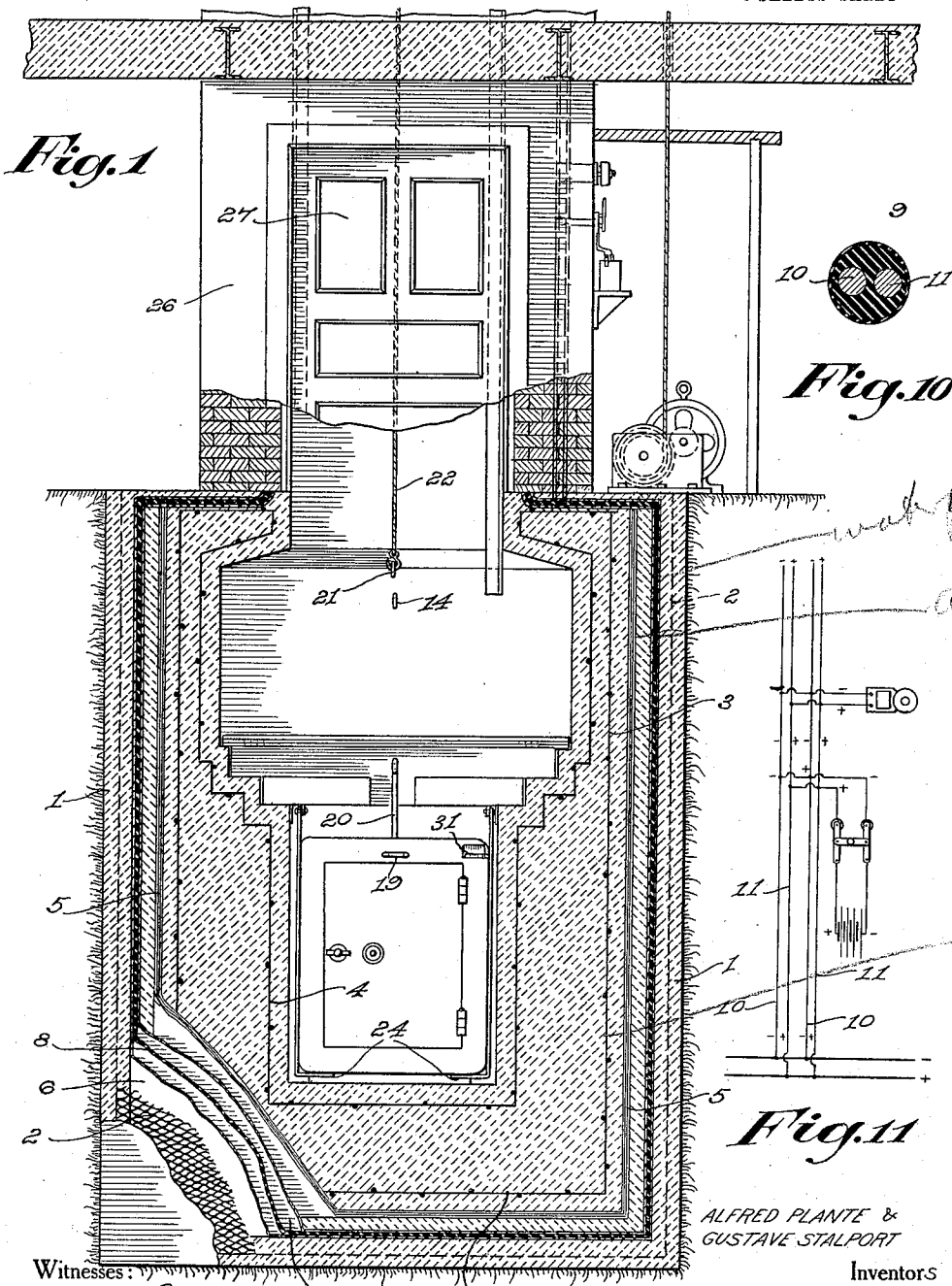


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DISAPPEARING SAFE AND VAULT THEREFOR.
APPLICATION FILED JUNE 3, 1912.

1,064,085.

Patented June 10, 1913.
5 SHEETS—SHEET 1.



L. J. Gaurin
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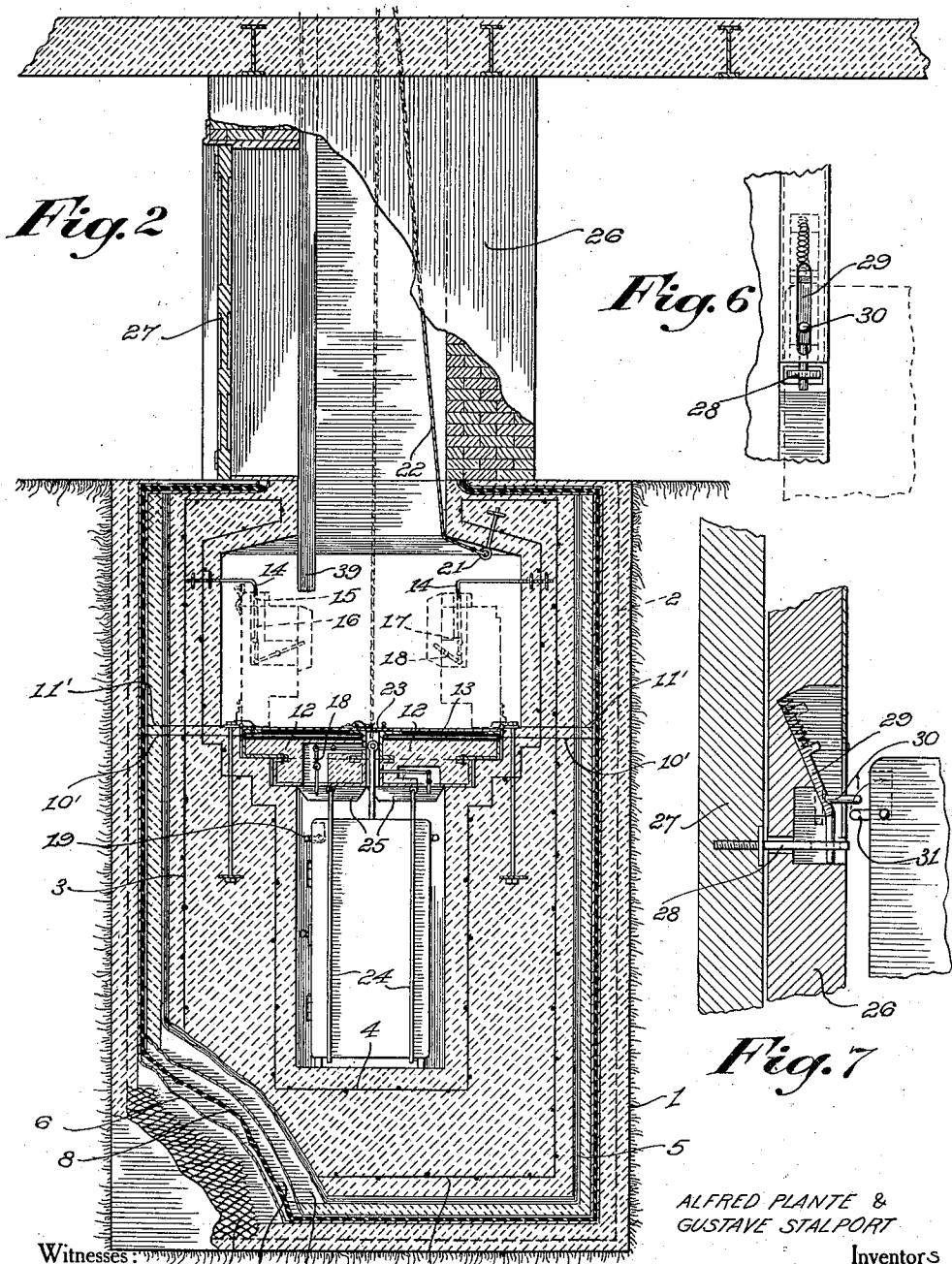
By *Marion Harris*
Attorneys

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Witnesses:
L. H. Gawin
E. Gawin

By

Marion Marion

Attorneys

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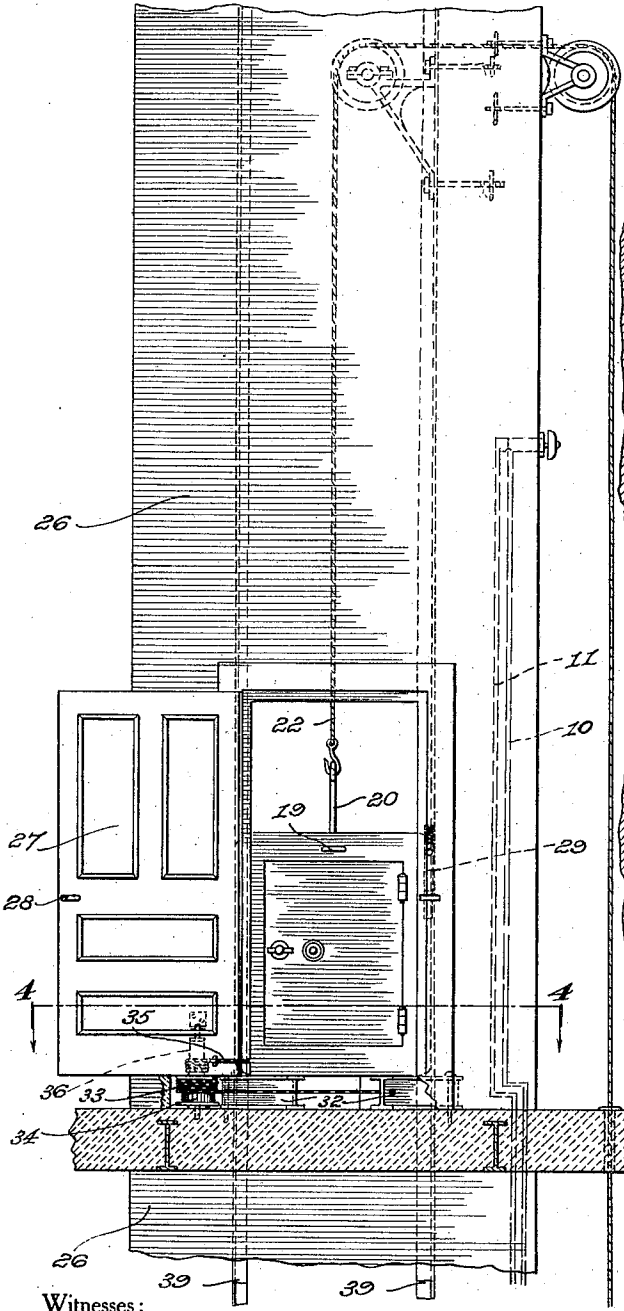


Fig. 3

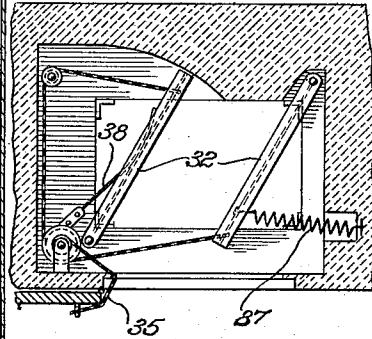


Fig. 4

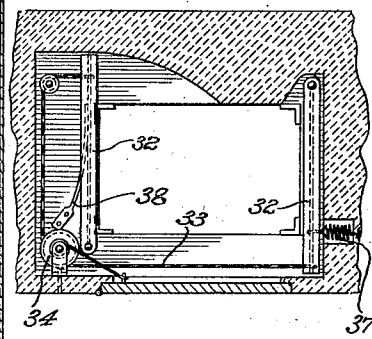


Fig. 5

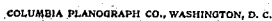
Witnesses:
L. A. Gaurin
E. Gaurin

ALFRED PLANTE &
GUSTAVE STALPORT
Inventors

By *Marion Martin*
Attorneys

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6 SHEETS—SHEET 4.



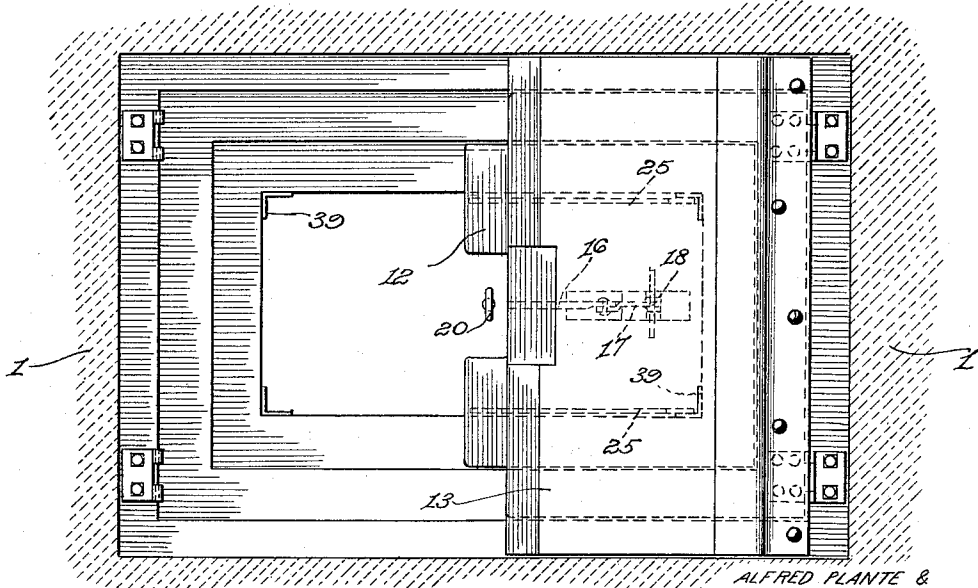
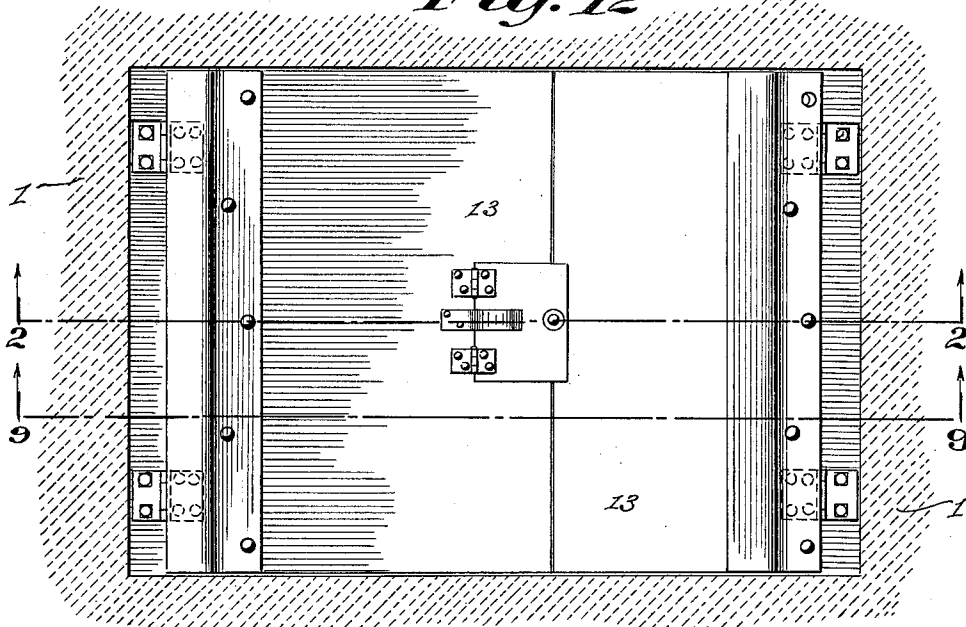
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Fig. 12



ALFRED PLANTE &
GUSTAVE STALPORT
Inventors

Fig. 13

Witnesses:

A. Gauvin
E. Gauvin

By

Marion Marion

Attorneys

UNITED STATES PATENT OFFICE.

ALFRED PLANTE AND GUSTAVE STALPORT, OF MONTREAL, QUEBEC, CANADA.

DISAPPEARING SAFE AND VAULT THEREFOR.

1,064,085.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed June 3, 1912. Serial No. 701,316.

To all whom it may concern:

Be it known that we, ALFRED PLANTE, a subject of the King of Great Britain, and GUSTAVE STALPORT, a citizen of the United States of America, both residing at Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Disappearing Safes and Vaults Therefor; and we do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention to be hereinafter described relates to burglar proof vaults for disappearing safes.

In order to more clearly disclose the construction, operation, and use of the invention, reference should be had to the accompanying drawings forming part of the present application.

Throughout the several figures of the drawings like reference characters designate the same parts.

In the drawings: Figure 1 is a central, vertical, cross section through the vault, with safe lowered; Fig. 2 is a similar view, at right angles to Fig. 1, on line 2—2 of Fig. 12; Fig. 3 is a front view of the safe in raised position, with supporting beams; Fig. 4 is a top plan view of the beams in operative position, taken on line 4—4 of Fig. 3; Fig. 5 is a similar view, in inoperative position; Fig. 6 is an inside elevation of the catch for securing the vault door; Fig. 7 is an enlarged side elevation of the same, in operative position; Fig. 8 is a lateral cross section through the vault; Fig. 9 is an enlarged, vertical, cross section on line 9—9 of Fig. 12; Fig. 10 is an enlarged cross sectional view of one of the sets of circuit wires, or cables; Fig. 11 is a diagrammatic view of the alarm circuit; Fig. 12 is a top plan view of the vault covers, closed; and Fig. 13 is a similar view of the vault, with one cover closed.

Referring to the drawings in detail, 1 indicates the vault wall made of concrete reinforced by an outer embedded layer of expanded metal 2 and two successive inner layers 3 and 4 of interwoven rods and wires. Throughout the extent of the vault wall and between the expanded metal and the layer 3 is embedded a water proofing material 5,

preferably, a layer comprising a number of thicknesses of water proofed paper, cloth, or the like.

Between the water proofed layer 5 and the expanded metal layer 2 are arranged two parallel spaced layers 6 and 7 of copper or other good electrical conductor. These conductors extend completely about the entire vault on all sides and are separated by an intervening layer of electrical insulating material 8. These plates or layers are included in a normally open electric alarm circuit. This circuit includes two cables 9 each having two wires 10 and 11 completely insulated from each other, the wire 10 being connected to the negative pole of the alarm circuit and the wire 11 being similarly connected to the positive pole. Likewise, the wire 10 is connected to the conductor plate 6 and the wire 11 is connected to the plate 7. Each of the cables has the same general appearance as an ordinary single-wire conductor. Therefore, when a burglar attempts to destroy the circuit by cutting one of the cables, the result is a complete closing of the circuit and sounding of the alarm. As his nippers pass through the wires 10 and 11, the blades of the nippers will act as conductors to bridge the insulation which separates the wires. Exactly the same result takes place when a burglar attempts to drill through the vault wall. His drill will either drive the metal of the outer layer 6 through the intervening insulation and against the metal of the inner layer 7, or, the metal of his drill, after passing through the outer layer and coming into contact with the inner layer, will act as a conductor and establish the circuit between them, thereby sounding the alarm.

In order to completely insure the protection of the safe, that part of the vault in which it is finally deposited is provided with heavy doors 12 of metal incased concrete. Within the top part of each door and having the same extent, is a conductor plate 13 which is completely insulated from the metal casing of the door. Each of these plates is connected to the conductor 6 by a branch conductor wire 10' and the metal casing of each door is similarly connected to the conductor 7 by a branch conductor wire 11'. Consequently, any attempt to drill through either of the doors 12 meets

with the same result as an attempt to drill through the walls of the vault.

Resilient hooks 14 are used to hold the doors 12 in raised or inoperative position, as indicated in dotted lines. The tips or holding ends of these hooks are adapted to be seated in notches 15 in the inner edges of the doors. In order to automatically unseat these hooks to release the doors, a sliding rod 16 is provided. This rod moves in a suitable bore in the door and leads into the notch so that the end of the rod may engage the end of the hook and force it from its socket. Each rod is flexibly connected, by means of a link 17, to one end of a lever 18. The free end of each lever 18 projects slightly beyond the lower face of the door—see Figs. 2, and 9—and is adapted to be engaged and operated by a pin, lug, or the like 19 on the side wall of the safe. Thus, as the safe is lowered, the hooks 14 will be unseated and the doors released, as clearly shown in dotted lines in Fig. 9. The body of each door 12 is suitably cut out or recessed to receive the parts 16, 17, and 18, and permit their free movement.

For raising the safe, a rod 20 is provided. This rod is solidly secured to the top of the safe and is provided with an eye adapted to receive a hook 21 on the end of a hoisting cable 22 which may be operated in any of the usual and well known ways. The doors are each provided with a small opening for the passage of the rod 20, a small spring pressed cover plate 23 being used to close the upper end of the opening after the safe has been deposited and the hook 21 disconnected. When it is desired to connect the hook, it is only necessary to move the cover plate to one side.

The safe does not rest directly on the foundation or bottom of the vault. It rests on the ends of a series of large L shaped supporting bars 24, the upper ends of which are pivotally connected to plates 25 secured to the lower face of the metal casing of each door. These L bars act as a suspending cradle. Likewise, the weight of the safe, when thus supported, becomes a very powerful means of holding the doors closed; as will be obvious.

The entrance to the vault well 26 is normally closed by a swinging door 27 provided with an eye bolt 28 which passes through a slot in the door frame. The eye of this bolt receives a spring pressed locking pin 29 having an off set finger 30 adapted to be engaged, and operated by a trip 31 pivotally mounted on the safe wall. The mounting of the trip permits it to swing upwardly but prevents it from swinging downwardly from the horizontal, as clearly shown in Fig. 7. The result is that, as the safe rises, its trip 31 will engage the finger 30 and raise the locking pin 29 out of the eye of

bolt 28, leaving the door 27 free to be opened.

It is necessary to provide a suitable support for the safe, within the well, opposite the door 27, after the safe has been raised. To this end, heavy supporting beams or girders 32 are pivoted at diagonally opposite corners of the well, in suitable recesses, and adapted to swing across the well toward each other, forming a bridge, their free ends resting on the top wall of the vault, as clearly shown in Figs. 4 and 5. To swing these girders or beams to the operative position shown in Fig. 3, a cable 33 is provided. This cable is wound about a small drum 34 journaled in the well near the door opening, and is passed about a suitable guide pulley, its opposite ends being connected to the free ends of the girders or beams. To operate this drum as the door 27 is swung open, a short cable 35 is provided. This cable is wound about a spool 36 which is formed as an extension of the drum, and has its free end secured to the door. Thus, as the door 27 is swung open, the cable 33 will be operated. To insure sufficient frictional engagement between the cable 33 and the drum 34, springs 37 and 38 are provided. Spring 37 acts on the free end of one beam and tends to return it to inoperative position, while spring 38 acts on the other to force it to operative position, as will be clear on reference to Fig. 4. The result is that, as the door opens, the two beams 32 will swing immediately to operative position. Now, as the door is closed to permit lowering of the safe, the cable 35 slackens and the spring 37 comes into action to return the beams to inoperative position. It is necessary, of course, to have the spring 37 of considerably greater power than the spring 38, in order to effect this return operation.

It is hardly necessary to state that the weight of the safe on the beams will keep them in operative position until the safe is lifted.

In order to accurately guide the safe in its ascent and descent to and from the vault, suitable L-shaped bars or the like 39 may be used.

An eye bolt is secured in the cement top of the safe vault in the rear; so that the cable 22 may be secured out of the way when not in use; by inserting the hook 21 through the eye of the said bolt, as shown in Figs. 1 and 2. In Fig. 2 the cable is shown in dotted lines as secured to the eye bolt 20 which is secured to the top of the safe.

It is thought that the operation and use of the invention will be clear from the preceding detailed description.

Changes may be made in the construction, arrangement, and disposition of the several parts of the invention without in any way departing from the field and scope of the

same, and it is meant to include all such within this application wherein only a preferred form has been disclosed.

5 Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent is:

10 1. In combination, a safe vault, doors mounted therein, a safe adapted to be lowered into said vault, means carried by said doors and adapted to support said safe, and means for holding said doors in open position.

15 2. In combination, a safe vault, doors mounted therein, a safe adapted to be lowered into said vault, means carried by said doors and adapted to support said safe, means for holding said doors in open position, and means for automatically releasing said holding means.

20 3. In combination, a safe vault, a well leading thereto, a door leading to said well, a safe, means for raising and lowering said safe in said well and vault, means for supporting said safe at a point adjacent said door, and connections between said door and said supporting means for automatically moving said supporting means to operative position.

25 4. In combination, a safe vault, a well

leading thereto, a door leading to said well, 30 a safe, means for raising and lowering said safe in said well and vault, means for supporting said safe at a point adjacent said door, connections between said door and said supporting means for automatically 35 moving said supporting means to operative position, and means for automatically returning said supporting means to inoperative position.

5. In combination, a safe vault, a well 40 leading thereto, a door leading to said well, a safe, means for raising and lowering said safe in said well and vault; spring pressed means for normally holding said door 45 closed; and means for automatically releasing said holding means as the safe is raised, comprising a spring pressed bolt, a lug secured thereto, and a pivotally mounted link secured in the side of the safe so as to engage the said lug and thus lift the bolt. 50

In witness whereof we have hereunto set our hands in the presence of two witnesses.

ALFRED PLANTE.
GUSTAVE STALPORT.

Witnesses:

L. A. GAUVIN,
E. J. GAUVIN.