

T. E. CAMP.
TONGUE AND GROOVE JOINT.
APPLICATION FILED FEB. 26, 1910.

986,439.

Patented Mar. 14, 1911.

Fig. 2.

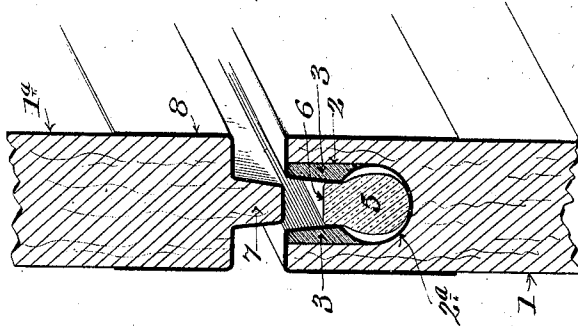


Fig. 1.

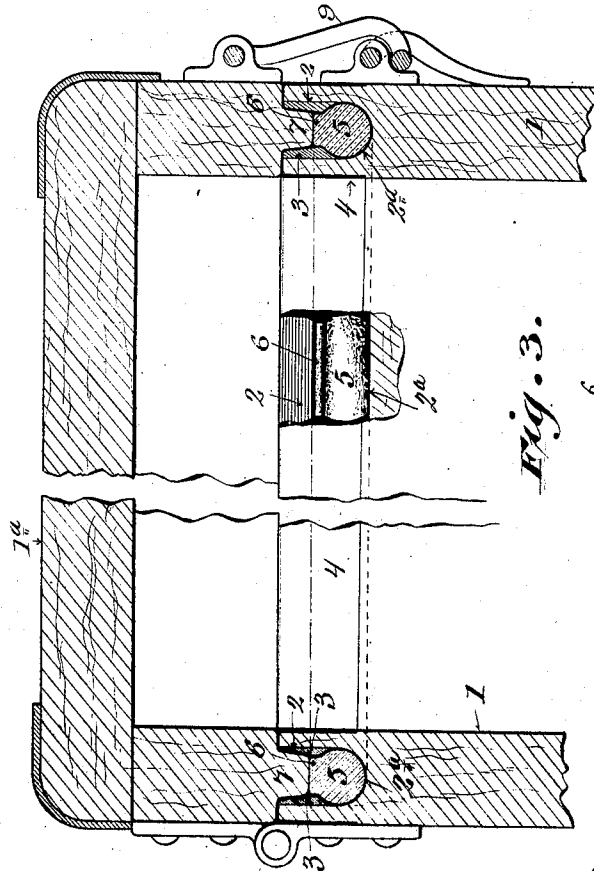
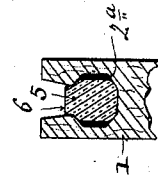


Fig. 3.



Witnesses:
Cassius W. Young,
May Downey

Inventor
Thomas E. Camp.
By *Cassius W. Young*
Attorneys

UNITED STATES PATENT OFFICE.

THOMAS E. CAMP, OF MILWAUKEE, WISCONSIN.

TONGUE-AND-GROOVE JOINT.

986,439.

Specification of Letters Patent. **Patented Mar. 14, 1911.**

Application filed February 26, 1910. Serial No. 546,137.

To all whom it may concern:

Be it known that I, THOMAS E. CAMP, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Tongue-and-Groove Joints; and I do hereby declare that the following is a full, clear, and exact description thereof.

10 The object of my invention is to provide an air-tight or hermetically sealed trunk, this being accomplished by means of a peculiar tongue-and-groove joint connection between the hinged top and body of the trunk.

15 A further object of my invention is to provide a practically air-tight tongue-and-groove joint adapted to be used in connection with any article wherein a sealed joint between detachable members is desired.

20 The invention consists therefore in certain peculiarities of construction and combination of parts as set forth hereinafter with reference to the accompanying drawings and subsequently claimed.

25 In the drawings Figure 1 represents a longitudinal sectional view of a fragment of a trunk or analogous receptacle having a hinged top or lid in connection therewith; Fig. 2, an enlarged detailed cross-sectional view of the male and female members which together comprise the elements of my improved joint, the male member being shown disengaged from its seat with which the female member is provided, and Fig. 3, 30 a detail cross-section of a modified form of the groove.

Referring by numerals to the drawings 1 indicates the body portion of a trunk provided with a continuous groove 2 in its upper edge that extends around the front wall of the trunk, the bottom 2^a, of the groove being semicircular in cross-section. The upper or throat portion of the groove walls are provided with filler strips 3, of any suitable material such as metal, wood or the like, which strips serve to contract said groove at its throat portion and in connection with the semicircular bottom of the groove thus form a "key-hole slot" having an open throat, the walls of which are non-expandible. The inner faces of the filler strips are preferably flared outwardly, as shown, in order to effect a more perfect seating for a male member to be hereinafter described, which latter member completes the joint. A metallic binder 4 extends up-

ward from the walls of the trunk body, over the top edges thereof, and downwardly and around the groove walls, to form a solid facing therefor. Fitted into the enlarged semicircular bottom 2 of the groove, is a cushion-strip 5, which cushion in its normal condition is preferably oval in cross-section, as shown, and provided with a lip 6 that projects into the throat portion of the chan- nel.

In Fig. 2 the cushion is shown in its normal shape, with the minor axis of the oval at a right angle to the throat portion of the groove. In this position the side faces of the oval are clear of the side-walls of the semicircular groove bottom, while a neck 5^a of the cushion extends upwardly into the throat thereof. This clearance between the groove walls and cushion is made for the purpose of permitting said cushion to be compressed when the male member of the joint is in position. The compression of the cushion, however, does not diminish its area, for the reason that the force of said compression is exerted in line with the major axis of the oval and an expansion in the width of the oval is effected. Thus it will be seen that the cushion only changes its configuration and the side-wall clearance in the bottom of the groove permits this lateral expansion, causing the cushion to fill the area in said groove bottom.

The male member, which in this instance is carried by the trunk lid, is provided with a tongue extension 7 that conforms in cross-section to the throat portion of the groove, and, as shown in Fig. 2, the tongue and adjacent sides of the lid may also be reinforced by a metallic binder 8, similar to that shown in connection with the groove. In Fig. 1 the joint members are shown in their closed position, in which position the tongue 7 has compressed the cushion 5 to such an extent that the latter has completely filled the semicircular bottom 2^a, but the area of said cushion remains the same.

By utilizing a cushion of less area than the groove or seat, it will be seen that the life of the cushion is greatly increased; which, under conditions wherein compression and contraction is had, to obtain a seal-joint, the said cushion will quickly deteriorate.

Any form of compression lock or clasp may be utilized to clamp the members in their closed position, there being a link

clamp fitting 9 connected to the top and trunk body for accomplishing the desired result as shown in Fig. 1.

While I have shown and described a solid cushion for accomplishing the desired result, it should be understood that this cushion may be hollow, nor do I wish to confine myself to the elliptical formation as, for example, a rectangular or polygonal form of groove bottom and cushion may be utilized to accomplish the same result, as shown in Fig. 3.

The essential feature of the invention is to provide a cushion having a seat of greater width than said cushion, the width of seat being disposed laterally or at right angles to the line of compression, it being understood that the throat portion of the groove is of less width than its bottom portion.

I claim:

1. A joint for detachable members comprising a wood body portion having a groove therein, a metallic binder extending upward from the wood body over the top edges thereof, downwardly and around the groove walls, to form a solid walled key-hole slot within the groove of the body portion having a restricted throat, filler-strips interposed between the side-walls of the groove and walls of the binder strip forming the restricted throat portion, a cushion seated within the bottom portion of the groove, the cushion being provided with a contracted neck that extends into the contracted throat portion of the aforesaid groove, said cushion being of less width than the greatest width

of the bottom of the groove, whereby a normal clearance between the groove-walls and cushion is obtained, and a tongue member conforming in cross-section to the groove throat arranged to enter the same and impinge against the cushion neck.

2. A joint for detachable members comprising a wood body portion having a groove therein, a non-expansible metallic binder extending upwardly from the wood body over the top edge thereof, downwardly and around the groove walls, to form a solid walled key-hole slot within the groove of the body portion having a restricted throat, a cushion seated within the bottom portion of the groove, the cushion being provided with a contracted neck that extends into the contracted throat portion of the aforesaid groove, said cushion being of less width than the greatest width of the bottom of the groove, whereby a normal clearance between the groove walls and cushion is obtained, and a tongue member conforming in cross-section to the groove throat arranged to enter the same and impinge against the cushion neck, whereby lateral expansion of the cushion is had to fill the lateral space between the walls of the groove bottom.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

THOMAS E. CAMP.

Witnesses:

GEO. W. YOUNG,
MAY DOWNEY.