June 17, 1930. W. W. BURNS 1,765,049

BURGLARPROOF SAFE

Filed July 25, 1928

FIG. 4.

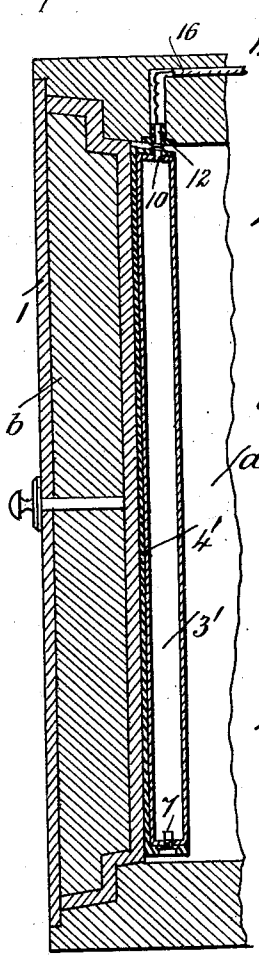


FIG. 1.

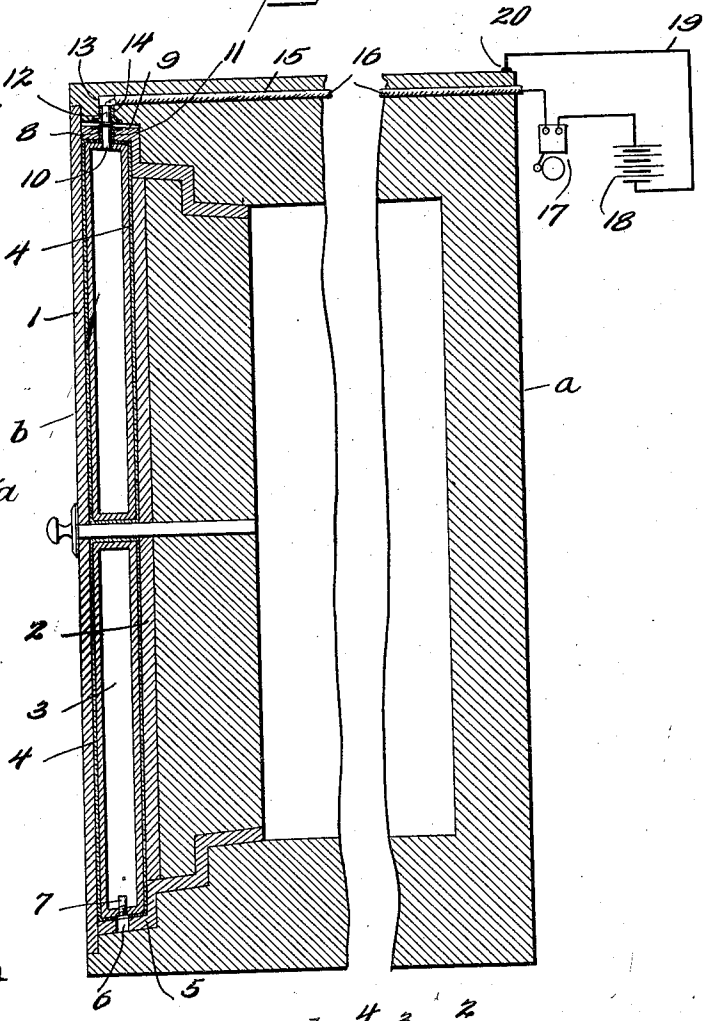


FIG. 2.

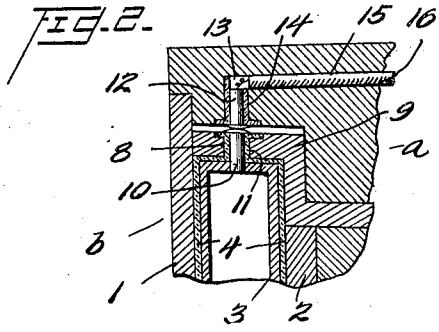
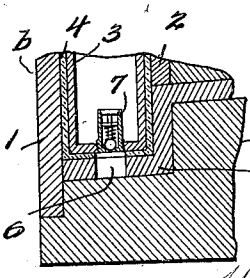


FIG. 3.



Inventor

Wm W. Burns

By Hubert W. T. Jenner.

Attorney

Patented June 17, 1930 1,765,049

UNITED STATES PATENT OFFICE

WILLIAM W. BURNS, OF BALTIMORE, MARYLAND

BURGLAR-PROOF SAFE

Application filed July 25, 1928. Serial No. 295,254.

This invention relates to protective means for vault and safe doors. In carrying out the invention, the vault or safe door is constructed with front and rear plates spaced apart, and within the space between the plates I provide a closed metal tank which is filled with tear gas under high pressure. This tank is insulated from the door and is provided with an insulated contact which projects through a suitable opening in the edge of the door and is adapted to engage an insulated contact in the doorway in the safe or vault when the door is closed. The latter contact is connected to one terminal of an electric circuit and the other terminal of said circuit is grounded on the body of the vault. A signal is arranged in this circuit remote from the vault. The arrangement is such that should an attempt be made to drill into the safe door the body of the drill will complete the electric circuit as soon as it engages the metal tank and this will cause an alarm to be sounded in a police station. The burglar will not be disturbed in his work by this signal, which is not within his hearing, but the police will be notified that an attempt is being made to open the safe. As the burglar proceeds with the drilling operation the drill will puncture the tank contained within the safe door and the tear gas will be forced out past the drill and will so affect the eyesight of the burglar as to hinder his escape, and will make him easier to capture when the police arrive. Thus the burglary will be prevented.

In the accompanying drawing, Fig. 1 is a vertical section through a vault or safe illustrating my invention. Fig. 2 is a detail sectional view showing the electrical contacts on a larger scale. Fig. 3 is a similar view showing the check valve through which gas is admitted under pressure to the tank within the door. Fig. 4 is a vertical section through a portion of the safe and the safe door, showing a modification.

Referring to the drawing, *a* represents the body of a safe or vault and *b* represents the door. The door has a front plate 1 and a rear plate 2 spaced from the plate 1 to provide a space within which is arranged a closed metal tank 3 which is preferably made of copper. This tank is insulated from the metal of the door by a lining 4 of insulating material. The lower edge of the door has a small opening 6 extending through it, which opening is closed and inaccessible when the door is closed. This opening registers with an opening in the tank 3 in which is fitted a check valve 7, the latter adapted to permit fluid to enter the tank and to prevent the fluid from flowing out of the tank. An opening 8 is formed in the upper edge 9 of the door, and a contact pin 10, electrically connected with the tank, projects through this opening. The pin works within an insulated bushing 11 and does not electrically engage the door. A similar contact pin 12 is arranged in an opening 13 in the doorway of the safe body, and when the door is closed these contacts engage one another as shown in Figs. 1 and 2. The contact 12 is insulated from the safe body by a bushing 14 of insulating material. A passageway 15 extends rearwardly through the safe body from the bore 13. An insulated wire 16 extends through this passageway to a signalling device 17 and thence to a suitable electric current source 18. A wire 19 connected to the opposite pole of said source is grounded upon the body of the safe or vault as indicated at 20. The signal, it will be understood, is placed at a place remote from the safe or vault, as in a detective's office or in the home of the owner of the safe.

The tank will be kept full of tear gas under high pressure. When a burglar attempts to drill through the front plate of the safe door, in order to blow the safe open, as the drill bit passes through the front plate and engages the wall of the tank the drill bit will complete the electric circuit.

The signal will be sounded and give notice that an attempt is being made to rob the safe. This signal will not be within the hearing of the burglar and as he drills through the front wall of the tank, the tear gas, escaping at high pressure past the drill, will so affect the eyesight of the burglar that when the detectives or individuals who have heard the alarm arrive at the place where the safe is

located, the burglar will be more easily overcome.

In the case of vaults, which are built into walls, the signal wires will of course be concealed by the walls, and it will be impossible for the burglar to locate them and cut them. The tank for tear gas and the electric signal and its connections can be applied to any side or sides of the safe as well as to its front side or door, if desired.

As the outward appearance of the vault or safe door is in no wise changed by the inclusion of the tank within the door, the burglar will have nothing to warn him or arouse his suspicions of the presence of the tank until he punctures the tank.

In the modification shown in Fig. 4, the safe *a* is provided with a door *b* of approved construction similar to that shown in Fig. 1, but the metal tank 3′ is secured against the inner side of the door instead of being inclosed within the body of the door. The tank 3′ is separated from the door by insulating material 4′, and is provided with a check valve 7, and a contact pin 10 at its upper part similar to the corresponding parts hereinbefore described. When constructed in this manner the invention can be applied to the doors of existing safes and vaults, and it is not necessary to provide them with specially constructed doors.

What I claim is:

1. The combination, with a safe, of a closed tank for an obnoxious gas under pressure secured to the safe and arranged to the rear of an outer side plate thereof, insulating material interposed between the safe side plate and the tank, a signal, and an electric circuit connecting the signal with the safe and the tank, the said circuit being closed when a drill penetrates the side plate and insulating material and engages with the tank, and the gas being liberated when the drill penetrates the tank.

2. The combination, with a safe having front and rear side plates, of a closed tank for an obnoxious gas under pressure built into the safe side between its front and rear side plates, insulating material inclosing the said tank and insulating it from the safe, a signal, and an electric circuit connecting the signal with the safe and the tank, the said circuit being closed when a drill penetrates the front side plate and insulating material and engages with the tank, and the gas being liberated when the drill penetrates the tank.

3. The combination, with a safe door, of a closed tank for an obnoxious gas under pressure secured to the safe door and arranged to the rear of the front plate thereof, insulating material interposed between the safe door and the tank, a stationary insulated contact piece carried by the safe body and arranged to one side of and parallel to its door, an insulated contact piece projecting from one edge of the said tank and sliding crosswise of and into engagement with the stationary contact piece when the door is closed, a signal, and an electric circuit connecting the signal with the safe and the tank, the said circuit being closed when a drill penetrates the outer side plate of the door and the insulating material and engages with the tank, and the gas being liberated when the drill penetrates the tank.

In testimony whereof I have affixed my signature.

WILLIAM W. BURNS.