No. 661,226. Patented Nov. 6, 1900.

H. A. POST.

SAFE.

(Application filed Feb. 26, 1900.)

(No Model.) 2 Sheets—Sheet 1.

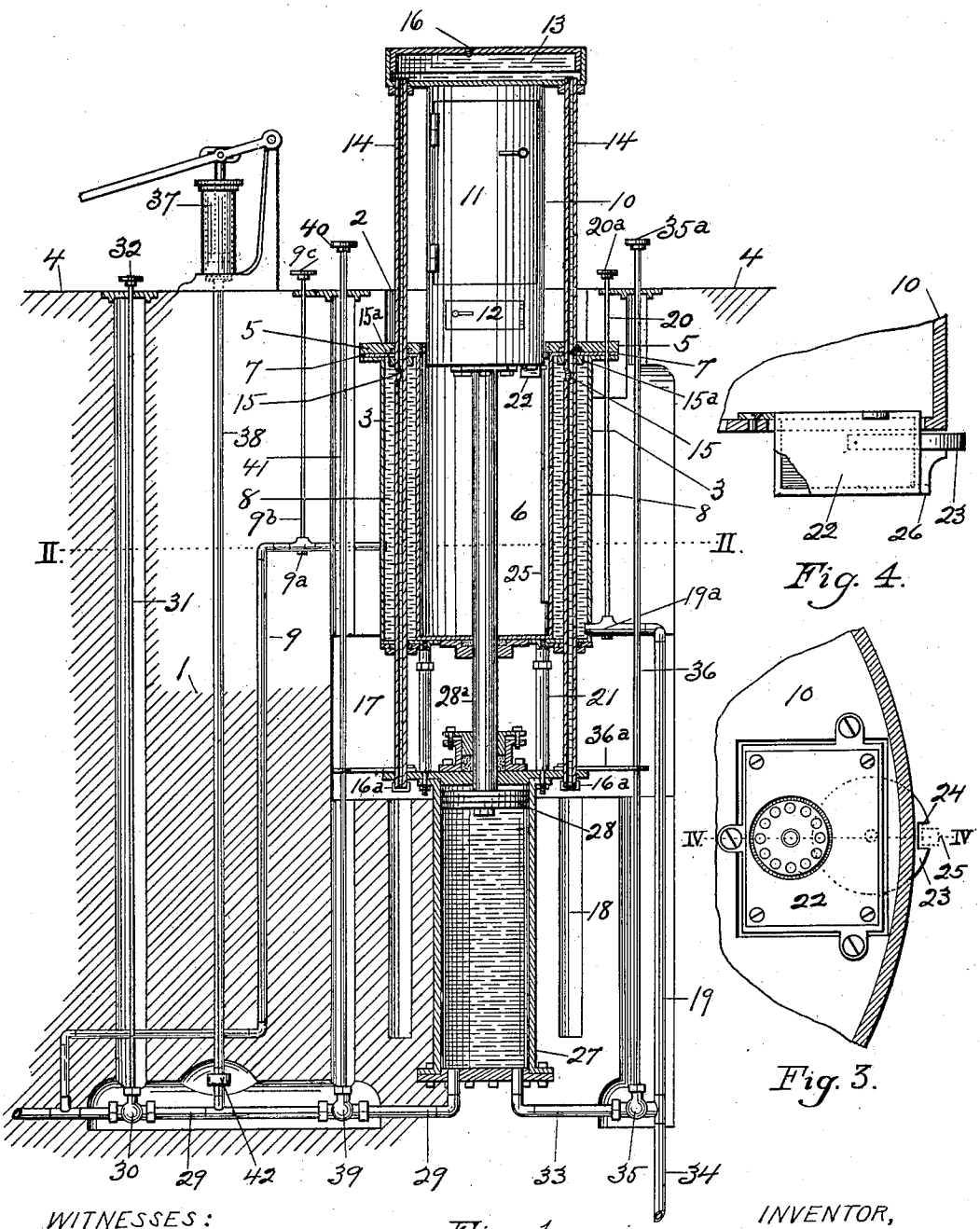


Fig. 1.

Fig. 4.

Fig. 3.

WITNESSES:

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INVENTOR,

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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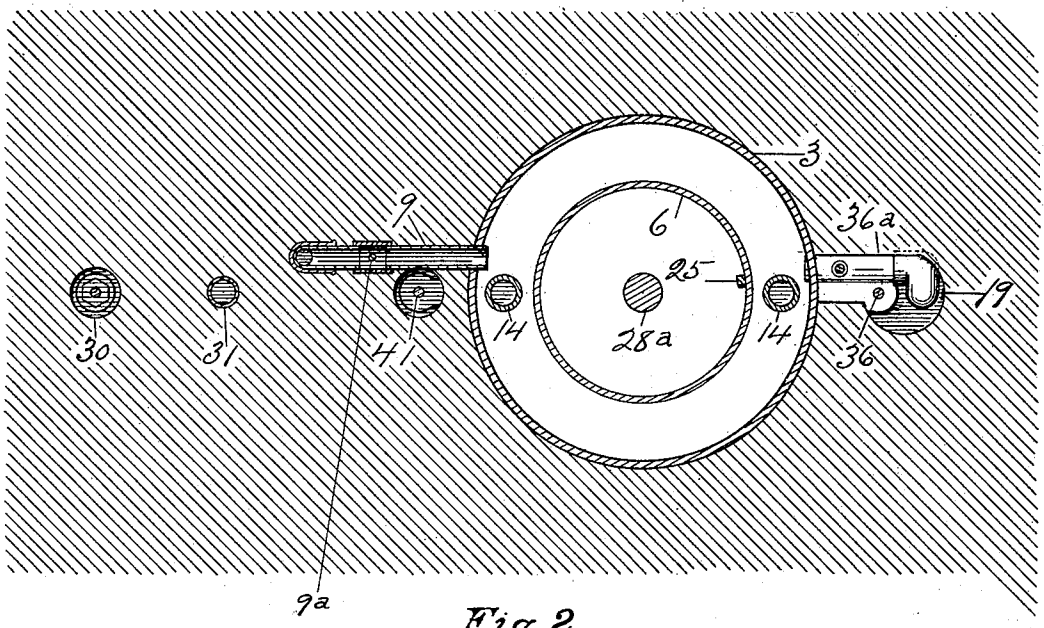


Fig. 2.

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UNITED STATES PATENT OFFICE.

HOWARD A. POST, OF WICHITA, KANSAS, ASSIGNOR OF ONE-HALF TO WILLIAM H. CRADDOCK, OF KANSAS CITY, MISSOURI.

SAFE.

SPECIFICATION forming part of Letters Patent No. 661,226, dated November 6, 1900.

Application filed February 26, 1900. Serial No. 6,557. (No model.)

To all whom it may concern:

Be it known that I, HOWARD A. POST, a citizen of the United States, and a resident of Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Safes, of which the following is a specification.

My invention relates to improvements in safes, and aims to provide a safe for the use of business houses, financial institutions, &c., for keeping valuable articles, money, &c., which shall be so constructed, located, and arranged as to be proof against tampering therewith by burglars or other unauthorized individuals and also secure against fire.

My invention relates especially to a safe located, when immediate access to it is not desired, within a depressed chamber or casing, which casing is itself inclosed within a vault formed within a mass of masonry, concrete, or other protective material. I surround said casing with a body of water connected with the main of the city water-supply, so that said body of water is under pressure, and I provide means of locating a body of water, also under pressure, within a separate chamber above and connected to the safe itself. I also provide means, preferably hydraulic, for lowering the safe into said casing when not in use and raising it therefrom when it is desired to open it, the time of elevating and lowering being regulated by a time-lock device.

The parts of the device are so arranged that the safe cannot be raised from the casing or vault except at the hour coinciding with the adjustment of the time-lock, and if tampered with at any other time a copious discharge of water is insured, materially interfering with the operations of the burglar and leading to detection.

In the accompanying drawings, Figure 1 is a view of my device, partly in elevation and partly in vertical section, showing the safe in elevated position. Fig. 2 is a horizontal section, looking downward, on the line II II of Fig. 1. Fig. 3 is a plan view of a portion of the upper or inner side of the bottom of the safe, showing the time-lock, and also, in horizontal section, a portion of the cylindrical wall of the safe. Fig. 4 is a view, partly in vertical section and partly in elevation, on the line IV IV of Fig. 3.

1 designates a mass of masonry, concrete, or other protective and substantial material, which may be located underground or in any convenient part of a building. Within said masonry or body of concrete is formed a preferably circular chamber or vault 2, and tightly fitted within said vault is a cylindrical metal tank 3. Over the top of said tank, which is located somewhat below the floor-level 4, is placed a horizontal metal plate 5, having its edges embedded in the surrounding masonry and projecting partly over said vault and tank. The central portion of said plate contains a preferably circular opening, beneath and registering with which is suspended a cylindrical metallic casing 6, open at the top and closed at the bottom, and having also at the top a flange-section 7, extending into the masonry or concrete, and also properly secured to the under surface of plate 5 by bolts or screws. (Not shown.) The space between said tank and casing forms an annular chamber 8 to be filled with water, conducted to the same through a pipe 9, leading from the city main and provided with a valve 9^a, said valve being manipulated by a hand-wheel 9^c, mounted on the top of vertical rod 9^b, the object of which is to cut the flow of water through said pipe 9 in the event of a leak being sprung at any of the water-joints of the water-casing.

The safe 10 consists of a metal cylinder closed at the top and bottom and provided with a convenient door 11 for affording access to the interior; also, preferably, a smaller door 12, near the bottom, to afford access to the time-lock, to be described.

Above the top of the safe and secured thereto is mounted a shallow cylindrical water chamber or cap 13 of a diameter greater than that of the safe, and such that it will, when in lowered position, just pass within the circular wall of the vault 2 and make a tight joint therewith. The water-cap 13 is connected with the annular water-chamber 8 by the vertical pipes 14, closed at their lower ends with caps 16^a and having inlets 15, through which water enters said pipes. Water-cap 13 is provided with a removable plug 16 to afford an outlet for any air contained

in said chamber when water is first admitted to it. The pipes 14 are prolonged downward through the bottom of water-chamber 8 and into the manhole - chamber 17, located beneath the safe, and beneath said last-mentioned chamber cylindrical cavities 18 are provided in the concrete to receive the lower ends of pipes 14 when the safe is lowered. Said pipes 14 also serve as guides and partial supports for the safe during its ascent or descent and are provided with collars 15^a. These in conjunction with caps 16^a serve as stops or checks to assist in stopping the safe at the proper place on its ascent, as shown. Chamber 8 is also provided with a drain-pipe 19, leading from a point near the bottom of said chamber to the sewer to serve as an outlet for water or air. Said pipe is controlled by a valve 19^a, said valve being controlled by vertical stem 20 through the medium of a hand-wheel 20^a, mounted on the top thereof. The tank 3 and casing 6 are supported underneath by columns 21 or other suitable support. It is obvious that if any attempt were made to tamper with the safe when in lowered position by drilling through the top of water-cap a flood of water from the main would immediately result.

It is to be understood that the safe when access to it is desired by authorized persons will occupy the position shown in Fig. 1, but at all other times it will be depressed within the casing 6, and the top of water-cap 13 will be level with the floor 4 and making a tight joint therewith. To prevent the elevation of the safe at improper hours or by unauthorized persons, I provide a device consisting of a time-lock 22, secured on the inside of the bottom of the safe and having a circular rotating disk 23 projecting horizontally therefrom toward casing 6. Said disk 23 contains a notch 24, adapted to engage at a predetermined hour a vertical guide and stop 25, firmly secured on the inner side of casing 6. The parts are so arranged that the safe can only be raised when notch 24 is immediately below or in engagement with stop 25, said stop at other times overhanging the edge of disk 23, and thus forming an obstacle to the elevation of the safe. The time-lock may be set to permit the elevation of the safe at any desired hour. A bracket or brace 26 is provided to support the disk 23.

The safe may be elevated or lowered by the use of either hydraulic pressure or compressed air and I have shown devices for effecting the same by water-pressure and in case of necessity, or, if preferred, for substituting air-pressure for such water-pressure. A cylinder 27 is located immediately below and in central longitudinal alinement with the safe 10 and casing 6. Said cylinder contains a piston 28, mounted on a piston-rod 28^a, which extends through the bottom of casing 6 and is secured to the bottom of the safe. A pipe 29 leads from the city main to said cylinder, and said pipe is controlled by a valve 30, having a stem 31, leading to the surface, and a hand-wheel 32. A pipe 33 leads from said cylinder to the sewer connection 34, and said pipe is controlled by a valve 35, having a stem 36, passing through a guide 36^a, leading to the surface, and a hand-wheel 35^a.

It is to be understood that the weight of the safe is to be proportionate to the force of the water-pressure, so that there will be sufficient power to lift it. It is obvious that when the safe is in lowered position, the cylinder 27 being empty, if water is admitted through valve 30 the water will press against piston 28 and the safe will be raised; also, that when the safe is in raised position, as in Fig. 1, valve 30 being closed, if valve 35 is then opened the water contained in the cylinder will be discharged into the sewer through pipe 33 and the safe will be lowered.

To operate the safe by means of compressed air, all water should be withdrawn from cylinder 27 and the valves 30 and 35 closed. Air is then forced into the cylinder through pipes 38 and 29 by the pump 37 or other suitable apparatus, with the result of raising the safe. To retain the compressed air in the cylinder, the valve 39 in pipe 29 is closed by means of the hand-wheel 40, rotating the stem 41. The pipe 38, leading to the force-pump, contains a check-valve 42 to prevent the return of air to the pump during the compressing process and also to exclude water from the air-pipe 38 when water is in use. When it is desired to lower the safe, the valve 35 is opened and the compressed air in cylinder 27 escapes through pipe 33, lowering the safe. When water-pressure is used, the closing of valve 39 after cylinder 27 is filled with water prevents back pressure on the check-valve 42.

It is obvious that any preferred means may be adopted for locking the safe in lowered position for a definite interval and I do not limit my invention to the precise devices shown for that purpose.

Having described my invention, I claim as new and desire to secure by Letters Patent—

1. A safe apparatus comprising a vault or tank contained within a body of masonry, concrete, or other protective material, a casing within said vault, a closed water-chamber, connected with a source of water-supply under pressure, between said casing and the inner walls of said vault, a safe removably located within said casing, a closed water-cap mounted on the upper end of said safe and secured thereto, pipes connecting said water-cap with said water-chamber, whereby constant and equal pressure may be exerted on the water contained within said chambers, and means for elevating and lowering the safe from or within the casing, substantially as set forth.

2. A safe apparatus comprising a vault or tank contained within a body of protective material, a vertical casing within said vault or tank, a water-chamber, connected with a source of water-supply under pressure, be-

tween said casing and the inner walls of said vault, a safe located within said casing and vertically movable therein, a closed water-cap mounted on the upper end of said safe and secured thereto, pipes connecting said water-cap with said water-chamber, whereby constant and equal pressure may be maintained on water contained within said chambers, means for elevating or lowering the safe from or within the casing, and means for holding said safe in lowered position for a fixed period and permitting its elevation at the expiration of such period, the same consisting of a mechanically-rotated disk mounted horizontally on the safe and having a notch in its edge, and a guide-stop mounted on the inside of the casing, with which said notch registers at fixed intervals, substantially as set forth.

3. A safe apparatus comprising a tank contained within a body of protective material, a vertical casing within said tank, a water-chamber, connected with a source of water-supply under pressure, between said casing and tank, a safe located within said casing and vertically movable therein, a closed water-cap secured on the upper end of said safe, pipes connecting said water-cap with said chamber, whereby constant and equal pressure may be maintained on water contained within said chambers, means for elevating and lowering the safe from or within said casing, and means for holding said safe in lowered position for a fixed period and permitting its elevation at the expiration of such period, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

HOWARD A. POST.

Witnesses:
N. H. ALEXANDER,
O. H. BOYLE.