(No Model.)

J. N. HIERONYMUS.

WOOD JOINT.

No. 477,118. Patented June 14, 1892.

Fig. 1.

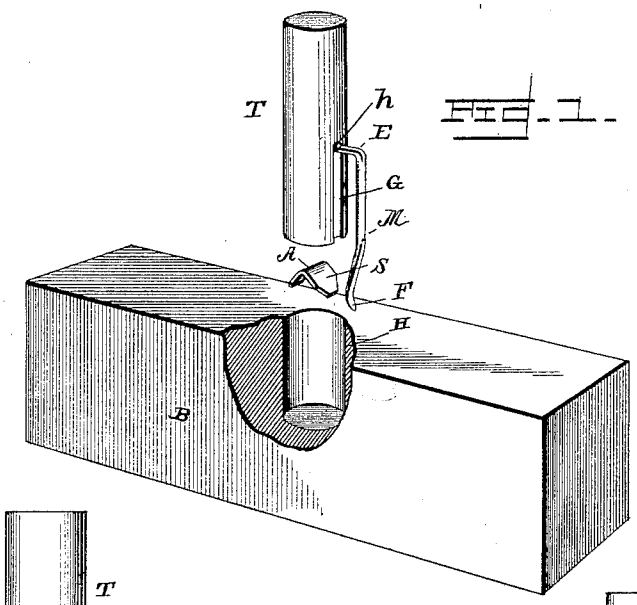


Fig. 2.

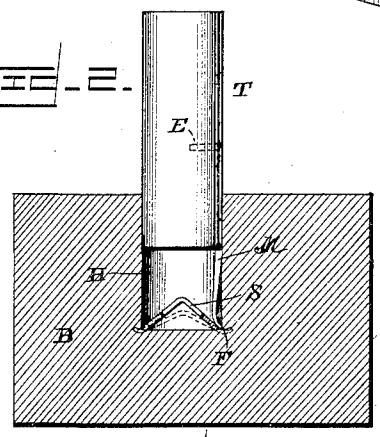


Fig. 3.

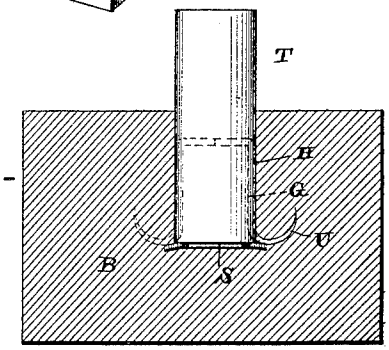


Fig. 4.

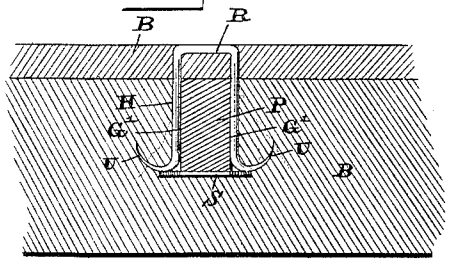
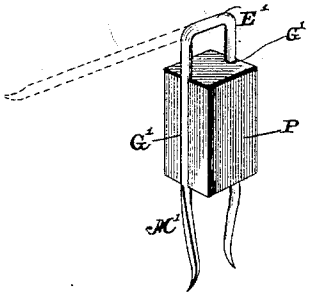


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

JASPER N. HIERONYMUS, OF FAIRBURY, ILLINOIS.

WOOD-JOINT.

SPECIFICATION forming part of Letters Patent No. 477,118, dated June 14, 1892.

Application filed October 9, 1891. Serial No. 408,236. (No model.)

To all whom it may concern:

Be it known that I, JASPER N. HIERONYMUS, a citizen of the United States, residing at Fairbury, in the county of Livingston and State of Illinois, have invented a new and useful Wood-Joint, of which the following is a specification.

This invention relates to carpentry, and more especially to that class thereof known as "splices" and "joints;" and the object of the same is to produce an improved means for connecting two wooden members.

To this end the invention consists in a joint of the character hereinafter more fully described and claimed, and as illustrated on the accompanying sheet of drawings, wherein—

Figure 1 is a perspective detail of a tenon with a hook and spreader-plate slightly removed therefrom and showing the tip of the tenon as above a hole in a block of wood, said block being in section through the hole. Fig. 2 is a side elevation of the same parts (also giving a section of the block) in position ready to be connected. Fig. 3 is a similar view after the parts are connected. Fig. 4 is a section through two flat members, showing them connected by a slightly-modified form of my device. Fig. 5 is a persective detail of the plug and double hook, which is used in Fig. 4.

It is well known in carpentry that where a tenon on one member is to be driven into another member (which I will call the "block") glue must be used to keep the tenon from drawing out, the hole in the block must be enlarged at its inner end, and the tip of the tenon spread, as by a wedge, after it is inserted or in the act of driving. A transverse pin must be passed through the block and tenon or some other means must be employed to prevent the separation of the members. This necessity arises in all cases where a wood-joint of this character is to be formed, such as in the rungs of chairs, the corners of bedsteads, desks, and other pieces of furniture, the corners of window and door frames, and at numerous other points known to the carpenter and cabinet-maker where two wooden members are connected by a tenon (or even a tongue and groove) whether the tenon is integral with one or whether it be a plug entering each of two members. A similar necessity arises when two flat members or blocks are to be connected without a tenon or a tongue and groove and where for any reason it may be undesirable to use a screw or a bolt.

My present invention contemplates the provision of means for effecting a rigid and permanent connection between such wooden members, to which end it consists in a joint of the construction described below. I do not, however, desire to be limited to the use of this device for the purpose described or mentioned, as other occasions which do not occur to me at this writing may arise in which a joint of this character would be highly advantageous, especially if the materials of parts be slightly changed.

Referring to the said drawings, the letter B designates a block, in which is bored a hole H of a size to receive a tenon T, which may be round, as shown, or of any other suitable cross-section.

S is a spreader-plate, which is bent across its body at about right angles, as at A, and which is of a size adapting it to be passed into the hole and put into position therein, as seen in Fig. 2, with its angle uppermost.

M is a metallic hook, preferably flattened and curved slightly, especially toward its tip, as shown at F. The body of this hook is normally straight, or nearly so, and its upper end E is bent at right angles to said body. There may be any number of these hooks, though only one is shown in use.

In connecting the members by my improved joint the following steps are taken: A notch or groove G is formed longitudinally in the side of the tenon, terminating at its upper end in a small transverse hole *h*, passing into the body of the tenon. The spreader-plate S is inserted in the hole H in the manner above described and so that one of its beveled sides will stand under the point where the groove is to come, and the angle of the plate is tapped gently, so as to curve its ends a trifle and embed them in the sides of the hole, as seen in dotted lines in Fig. 2. The upper end E of the hook is then inserted in the hole *h*, the body of this hook standing in the groove and its pointed and flattened portion projecting beyond the end of the tenon. The latter, with the hook applied, is then passed into the mouth of the hole H in the block B, when the parts will be in the position shown in Fig. 2. The tenon is then driven in, and this operation turns the flattened portion of the hook upwardly in the body of the block, as shown

at U in Fig. 3, thus forming the "hook," by which I have designated this part throughout. The beveled face of the spreader-plate deflects the tip of the hook as the latter is driven in and causes it to curve outwardly and upwardly, as is desirable, the bottom of the groove G preventing the body of the hook moving toward the center of the hole H during this operation. When the end of the tenon reaches the angle A in the spreader-plate, a further driving of the tenon of course flattens out the plate and its ends pass under the hooks, while its body assumes the position shown in Fig. 3 at the finish of the driving. At this time the tenon is deeply and firmly seated in the hole and locked therein by the ends E and U of the hook, which respectively engage the tenon and the block. Of course the end E could be bent at an acute angle, if preferred, or it could be continued through the tenon; but the latter modification I will describe at length farther on. Obviously there could be another hook at the other side of the tenon and engaging the other beveled face of the spreader-plate; or if the hole were long and the angle of said plate stood longitudinally of the hole there could be several hooks on each side of the tenon, the only limitation being that no hook must strike the angle of the plate.

In Fig. 5 is shown a double hook M′, which is simply two single hooks whose ends are connected and form the bend of this hook, as seen at E′. In the use of this hook the hole *h* would have to be continued entirely through the tenon and there would have to be two grooves G and one of the arms of the hook would have to be straight and in alignment with the bend E′, as seen in dotted lines. After this arm is passed through the hole in the tenon it is bent down, so as to stand in the groove G at that side of the tenon, its point given a slight curvature, as seen in full lines, and the tenon is applied in the manner above described; but it sometimes occurs that two flat members or blocks B are to be connected, as shown in Fig. 4, and this double hook becomes available in that case, a plug P being substituted for the tenon. The double hook (which may of course be of any desired length) is bent into the form of a staple and its straight ends passed entirely through the smaller block B, as seen, this block being preferably provided with a recess R, wherein is countersunk the bend E′. The larger block is provided with the hole H, and the spreader-plate S, above described, is seated in the bottom thereof. The plug P is provided with diametrically-opposite grooves G′, corresponding with the grooves in the tenon, except that they extend completely to the upper end of the plug. The latter is then inserted between the arms of the double hook and pressed up against the face of the smaller block, the grooves receiving said arms, as will be clear. The outer ends of the hooks are then given a slight curvature and passed into the hole H, followed by the plug, and the parts are driven together until the plug is fully seated in the hole, as shown in Fig. 4. The driving of the parts in this manner turns the end of each arm of the double hook upwardly at U, the same as in the case of a single hook, and obviously instead of a plug a long strip might be used which would fit a groove instead of the hole H, there being several double hooks over this strip.

What is claimed as new is—

1. A wood-joint comprising one member having an opening in one side, a plate wider than the opening and engaging the walls of the same, a second member terminating in a tenon and fitting said opening and having a longitudinal groove at its end and an approximately transverse hole at the upper end of the groove, and a hook, its body lying in said groove, its upper end being bent at an angle and seated in said hole and its lower end deflected by the plate and hooked into the body of the first member.

2. A wood-joint comprising one member having an opening in one side, a second member fitting said opening and having a longitudinal groove with an approximately transverse hole at its upper end, a hook with its body lying in said groove, its upper end bent at an angle and seated in said hole and its lower end curved outwardly and upwardly from the second member into the body of the first, and a plate between the bottom of the hole in the first member and the inner end of the second member, with an end projecting beyond the wall of said hole and under the bend of said hook.

3. A wood-joint comprising a member having an opening in one side, a deflecting-plate wider than the opening mounted therein and engaging the walls thereof, a second member fitting said opening and having longitudinal grooves in its opposite faces, whose upper ends are connected, and a double hook with its arms lying in said grooves, its bend connecting the arms above said grooves, and its lower ends deflected outwardly by the plate and hooked into the body of the first member.

4. The combination, with one member having a hole in one side and a spreader-plate bent at an angle and seated in said hole with its angle uppermost, of a second member of a size to fit said hole and a hook member set into the wall of this member and projecting beyond the end thereof in a line above one of the beveled faces of said plate, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JASPER N. HIERONYMUS.

Witnesses:
NIMROD MAPEL,
JOHN MAPEL.