

W. E. WILKINSON & G. L. MUMMERT.
BOLTWORK FOR CIRCULAR DOORS FOR SAFES,
APPLICATION FILED OCT. 1, 1908.

929,907.

Patented Aug. 3, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

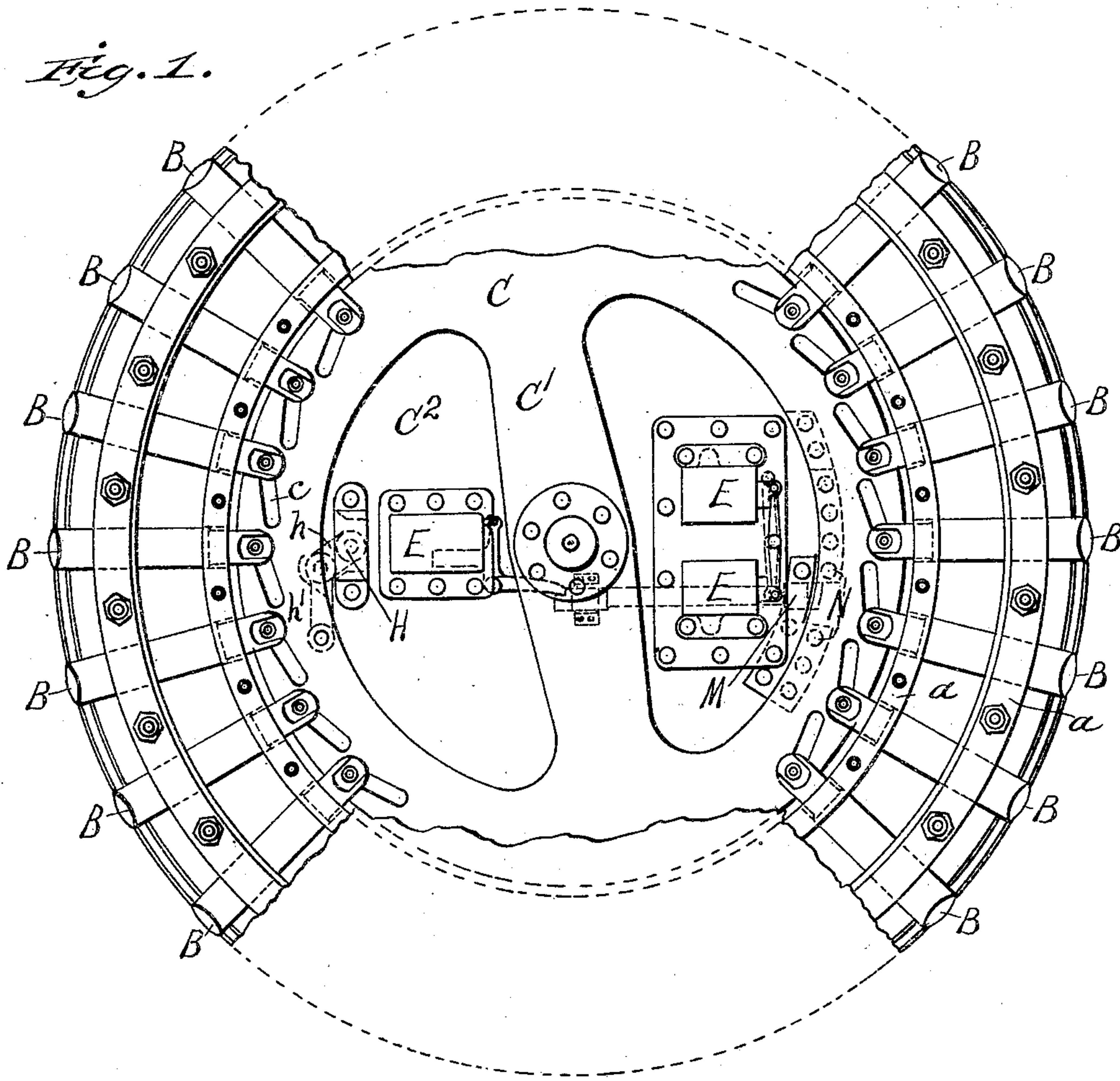
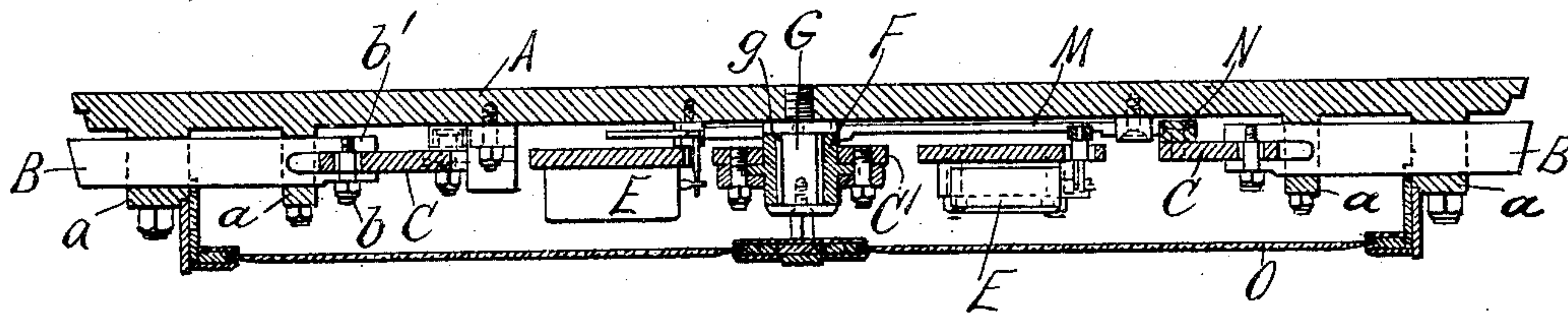


Fig. 2.



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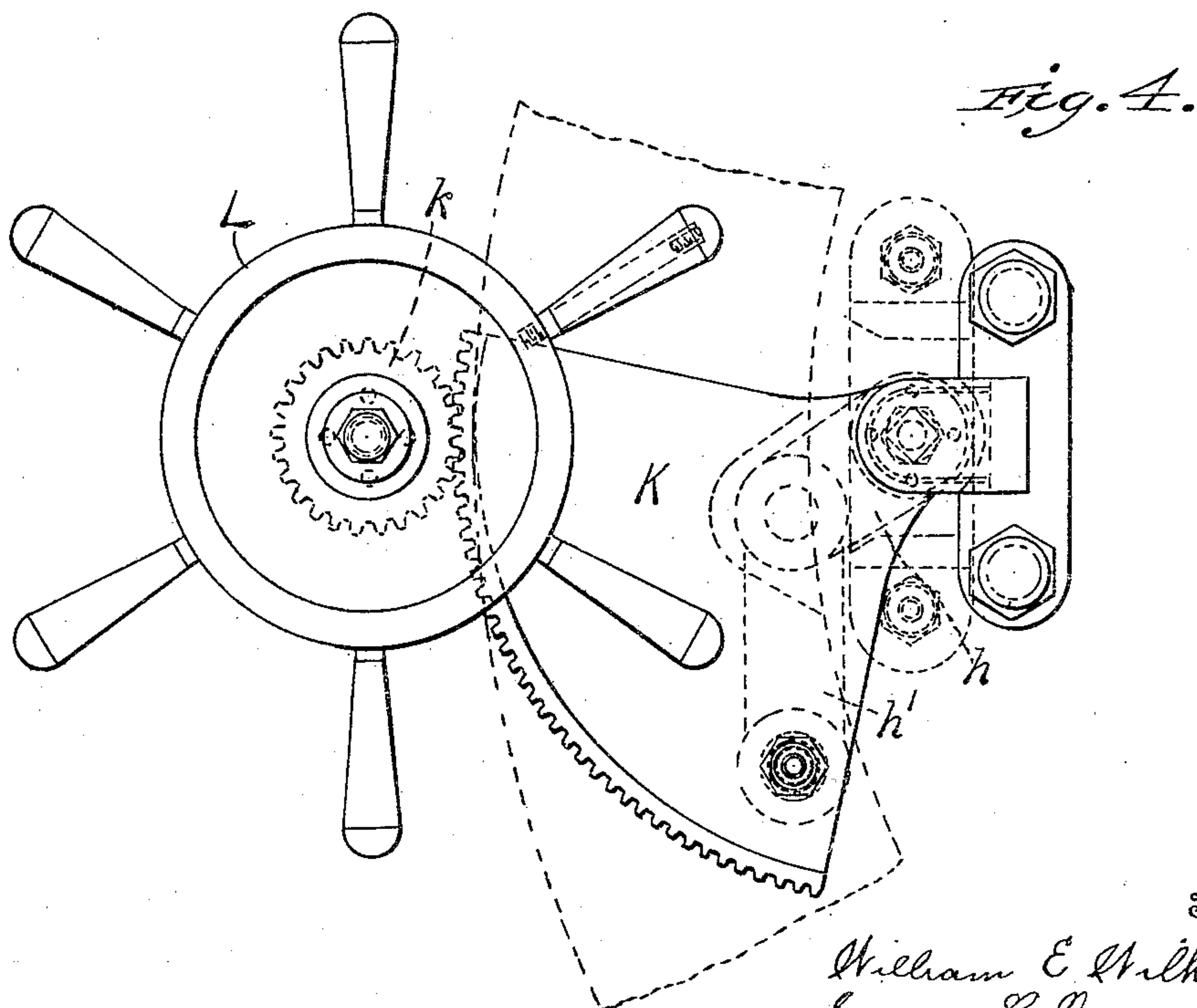
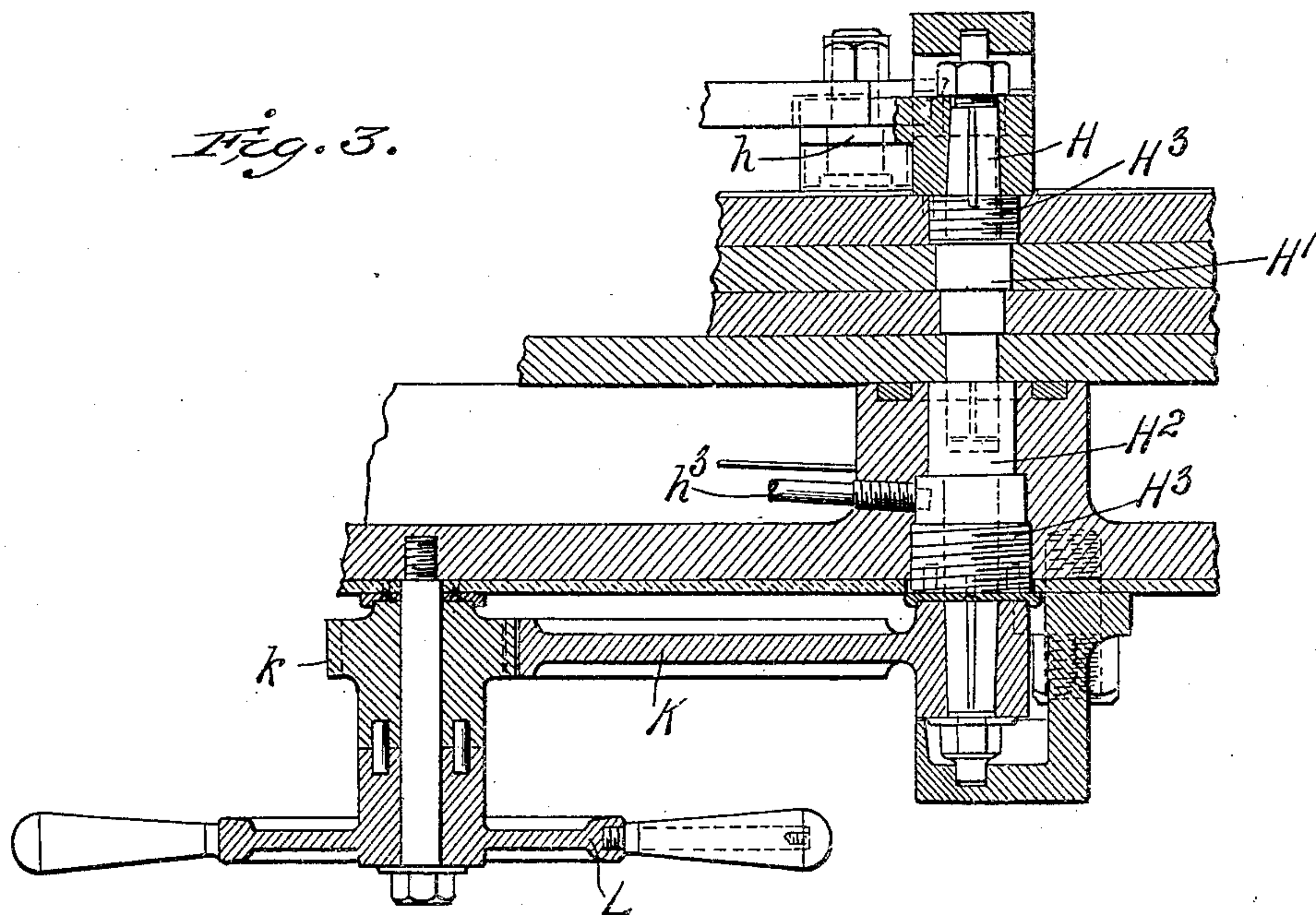
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UNITED STATES PATENT OFFICE.

WILLIAM E. WILKINSON AND GEORGE L. MUMMERT, OF YORK, PENNSYLVANIA, ASSIGNORS
TO YORK SAFE & LOCK COMPANY, OF YORK, PENNSYLVANIA, A CORPORATION OF
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BOLTWORK FOR CIRCULAR DOORS FOR SAFES.

No. 929,907.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed October 1, 1908. Serial No. 455,679.

To all whom it may concern:

Be it known that we, WILLIAM E. WILKINSON and GEORGE L. MUMMERT, citizens of the United States, and residents of York, York county, Pennsylvania, have invented certain new and useful Improvements in Boltwork for Circular Doors for Safes; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and to the characters of reference marked thereon.

The present invention relates to improvements in bolt work for circular doors, the object of the invention being to provide an improved arrangement of the mechanism for simultaneously projecting and withdrawing radially arranged bolts adapted to secure all portions of the door in its jamb or frame, and the invention consists in certain novel details of construction and combinations and arrangements of parts all as will be hereinafter more fully described and pointed out particularly in the appended claims.

Referring to the accompanying drawings: Figure 1 is an elevation, partly broken away, of the inner side of a circular door embodying the present improvements, the glass door and frame being removed. Fig. 2 is a transverse section through the parts illustrated in Fig. 1. Fig. 3 is a detail transverse section on an enlarged scale showing the mechanism for moving the bolt operating wheel. Fig. 4 is a front elevation of the movable parts illustrated in Fig. 3, and with a section of the bolt operating wheel in dotted lines.

Like letters of reference indicate the same parts in all the views.

The letter A indicates the inner plate of a circular door for safes. On the rear face of this plate two parallel annular projections *a* are formed and provided with a series of radial bearings or apertures for the reception of the radially disposed bolts B adapted to project beyond or be withdrawn within the periphery of the door in the well understood manner. Each radial bolt B is bifurcated at its inner end for the reception of the periphery of a bolt operating wheel C, the connection between the bolts and wheel C being formed by transverse pins, preferably in the form of threaded bolts *b* secured in the arms *b'* of the locking bolts B and

passing through tangentially arranged slots *c* in the rim of the bolt operating wheel C. By this arrangement of the parts, rotation of the wheel in one direction or the other causes the bolts to be projected or retracted, as the case may be, the rim of the wheel prevents any rotation of the locking bolts B on their own axes, and the power for moving the bolts is applied in the axial line of each bolt, whereby any tendency to bind or stick in their bearings is effectually prevented.

In the preferred construction, the wheel C is cut from a solid flat plate of metal with a single cross piece C', and apertures C² at each side of the cross piece in which the locks E—E may be conveniently located and secured to the door plates in the usual or preferred manner. The cross piece C' is connected with or has formed upon it a central hub or bearing F adapted to receive a journal G, and where desired an antifriction or roller bearing formed by rollers *g* may be interposed between the journal and hub of the wheel to prevent undue friction in moving the parts from their locked to unlocked position, and vice versa.

In practice, the central bearing for the wheel supports practically the entire weight of the same, and being small as compared with the diameter of the wheel offers but little or no resistance to its rotary movement, the device in this respect being much superior to devices wherein the operating wheel is in the form of a ring supported by bearings at or near its periphery, as has heretofore been proposed.

For moving the bolt operating wheel, a crank shaft H is journaled in the plates of the door and provided with a crank arm *h* connected by a link *h'* with the rim of the wheel C, as will be readily understood from an inspection of Figs. 1 and 4 of the drawing. While the crank shaft H extends entirely through the door, it is preferably formed in such manner that the removal or breaking of its outer end will not afford access to the interior of the safe, and for this purpose the shaft is made in sections, the inner section which has been lettered H is passed into its bearings from the inner side of the door, and may be of different diameters, as shown at H', so as to break the continuity of the bearing surface and insure a distribution of strain to all of the door plates, should an attempt

be made to wreck the safe. The outer or forward end of the shaft which has been lettered H^2 is passed into its bearings from the front of the door and provided with a suitable socket or connecting means for the end of the rear section H' of the shaft. Both sections of the shaft are held in place by sleeves H^3 , threaded into the door plates and held against withdrawal by set screws such as indicated at h^3 , or other appropriate and well known means. To give a sufficient leverage, the outer end of the operating shaft is preferably provided with a toothed segment with which a pinion k is adapted to cooperate, and the pinion k is connected with a hand wheel L , whereby it and the segment may be moved for turning the bolt operating wheel in one direction or the other.

A single lock bolt, such as indicated at M , may be employed for locking the operating wheel with the locking bolts projected, and as a convenient arrangement of the parts one face of the rim of the wheel may be provided with locking segments N between which the bolt M is adapted to pass when the parts are in their locking position, as shown in Fig. 1.

For protecting the bolt work from dust and atmospheric influences, the parts are preferably inclosed by glazed doors, shown in Fig. 2, at O , although it will be understood that in so far as the invention of the present application is concerned these protecting doors may be omitted.

Having thus described the invention, what we claim as new and desire to secure by Letters-Patent, is:

1. The combination with a safe door having two annular projections formed integral therewith on the inner side with radially disposed bearings in said projections, of bolts extending through the bearings in both projections and having their inner ends bifurcated, an angularly movable wheel located within and below the level of the inner projection and with its periphery passing between the arms of all the bolts and having a cam slot for each and every bolt, pins mounted rigidly in the arms of the bolts and passing through the slots, a crank shaft passing through the door, a link connecting the crank of the shaft with the wheel, and means for oscillating the shaft, thereby moving said wheel to project and retract the bolts.

2. The combination with a door and a series of radially disposed bolts movably mounted thereon, of an angularly movable wheel having its axis coincident with the center from which said bolts radiate, said wheel having in its periphery a cam slot for each and every bolt, pins carried by the bolts and passing through the said slots, a crank shaft journaled in the door, a link connecting the crank of said shaft with the wheel, and means for oscillating said shaft to move the wheel in one direction or the other, substantially as described.

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