

THE SCARF JOINT

Wear safety glasses when making woodwork joints.

The method known as "scarfing" is used for the joining of timber in the direction of its length, enabling the workman to produce a joint with a smooth or flush appearance on all its faces. One of the simplest forms of scarfed joint is known as the half lap, in which a portion is cut out at the end of each beam or joist, equal in depth to half the full depth of the beam, and of equal length to the required scarf.

The two pieces before they are placed together form a joint as shown at Fig. 211, the projecting part (A) fitting into the recessed portion marked B and the two pieces being secured in their respective positions by screws.

Fig. 212 shows a dovetailed scarf joint. This is a variation of Fig. 211, the length of the dovetail lap being from 6 ins. to 8 ins. in length.

Fig. 213 is an illustration of a joint designed to resist a cross strain. The face side is left flush, whilst the underside is assisted by an iron plate. The joint is secured with nuts, bolts, and washers. This type of joint is frequently used for joining purlins in roof work; the iron plate on the underside is in this case omitted.

Fig. 214 is designed to resist both tension and compression and is an excellent joint for all purposes. The joint is brought together by using folding wedges as shown in the centre.

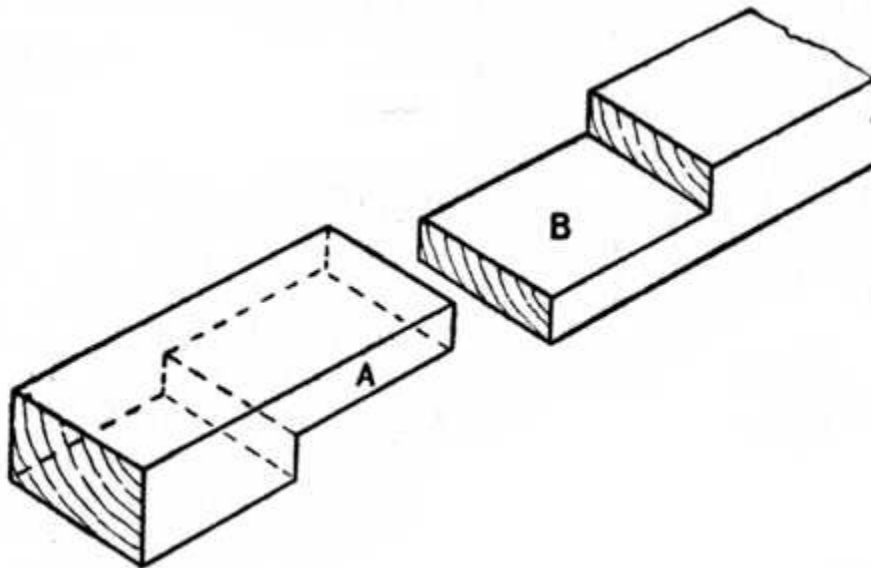


Fig. 211.—Half-Lap Scarf Joint for Light Timber.

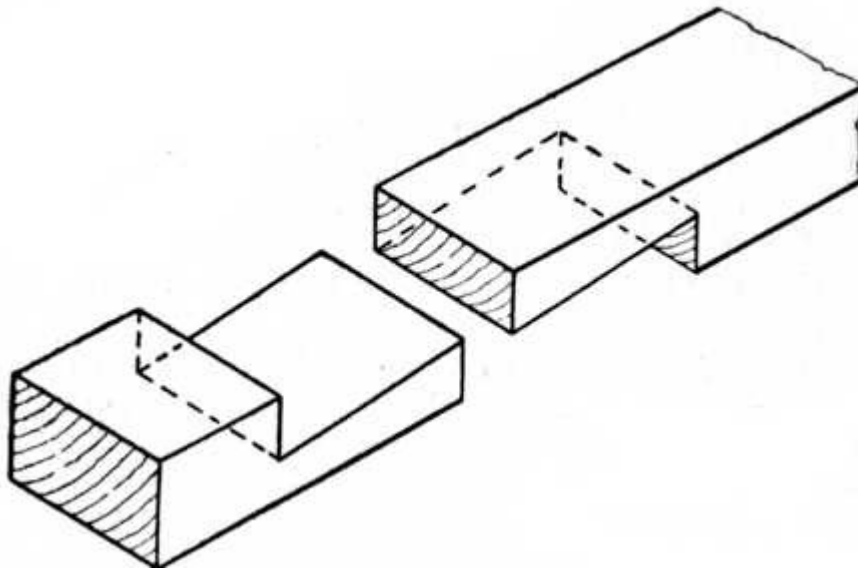


Fig. 212.—Dovetailed Scarf Joint.

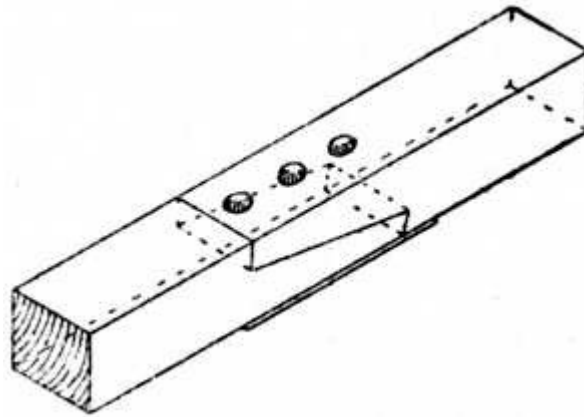


Fig. 213.—Plated Scarf Joint Used in Roof Work.

Fig. 215 is a variation of Fig. 214, and it will be noticed that tenons are provided on the face and underside to resist cross strain. Probably this is one of the best varieties of the scarfed joint. Unfortunately, however, its production is somewhat costly, and this may be the reason that it is not more universally used. Folding wedges are used to secure the two pieces in position.

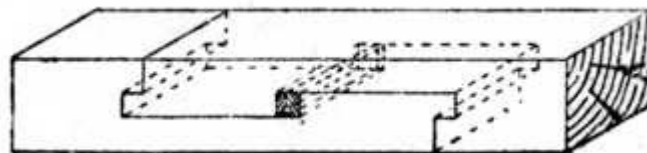


Fig. 214.—Tenoned Scarf Joint.

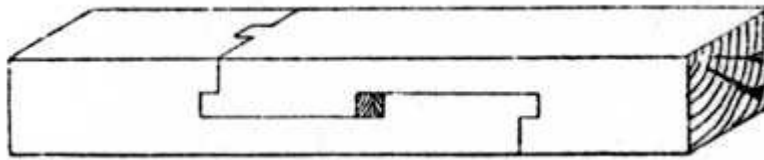


Fig. 215.—Double Tenoned Scarf Joint.

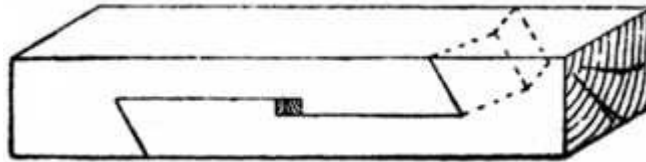


Fig. 216.—Scarf Joint with Vee'd ends.

Fig. 216 is a scarfed joint with undercut vee'd ends which prevent the joint from lipping up or down or sideways. It is a useful joint, calling for careful setting out and accurate craftsmanship. Folding wedges are used in this case to draw up and secure the joint.

Fig. 217 is a "fished joint," and the following difference between a scarfed and fished joint should be noted. A fished joint need not necessarily reduce the total length of the beams to be joined, and fish plates of wood or iron (or a combination of both) are fastened at each side of the joint. In a scarf joint all surfaces are flush. In Fig. 217 the beams are butt-jointed and secured by wooden plates and iron bolts. The upper plate is let into each beam, and the lower plate is provided with two wooden keys to prevent the beams sliding (or "creeping") upon the lower plate. Iron nuts, bolts, and washers are used to complete the joint.

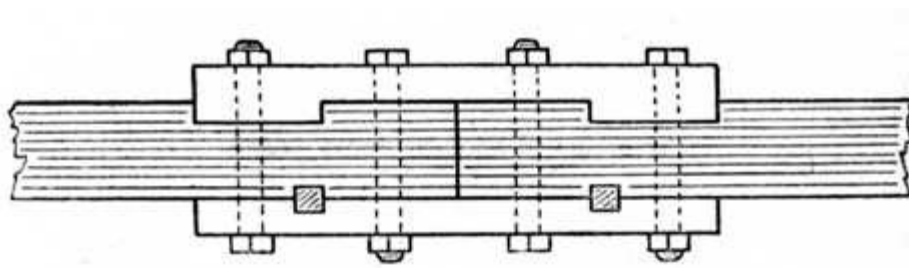


Fig. 217.—Fished Joint.

In the case of the scarfed joint at Fig. 218 (used for purlins) the length of the scarf is usually made about four times that of the depth of tie beam. It has two hardwood keys which force the pieces together and thus tighten the joint.

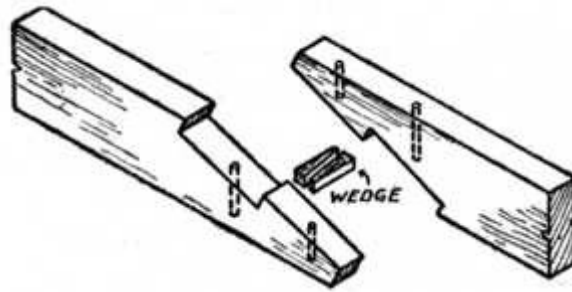


Fig. 218.—Detail of Scarfed Joint in Purlins.

The methods of scarfing and fish-jointing are many and varied, and, in selecting a joint, the nature of the pieces to be joined and the direction and the amount of the load should be carefully taken into consideration.

The above joints come under the heading of carpentry, and the ordinary tools such as the saw, plane, boring-bit and chisels are all that are requisite and necessary to produce a sound and serviceable joint. Scarfed joints are generally of large size, and they are usually made by placing the work upon sawing trestles owing to the bench being too small to accommodate the large timbers.

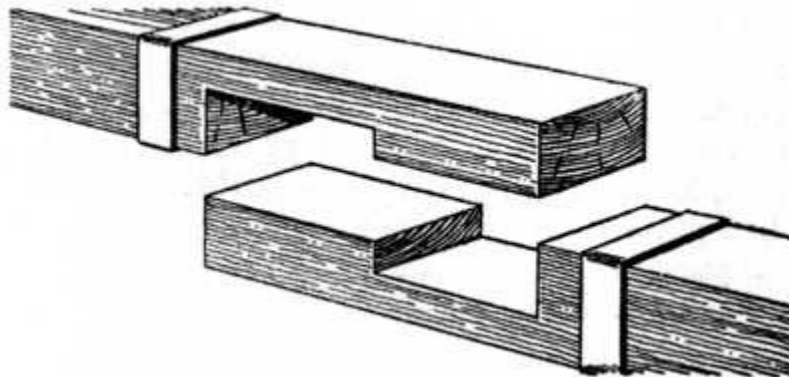


Fig. 219.—Example of Tabled Joint with Straps.

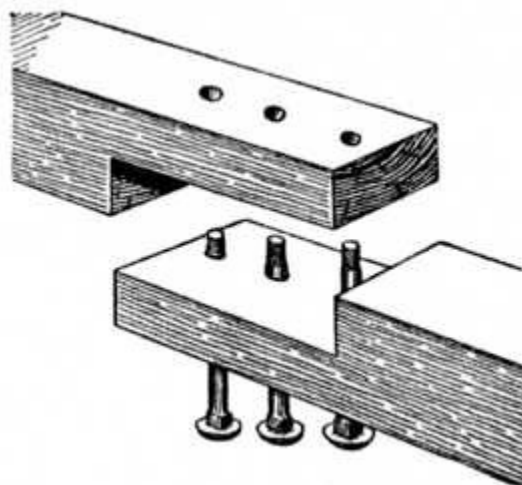


Fig. 220.—Lapped Scarf Joint with Bolts for Heavy Timber.

Fig. 219 is a tabled scarf joint which admirably resists tension and compression. It is very easy to make and fit, and is not materially affected by shrinkage. The rectangular wrought iron straps are knocked up over the joint after the two pieces engage. The length of the joint should be approximately five times its thickness.

Fig. 220 is an example of a lapped scarf joint which is secured with nuts and bolts. It effectively resists compressional stress in vertical posts and it may, if required, be strengthened by the addition of wrought iron fish plates. It is quite a serviceable joint for all general purposes, such as shed or garage building where fairly heavy timbers are used.