No. 865,233.

PATENTED SEPT. 3, 1907.

W. W. BURNS.

STAIR RAIL JOINT.

APPLICATION FILED OCT. 11, 1906.

Fig. 1.

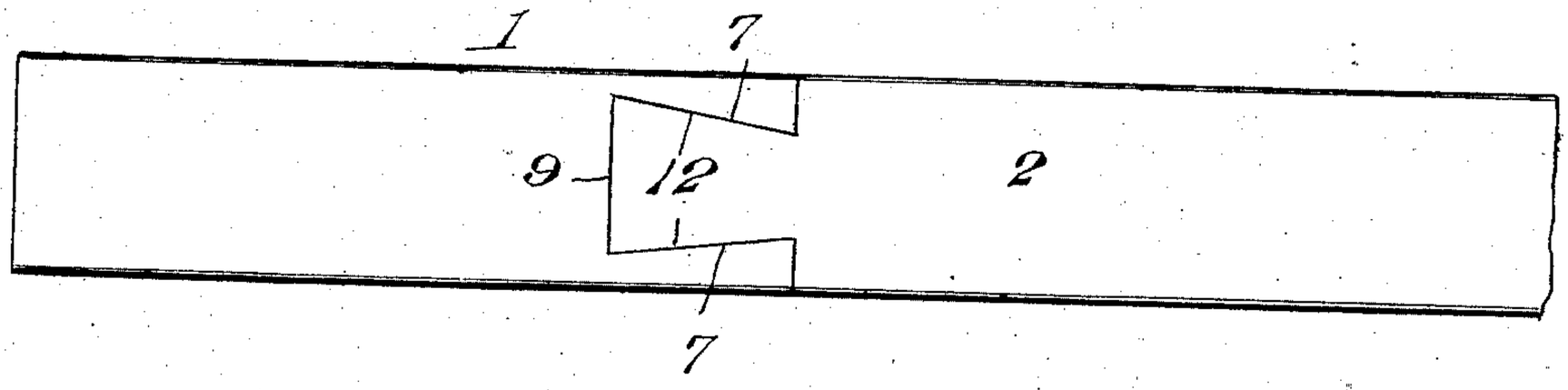


Fig. 2.

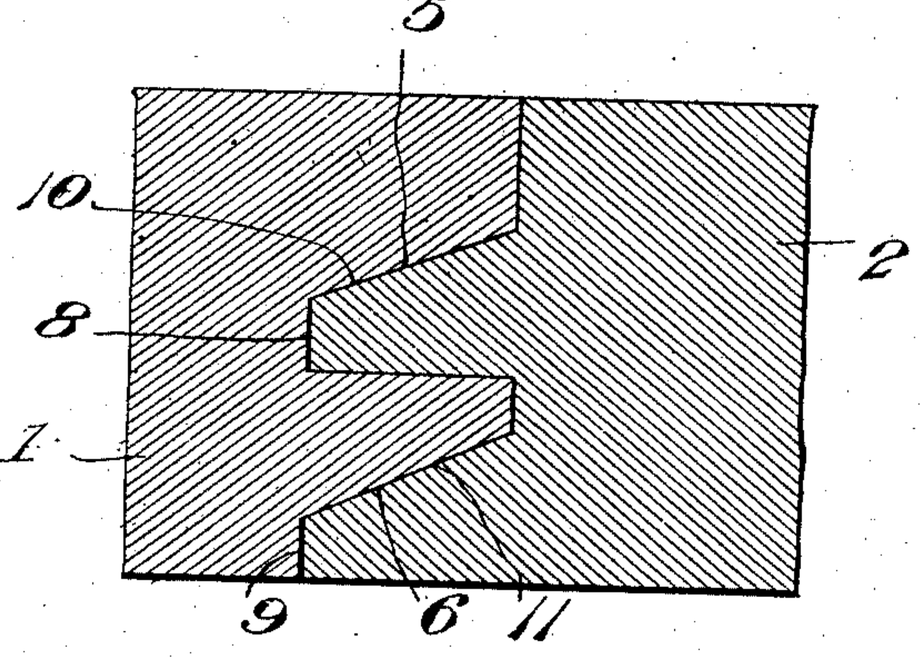
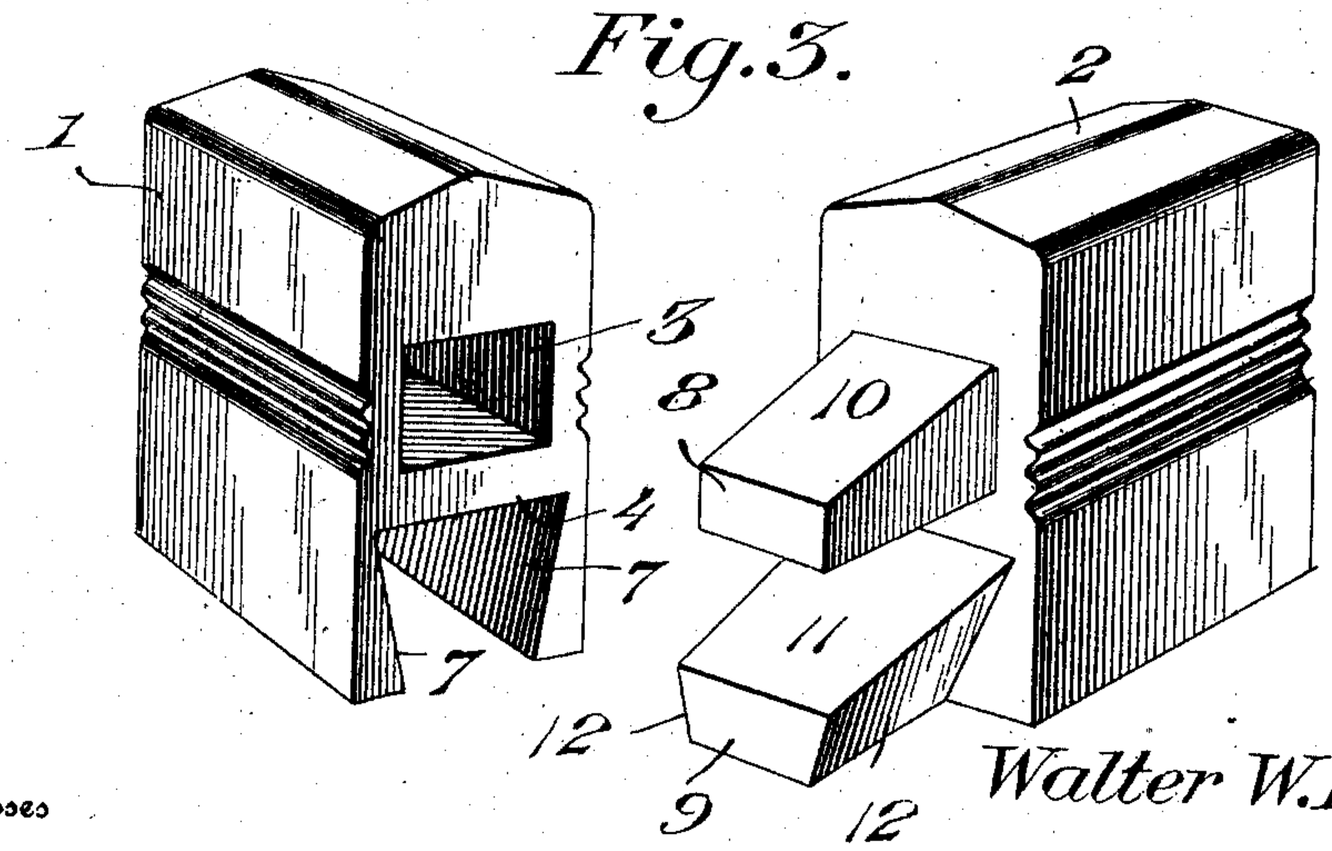


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

WALTER W. BURNS, OF FROSTBURG, MARYLAND.

STAIR-RAIL JOINT.

No. 865,233. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed October 11, 1906. Serial No. 338,340.

To all whom it may concern:

Be it known that I, WALTER W. BURNS, a citizen of the United States of America, residing at Frostburg, in the county of Allegany and State of Maryland, have invented new and useful Improvements in Stair-Rail Joints, of which the following is a specification.

This invention relates to an improved stair rail joint, designed to provide a means by which the sections of a stair rail may be quickly and conveniently coupled together in such a manner as to effect a saving of time and labor over the customary joining operation, as well as to enable the rail sections to be firmly and securely connected against both independent vertical and lateral motion without the absolute necessity of gluing the joint.

The invention is further designed to provide a joint which will permit of the ready disconnection of the rail sections when occasion requires and which will enable such sections to be easily and economically manufactured.

In the accompanying drawing—Figure 1 is a bottom plan view of two rail sections connected by my improved joint. Fig. 2 is a longitudinal section through the joint. Fig. 3 is a perspective view of the rail ends, showing the construction of the members of the joint.

Referring to the drawings, 1 and 2 represent stair rail sections embodying the elements of the joint constituting my invention. As shown, the section 1 is provided with upper and lower mortises 3 and 4 opening through the meeting end thereof, said mortises being respectively provided with beveled upper walls 5 and 6 inclining inwardly and downwardly from the entrances thereof. The mortise 4 opens at its base through the bottom of the section 1 and is of the dovetailed type, having its side walls beveled inwardly and downwardly, as clearly shown in Fig. 3. The rail section 2 is provided upon its meeting end with tenons 8 and 9 for insertion into said mortises, the said tenons being respectively formed with beveled upper faces 10 and 11 which incline downwardly and outwardly and are adapted to engage the beveled upper walls 5 and 6. The tenons are disposed in superposed relation, and the tenon 9 is of the dovetail type, its sides 12 being tapered or beveled to conform to the bevel of the faces 7 of the mortise 4. The entrances of the mortises are so arranged that when the meeting ends of the rail sections are brought together and the outer ends of the tenons inserted within the mortises the upper surface of the section 2 will lie above the upper surface of the section 1, and so that when the section 2 is forced inwardly to insert the tenons in the mortises in their full extent the beveled walls 5, 6, 10 and 11 will force the tenons downward until, when said tenons are fully inserted and the ends of the sections abut, the upper and lower surfaces of said sections will lie flush with each other.

It will be observed that when the tenon 9 is fully inserted in the mortise 4 the bottom surface of said tenon will be exposed at the bottom of the mortise and lie flush with the base of the section 2, thus securing a flush construction, and that the peculiar form of the tenons and mortises will insure such a firm connection that it will effectually prevent the rails from having either vertical or lateral movement, by which it will be apparent that the sections will be maintained at all times in alinement.

It will be further observed that the frictional engagement between the elements of the joint will serve to hold the parts connected against endwise movement, except when some little force is exerted, and that as a vertical movement of one section relative to the other is necessary in connecting and disconnecting said sections, no two sections of a stair rail equipped with the invention can become disconnected under all ordinary circumstances in use, as the joining of several sections together will prevent such vertical movement of either end of any one of the sections. Hence the construction described will enable a firm and secure joint to be obtained without the use of glue, and will enable the section of a rail to be quickly and conveniently joined.

Having thus described the invention, what is claimed as new, is:—

In a rail joint, a rail section having an upper mortise provided with an inwardly and downwardly inclined top wall and a lower dovetailed mortise having a similarly inclined top wall, in combination with a second rail section provided with an upper tongue to enter the upper mortise and having a beveled upper surface and a lower dovetailed tongue having an upper beveled surface, said beveled surfaces of the mortise and tongues operating to force the tongues downward in the mortises when the rails are brought together.

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

WALTER W. BURNS.

Witnesses:
ALEXANDER SMYTH,
CLARENCE S. WADE.