H. W. HELLER.

BURGLAR PROOF SAFE OR VAULT.

APPLICATION FILED SEPT. 22, 1915.

1,234,022.

Patented July 17, 1917.

5 SHEETS—SHEET 1.

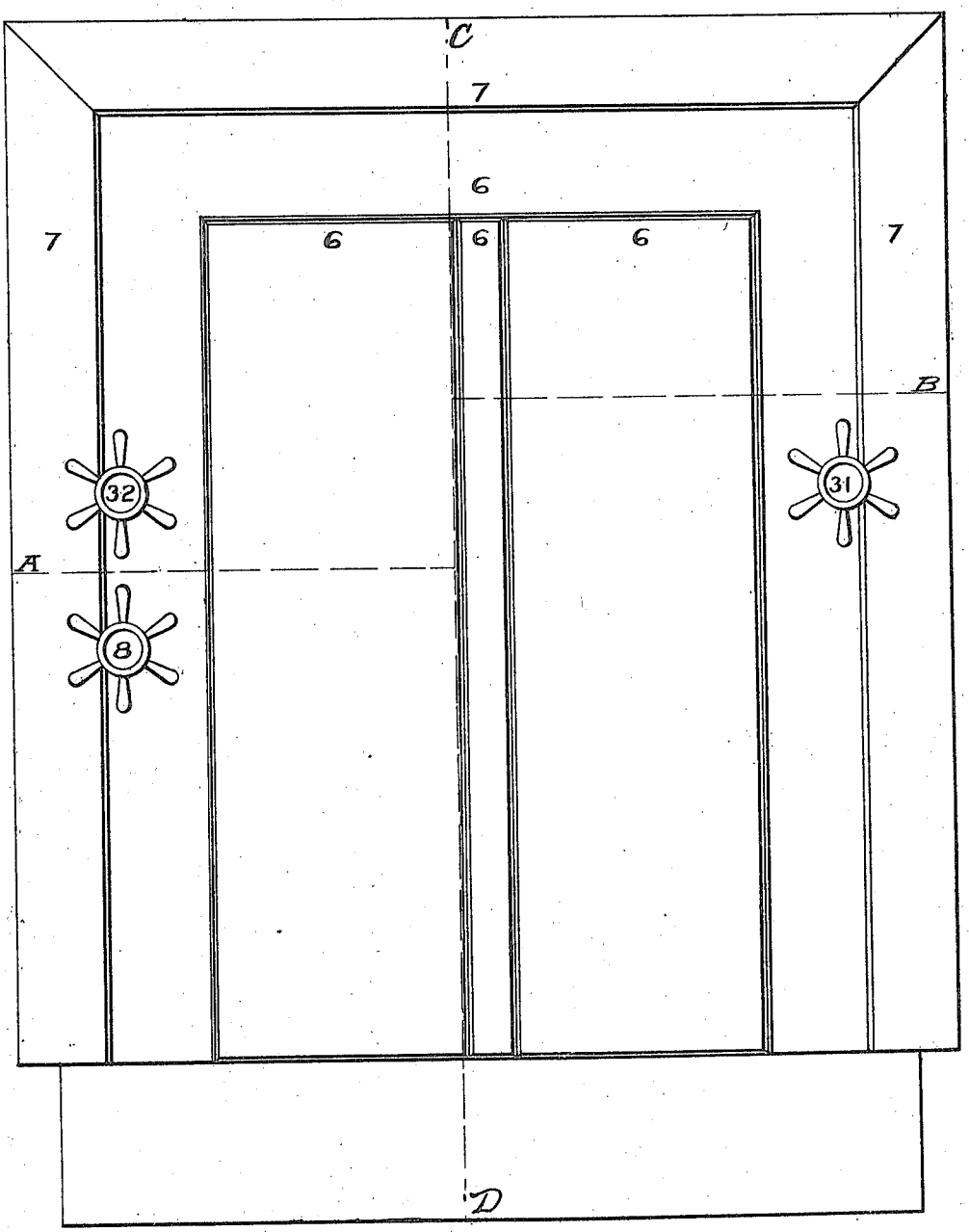


FIG. 1

WITNESSES:

Zorah M. Heller

Harry Young

INVENTOR

Harry W. Heller

By

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5 SHEETS—SHEET 2.

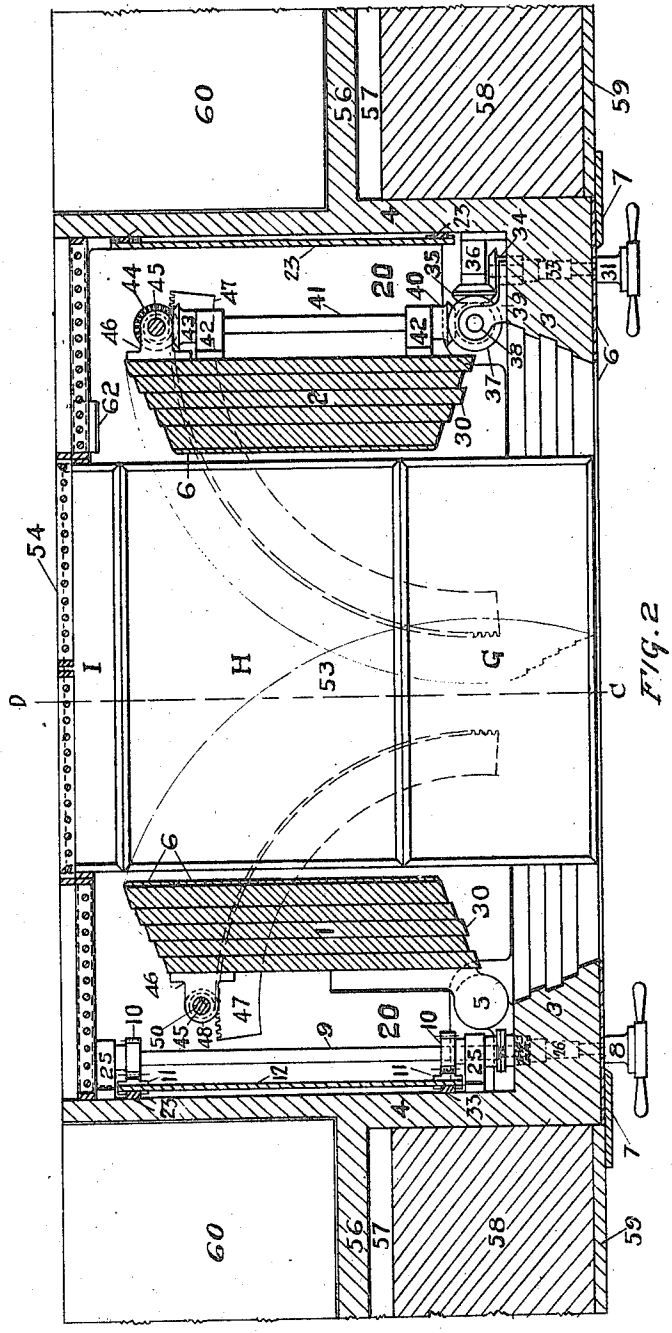


FIG. 2

WITNESSES:

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5 SHEETS—SHEET 3.

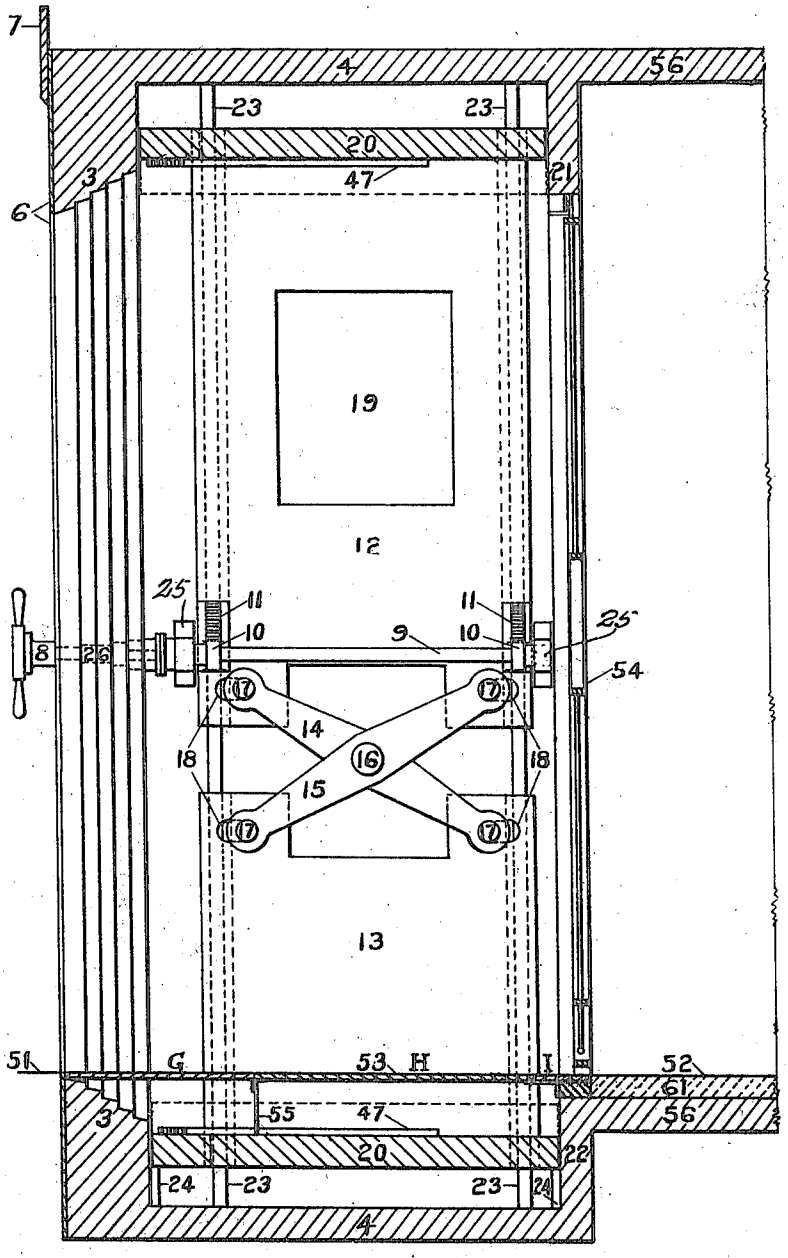


FIG. 3

WITNESSES:

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5 SHEETS—SHEET 4.

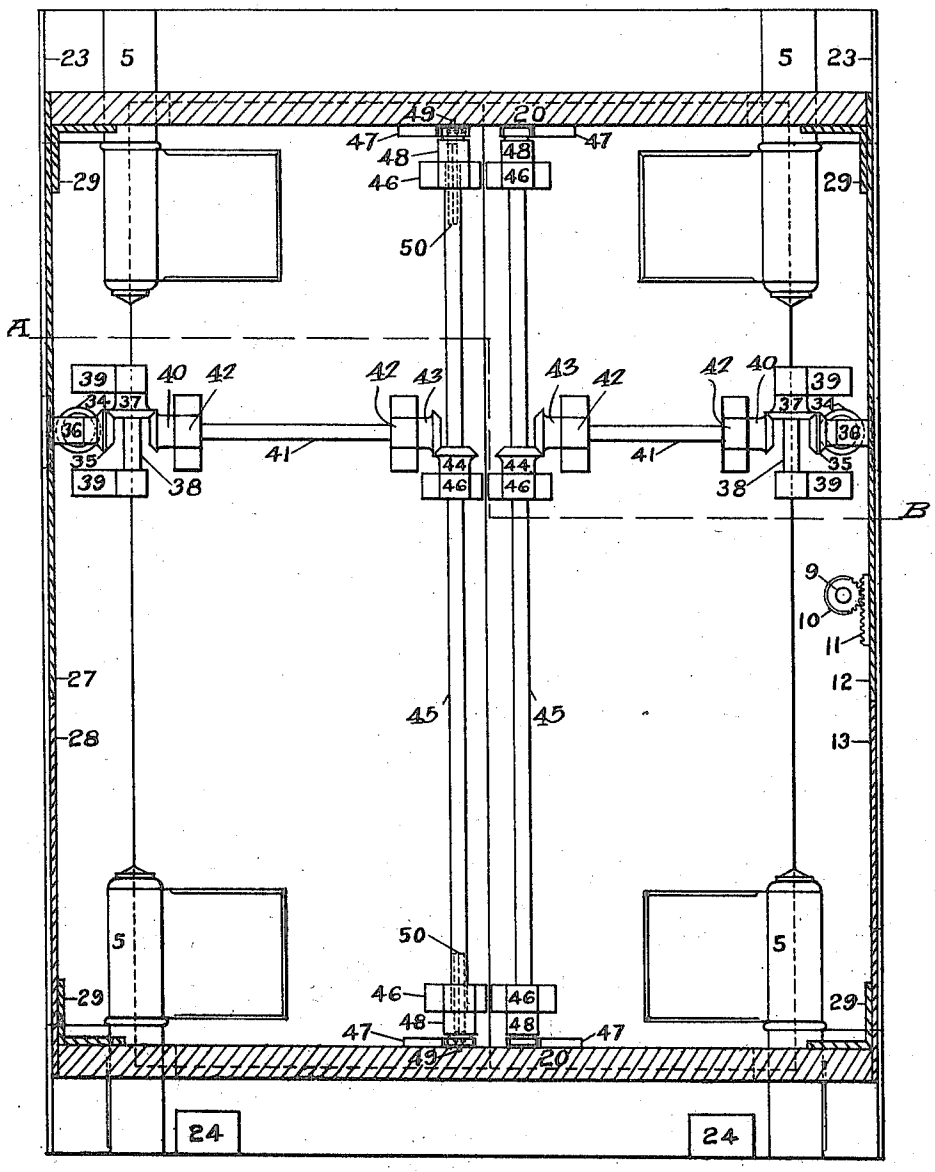


FIG. 4

WITNESSES:

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5 SHEETS—SHEET 5.

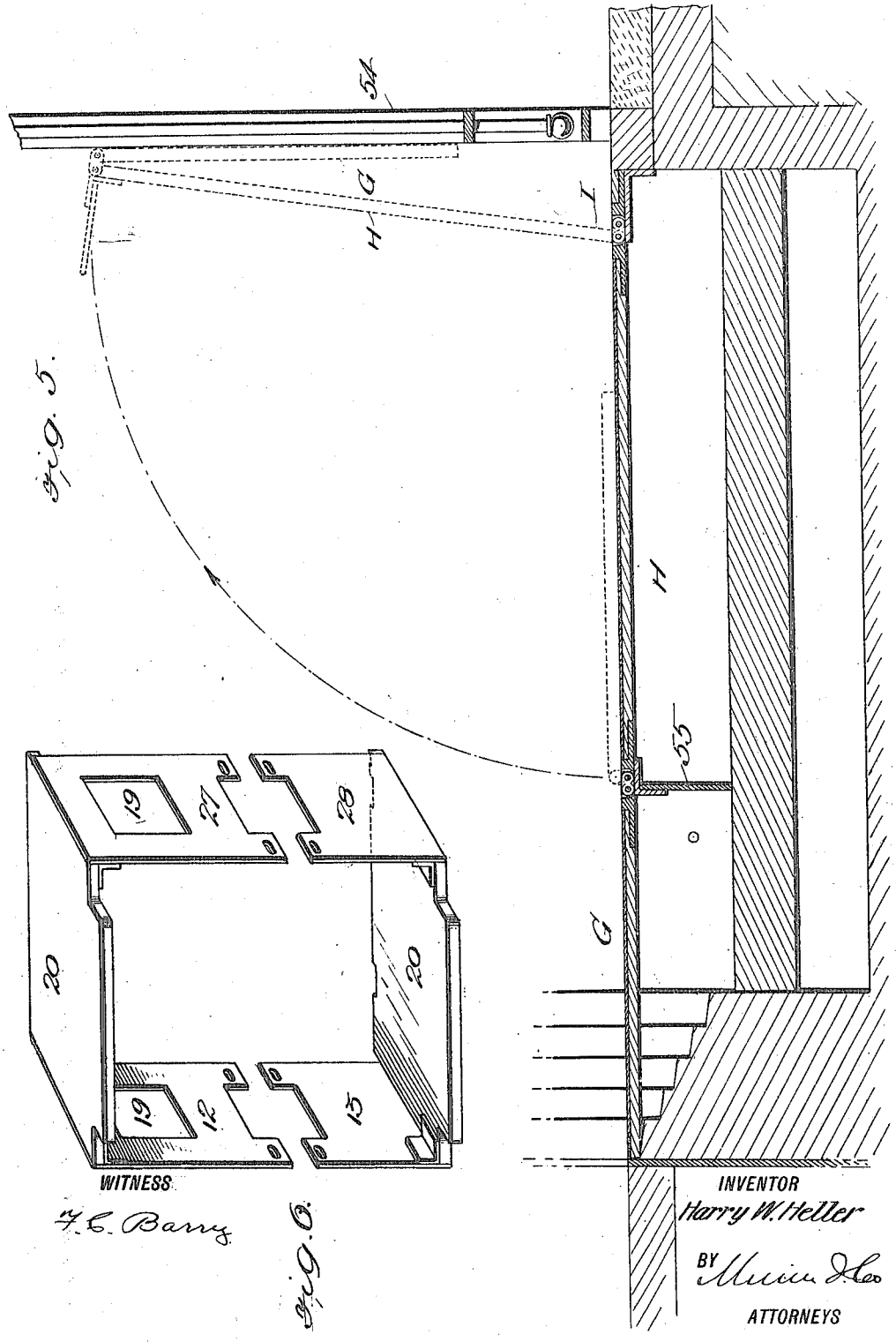


Fig. 5.

Fig. 6.

WITNESS

H. E. Barry

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UNITED STATES PATENT OFFICE.

HARRY W. HELLER, OF PORTLAND, OREGON.

BURGLAR-PROOF SAFE OR VAULT.

1,234,022. Specification of Letters Patent. Patented July 17, 1917.

Application filed September 22, 1915. Serial No. 51,997.

To all whom it may concern:

Be it known that I, HARRY W. HELLER, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Improved Burglar-Proof Safe or Vault, of which the following is a specification.

My invention relates to improvements in protective safe or vault-work and pertains to the entrance door or doors and their closing, opening and holding mechanism also foot-bridge and other appliances pertaining thereto.

The outer doors of the safe or vault open or swing inward and a foot-bridge or walkway extends through the vestibule or vault entrance from the permanent floor of the room in which the safe is located to the corresponding floor of the safe proper.

The details of construction, arrangement, and operation are as hereinafter described, and shown in the accompanying drawing, in which:

Figure 1 is a front elevation of safe or vault.

Fig. 2 is a horizontal section (with doors in open position) on line A—B, Fig. 1 and Fig. 4.

Fig. 3 is a vertical section through depth on line C—D, Fig. 1 and Fig. 2, with door removed.

Fig. 4 is a vertical section through the vestibule, the safe doors shown closed.

Fig. 5 is an enlarged sectional view on line C, D, Fig. 2, of the hinged and foldable foot-bridge.

Fig. 6 is a perspective view of the counterbalance device for locking the swinging doors.

Similar numerals refer to similar parts throughout the several views.

The doors 1 and 2, their corresponding jambs 3 and walls of vestibule 4, constitute the principal protective steel work of the safe or vault entrance and may be built of a series of steel plates known to the art as laminated construction or it may consist of armor-plate or manganese steel as may be elected.

Doors 1 and 2 swing inward on hinges 5 which are located at the inner angles of the stepped jambs of the vault entrance, which incline inward as shown.

Finish plates 6 are ornamental features, also architraves 7.

Hand-wheel 8 controls the counter-balance locking device by connecting with shaft 9 which turns gear 10 engaging rack 11. Rack 11 is attached to vertical member of counter-balance device 12 which is connected to counter-balance 13 by levers 14 and 15 operating on stud 16.

Levers 14 and 15 are connected to the counterbalances 12 and 13 by studs 17 fastened thereto and operating in elongated slots 18 which are cut in counterbalances 12 and 13. Opening 19 in vertical member of counter-balance device 12 is for the purpose of reducing weight only.

Brackets 25 support shaft 9.

Vertical members of counter-balance devices 27 and 28 correspond with counterbalances 12 and 13 and are connected in the same manner.

29 are angle irons connecting horizontal and vertical members of counter-balance device 20.

The latter serves as means for holding the doors in locked position.

Dotted lines, Fig. 3, show counter-balance 20 in the locked position.

At the top said part 20 connects with vertical members 12 and 27, and at the bottom it connects with vertical members 13 and 28. Levers 14 and 15 occur at each side and connect with vertical members 12 and 27, 13 and 28, and are pivoted on the stud 16; the weight of vertical members 12 and 27 and 20 at the top being the same as the vertical members 13 and 28 and 20 at the bottom, they naturally counter-balance each other.

21 and 22 are a part of the walls of the vestibule and are so built for counterbalance 20 to ride against.

Guides 23 keep the counter-balance locking device in its proper riding position. Stops 24 form a rest for counter-balance 20 at the bottom when in the unlocked position.

The numeral 30 indicates ribbed or stepped construction on the backs of the doors.

Hand-wheel 31 operates the closing and opening mechanism for door 2 and hand wheel 32 performs the same function for door 1, details being the same and a description of one is a description of the other.

33 is a shouldered built-in spindle extending through jamb, 34 bevel gear on end of spindle 33, 35 double faced bevel gear, 36 bracket support for gear 35, 37 a bevel gear, 38 shaft for said gear, and 39 a bracket support for said shaft 38, 40 bevel gear,

41 horizontal shaft, 42 bracket supports for shaft 41, 43 bevel gear, 44 bevel gear, 45 vertical shaft, 46 bracket supports for shaft 45, 47 rack attached to counterbalance 20, 48 spur gear and head, 49 stud holding spur-gear 48 in its proper relation to counterbalance 20, 50 square shank connected to spur-gear 48 which slides in shaft 45 when counter-balance locking device is raised or lowered.

A foot-bridge forms a level walk-way as shown in Fig. 3 and is explained by numerals and letters as follows.

Finished floor of room 51, finished floor of vault 52, level foot-bridge 53 extending from room 51 to vault 52.

Said foot-bridge is in three parts, indicated by G, H, and I.

I is permanent, part H is hinged to part I and part G is hinged to part H with flush hinges. Preparatory to closing the doors part G swings over and lies flat on part H, and the latter is then swung back until it rests against grill 54. Attached to the under side of part H and where part G connects is support 55 which rests on counter-balance 20 when the latter is in the unlocked position.

I prefer to have the entire foot-bridge swing in as described, thereby keeping all of the appurtenances within the structure. The foot-bridge is shown by full lines extending horizontally as when in use, and the dotted lines indicate the folded position of the foot-bridge; that is to say, the part G is folded upon the part H, and both are raised and lean backward against the grill 54. Weight of the foot-bridge will be reduced to the minimum by the use of aluminum in its construction.

Grill or gates 54 are for the purpose of keeping those who visit the safe or vault from entering same at will when the main doors are open and in its stead may be substituted an inner steel door or doors and grill or gate. I do not regard the inner steel door a necessity in this class of construction but an optional auxiliary.

Fig. 2 and Fig. 3, numerals 56, 57, 58, 59, 60 and 61 are for the purpose of showing the relation of steel lining, walls, etc., for safe or vault to the balance of the work and are thus explained:

56 steel lining, 57 air chamber between lining 56 and wall 58, 59 finish on face of 58, 60 location of safe deposit boxes or coin compartments, etc., 61 tile floor.

Numeral 62, Fig. 2, represents the time-lock and automatic device which I do not claim as part of my invention, these locks being of standard manufacture and are in general use by safe and vault builders. Locks and their connections to the counterbalance locking device can be of any suitable character.

I prefer to use either three or four movement time lock and automatic device and to locate same as indicated, which places them at the point least susceptible to any agencies that might be employed from the outside in an effort to burglarize the safe or vault.

This location of the locks makes them easy of access and convenient to operate by the custodian.

I claim:

1. A safe having an opening bounded by jambs whose edges are inclined to make the opening wider on the interior than the exterior of the safe, doors hinged within the safe at the inner angles of said jambs and having their edges inclined to fit in the inclined jambs thus preventing the doors being opened outwardly, and means operable from the exterior of the safe for swinging the doors inward and thus away from each other, as shown and described.

2. In a safe or vault having doors hinged within the safe chamber and thus adapted to to swing inward, the jambs of the doorway being inclined inward from each other, mechanism for swinging each of said doors, the same comprising a shaft and gearing supported on the back of the door, a curved rack with which one of the gears engages, another shaft projecting through the safe wall and operatively connected with the first-named shaft, all combined as described.

3. A safe or vault having an adjustable foot-bridge formed of two flat parts hinged together, and one of them provided with a supporting foot and hinged to the fixed portion of the floor, whereby said foot-bridge may be arranged horizontally to form a walk-way, or swung upward out of the way to allow space for closing the safe doors, as described.

4. A safe having an opening bounded by jambs whose edges are inclined to make the opening wider on the interior than the exterior of the safe, and doors hinged within the safe at the inner angles of said jambs and having their edges inclined to fit in the inclined jambs thus preventing the doors being opened outwardly.

HARRY W. HELLER.

Witnesses:

ZORAH M. HELLER,

HARRY YOUNG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."