

May 11, 1926.

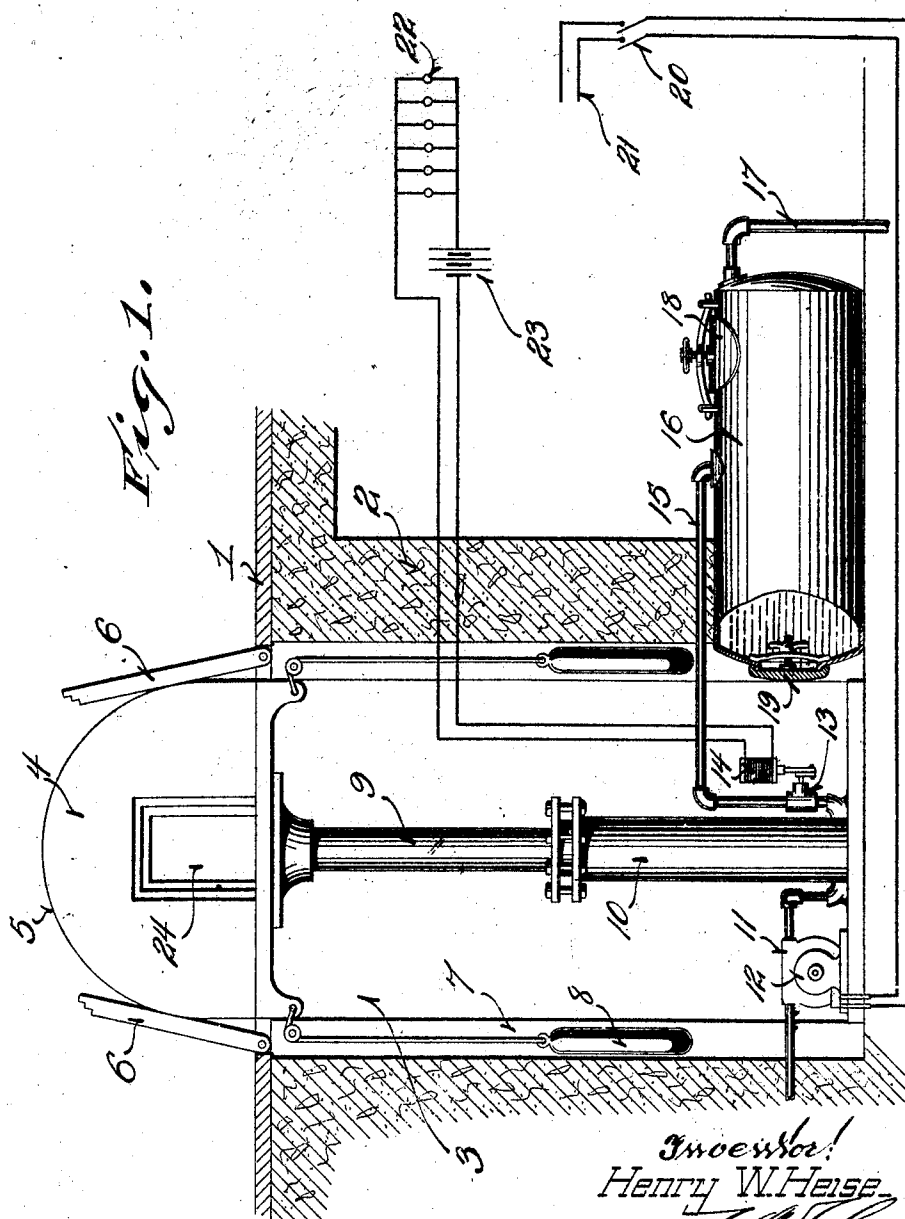
1,584,294

H. W. HEISE

DISAPPEARING SAFE

Filed Oct. 17, 1925

2 Sheets-Sheet 1



Inventor!
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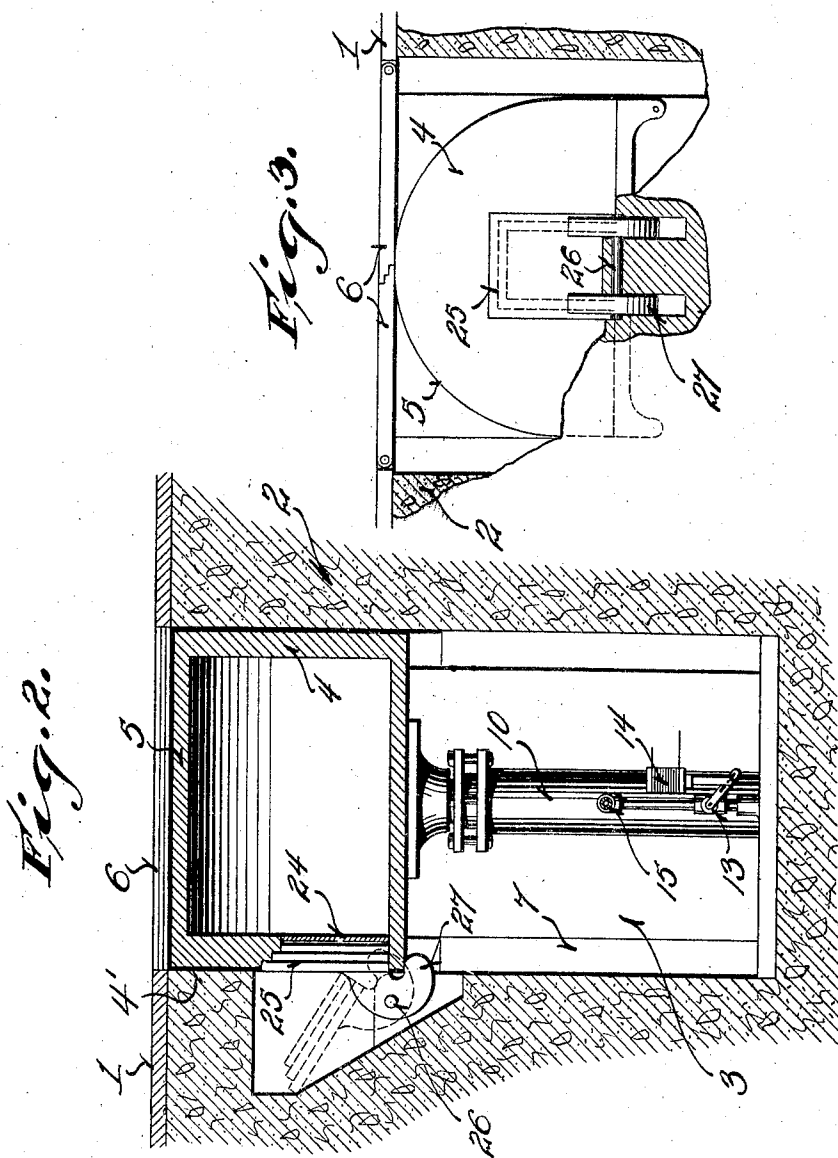
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2 Sheets-Sheet 2



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Patented May 11, 1926.

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UNITED STATES PATENT OFFICE.

HENRY W. HEISE, OF RACINE, WISCONSIN, ASSIGNOR OF ONE-THIRD TO JOSEPH A. JOHNSON AND ONE-THIRD TO HENRY J. SCHAEF, BOTH OF RACINE, WISCONSIN.

DISAPPEARING SAFE.

Application filed October 17, 1925. Serial No. 63,073.

This invention relates to disappearing safes or vaults.

Objects of this invention are to provide a safe which is burglar proof and which is actually physically removed from the field of operations of burglars in a very simple and effective manner, and which is so constructed that it will disappear below the floor level and house itself within a concrete foundation so that access to the safe may not be had by the burglars.

Further objects are to provide concealed means for controlling the operation of the safe and to have such means accessible to any one of a large number of employees of the bank so that any one of the employees may initiate the downward movement of the vault at the first sign of trouble.

Further objects are to provide a water seal of effective characteristics to prevent access to the mechanism for operating the safe so that although burglars may be in possession of a bank, in which the safe is installed, for a material length of time nevertheless they will find it impossible to enter the housed operating mechanism and elevate the safe.

An embodiment of the invention is shown in the accompanying drawings, in which:—
Figure 1 is a sectional view through the concrete work and through a portion of the water seal showing the safe in raised position.

Figure 2 is a view taken at right angles to Figure 1 showing the safe and associated parts in section and in retracted or hidden position.

Figure 3 is a view partly broken away showing the position of the parts as in Figure 2, such view being at right angles to Figure 2.

Throughout the description and claim, the term "safe" will be employed in a generic sense to include a safe, vault or similar safety receptacle.

Referring to the drawings, it will be seen that beneath the main floor 1 of the bank a concrete setting 2 is placed. This concrete work provides an enlarged cavity 3 within which the heavy dome-shaped safe 4 is adapted to move. This safe is provided with a rounded upper portion 5 which contacts with the heavy doors 6, such doors forming a continuation of the floor 1 when the safe is retracted, as shown in Figures

2 and 3. When the safe is elevated, its upper dome-like portion strikes the doors 6 and raises them to the position shown in Figure 1. Preferably, suitable guides 7 are positioned inside of the cavity 3 for guiding the safe and, if desired, counterweights 8 may be employed to partially balance the weight of the safe. This safe is carried by means of a plunger 9 operating in a hydraulic cylinder 10. The cylinder is supplied by means of a pump 11 driven by an electric motor 12. The pump may be supplied from the city mains or in any suitable manner.

The exhaust from the hydraulic cylinder is controlled by means of the discharge valve 13 operated by an electromagnet 14. The discharged water passes through a pipe 15 and empties into the upper portion of a tank 16, such tank being set in the concrete foundation in an immovable manner. An overflow 17 extends from adjacent the upper portion of the tank and carries the surplus water off. In this manner the water in the tank is kept fresh by constant changes due to the operation of the hydraulic mechanism.

It is to be noted that a manhole 18 is provided adjacent the upper side of the tank and that a manhole 19 is provided at the end opening into the cavity 3. Thus it is impossible for any one to enter the cavity 3 without passing through the large water tank which would preclude access by burglars. However, if repair has to be made to the mechanism within the cavity 3, the mechanics can bail or pump the water out of the tank 16 and secure access to the cavity 3. In view of the large size of the tank and its immovable setting, this operation is laborious and consumes a large amount of time which would preclude access so far as the burglars were concerned.

At some hidden place in the bank, the operating switch 20 for controlling the motor 12 is installed. Thus when it is desired to raise the safe it is merely necessary to connect the motor to the main 21 by closing the switch. The motor will then function and the pump will force water into the cylinder 10, thus raising the safe. At a plurality of hidden points within easy access of a large number of the employees of the bank are positioned a plurality of push buttons 22, such push buttons being connected in parallel and control-

ling the supply of energy from a battery 23 to the solenoid 14.

Thus at the first alarm any one of the large number of employees may press a button and lower the safe.

During the lowering operation of the safe the doors 6 close and completely house the upper end of the safe.

It is to be noted that the upper end of the safe is cylindrical, as shown in Figures 1 and 3. The flat wall 4' of the safe, as shown in Figure 2, slides in intimate contact with the adjacent wall of the cavity 3 and thus prevents access to the entrance opening of the safe. This entrance opening is provided with the usual light door 24. However, it is also provided with a heavy door 25 and it is to be noted that this door 25 is pivotally carried by a shaft or support 26 and provided with an inwardly projecting cam-like arm 27 so that when the lower portion of the safe contacts with this arm, as shown in Figure 2, the heavy door 25 is swung into position and is held closed by the weight of the safe.

It is to be noted that the heavy safe door 25 and the heavy floor doors 6 have their edges stepped, as shown in the drawings.

It will be seen that when the safe is retracted, it is a physical impossibility to enter such safe as it not only has the usual heavy door held in closed position by the weight of the safe, but the safe is also bodily housed within the concreted setting.

It will be seen further that the operation

of the safe is wholly automatic being initiated by the push buttons 22 or by the switch 20 to lower or raise such safe.

It is to be noted further that the safe is remotely controlled so that none of the employees of the bank need be near the safe to cause its operation.

Although the invention has been described in considerable detail, it is to be understood that the invention may be variously embodied and is, therefore, to be limited only as claimed.

I claim:

The combination of a setting, a floor extending across the top of such setting, said setting having a cavity therein, a pair of heavy doors adapted to close the upper end of said cavity and forming a continuation of said floor, a safe adapted to move into and out of said cavity and to elevate and lower said doors, a hydraulic cylinder mounted within said cavity, a piston mounted in said cylinder and connected to said safe, and mechanism for controlling motion of said piston, a discharge tank having one end projecting through said setting into said cavity, a manhole formed in said tank and opening into said cavity, a closure for said manhole, a pipe connecting the discharge valve with said tank, and an overflow pipe leading from the upper portion of said tank.

In testimony that I claim the foregoing I have hereunto set my hand at Racine, in the county of Racine and State of Wisconsin.

HENRY W. HEISE.