Feb. 23, 1926. **1,574,330**

W. E. WILKINSON

JOINT

Filed August 8, 1922 2 Sheets-Sheet 1

Fig. 1.

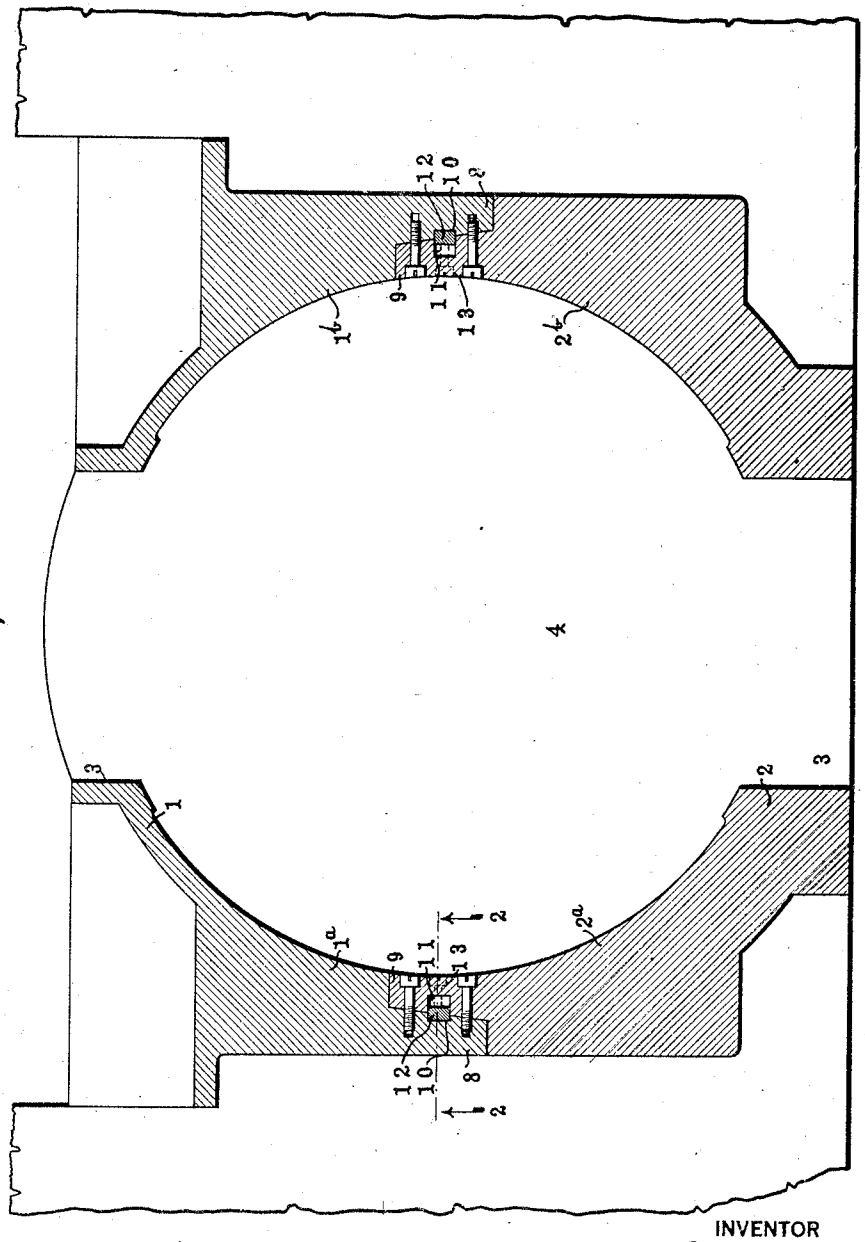

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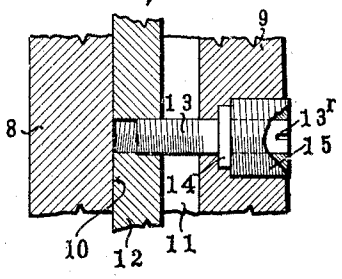
Fig. 3



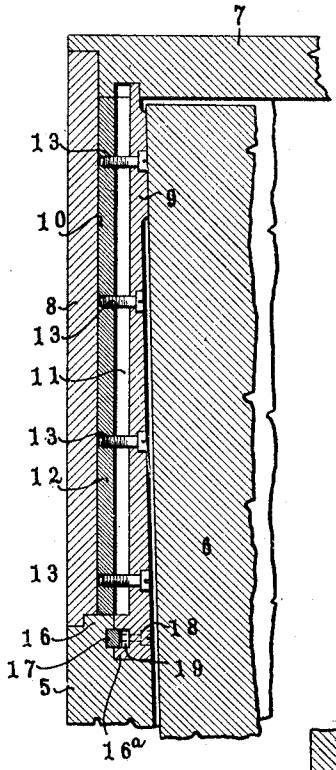


Fig. 2

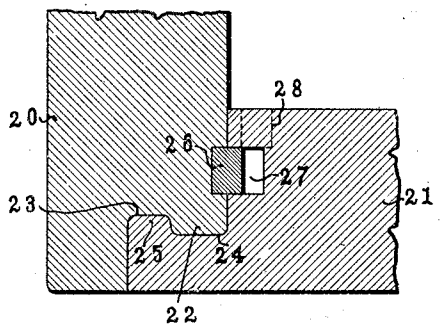


Fig. 4

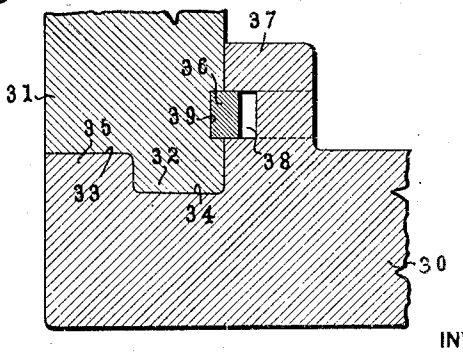


Fig. 5

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UNITED STATES PATENT OFFICE.

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JOINT.

Application filed August 8, 1922. Serial No. 580,535.

To all whom it may concern:

Be it known that I, WILLIAM E. WILKINSON, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Joints, of which the following is a full, clear, and exact description, such as will enable others skilled to the art to which it appertains to make and use the same.

This invention relates to joints and more particularly in some of its details to joints designed for uniting members of metal, wood and the like.

It is an object of the invention to provide an improved joint of the class mentioned, which is simple in construction, providing a strong and rigid union between the parts.

Another object is the provision of an improved joint of the class mentioned which firmly unites the parts into a rigid structure, the locking element of which is accessible for operation only from a definite position.

Another object is to provide an improved tight-fitting joint adapted for effecting a seal as well as providing a strong and effective connection.

Other objects will be in part obvious in connection with the following detailed description and in part pointed out hereinafter.

In the accompanying drawings, showing several illustrative embodiments of the invention,

Fig. 1 is a horizontal section through a vault structure in which the invention is embodied.

Fig. 2 is a vertical section taken approximately on the line 2—2 of Fig. 1.

Fig. 3 is a detailed enlarged view of the operating means for the locking key, and Figs. 4 and 5 are detailed sectional views of modified forms of the invention.

Referring now to the drawing for a detailed description of the constructions, the improved joint is shown in connection with a safe or vault construction in Figs. 1 and 2, but it is to be understood that the invention is adapted for general application and is in no wise limited to the use mentioned. Side walls of the housing for the vault are shown in Fig. 1, being preferably of metal, these walls including sections 1 and 2 having respectively side frame pieces 1^a, 1^b and 2^a and 2^b, integrally united above the passageway 3. The side frame pieces are united also below the passageways 3 and the walls are secured below to a base 4. The base 4 is provided with an upstanding circular wall 5, a section of which is shown in Fig. 2. The inner surface presented by walls 1 and 2, is preferably circular, as shown, to conform to the periphery of a rotary door 6, a fragment of which is shown in Fig. 2, and to provide bearings for the door. The top frame piece 7 for the vault housing overlies the side walls 1 and 2.

As shown in Figs. 1 and 2, the wall sections 1 and 2 are provided at adjacent edges with tongues 8 and 9 respectively adapted to overlap each other, the edges being cut away or halved to provide complementary seats for the overlapping tongues. Since the side frame pieces 1^a and 1^b, and likewise the pieces 2^a and 2^b each form a single member, these parts will be secured against relative lateral movement transversely to the tongues when the parts are in interlocking engagement as shown in Fig. 1.

For securing the members 1 and 2 from movement in the direction of length of the overlapping tongue, a special locking mechanism has been devised. The meeting faces of the overlapping tongues are formed preferably throughout their extent with slots 10 and 11. One of these slots 10 may be deeper than the other for receiving and completely containing an elongated locking key 12 preferably co-extensive in length with the length of the slots. The key 12 is mounted in the slots for bodily movement therein transversely of its length from locking position, in which it intersects the opposite surfaces of the tongues, to unlocking position in which it lies wholly within the deeper slot, and out of alignment with the meeting surfaces. For effecting a tight joint preventing passage of liquids, etc., the key 12 acts as a sealing member when in locking position, and for this purpose the slot 11 may have side walls slightly converging toward its bottom in which case the key will be correspondingly wedge shaped.

For effecting this locking and unlocking movement of the key, screws 13 are mounted in one of the tongues, preferably in that having the deeper slot, and are arranged to threadedly engage with the key as shown in

Fig. 2. These screws are of such lengths that when seated in the supporting tongues the threaded ends extend to points adjacent the meeting faces of the tongues so as not to interfere with the separation when the key is moved to unlocking position. As shown in Fig. 1, the key operating screws are accessible only from within the walls 1 and 2 so the joint lock can be manipulated only from within.

In order that the operating screws may function to move the key to locking position as well as to unlocking position, it is necessary that they may be anchored in the supporting tongue. For this purpose each screw 13 is of special construction, as shown in Fig. 3, having a circumferential collar 14 intermediate its end, the slotted end 13' being spaced from said collar. The screw opening in the supporting tongue has a large bore at one part thereof of sufficient dimensions to receive the collar 14 and a seat is provided at the bottom for the collar 14, limiting movement of the screw 13 in one direction. Movement of the screw in the opposite direction is limited by engagement of the collar with a hollow cylindrical anchor block 15 seated in the large bore and secured in position by means of screw threads. The anchor block 15 has an axial opening for receiving the slotted end of the screw 13 so the latter may be accessible for operation when the anchor block is in position.

By means of the special adjusting screw construction it will be seen that the key 12 may be positively operated to locking or unlocking position while the adjusting screw itself is securely anchored in position in its supporting wall while being accessible for operation without removal of the anchor block.

A modification of the joint above described is shown in Fig. 2 in which a similar locking arrangement is employed for securing the walls 1 and 2 to the circular wall 5 of the base 4. In this case the upper edge of the circular wall is formed with a groove opening from its inner face forming a tongue 16 and adapted for the reception of a downwardly extending annular tongue 16^a formed at the lower edge of the walls 1 and 2. The meeting surfaces of the tongues 16 and 16^a are formed with aligning slots for the reception of the locking key 17 which in this case is curved to correspond with the curvature of the walls. Operating screws 18 are mounted in the tongue 16 to move the key bodily in either direction to locking or unlocking position as in the case described above. When in unlocking position, the key 17 lies wholly within the deep slot 19 so as not to interfere with the separation of the members or to impede movement thereof into engaging position. The construction of the operating screws for the key may be the same as described in detail above.

Another illustrative embodiment of the joint is shown in Fig. 4 wherein the two members 20 and 21 are formed with interlocking terminal formations. The member 20 has a projection 22 and a recess 23, while member 21 is formed with a recess 24 and a projection 25. The recess 24 is adapted for the reception of the projection 22 and the recess 23 for the reception of the projection 25. When the parts are engaged this provides an interlocking connection resisting parting movement of the members in certain directions, while parting movement in other directions is resisted by the locking key 26. This key is adapted to be positioned in aligning slots formed in adjacent faces of the joined members, and in this case, as in the other embodiments referred to, one of the slots 27 is deeper than its companion so as to receive the key wholly within its boundaries so the latter lies within the meeting faces of the two members. The key 26 may be adjusted from locking to unlocking position or vice versa by means of the special screw construction described above and shown in Fig. 3, or it may be operated by other means, as by the provision of a slot 28 in the member 21 for the reception of an operating tool adapted for moving the key bodily in different directions.

In the modified form shown in Fig. 5 the members 30, 31 are formed with complementary engaging parts 32, 33, 34 and 35 corresponding respectively with the parts, 22, 23, 24 and 25 of Fig. 4 preventing separation of the members in certain directions. For locking the members from separating movement in other directions the locking key 36 is provided corresponding to the locking keys of the embodiments previously described. For accommodating this key the member 30 is formed with an integral rib or lug 37 formed with a groove 38 for the reception of the key 36. A complementary groove 39 alined with groove 38 is formed in the member 31, the key being shown in locking position therein in Fig. 5. Screw operating means similar to that shown in Fig. 3 for operating the key to or from locking position may be mounted in the lug 37.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the

language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention, which, as a matter of language, might be said to fall therebetween.

I claim—

1. A joint, including, in combination, two members having adjacent edge-portions of their bodies disposed in overlapping relationship and being each formed with a recess, said recesses registering when said members are disposed in such relationship, securing means disposed beside said recesses and associated with one of said members and engaging the second of the same, a key, and means for moving said key to extend into both of said recesses.

2. A joint, including, in combination, two members, each formed with a tongue-shaped edge-portion, said tongues being disposed in overlapping relationship and each of the same being formed on its inner face with a recess to register with the recess of the other, a substantially straight key, and means associated with one of said members and engaging said key at a plurality of points whereby the latter may be moved to a position at which it will extend into both of said recesses.

3. A receptacle body, including, in combination, two sections having portions of their bodies disposed in overlapping relationship, each of said overlapping portions being formed with a recess registering with the recess of the other when the parts are thus disposed, means extending into both of said recesses to prevent relative movement of said sections, and means for operating said last-named means and accessible and operable solely from within said receptacle body.

4. In a receptacle in the nature of a safe, in combination, a plurality of frame sections, overlapping tongues formed on adjacent sections and having contiguous lateral slots therein, a key adapted to seat in the slot in one of said tongues and to be extended into the slot in an adjacent tongue to lock a pair of said sections against relative movement longitudinal to said tongues, and a screw adapted to be rotated to move said key into and out of locking position.

5. A safe, including, in combination, a body comprising a plurality of sections, means for locking said sections against relative movement to provide a unitary structure, and means accessible only from within the interior of said safe for releasing said locking means.

6. A safe, including, in combination, a body comprising a plurality of sections, complementary recesses formed in said sections, locking means cooperating with said recesses to prevent relative movement of said sections and to provide a unitary structure, and means accessible only from within the interior of said safe for releasing said locking means.

7. A safe, including, in combination, a body comprising a plurality of contiguous sections formed with registering recesses, means to lock said sections against relative movement, said means being extensible into each of said recesses to bridge the joint between said sections and movable to a position wholly within one of said recesses, and means accessible only from a point within said safe to operate said locking means.

8. A safe, including, in combination, a body comprising a plurality of sections formed with overlapping tongues having registering recesses formed therein, a locking member movable from a position wholly within one of said recesses to a position bridging the joint between said tongues, and means for moving said key between said positions, said means being accessible only from the interior of said safe.

In testimony whereof I affix my signature.

WILLIAM E. WILKINSON.