

T. H. BOYLE.
 LOCK JOINT FOR STRUCTURES.
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1,320,982.

Patented Nov. 4, 1919.

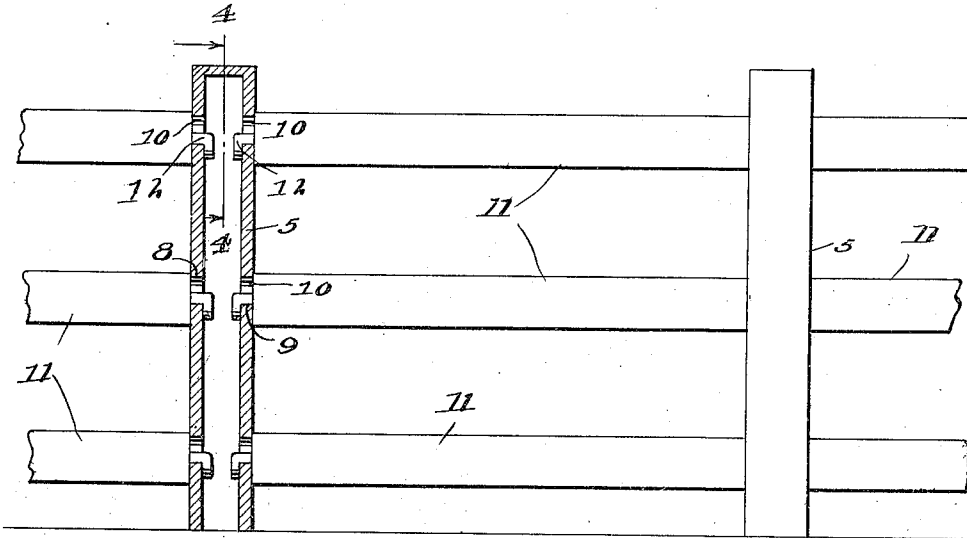


Fig. 1.

Fig. 3.

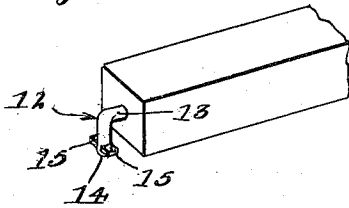
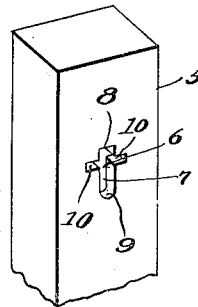


Fig. 2.

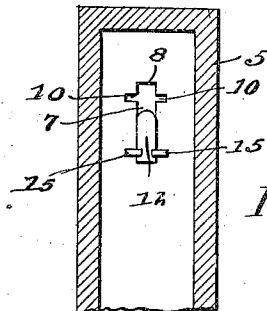


Fig. 4.

Witnesses
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LOCK-JOINT FOR STRUCTURES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, THOMAS H. BOYLE, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Lock-Joints for Structures, of which the following is a specification.

This invention relates to lock joints whereby different elements may be secured together, and has for its object the provision of a peculiarly constructed lock joint susceptible of use in a great variety of arts whereby two elements may be secured together, the construction of the joint being such that the members may be assembled in one position after which relative rotary movement of the members will so dispose the locking member that displacement or separation of the sections will be positively prevented.

An important object is the provision of a device of this character which will be extremely simple and inexpensive in manufacture, highly efficient and durable in use and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction to be hereinafter more fully described and claimed, and illustrated in the accompanying drawings in which:—

Figure 1 is a front elevation of a fence constructed of elements provided with my locking means, one of the fence posts being in sections,

Fig. 2 is a perspective view of one element and

Fig. 3 is a fragmentary perspective view of the other engaging element.

Fig. 4 is a detail sectional view on the line 4—4 of Fig. 1.

It will be readily understood in advance, that my particular construction of lock joints is capable of use in a wide variety of arts for the construction of widely differing structures, but for the sake of illustration I have shown a fence constructed of members provided with my locking means, it being understood naturally that the joint is not limited to use upon fence structures.

Referring more particularly to the drawings the numeral 5 designates a fence post which in the present instance is illustrated as being of hollow rectangular formation and formed of any suitable material which

may conveniently be iron. Formed in opposite sides of the post 5 at certain predetermined intervals are openings 6 which are somewhat in the nature of a key-hole slot and which includes a relatively large portion 7 having one end 8 straight and the other end 9 curved, and further including lateral branch slots 10.

In this fence structure, the rails are designated by the numeral 11 and may be of any desired cross sectional area and configuration so in the present instance they are illustrated as being square. Extending from each end of each rail 11 is a locking member 12 including a preferably cylindrical shank 13 terminating at its ends in a right angularly extending head 14 of a length corresponding to the length of the relatively large opening 7 in the fence post. The diameter of the shank 13 and head 14 is preferably equal to the width of the relatively large opening 7. Formed on the head 14 adjacent the free end thereof are laterally extending wings 15 of the same size and shape as the branch slots 10 in the fence post.

In the assembling of the elements constituting the fence, the posts 5 are first properly positioned a distance apart equal to the length of the rails 11, after which the rails are separately placed between the post in such position that the heads 14 will have their free ends extending upwardly so that they may be passed through the openings 6 in the post. After the heads 14 are thus inserted through the openings 6, each rail 11 is given a partial rotation whereupon the heads 14 will be so moved that the shank 13 will bear against the curved ends 9 of the openings 6 and the wings 15 will engage against the inner face of the post. This position of the heads 14 is clearly shown in Fig. 4 and from an inspection of this figure it will be apparent that after the rails 11 have been thus partially rotated as above described it will be impossible for the rails to become separated from the post. It is of course readily understood that even after the posts have been inserted in position they may be sprung slightly apart so that the rails may be properly inserted between them.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided a lock joint which is adapted for use in the construction of a

wide variety of structures and which is so formed that after elements have been once secured together accidental displacement or separation thereof will be positively prevented. It will also be apparent that various structures may be readily built out of different elements provided with my peculiar lock joint in a very short length of time and with a minimum expenditure of labor.

10 Having thus described my invention I claim.

1. A lock joint comprising in combination a structural element provided with an elongated opening having one end square and its other end curved, the opening having communicating therewith intermediate its ends relatively small lateral branches, a second structural element, and a locking member extending from face of said second named structural element and formed as a cylindrical shank terminating in a right angularly extending head of a size and shape to conformingly pass through said opening, and laterally extending wings on said head passable through said branch

openings, relative rotation of said structural elements positioning said head and wing against the rear side of said first named structural element with said shank engaging the curved end of the first named opening.

2. A lock joint comprising, in combination, a structural element provided with an elongated opening having communicating therewith intermediate its ends relatively small lateral branches, a second structural element, and a locking member extending from one face of said second named structural element and formed as a shank terminating in a right angularly extending head of a size and shape to conformingly pass through said opening, and laterally extending wings on said head passable through said branch openings, relative rotation of said structural elements positioning said head and said wings against the rear side of said first named structural element.

In testimony whereof I affix my signature.

THOMAS HENRY BOYLE.

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