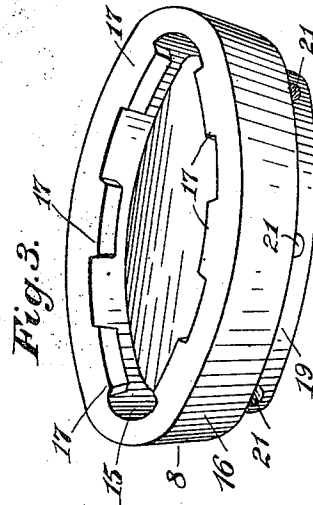
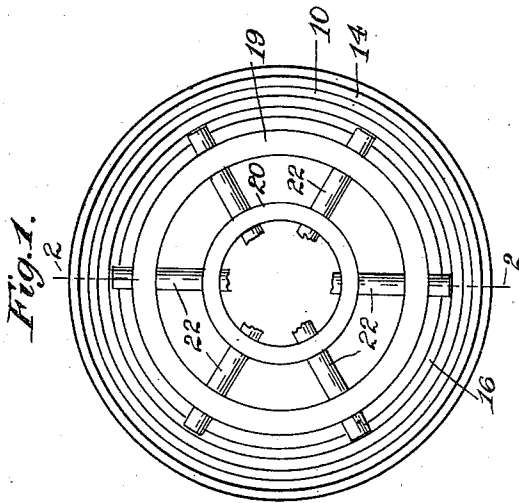
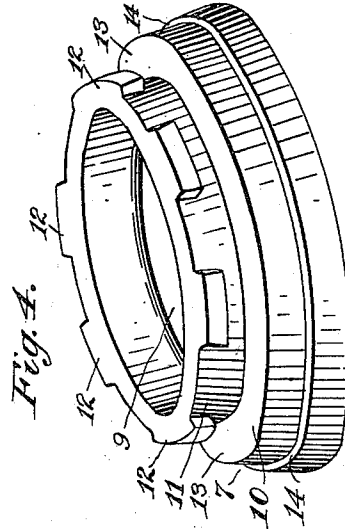
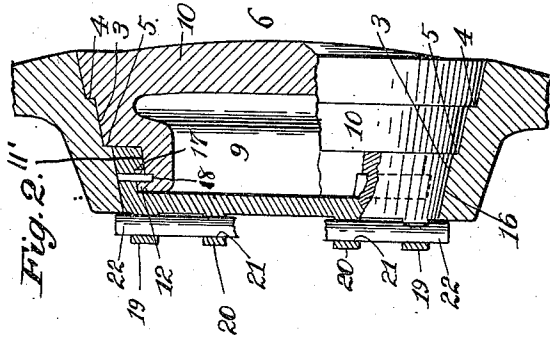


S. W. FISH.  
SAFE OR VAULT DOOR.  
APPLICATION FILED APR. 30, 1910.

997,779.

Patented July 11, 1911.



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# UNITED STATES PATENT OFFICE.

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## SAFE OR VAULT DOOR.

997,779.

Specification of Letters Patent.

Patented July 11, 1911.

Application filed April 30, 1910. Serial No. 558,611.

*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 Safe or Vault Doors, of which the following is a specification.

The present improvement relates to safe or vault doors, the object thereof being to provide an improved door made up of a pair of members so united that each may engage the jamb surface and the inner member of which may constitute a back-plate for supporting the bolting or other operating means.

In the present improvement the door is made up of a main door portion and a back-plate for the support of the bolts and the operating means, the back-plate being united to the outer door by rotating one relatively to the other, another construction of the present improvement being illustrated in my contemporaneously pending application Serial No. 563,739, filed May 27, 1910.

Heretofore it has usually been necessary to secure the back-plates of doors made of unmachineable metal by means of bolts penetrating soft metal inserts in the door, this necessitating that the door holding bolts be carried by the inwardly extending flange of the door. By the present improvement, however, these bolts may be carried by the back-plate, since the improved manner of uniting the back-plate with the door makes it practically impossible to separate the back-plate from the door by the action of explosives, thus obviating the necessity of forming bolt openings, or a bolt groove, in the body jamb, as the bolts may be so located that they can engage the inner surface of the inwardly extending flange or the body jamb, or any other portion of the body which may be in position to cooperate with the bolts, this depending entirely upon the construction of the body.

In the drawings accompanying and forming part of this specification, Figure 1 is a rear view of this improved door; Fig. 2 is a cross-sectional view thereof taken in line 2—2, Fig. 1; Fig. 3 is a perspective view of the inner member or back-plate of the door; and Fig. 4 is a perspective view of the outer member or main door portion.

Similar characters of reference indicate corresponding parts throughout the drawings.

The safe or vault body may be of any suitable form and construction, it having a tapered jamb 3 and is shown provided in the present instance with a plurality of shoulders or steps 4 and 5.

The door 6 comprises an outer member or main portion 7 and an inner member or back-plate 8, with a chamber 9 formed therebetween. In this chamber the bolt operating mechanism, or other necessary operating mechanism of the vault door, may be located and carried by the back plate, for which purpose, as hereinafter stated, the back plate is usually made of a metal different from that of which the outer member of the door is formed, so that it may be readily machined. These members are so united that each of the members forming the door will engage the body jamb, and to permit this the main door portion is formed with a body portion 10 having an inwardly extending flange 11 spaced apart from the jamb and forming an annular recess 11', the wall of which is provided with a series of locking or holding lugs 12, the whole being formed of an integral structure and usually of some suitable unmachineable metal, as for instance manganese steel. The door is provided with a pair of steps or shoulders 13 and 14 adapted to engage the steps or shoulders of the body hereinbefore referred to.

The inner member or back-plate constituting the closure for the chamber of the main door portion formed within the inwardly extending flange thereof, is provided with a flange 15 which may be considered as a forwardly extending flange, adapted to fit said recess and having a tapered outer surface adapted to conform to a portion of the tapered surface 16 of the body jamb, and this flange overlaps a portion of the inwardly extending flange of the outer or front member of the door and is also provided with a series of locking or holding lugs 17 adapted to coact with the lugs of the inwardly extending flange of the outer door member, so that when one of the members is rotated with relation to the other they will be locked against separation except by rotary movement. Some suitable means, as for instance

a key or keys 18, may be used to prevent the separation of the door members. In practice the inner member or back-plate may be made of a different metal from that of which the outer member of the door is formed, so that it may be readily machined for the reception of the bolts and bolt operating means, or any other form of door holding or locking means. The inner member constituting the back-plate not only closes the chamber between the two members forming the door, but is, in the form shown, provided with a pair of annular flanges or rings 19, 20 forming a bolt carrying frame having a series of alined openings 21 for the reception of sliding bolts 22. The inner end of the flange forming the jamb of the body may be provided with suitable bolt engaging surfaces for engagement with the door locking or holding bolts, and these surfaces may be located at intervals around the body flange, thus obviating the necessity of grinding the entire inner surface of the flange when the body is made of unmachineable metal.

From the foregoing it will be observed that the back-plate is not only secured to the outer member of the door in a very rigid manner, but it also constitutes a portion of the door and engages the jamb surface of the body, so that the separation or blowing off of the back-plate would be impracticable without the rupture of the entire door, while at the same time this back-plate, as hereinbefore stated, can be made of a different metal from that of which the outer member of the door is made, thus very materially lessening the cost as well as facilitating the construction of the door without in any way impairing its strength and efficiency, since, in order to separate the outer member of the door from the back-plate, the lugs connecting the members would have to be entirely broken off, which is well nigh an impossibility.

I claim as my invention:

1. A safe or vault door and a back-plate interlocked therewith and extending across the rear of the door for supporting door holding means, and means for interlocking such members.

2. A safe or vault door and a back plate lug-interlocked with a portion of said door and extending across the rear of the door and carrying door holding bolts.

3. A safe or vault door and a back-plate overlapping a part of the edge of said door and interlocked therewith by means carried thereby, said plate carrying door holding bolts.

4. A safe or vault door and a back-plate overlapping a part of said door and interlocked therewith by means carried thereby and forming a continuation of said door adapted to engage the body jamb.

5. A safe or vault door comprising a body having a rearwardly extending flange, and a back-plate having a forwardly extending flange interlocked with the rearwardly extending flange of the door by means carried thereby.

6. A safe or vault door comprising a body having a rearwardly extending flange, and a back-plate having a forwardly extending flange, said flanges having interlocking lugs.

7. A safe or vault door comprising a body having a rearwardly extending flange, and a back-plate extending across the rear of the door and having a forwardly extending flange overlapping the rearwardly extending flange of the body and interlocked therewith by means carried thereby.

8. A safe or vault door comprising a body having a rearwardly extending flange, and a back-plate extending across the rear of the door and having a forwardly extending flange overlapping the rearwardly extending flange of the body and interlocked therewith by lugs carried by said flanges.

9. A safe or vault door comprising a body having a rearwardly extending flange, and a back-plate extending across the rear of the door and having a forwardly extending flange interlocked therewith by means carried thereby on rotating one of said members relatively to the other.

10. A safe or vault door comprising a body having a chamber in the rear thereof, and a back-plate extending across the rear of the door and overlapping a portion of said body and interlocked therewith by means carried thereby.

11. A safe or vault door and a back-plate extending across the rear of the door and overlapping a portion of said door and interlocked therewith by lugs carried by the door and plate.

12. A safe or vault door and a back-plate extending across the rear of the door and overlapping a portion of said door and interlocked therewith by lugs carried by the door and plate, said back-plate having a part thereof forming the joint surface of the door.

13. A safe or vault door comprising a body having a rearwardly extending flange and a back-plate extending across the rear of the door and having a forwardly extending flange overlapping a portion of the flange of said door, and lugs carried by said flanges for interlocking the back-plate and door together, said door having a chamber located between said back-plate and the body of the door.

14. In a safe or vault, the combination of a body having a jamb surface, a door adapted to fit therein and comprising a body having a rearwardly extending flange a part thereof adapted to fit and engage the jamb

surface of the body, and a back-plate extending across the rear of the door and provided with a part overlapping a part of the flange of the door and adapted to fit and engage another portion of the jamb surface, said door and back-plate having means for interlocking them together.

15. In a safe or vault, the combination of a body having a jamb surface, a door adapted to fit therein and comprising a body having a rearwardly extending flange a part thereof adapted to fit and engage the jamb surface of the body, and a back-plate extending across the rear of the door and provided with a part overlapping a part of the flange of the door and adapted to fit and engage another portion of the jamb surface, said door and back-plate being interlocked together by lugs carried by said flanges.

16. In a safe or vault, the combination of a body jamb, a door having a part thereof adapted to engage said jamb and provided with a rearwardly extending flange, a back-plate having a forwardly extending flange overlapping a portion of the flange of the door and engaging another portion of the jamb of the body, said flanges being interlocked together by means carried thereby.

17. In a safe or vault, the combination of a body jamb, a door having a part thereof adapted to engage said jamb and provided with a rearwardly extending flange, a back-plate having a forwardly extending flange overlapping a portion of the flange of the door and engaging another portion of the jamb of the body, said flanges being interlocked together by lugs carried thereby.

18. In a safe or vault, the combination of a body jamb, a door having a part thereof adapted to engage said jamb and provided with a rearwardly extending flange, a back-plate having a forwardly extending flange overlapping a portion of the flange of the door and engaging another portion of the jamb of the body, said flanges being interlocked together by lugs carried thereby and said back-plate carrying bolt-supporting means.

19. In a safe or vault, the combination of a body jamb, a door having a part thereof adapted to engage said jamb and provided with a rearwardly extending flange, a back-plate having a forwardly extending flange overlapping a portion of the flange of the door and engaging another portion of the jamb of the body, said flanges being interlocked together by lugs carried thereby and said back-plate carrying bolt-supporting means comprising a pair of annular flanges.

20. In a safe or vault, the combination of a body jamb, a door having a part thereof adapted to engage said jamb, a back-plate having a forwardly extending flange engaging a portion of door and also engaging

another portion of the jamb of the body and interlocked together by lugs carried by the door and flange and said back-plate carrying bolt-supporting means, and means for preventing the rotation of the back-plate independently of the door.

21. A safe or vault having a tapered body jamb provided with one or more shoulders, a tapered door adapted to fit said jamb and having a shoulder or shoulders for engagement with the shoulder or shoulders of the jamb, said door having a rearwardly extending flange a part thereof spaced apart from the jamb, and a back-plate having a forwardly extending flange overlapping a portion of the flange of the door, said flanges having interlocking lugs.

22. A safe or vault comprising a body jamb, a door adapted to fit said jamb and having a part spaced apart from said jamb, and a back-plate having a part filling the space therebetween and said jamb and interlocked with said door by means carried by said parts.

23. A safe or vault door comprising a body and a rearwardly extending flange having a part thereof spaced inwardly from the edge of the door, and a back-plate secured to the door and having a part overlapping said inwardly spaced part, and means for securing the back-plate and door together.

24. A safe or vault door and a back plate extending across the rear of the door and interlocked with said door by means carried by said door and plate on rotating one of said members relatively to the other, said back plate carrying door holding means.

25. A safe or vault door and a back-plate extending across the rear of the door and interlocked with said door by means carried by said door and plate on rotating one of said members relatively to the other and carrying door holding means comprising bolts.

26. A safe or vault door, a back-plate extending across the rear of the door, interlocking means carried by the plate and door for securing said members together by rotating one of them relatively to the other, the interlocking means carried by the door being located within side walls of the back-plate, and door holding means carried by the back plate.

27. A safe or vault door,—a back-plate extending across the rear of the door, interlocking means carried by the plate and door for securing said members together by rotating one relatively to the other, the interlocking means carried by the door and plate being located on side walls thereof, and door holding means carried by the plate.

28. A safe or vault door, a back-plate extending across the rear of the door, said door

and back-plate having side walls one overlapping the other, means located on said side walls for securing said door and back-plate together, and door holding means carried by the back-plate.

29. A safe or vault door, a back plate extending across and of substantially the same diameter as the door and interlocked therewith by rotating one part relatively to the other, and means for interlocking said door and plate.

30. A safe or vault door, a bolt carrying back plate covering the back of and of substantially the same diameter as the door and interlocked therewith by lugs carried by en-

gaging portions of such door and plate on the rotation of one of said parts.

31. A safe or vault door comprising a body having a rearwardly extending flange, a back plate extending across and of substantially the same diameter as the door and adapted to be interlocked with the flange, and interlocking means carried by said members for securing them together on the rotation of one of said members, said back plate having a bolt carrying frame.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."