

(Model.)

F. M. WILLIAMS.  
SAFE BOLT RETRACTING DEVICE.

No. 446,940.

Patented Feb. 24, 1891.

Fig. 1.

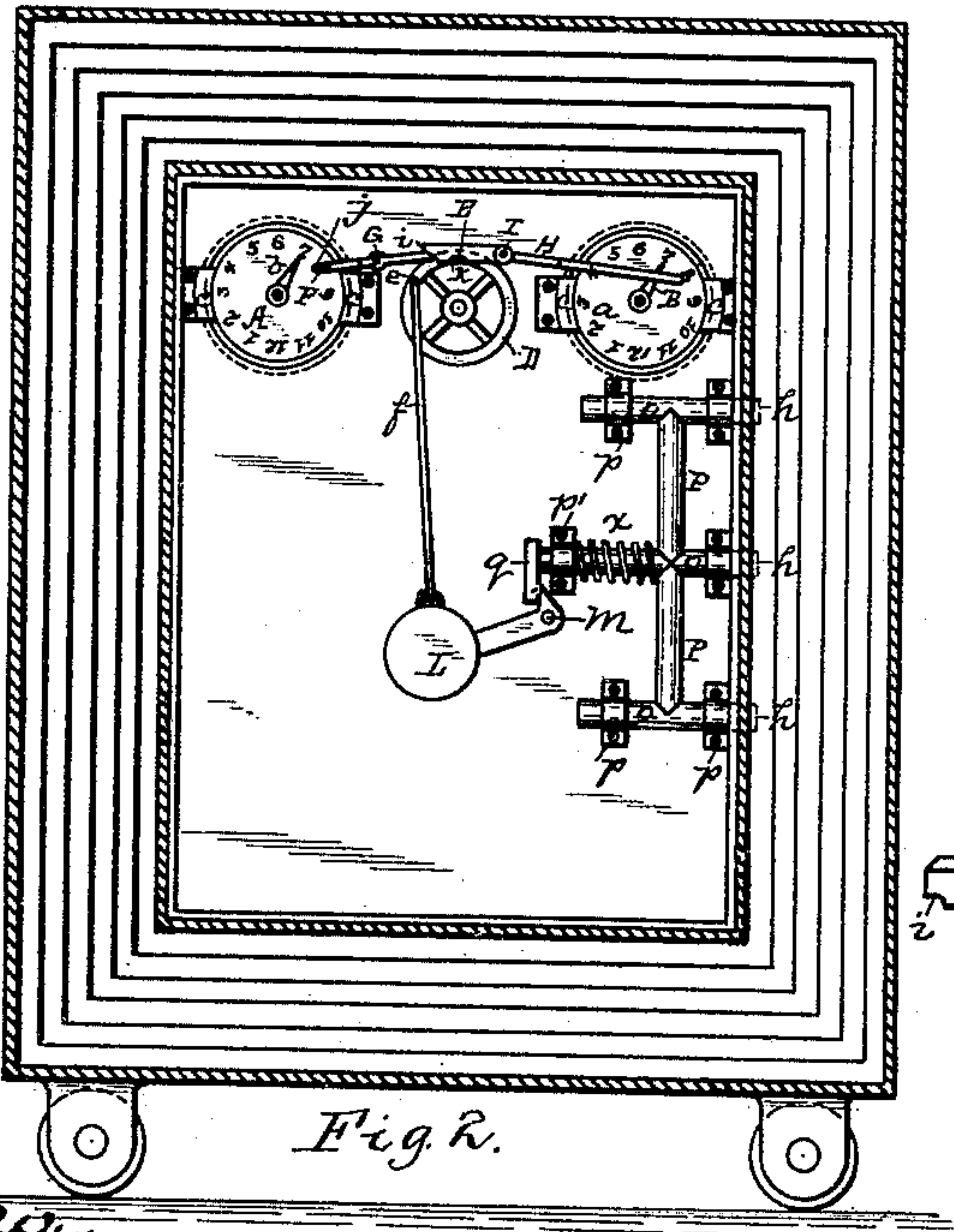
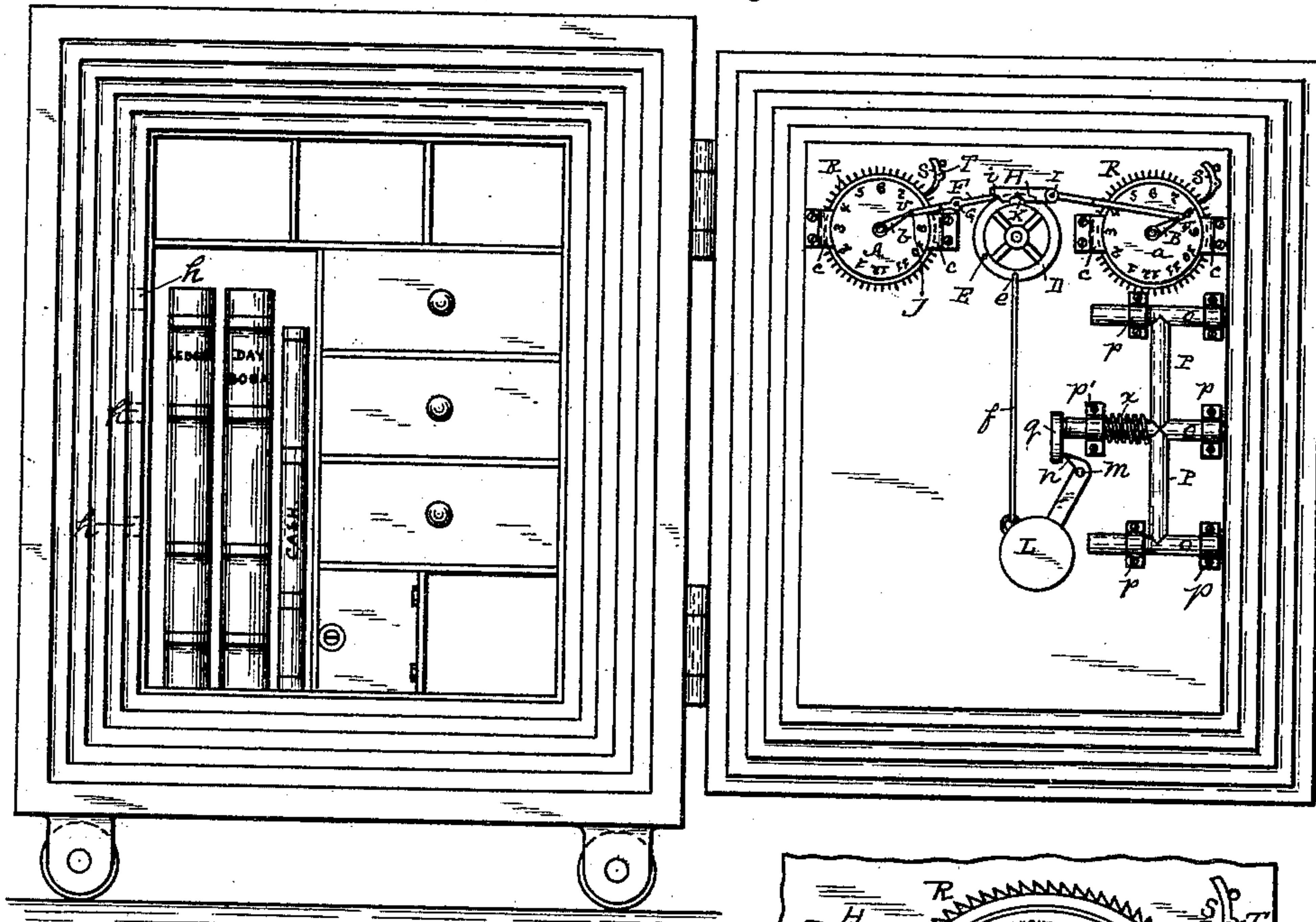


Fig. 2.

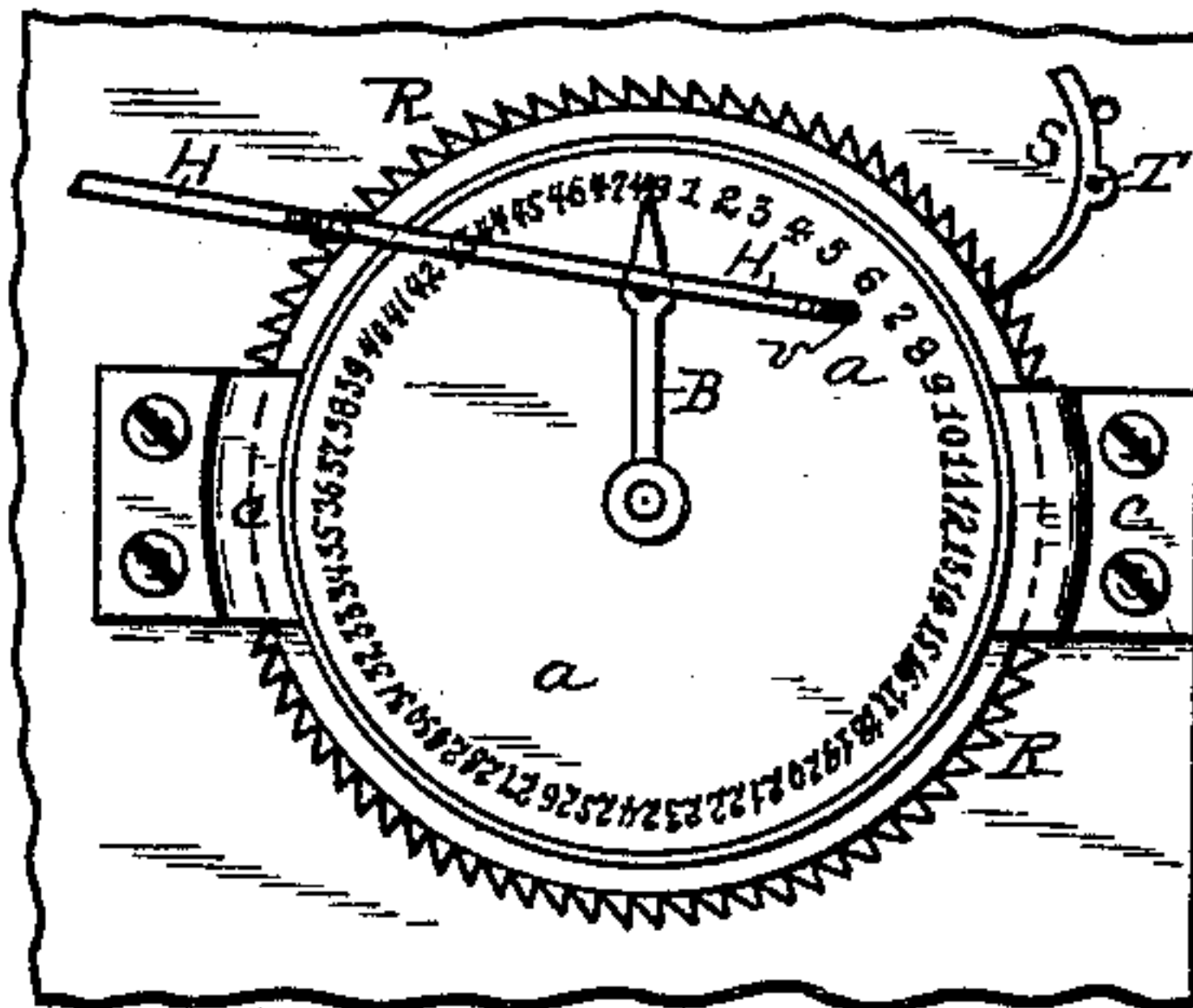


Fig. 3.

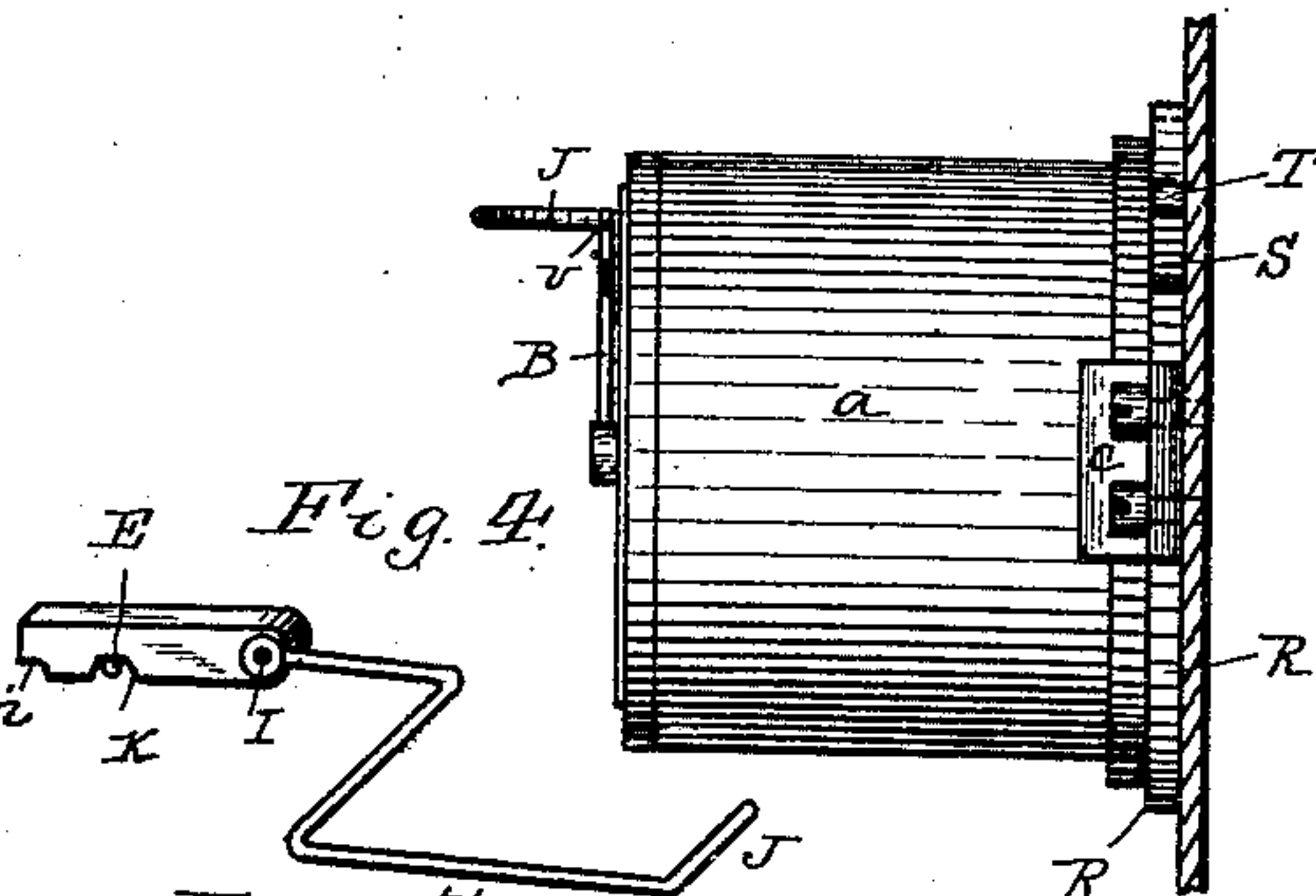


Fig. 4.

Fig. 5.

Inventor:  
Francis M. Williams,  
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Witnesses:  
J. N. Cook,  
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# UNITED STATES PATENT OFFICE.

FRANCIS M. WILLIAMS, OF BROWNSVILLE, PENNSYLVANIA, ASSIGNOR OF  
ONE-HALF TO R. R. BULGER AND W. H. BULGER, OF SAME PLACE.

## SAFE-BOLT-RETRACTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 446,940, dated February 24, 1891.

Application filed April 15, 1890. Serial No. 348,075. (Model.)

*To all whom it may concern:*

Be it known that I, FRANCIS M. WILLIAMS, a citizen of the United States, residing at Browns-ville, Fayette county, Pennsylvania, have invented a new and useful Improvement in Time-Safe-Bolt-Retracting Devices; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this description, in which drawings—

Figure 1 is an elevation of safe with door open, showing rear elevation of same with my improvement secured thereto. Fig. 2 is a sectional elevation of safe-door, showing position of bolt-locking device when locked. Fig. 3 is an enlarged view of face of time-piece and pawl secured on door. Fig. 4 is a side elevation of same. Fig. 5 is an enlarged view of lever H.

My invention relates to a time-lock apparatus especially adapted to safes and vaults, the particular object of which is to furnish safes and vaults with a time-lock fastening constructed and placed wholly within the safe or vault and having no connection or communication with the outside of the door or other part of the safe or vault, thus avoiding all danger from drilling and blasting, and at the same time furnishing a better, less complicated, and more reliable means of securing safes and vaults.

I construct my apparatus of iron, steel, brass, and other suitable material.

The particular improvements embodied in my invention will be hereinafter described and claimed.

In the apparatus embodying my invention I place two forty-eight-hour time-pieces A a, having one hand each B b against the interior side of safe or vault door at points near to and about equidistant from the top and sides of the door and secured to the door by the grooved fastenings or holders c c in such a manner that each time-piece may be adjusted to position by being turned to the right or left, as may be required. Between the two time-pieces A a, I place the balance-wheel D. On the side of the balance-wheel D, I place cog-pin E. Between time-piece A and the bal-

ance-wheel D, I place the lever F, balanced on the pivot G and having arm or jog j to meet hand b on time-piece A and shaped to fit round said time-piece. Between the time-piece a and the balance-wheel D, I place the lever H, balanced on the pivot I and having an arm or jog J to meet hand B on time-piece a and shaped to fit round said time-piece, as shown at Fig. 5, and having a notch K to fit cog-pin E on balance-wheel D. The notched end of lever H is made heavy in proportion, so that its weight will hold it securely in position on cog-pin E. On the interior side of the safe or vault door, and below the parts above described, I place a counterpoise L, swung on a pivot m and having extension or lip n. I connect the counterpoise L with balance-wheel D by rod f at e. On the lock side of the door I place lock-bolts O O O, connected by upright P and secured to surface of the door by fastenings p p p p p, the center bolt having a head q, resting against extension or lip n of counterpoise L. I surround the center bolt between upright P and fastening p' by spiral spring X, arranged to press outward and thus force bolts O O O into the keeper-holes h h h in the side of the safe or vault and lock the door.

On the time-pieces A a I place ratchet-wheels R, and to fit ratchet-wheels R a keeper or pawl S, secured to surface of door by pivot-pin T. This ratchet-and-pawl combination prevents premature turning of the time-pieces by reaction or other causes.

In operating my invention, the door being open, I raise the counterpoise L, place the balance-wheel D in position, with the cog-pin E fitted in the notch K in lever H, with the end of lever F under the end of lever H at point of contact i, as shown at Fig. 2. I then turn time-pieces A a with respective hands B b at distance from point of contact with lever F and H at v v to correspond to the number of hours it is desired to have the door remain closed. I then close the door. The beveled ends of the bolts being brought in contact with the correspondingly-beveled face of the inner jamb of the safe force said bolts back sufficient to permit said bolts entering the orifices in the sides of the jamb, thereby locking same, and, the clock-work of time-



pieces being in motion, the hands B b on time-  
pieces A a turn on with time until they come  
in contact with the arms or jogs j J on bal-  
anced levers F and H, or either of them, when  
5 the pressure of the hands B b, or of either of  
them, tilts the respective levers F and H,  
raising the notched end of lever H from the  
cog-pin E on balance-wheel D and setting  
the balance-wheel and counterpoise free.  
10 A downward movement of the counterpoise  
L is then made by its own weight and oper-  
ates by leverage of the lip n on the bolt-head  
Q and draws the connected lock-bolts O O O  
from the keepers h h h in the side of the safe  
15 or vault and unlocks the door. The weight  
of the counterpoise holds the bolts in reverse  
position until the apparatus is reset.

I use two time-pieces, so that if either  
should fail or stop the other would alone do  
20 the required work, a by driving hand B in  
direct contact with lever H, and A by driv-  
ing hand b in contact with lever F, thereby  
raising lever F, and with it lever H, and un-  
locking door, as hereinbefore described.

25 What I claim, and desire to secure by Let-  
ters Patent, is—

1. In a time-safe-bolt-retracting device, the  
combination of a solid door, two time-pieces  
suitably secured on the inner side thereof, a  
30 balance-wheel intermediate said time pieces,  
having a cog-pin on the side thereof, levers  
H and F, suitably pivoted between said time-  
pieces near said balance-wheel, the outer  
ends thereof projecting toward said time-  
35 pieces and terminating in a jog or inwardly-  
projecting arm, the inner end of said lever H

having on its lower surface a notch adapted  
to fit the cog-pin on the side of said balance-  
wheel, a counterpoise pivoted upon an arm  
secured thereto, said arm having a lip, said 40  
counterpoise being secured to said balance-  
wheel by a rod, and the locking-bolts, the in-  
ner end of the center one of which is sur-  
rounded by a spring and provided with a  
downwardly-projecting head, substantially as 45  
and for the purpose herein set forth.

2. In a time-safe-bolt-retracting device, the  
combination of a solid door, two time-pieces,  
a ratchet-wheel and pawl to prevent prema-  
ture rotation of the same, a balance-wheel in- 50  
termediate said time-pieces and having a cog-  
pin on the side thereof, levers H and F, suit-  
ably pivoted between said time-pieces near  
said balance-wheel, the outer ends of said le-  
vers terminating in an inwardly-projecting 55  
arm adapted to strike or come in contact with  
the hands of said time-pieces, the inner end  
of said lever H having on its lower surface a  
notch adapted to fit the cog-pin on the side of  
said balance-wheel, and a counterpoise pivoted 60  
upon an arm secured thereto, said arm hav-  
ing a lip, and said counterpoise being secured  
to said balance-wheel by a rod and sliding  
bolts, the inner end of the center one of which  
is surrounded by a spring and provided with 65  
a downwardly-projecting head, substantially  
as and for the purposes herein set forth.

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Witnesses:

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