UNITED STATES PATENT OFFICE.

EDGAR M. BENHAM, OF NORWOOD, OHIO, ASSIGNOR TO WALTER A. KNIGHT, TRUSTEE, OF PLEASANT RIDGE, OHIO.

VENTED BURGLAR-PROOF SAFE.

1,120,435.


To all whom it may concern:

Be it known that I, Edgar M. Benham, a citizen of the United States, residing at Norwood, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Vented Burglar-Proof Safes, of which the following is a specification.

My invention relates to improvements in safes and vaults of the class commonly known as burglary proof and the invention consists of the improved safe which I will hereinafter describe and claim. The most efficient safes of this class have the body cast in one piece. The wall is solid, thick, and its only opening is a round one for the door, a single casting of the same material, which is round, and is ground into place, so as to seat perfectly and render it impossible to insert even minute quantities of the most flammable explosives. However, it has been found that skilful workmen can, in a few minutes, sledge such a safe next to the joint of the door and safe body, and insert enough nitroglycerin, or other powerful modern explosive, so that an explosion will permit the easy removal of the door. Attention is called to the fact that all metals can be drilled and that holes can be burned through them; and also to the further fact that a casting having vent holes can be made thicker than one without, and the metal be of uniform firmness and toughness throughout.

It is a commonly known fact that the efficiency of the discharge of an explosive depends upon its confinement, and the more nearly air tight the safe or portion thereof in which the explosion takes place, the greater the damage.

I construct my safe, preferably, of a single casting of tough metal, provided with crooked vent holes extending completely through the walls of the safe, said vent holes being of sufficient size and number to make an explosion ineffective, and fit the door in very loosely so that the gases formed by the ignition of an explosive would pass off freely and not displace the door or crack the safe.

In banks, the so-called burglary proof safe is placed within a fire-proof vault, and this would be the way in which my invention would ordinarily be used; but it might be made large enough to contain a fire-proof repository, if this best suited conditions in a given case; or it might itself have an inner tight chest to contain the valuables and prevent their destruction by explosions. If a fire-proof vault contained one of my vented safes with a tight chest within it, and burglars forced open the vault, they not only could not open my safe within; but they could not maliciously destroy its contents, for the tight chest within the vented safe would protect the valuables from destruction by explosion, and would itself be protected by the vented safe. If desired, a fire-proof outside, with or without an intervening chamber, could be provided for my safe, and this style would have the appearance of an ordinary fire-proof safe. An explosion would simply remove the exterior fire-proofing.

My invention might be made highly dangerous to burglars if desired, by filling the outer portions of the vent holes with plugs of lead or other soft metal. They would be finished over and look like the rest of the safe body, in which case it would have the appearance of an ordinary safe. The pressure of the gases formed by the explosion would shoot out the metal plugs with terrific force, and if they were sufficient in number and properly placed, no one near could escape without injury, if they escaped at all.

My safe is not only free from the faults of other types of burglary proof safes, but can be made at a much less cost, for the expensive grinding to secure close fitting is all eliminated.

My invention is illustrated in the accompanying drawings, in which:

Figure 1 is a front elevation of a safe whose body is made of a single casting, and the door another casting of the stepped flange type, with part of the body broken away and in section to show vent holes and plugs, and part of the door broken away to show overlapping edge and bolt work, vent holes in the door being shown in dotted lines. Fig. 2 is a vertical section along the line $a-a$ of Fig. 1, the vent holes in the door shown plugged, and those in the body open. Fig. 3 is a detail of the bolt work with a part broken away and in section, and contiguous parts of the door and safe:\s...


ward the front, with outer portions of the safe broken away. Fig. 4 is an enlarged detail of the door lug and slide.

Referring now to the drawings: A is a safe body, a single casting of metal, too tough to be slided or otherwise broken apart. The door opening, a, may be stepped in the usual way, and will of course be provided for in the casting, requiring no finishing.

Vent holes a' are cast in the safe and are preferably crooked so that no instrument could be inserted from without into the safe to remove any of its contents. These holes may be any shape, size and number, and so arranged as best accomplishes the end desired. The door D, also a single casting of the same material, is adapted to fit loosely into its opening, and has a flange b to protect the crack left between the door and the body from the insertion of tools. The door may be held steady, when closed, by lugs b', which secure the door's adjustment to the position necessary for the proper operation of the bolt work. Vent holes, b', similar to those in the safe-body, are provided for the door. These vent holes may be completely hidden by running plugs c of lead or other soft metal, in the outer ends thereof. When the safe has been finished, these will not be noticeable from the outside, and burglars would see no difference between this and other safes, except that the door was loose fitted. If sufficiently vented, the door can be made to close tight, when the appearance of the safe would be exactly the same as that of other safes.

The bolt work D may be of any convenient type; that shown in Fig. 3 having bars all adapted to be slid into and out of position at each side by throwing the handle a. I also cast undercut lugs b' on the inside of the safe door at the top and bottom, and slidably attach to the inner side of the safe bars a' with notches a' adapted to permit the passage of the lugs when the door is being closed. These bars may be slid so as to engage the lugs b' by levers pivoted to the inside of the safe body at a' and to bars a' at a', with free ends a' adapted to engage notches a' in the bolts d'. Then movement of the bolts d' simultaneously adjusts the bars a' when the safe door is closed. The bars a' may also be adjusted independently by means of bell crank levers pivoted in the outer casing, one arm a' of which levers engages the bar a', and the other arm a' of which is an exterior handle for manipulation. It will be apparent that the bolts d', the bars a' and the lugs b' will hold the door securely in position. Obviously combinations and time lock mechanisms can be applied to this the same as other safes.

I claim as my invention and desire to secure by Letters Patent of the United States:

1. A safe having in its walls a plurality of relatively small vent-channels extending completely through the same, sufficiently numerous to afford a vent for gases of explosion within, said channels being crooked to prevent the introduction of tools or instruments from without.

2. A safe comprising a unitary body and a door with sufficiently numerous, relatively small crooked vent holes extending completely through the walls of both body and door to afford vent for gases arising from explosion within the safe.

3. A unitary safe-body having in its walls a plurality of relatively small crooked vent holes extending completely through the wall, sufficiently numerous to afford a vent for gases arising from explosion within the safe and plugs so made as to cover and hide the outer end of said holes and be readily displaced by the pressure of gases from within the safe.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDGAR M. BENHAM.

Witnesses:
H. G. SKIFF,
A. L. TILDESLEY.