Aug. 21, 1923. 1,465,362

K. MAMIYA

INDICATING MECHANISM FOR STRONG BOXES AND SAFES

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Fig. 7.

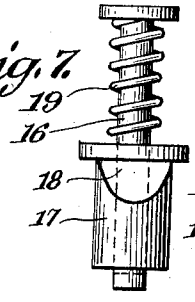


Fig. 7a

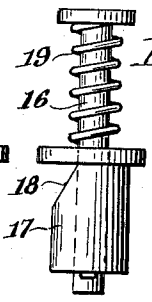


Fig. 7b

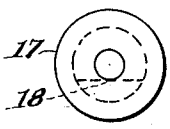


Fig. 1.

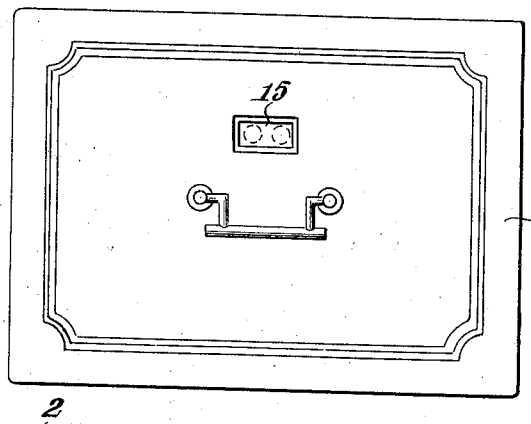


Fig. 2.

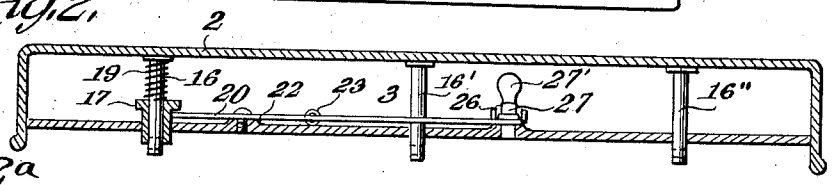


Fig. 2a

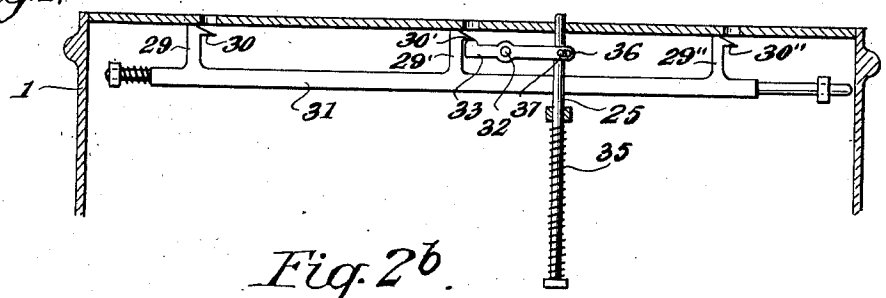
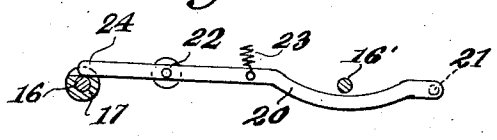


Fig. 2b



Inventor:
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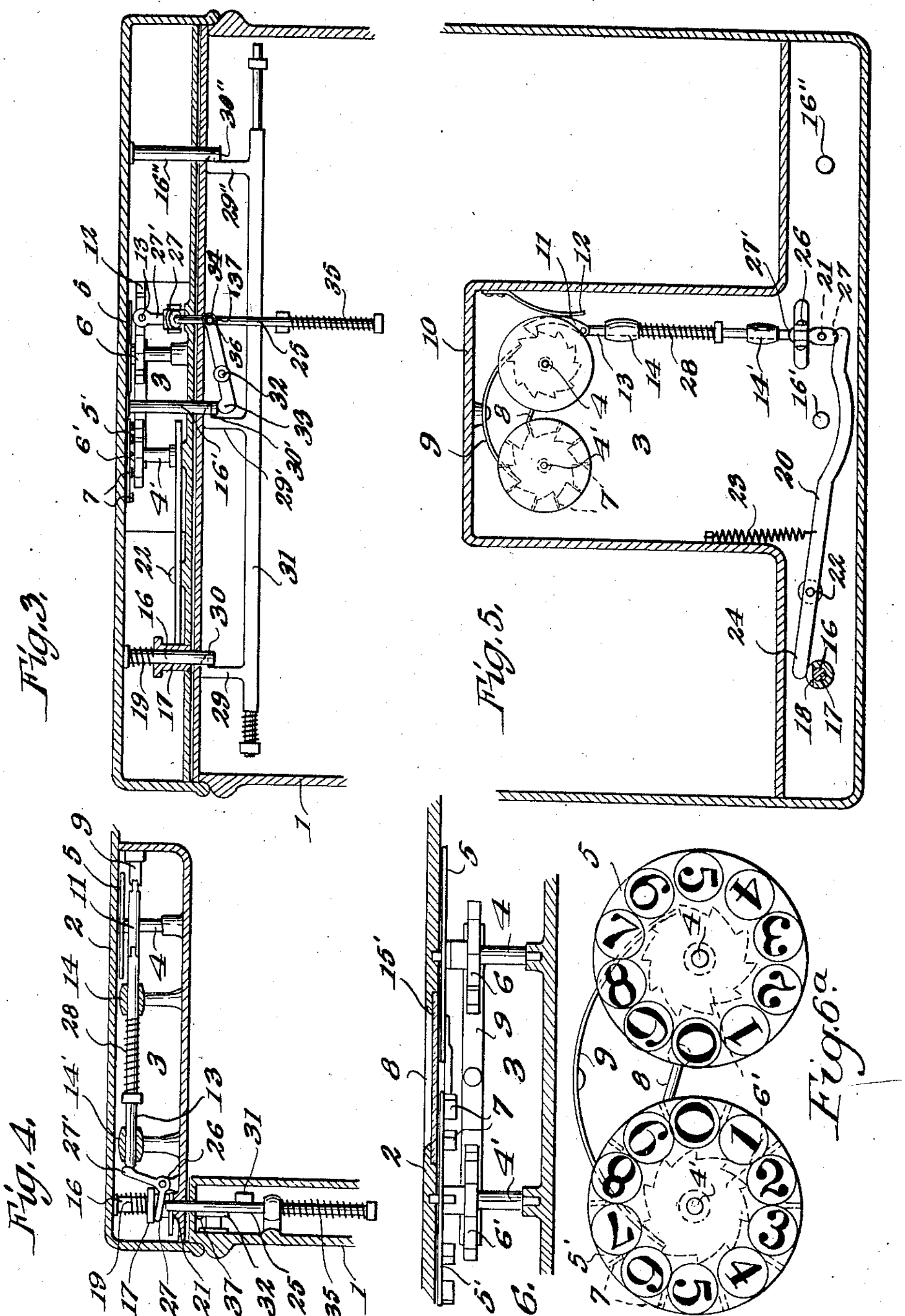
Aug. 21, 1923. 1,465,362

K. MAMIYA

INDICATING MECHANISM FOR STRONG BOXES AND SAFES

Filed May 8, 1919 2 Sheets-Sheet 2



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By: B. Singer, atty.

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UNITED STATES PATENT OFFICE.

KATSUSABURO MAMIYA, OF OHITO, JAPAN.

INDICATING MECHANISM FOR STRONG BOXES AND SAFES.

Application filed May 8, 1919. Serial No. 295,645.

To all whom it may concern:

Be it known that I, KATSUSABURO MAMIYA, a subject of the Emperor of Japan, and a resident of Ohito, Tanakamure, Tagata-gun, Shizuoka-ken, Japan, have invented new and useful Improvements in an Indicating Mechanism for Strong Boxes and Safes, of which the following is a specification.

This invention relates to an indicating mechanism and aims to particularly provide a device of this nature adapted to be used in connection with strong boxes or safes, to indicate the number of times which the same has been opened.

It is a well-known fact that quite a number of thefts have occurred where it would have been possible to apprehend the thief if the guardian of the strong box or safe would have been able to have ascertained, immediately upon an investigation of the strong box or safe, that the same had been opened during his absence. It is often the case that theft is not detected until a great deal of time has elapsed when certain valuables may be looked for without being found, which is the only indication that this has occurred.

Having described the object of my invention, I desire to direct attention to the drawings in which:—

Figure 1 represents a plan view of my improved strong box or safe with an indicating mechanism attached.

Fig. 2 is a sectional front elevation of the cover and the devices mounted therein.

Fig. 2^a is a similar view of the box or safe.

Figure 2^b is a detail plan of the protecting lever 20, and its connections.

Figure 3 is a more detailed view, also in sectional front elevation, but with the cover closed.

Figure 4 is a sectional side elevation with the cover closed.

Figure 5 is a detail plan view of the indicating mechanism, as well as other details of construction.

Figure 6 is a front elevation of the same.

Fig. 6^a is a detail plan of the same.

Figure 7 illustrates a detail of construction associated with a lock to prevent tampering with the indicating mechanism.

Fig. 7^a is a similar view at right angles to Fig. 7.

Fig. 7^b is an end elevation of the same.

In these views like reference characters indicate like parts, the numeral 1 designating the body proper of the safe or strong box, and 2 the lid or door thereof. The door is adapted to provide a space 3 in which are provided spindles 4 and 4′ mounting the discs 5 and 5′ which are actuated by the ratchet wheels 6 and 6′. Extending downwardly from the lower face of the dial disc 5′ are lugs 7 equal in number to the figures printed upon the upper face of the dials 5 and 5′, a conventional lug 8 being provided upon the dial 5 for engaging with the downwardly projecting lugs 7 of the dial 5′ whereby, upon one complete revolution having been performed by the dial 5, the dial 5′ will be moved forward one notch in the conventional manner.

A spring 9, conveniently attached to lid 2 engages with its end the ratchets 6 and 6′ to prevent any premotion of the dials 5 and 5′. A pawl 11 engages the ratchet 6 by virtue of the spring 12 bearing against said pawl. Projecting rearwardly from the end of said pawl is a rod 13 mounted in guides 14 and 14′, a spring 28 being positioned between such guides and normally tending to draw the rod 13 and consequently the pawl 11 rearwardly so as to revolve the dial 5 by means of the ratchet 6.

Provided in the upper face of the door or lid 2 is a window 15 through which the dials 5 and 5′ may be observed.

The lid 2 is further provided with locking posts 16, 16′ and 16″, the post 16 being encircled by a sleeve 17, including a beveled portion 18. Interposed between the upper portion of the sleeve 17 and the upper end of the rod 16 is a spring 19 adapted to exert downward pressure upon the sleeve 17.

As seen most clearly in Figure 5, a lever 20 pivoted at 22 and having a short arm 24, is provided which short arm 24 is adapted to bear against the face of the sleeve 17 and upon the lowering thereof, to ride inwardly toward the rod 16 along the inclined face 18 of the sleeve, the spring 23 being provided to insure this motion.

An opening 21 is provided in the lower floor of the space 3 which opening is adapted to receive the upper end of a rod 25 mounted in the main part of the safe 1 as shown best in Figure 4. A bell crank lever, including the arms 27 and 27′ is fulcrumed as at 26 to the lower floor of the space 3 and is adapted to be engaged by the upper end of the lever 25, which lever 25 is acted upon by a spring 35 which normally tends to pull the same downwardly.

Secured to a rod 31 are uprights 29, 29′ and 29″ terminating in hook-shaped ends 30, 30′ and 30″, which are adapted to engage the lower end of the rod 16, 16′ and 16″ respectively.

A lever, including arms 33 and 36 is fulcrumed as at 32 and the arm 36 is provided with an elongated slot 37 which is adapted to engage a pin 34 secured to the rod 25.

In operation it will be seen that the cover being closed the rods 16, 16′ and 16″ will become engaged by the ends 30, 30′ and 30″ of the uprights. Simultaneously, the lower face of the sleeve 17 will be caused, by virtue of its engagement with the body portion 1 of the safe, to ride upwardly on the rod 16, thus pushing the end 24 of the lever 20 inwardly and the end 20 thereof outwardly. It will be noted that the end 20 normally covers the opening 21, i. e., when the cover is opened, but when the cover is being closed, the aforementioned action will take place, resulting in the opening 21 being cleared by the end 20 of the lever.

Simultaneously with the aforementioned operation, the end of the rod 16′ will engage the end 33 of the lever fulcrumed at 32, causing the upper end of such lever to move upwardly, which by reason of the connection 37 and 34, moves the rod 25 upwardly against the action of the spring 35. The upper end of the rod 25 will bear against the lower face of the arm 27 of the bell crank fulcrumed at 26, causing the second arm 27′ to move inwardly against the end of the rod 13 against the action of the spring 28, causing the pawl 11 to engage the ratchet 6 one notch further up.

Upon opening the lid or cover of the safe, it will be seen that the sleeve 17, by reason of the compression of the spring 19, will move downwardly, allowing the arm 24 of the lever fulcrumed at 22, to ride inwardly along the inclined surface 18 of said sleeve resulting in the swinging of the opposite end 20 of said lever so as to cover the opening 21, to effectively prevent any tampering with the indicating mechanism.

Simultaneously with the aforementioned action, the rod 16′ will release the arm 33 of the lever fulcrumed at 32 permitting such arm to move upwardly, the opposite arm 36 moving downwardly and carrying with it the rod 25 by virtue of the action of the spring 35. This movement results in the withdrawal of the upper end of the rod 25 from the space 3, thus permitting the arm 27 of the bell crank pivoted at 26 to move downwardly and also swinging the arm 27′ of such bell crank rearwardly, thus permitting the rod 13 to move under influence of the spring 28 whereby to pull the pawl 11 and move the indicating mechanism one notch.

From the foregoing it will be seen that I have constructed a mechanism such as described in the preamble, which will immediately indicate every opening of the lid or door of the safe or strong box, at the same time providing a mechanism which will effectively prevent any tampering with the indicating mechanism to detect such opening.

Having described my invention, what I claim is:—

1. A safe having a door, indicating mechanism mounted on the door, operating means for said indicating mechanism also mounted on the door and an element arranged in the body of the safe and effective on the closing of the door to coact with said operating means to render them operative, and means to prevent the indicating mechanism from being operated when the door is open.

2. A safe having a door, indicating mechanism mounted on the door and including on the inner side of the door a casing element having an opening, operating means for said indicating mechanism including an element arranged in the body of the safe, to enter said opening when the door is closed and thereby enable the indicating mechanism to be operated, and automatically operating means to close said opening and thereby prevent the indicating mechanism from being operated when the door is open.

In witness whereof I affix my signature.

KATSUSABURO MAMIYA.