S. W. FISH.

COMPOUND DOOR FOR SAFES AND VAULTS.

APPLICATION FILED NOV. 6, 1909.

997,773.

Patented July 11, 1911.

FIG. 1.

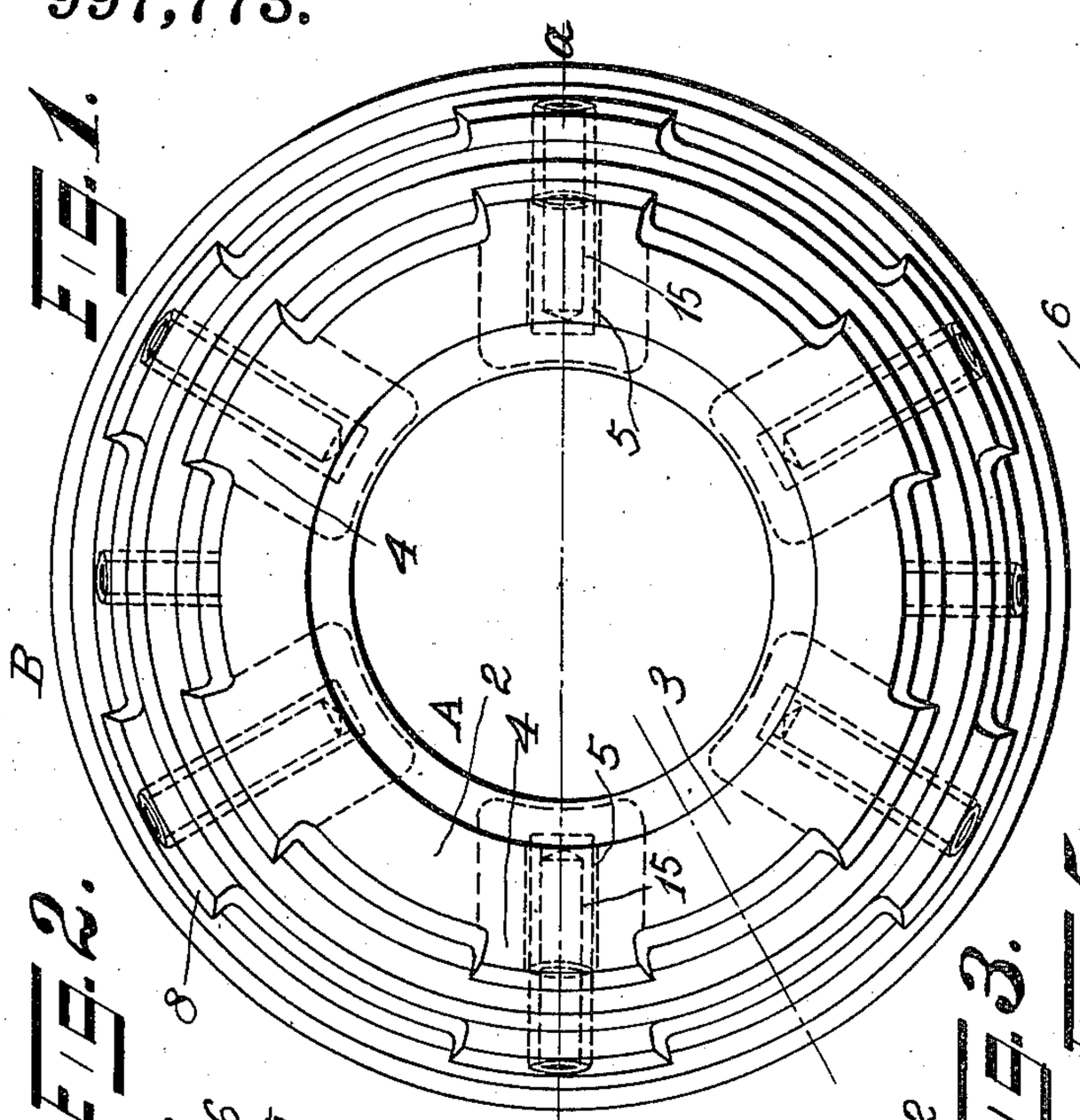


FIG. 2.

FIG. 3.

FIG. 6.

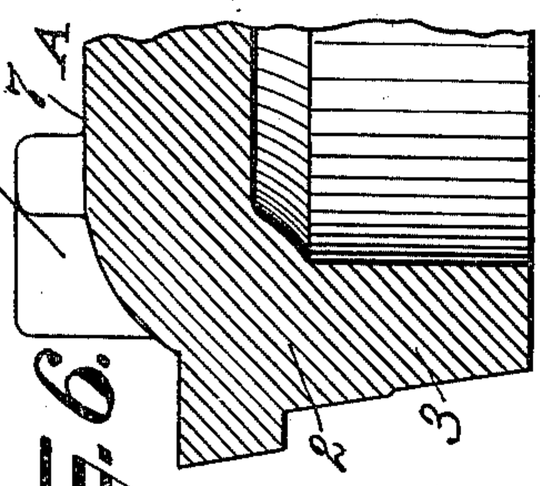


FIG. 5.

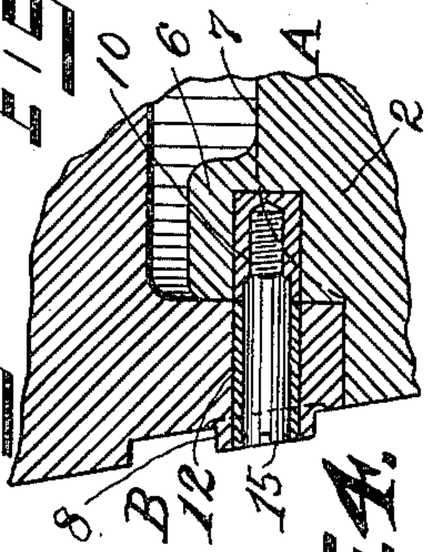
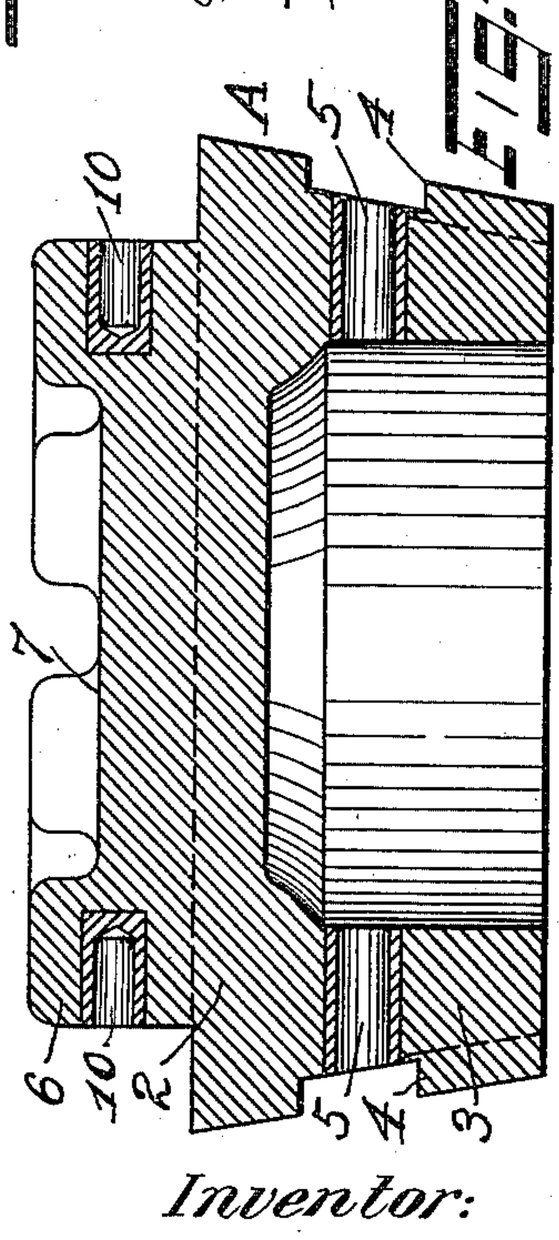


FIG. 4.



Witnesses:

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COMPOUND DOOR FOR SAFES AND VAULTS.

997,773. Specification of Letters Patent. Patented July 11, 1911.

Application filed November 6, 1909. Serial No. 526,486.

To all whom it may concern:

Be it known that I, SAMUEL W. FISH, a citizen of the United States, residing at Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Compound Doors for Safes and Vaults, of which the following is a specification.

The present improvement relates to safes and vaults, and more particularly to the doors thereof, the object of the invention being to provide an improved double or compound door comprising a plurality of doors each a complete door in itself and each having means for interlocking it with the safe or vault body, but which doors are very rigidly connected together in an improved manner, so that the separation of one door from another will not only require the rupturing of the holding means between the doors, but also of the locking means between the outer door and the safe or vault body, the present invention being in part an improvement upon that shown and described in my co-pending application, Serial No. 492,869, filed April 29, 1909. In that improvement the doors were secured together by means of locking lugs and the rotating of one door relatively to the other. In the present improvement the doors are secured together by sliding one door on to the other and bolting them together.

In the drawings accompanying and forming part of this specification, Figure 1 is a rear elevation of this improved door; Fig. 2 is a cross-sectional view on the line *a*—*a* of Fig. 1; Fig. 3 is a cross-sectional view of the outer door; Fig. 4 is a cross-sectional view of the inner door; Fig. 5 is a detail sectional view of portions of two doors bolted together by a somewhat different form of bolt from that shown in Figs. 1 to 4; and Fig. 6 is a detail sectional view of a portion of the inner door.

Similar characters of reference indicate corresponding parts throughout the figures of the drawings.

This improved compound door comprises two doors, an inner door A and an outer door B. The inner door comprises a body 2 having a flange 3 provided with the usual locking lugs 4 and bolt openings 5 for the reception of suitable bolts for securing the door against rotation. This inner door is also provided with a forwardly extending boss 6 having a recessed or chambered front portion 7 thus forming a flange projecting from the boss. This boss or annular member is of a less diameter than the inner door body, thereby forming an annular space for the reception of the flange of the outer door hereinafter referred to, the space being of such depth as to permit the tapered joint surfaces of the inner and outer doors to be continuous, in a manner which will be readily understood. The outer door also comprises a flanged door having suitable lugs 8 adapted to coöperate with similarly formed lugs carried by the body jamb, so that both doors, when in the jamb, are each separately locked within the jamb by lugs. The flange of the outer or front door fits on to the boss of the inner door, and is secured thereto by suitable bolts, and for this purpose the boss is provided with bolt openings 10 having soft metal inserts therein, and the flange of the outer door is also provided with bolt openings 12 likewise having soft metal inserts therein, thereby to facilitate the machining thereof for the reception of the holding bolts, these inserts being necessary when the doors are made of unmachineable metal, as for instance manganese steel.

In the form shown the bolt openings in the outer door pass through the lugs and into the metal of the body formed by the boss and preferably in the rear of the flange forming the chamber 7. The two doors are secured together by suitable bolts 15, each projecting radially through the rearwardly extending flange of the front door and into the solid metal formed by the boss of the rear door. In one form, as shown in Fig. 5, these bolts may have threaded inner ends.

From the foregoing it will thus be seen that the two doors are assembled by a slip joint connection as it were; that is, the flange of one slides on to a projecting portion of the other, and are secured together in a very effective and permanent manner by suitable bolts, thus forming a compound door, each member thereof having separate locking means, or lugs, for securely holding it within the jamb of the body, so that should a burglar be successful in removing the outer door the safe would still be securely closed by the inner door. This compound door is thus made up of a pair of doors each of an integral structure, rigidly secured together and each having its separate lock-

ing means for locking the door within the jamb of the safe body, the doors being so assembled that they are spaced apart to form a chamber between the rear of the outer door and the front of the inner door, within which chamber suitable locking means may be located if desired.

The door may be supported on the body by any suitable form of hinge, this usually being a crane hinge, but as this does not constitute a part of the present invention a showing thereof is omitted.

I claim as my invention:

1. In a safe or vault, a door formed of a plurality of doors, one having a boss extending across the door but of less diameter than the door thereby forming with the door an annular space, and the other door having a member overlapping such boss and fitting into such space, and bolts for permanently securing said doors rigidly together and located in said boss and overlapping member.

2. In a safe or vault, a door comprising an inner door having a forwardly extending boss extending across the front of the door but of less diameter than such door, and an outer door having a rearwardly extending flange fitting on to said forwardly extending boss, and bolts located in the rearwardly extending flange and boss for permanently securing the doors together.

3. In a safe or vault, a door formed of a plurality of doors, one having a flange and the other a boss having a flange, one flange overlapping the other, and bolts projecting transversely into the overlapped portions of the doors for rigidly securing them permanently together.

4. In a safe or vault, a door comprising an inner door having a boss provided with a flange and an outer door having a rearwardly extending flange fitting over said boss and its flange, and bolts projecting transversely into the overlapped portions for securing the doors permanently together.

5. In a safe or vault, a door formed of a plurality of doors comprising an inner door and an outer door, one having a rearwardly extending annular member and the other a forwardly extending annular member, the annular member of one of said doors being of less diameter than its door thereby forming an annular space around said member, the annular member of one of said doors fitting over the annular member of the other and into such space, and means projecting into said annular members for permanently securing the doors rigidly together.

6. In a safe or vault, a door formed of a plurality of doors comprising an inner door and an outer door, one having a rearwardly extending annular member and the other a forwardly extending annular member, the annular member of one of said doors being of less diameter than its door thereby forming an annular space around said member, the annular member of one of said doors fitting over the annular member of the other, and means projecting into said annular members for securing the doors rigidly together, each of said doors having door holding lugs for holding it to the body.

7. In a safe or vault, a door formed of a plurality of doors, an inner door having a forwardly extending boss of less diameter than the diameter of the door and forming an annular space around such boss, and the outer door having a flange fitting into said space and around said boss, and means located in said flange and boss for securing said doors together.

8. In a safe or vault, a door formed of a plurality of doors, an inner door having a forwardly extending boss of less diameter than the diameter of the door and forming an annular space around such boss, and the outer door having a flange fitting into said space and around said boss, and bolts projecting through said flange for securing said doors together, said door having holding lugs for securing it within the jamb of the body.

9. In a safe or vault, a door formed of a plurality of doors, an inner door having a forwardly extending boss of less diameter than the diameter of the door and forming an annular space around such boss, and the outer door having a flange fitting into said space and around said boss, and bolts projecting through said flange for securing said doors together, each of said doors having holding lugs for securing it within the jamb of the body.

10. In a safe or vault, a door formed of a plurality of doors, one door having a boss forming an annular space and the other having a flange overlapping said boss and filling said space with the peripheral edges of the doors flush with each other, means located in said flange and boss for permanently securing the doors together, one or both of said doors having holding means for securing it within the jamb of the body.

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