No. 862,236. PATENTED AUG. 6, 1907.

W. CORRY.

SUPPORTING AND LOCKING MECHANISM FOR SAFE DOORS.

APPLICATION FILED JULY 31, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

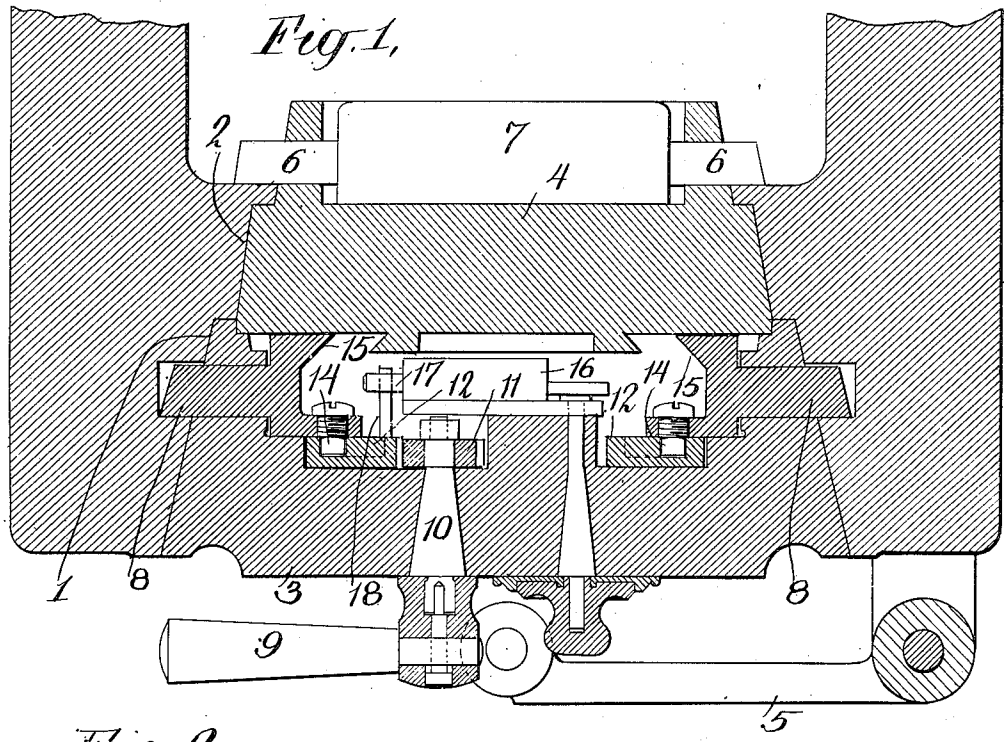
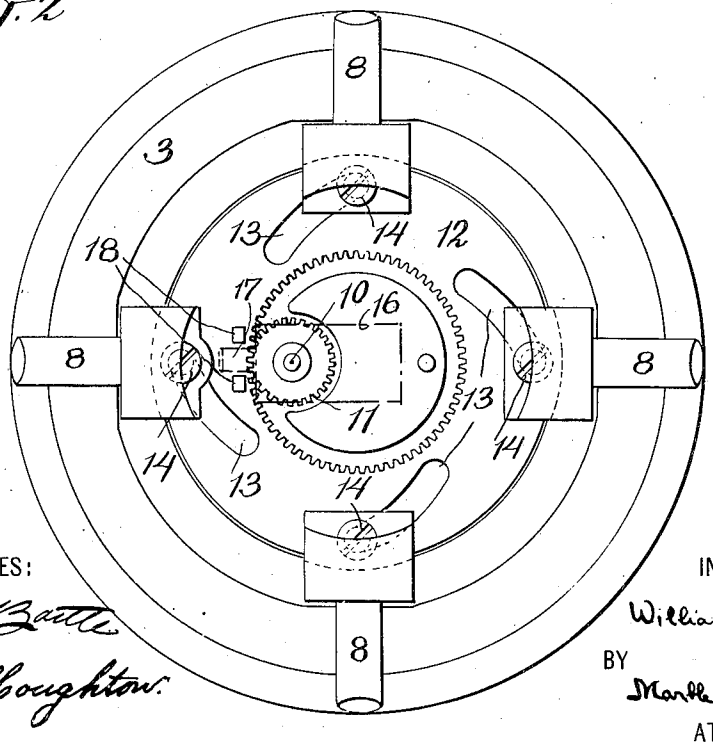


Fig. 2



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Fig. 3.

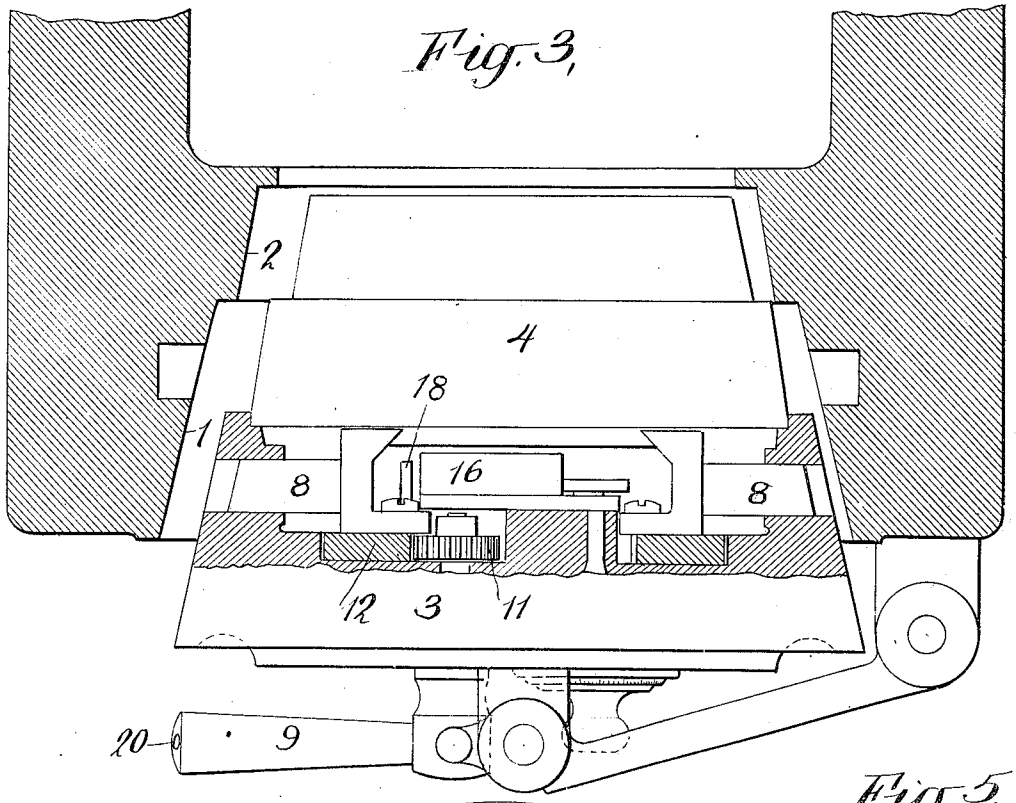


Fig. 4.

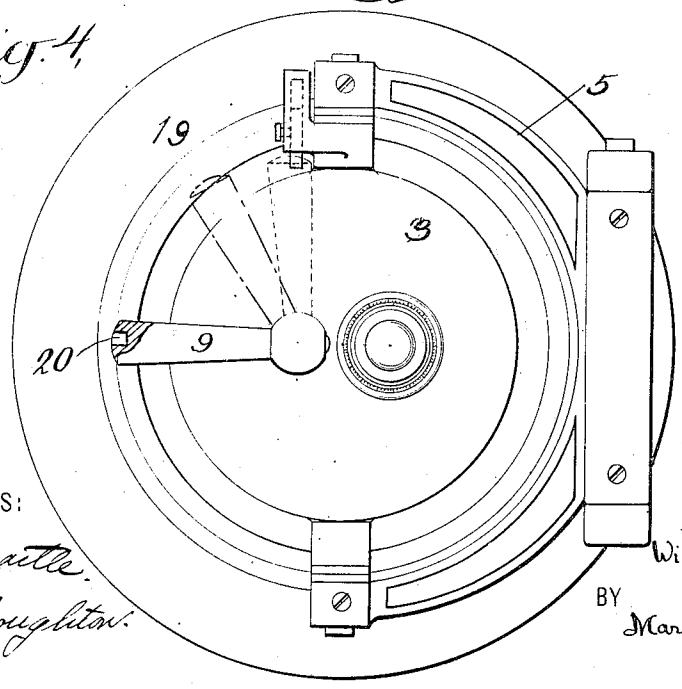
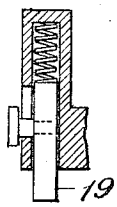


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM CORRY, OF NEW YORK, N. Y., ASSIGNOR TO CHROME STEEL WORKS, OF CHROME, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SUPPORTING AND LOCKING MECHANISM FOR SAFE-DOORS.

No. 862,236. Specification of Letters Patent. Patented Aug. 6, 1907.

Application filed July 31, 1906. Serial No. 328,584.

To all whom it may concern:

Be it known that I, WILLIAM CORRY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Safe-Doors, Supports Therefor, and Locking Mechanism Therefor; and I do hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in safe doors and means for supporting the same while open, also to locking mechanism therefor.

My invention is applicable to that type of safe or vault having inner and outer doors. In such safes and vaults the doors have been independently hinged hitherto. The double hinges thus required take up an excessive amount of room, reducing the capacity of the safe.

According to my invention I provide hinges for one door only; and instead of hinges for the second door I provide means for clamping it, when desired, to the hinged door, so that both may be opened and closed together, both swinging about a common hinge. I provide means, however, whereby the outer door may be opened independently of the inner door when desired.

My invention resides in means whereby a single hinge or equivalent support permitting opening and closing, serves for both doors of the safe or vault; in means for clamping the doors together so that they may move upon a common hinge or support; in the construction of the locking mechanism; and in other features of invention as hereinafter described and more particularly pointed out in the claims.

I will now proceed to describe my invention with reference to the accompanying drawings, illustrating one embodiment thereof, and will then point out the novel features in claims.

In the said drawings: Figure 1 shows a horizontal section through the doors and adjacent parts of a safe embodying my invention. Fig. 2 shows an elevation of the inner side of the outer safe door. Fig. 3 shows a top view of the safe doors and a horizontal section of adjacent parts of the safe, a part of the outer door being sectioned, and the inner and outer doors being shown secured together. Fig. 4 shows a front view of the outer safe door and adjacent parts. Fig. 5 shows a detail vertical section of the latch for the operating handle of the lock mechanism.

In the drawings I show my invention applied to a safe or vault having doors of the circular type, but it will be obvious that my invention is independent of this type of doors, and is applicable to safe doors generally.

In the said drawings, 1 designates the seat in the safe wall for the outer door, 2 the seat in such wall for the inner door, and 3 designates the said outer door and 4 the said inner door. I have shown the outer door pivoted to a yoke 5, itself pivoted to the wall of the safe at the side of the opening 1, this being a feature of construction common in safes. Each door is of the stepped and slightly conical form commonly used and is customarily ground or fitted into its seat or opening, so as to form therewith an absolutely fluid tight joint.

The inner door is provided with the customary locking bolts 6 operated by suitable mechanism 7 not shown in detail, but which may be understood to be one of the well-known automatic bolt-actuating mechanisms controlled in its operation by a time lock contained within it, and arranged to retract the bolts when the time lock permits and to thrust out said bolts automatically upon the closing of the door.

The outer door 3 is provided with locking bolts 8 arranged to be operated by means of hand lever 9 through the operating mechanism now to be described. Said hand lever is connected to a spindle 10 projecting through the safe door and provided at its end with a pinion 11 engaging an internally-toothed ring gear 12 having in it a plurality of cam-slots 13 engaged by dogs 14 projecting from the said locking bolts 8. It will be seen that by moving the handle 9 the ring gear is rotated and the bolts 8 are moved in or out, according to the direction of rotation of the hand lever.

The bolts 8 are provided at their inner ends with claws 15 which, when the bolts 8 are in their innermost positions, grasp the inner door 2 tightly and so clamp it to the outer door. When the doors are so clamped together they may be opened together, swinging about the common pivot, which is the hinge of the outer door, both doors being then carried by the yoke 5. Similarly the doors may be closed together, and when the bolts 8 of the outer door are forced outward into their sockets, the inner door is disconnected from the outer door. The bolt mechanism of the outer door is so arranged, however, that said door may be opened independently of the inner door. To this end it is necessary merely to move the hand lever 9 to an intermediate position indicated in broken lines in Fig. 4. When in this position the bolts 8 of the outer door are clear of their sockets but their claws 15 have not engaged the inner door.

The movements of the locking mechanism of the outer door are controlled by an ordinary permutation lock 16, the bolt 17 of which engages dogs 18 of the ring gear, except when said bolt has been retracted by the proper operation of the permutation lock.

In order to prevent accidental release of the inner door 4 while both doors are swung outward, I provide

a latch for holding the handle 9 in the unlocked position. The particular form of latch shown in Figs. 4 and 5 comprise a spring bolt 19 adapted to enter a recess 20 in the end of handle 9.

What I claim is:—

1. A safe having inner and outer doors, separate seats for said doors in its walls, releasable holding means detachably securing the doors together, and supporting means common to both doors permitting opening and closing thereof.

2. A safe having inner and outer doors, separate seats for said doors in its walls, releasable holding means detachably securing the doors together, and hinging means common to both doors permitting opening and closing thereof.

3. A safe having inner and outer doors, means for movably supporting one of said doors to permit opening and closing thereof, and clamping mechanism carried by one door and arranged to engage the other door, to cause both to move together.

4. A safe having inner and outer doors, means for movably supporting one of said doors to permit opening and closing thereof, and locking mechanism for one of said doors comprising clamping means whereby when said door is unlocked said clamping means may engage the other door to cause both to open together.

5. A safe having inner and outer doors, means for movably supporting one of said doors to permit opening and closing thereof, and locking mechanism for the outer door comprising clamping means wherby when said door is unlocked said clamping means may engage the inner door to cause both to open together.

6. A safe having inner and outer doors, means for movably supporting one of said doors to permit opening and closing thereof, and locking mechanism for one of said doors comprising clamping mechanism adapted to engage the other door when said first door is unlocked, said locking and clamping mechanism having an intermediate position in which said first door is unlocked but the second door is not engaged by said clamping mechanism.

7. A safe having inner and outer doors, means for movably supporting the outer door to permit opening and closing thereof, and locking mechanism for one of said doors comprising clamping mechanism adapted to engage the other door when said first door is unlocked, said locking and clamping mechanism having an intermediate position in which said first door is unlocked but the second door is not engaged by said clamping mechanism.

8. A safe having inner and outer doors, means for movably supporting the outer door to permit opening and closing thereof, and locking mechanism for the outer door comprising clamping mechanism adapted to engage the inner door when said locking mechanism is in the unlocked position, said locking mechanism having an intermediate position in which the outer door is unlocked but the inner door not engaged.

9. A safe having inner and outer doors, means for movably supporting one said door to permit opening and closing thereof, and locking mechanism for one of said doors comprising bolts arranged when in the retracted position to engage the other door, and means for operating said bolts.

10. A safe having inner and outer doors, means for movably supporting one said door to permit opening and closing thereof, and locking mechanism for one of said doors comprising bolts arranged when in the retracted position to engage the other door, said bolts having an intermediate position in which the one door is unlocked but the other door not engaged, and means for operating the same.

11. A safe having inner and outer doors, means for movably supporting the outer door to permit opening and closing thereof, and locking mechanism for said outer door comprising bolts arranged when in the retracted position to engage the inner door, and means for operating the same.

12. A safe having inner and outer doors, means for movably supporting the outer door to permit opening and closing thereof, and locking mechanism for said outer door comprising bolts arranged when in the retracted position to engage the inner door, said bolts having an intermediate position in which the outer door is unlocked but the inner door not engaged, and means for operating said bolts.

13. A locking mechanism for safe doors, comprising a cam disk, means for rotating the same, and locking bolts engaging said disk and arranged to be actuated thereby, and provided with means for gripping an adjacent door when in the retracted position.

14. A locking mechanism for safe doors, comprising an annular gear provided with cams for operating locking bolts, an operating handle having a pinion for rotating said gear, and locking bolts engaging the said cams, and provided at their inner ends with means for gripping an adjacent door.

15. In a safe, the combination with inner and outer doors, means for movably supporting one of said doors to permit opening and closing thereof, mechanism for securing the doors together to cause them to open and close together, and operating means for said mechanism, of a catch preventing accidental operation of said mechanism.

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

WILLIAM CORRY.

Witnesses:
MAY I. TRIMBLE,
H. M. MARBLE.