protruding outwardly beyond said wall into the earth a substantial distance and disposed in heat-conductive contact with the surrounding earth so that the earth tends to conduct heat away from said box to prevent the contents of the box from becoming overheated and scorched during fire in the building.

2. The combination defined in claim 1 in which said lock box is cemented to the basement wall.

3. The combination of claim 1 in which those parts of said lock box which protrude outwardly beyond said wall are coated with a rust-preventing moisture-proof covering.

References Cited in the file of this patent

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