(No Model.)

G. M. BENNETT.

JOINT FOR SCHOOL FURNITURE.

No. 525,756. **Patented Sept. 11, 1894.**

Fig. 1.

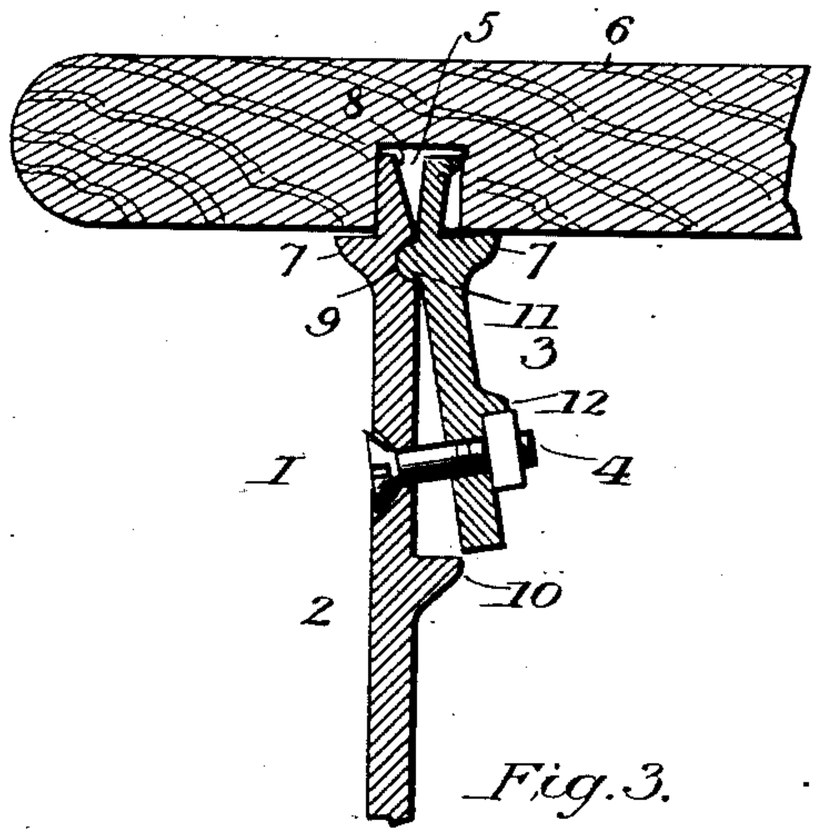


Fig. 3.

Fig. 2.

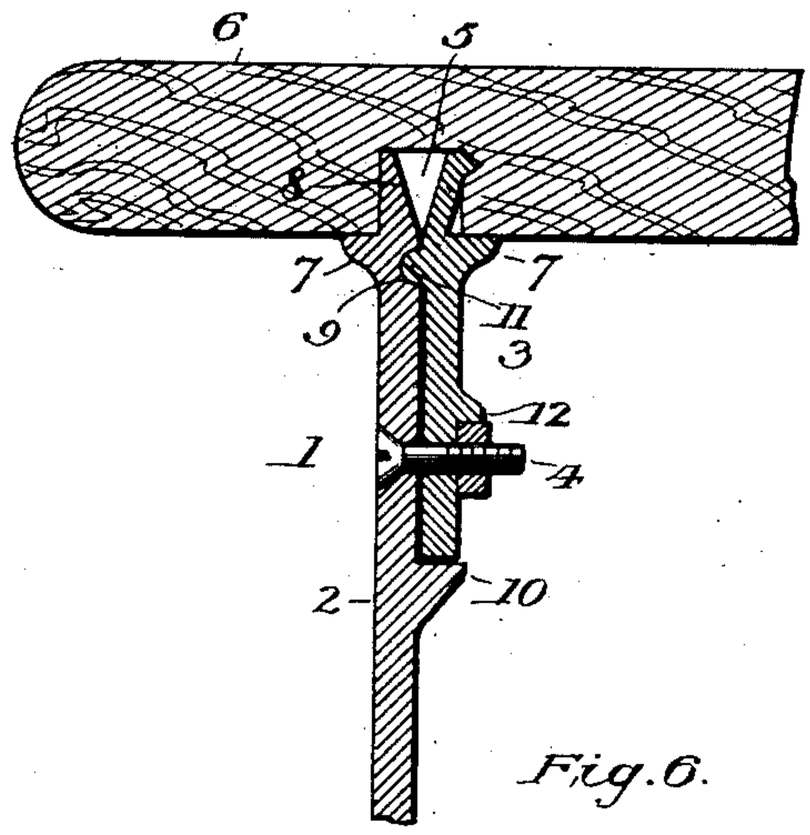


Fig. 6.

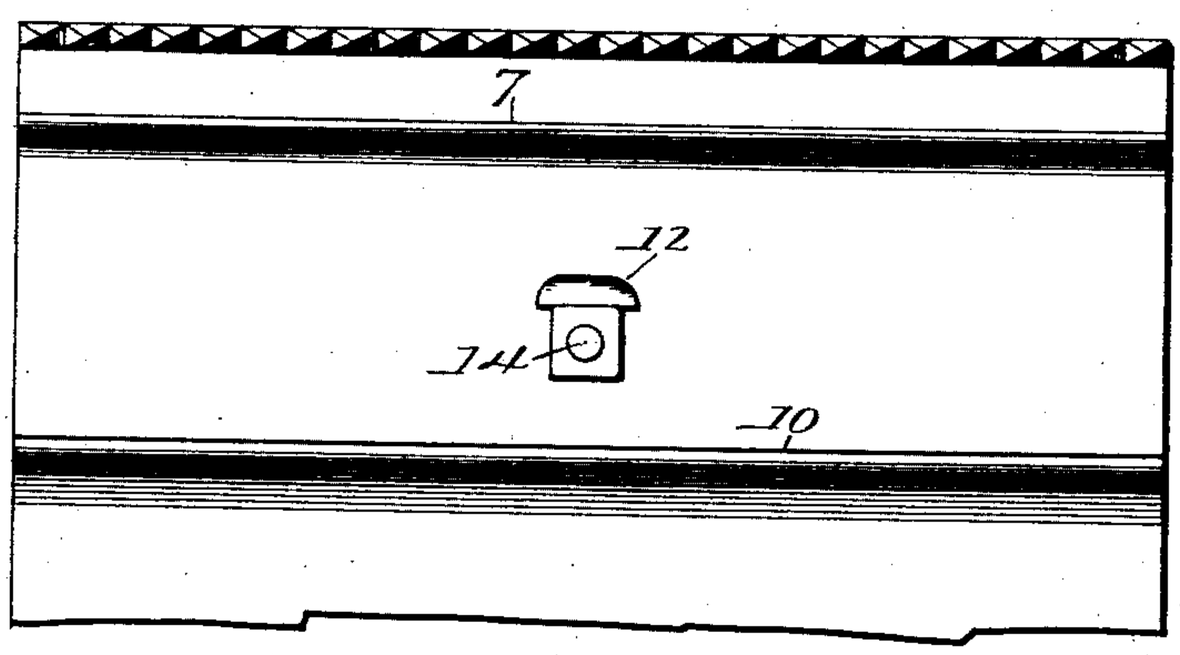


Fig. 5.

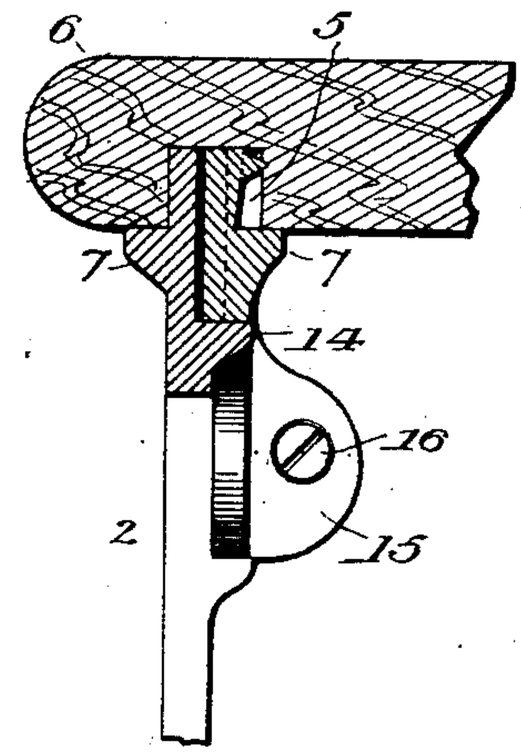
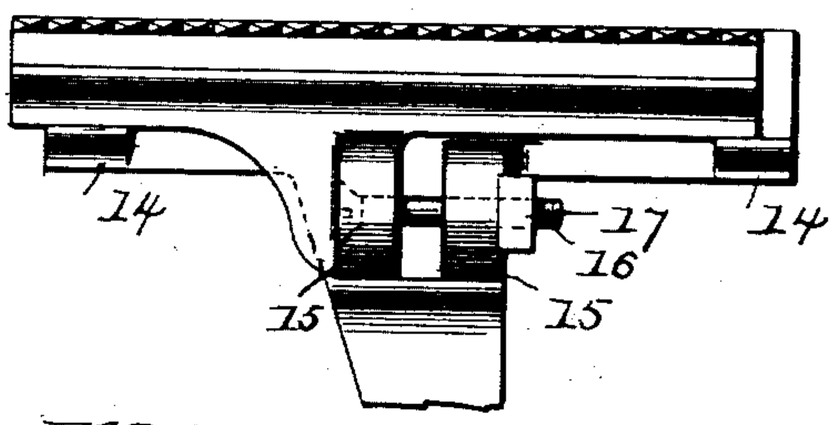
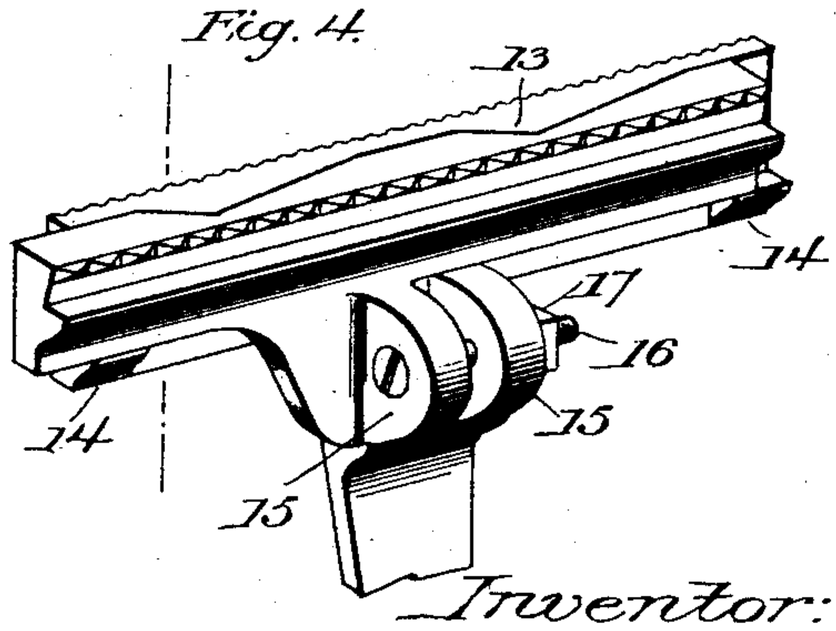


Fig. 4.





Witnesses:
F. S. Elmon
Raymond H. Barnes.

Inventor:
G. M. Bennett
By Philip T. Dodge
atty.

UNITED STATES PATENT OFFICE.

GEORGE MERRIT BENNETT, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF ONE-HALF TO SEYMOUR W. PEREGRINE, OF SAME PLACE.

JOINT FOR SCHOOL FURNITURE.

SPECIFICATION forming part of Letters Patent No. 525,756, dated September 11, 1894.

Application filed June 29, 1893. Serial No. 479,104. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MERRIT BENNETT, of Grand Rapids, county of Kent, and State of Michigan, have invented a new and useful Improvement in Joints for School Furniture, of which the following is a specification.

In the handling of school furniture, it is customary to ship the parts in a separated condition, and when they arrive at their destination to set them up by connecting the various parts. For this purpose different forms of joints have been devised for securely holding the wooden portions of the furniture to the iron castings, it being the aim in all cases to construct a joint by means of which the parts can be quickly connected and readily disconnected, and which when the parts are connected will hold them securely without the risk of their becoming loose.

My present invention relates to an improved joint embodying these features, and it consists broadly of a joint composed of a fixed and a relatively movable member, the said parts being adapted by suitable mechanism to be adjusted and expanded within the recess in the wooden portion of the desk and caused to engage firmly the sides of the recess as more fully described hereinafter.

The invention also consists in the details of construction and combination of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1, is a section through a portion of a standard of a school desk and through the adjacent wooden portion showing my invention embodied therein. Fig. 2, is a similar view showing parts of the joint in another position. Fig. 3 is an elevation of the same. Fig. 4, is a perspective view of a modification. Fig. 5 is an elevation of the same. Fig. 6 is a section through the same.

Referring to Figs. 1, 2, and 3, 1 represents my improved joint which consists of a fixed member 2, which is formed on the standard or other fixed portion of the desk, and a relatively movable member 3 in the form of a plate, which is sustained by the fixed member and adapted by suitable means 4 in the form of a bolt to be adjusted with relation to the fixed member to cause the expansion of the parts of the joint, as more fully described hereinafter. The edges of these two members are adapted to enter a channel or recess 5, formed in the wooden portion 6 of the desk, which is to be connected to the standard and adjacent to their edges they are provided with shoulders 7, arranged to abut against the wooden portion 6 at the sides of the recess, as plainly shown in the drawings. The fixed member is beveled on its inner face as shown at 8, and is formed with a groove 9, and below the groove with a lateral flange 10. The movable member is also beveled on its inner face, and is provided with a rib 11, to enter the groove in the fixed member, the groove and rib thus constituting a fixed fulcrum on which the movable member rocks and the edge of the plate being seated upon and guided by the flange 10 on the fixed member.

The parts of the joint are connected together by means of the bolt 4 before alluded to, which extends through the two members and is provided with a nut which is prevented from turning by a boss 12, projecting from the side of the movable member.

From the foregoing description it will be seen that owing to the peculiar formation of the inner faces of the two members, the movable plate will rock or tip on the rib as an axis, as the bolt is screwed or unscrewed, which movement will cause its edge to approach or recede from the edge of the fixed member, according to the direction in which the bolt is turned, the portions beyond the axis forming jaws adapted to be inserted, in a closed condition, into the groove 5 through the open side thereof, and then opened or spread apart, as represented in Fig. 2, to secure them therein.

In practice when it is desired to connect the standard to the wooden portion of the desk, the bolt 4 is unscrewed, which will allow the beveled edge of the movable plate to approach the fixed member as shown at Fig. 1, and in this position the edges are inserted in the channel in the wooden portion of the desk. The bolt is then screwed into the nut, which action will cause the movable plate to tip or rock and its beveled edge to move away from the edge of the fixed member, and en-

gage the wall of the recess, and on the continued movement of the bolt, the parts of the joint will be forcibly expanded within the recess, and engaging the same will be held securely and firmly therein.

It will be observed that the edge of the fixed member nearest the edge of the wooden portion of the desk is straight, which bearing uniformly against the wall of the recess, there will be little or no liability of the pressure splitting or fracturing the edge. It will also be observed that in employing my improved joint it will not be necessary to form in the wood, dovetailed or other under-cut recesses or channels, as the parts of my joint under the influence of the screw may be caused to engage the straight parallel sides of the channel with such force as to prevent the removal of the same. Further it is possible under my construction to take up any looseness in the joint which might result from shrinkage or from other causes, by simply screwing up the bolt when occasion may arise.

To enable the edges of the two members to hold securely within the recess, I propose to form at their outer sides, teeth or serrations as shown.

In Figs. 4, 5 and 6 I have represented a modification of my invention. In this case instead of constructing the members so that the expansion of the parts is effected by the clamping action of a screw bolt, I so arrange the members that their expansion is accomplished by sliding the movable plate longitudinally on the fixed member, the longitudinal movement of the plate causing it to rock or tip, as in the first case mentioned, on a fixed fulcrum. The meeting faces of the two members are formed at intervals with inclined surfaces 13, so that when the movable plate is slid along the fixed member, it will be caused to separate therefrom laterally in the familiar manner of a wedge. To effect the longitudinal movement, I provide the fixed member with guides 14, to receive the movable plate and form on the two members lateral hinge lugs 15, arranged side by side, and provided with openings to receive a bolt 16, having a nut 17, applied to its end, which is seated in a recess in the fixed member, and prevented thereby from turning. By screwing the bolt into the nut, the two lugs will approach, thereby causing the movable plate to slide longitudinally of the fixed member, and owing to the inclined faces, the movable plate will separate laterally, and swing outwardly on the bolt 16 as a fixed pivot or fulcrum.

While I have shown and described my invention as being applied to school furniture, it is to be understood that it may be employed for other purposes and in other connections, and that my invention is intended to cover such an application of the mechanical construction set forth, provided the operation will be substantially as hereinbefore indicated.

An essential difference between my fastening and others heretofore devised and used is that mine is adapted to be secured in a straight or parallel-sided groove or channel while others require a dove-tail groove.

Another essential difference is that my construction permits the two members to be connected together previously to insertion into the groove and to be inserted and removed together, while in others they are inserted and withdrawn separately, the movable member acting as a key to hold the other member in place.

I am aware of Patents Nos. 237,176 and 246,670, granted to O. S. Garretson February 1, 1881, and September 6, 1881, respectively, each of which shows a dove-tail groove and a fastening of the character above referred to. My invention differs from these in that the holding force is exerted in a direction substantially parallel to the plane of the desk, while in the patented constructions it is exerted in a direction inclined to the surface of the desk,—that is, in a direction at right angles to the sides of the groove or channel. There is thus a wedging action between the bottom and sides of the groove, with a constant tendency to split, or tear off, the lower surface of the desk in which the groove is formed. In my construction this wedging or tearing action is avoided, and this forms another essential feature of my invention.

Having thus described my invention, I claim—

1. In a furniture joint or fastening of the character described the combination with the fixed member, of a movable member having a fixed, in contradistinction to a movable fulcrum thereon on which it is adapted to rock, both members extending forward beyond the fulcrum to form holding jaws adapted, when closed together, to enter the open side of a groove or channel, and means for spreading and holding said jaws apart.

2. In a furniture joint of the character described the combination with a fixed member, of the movable member having a fixed, in contradistinction to a movable, fulcrum thereon, the edges of the two members, beyond the fulcrum, forming jaws adapted to be opened and closed by rocking the movable member on its fulcrum, the two jaws, when closed together, having their outer faces substantially parallel, and means for forcibly spreading and holding said jaws apart.

3. The combination of a desk top having in its under surface a groove or channel, a standard or support for said top, and a movable holding device having a fixed, in contradistinction to a movable, fulcrum against the side of the standard near the top of the latter, the upper ends of the standard and of the movable device forming jaws adapted, when closed together, to enter the groove together, and a clamping bolt passing through the lower end of the movable holding device, below the fulcrum, and through the standard; whereby the

movable device is adapted to be rocked and the jaws spread apart and fixed in holding position in the groove.

4. In a furniture joint the combination of the fixed member having its inner face beveled and provided with a groove, the movable member having its inner face beveled in a direction opposite to that of the opposite member and provided with a rib to enter the groove, the rib and groove constituting a fixed fulcrum on which the movable member may rock, and a device for rocking the movable member on its fulcrum; whereby the beveled ends of the two members may be caused to approach or be separated, as and for the purpose described.

In testimony whereof I hereunto set my hand, this 22d day of May, 1893, in the presence of two attesting witnesses.

GEORGE MERRIT BENNETT.

Witnesses:

CHAS. A. RENWICK,

ERNST E. KASPER.