supporting the second voussoir at J) instead of laggings, four (two supported on each rib) small hardwood wedges being required per voussoir. As each stone voussoir is accurately dressed to the required shape, the centre merely serves as a support and need not necessarily be cut to the true shape of the soffit if setting wedges are used to bring individual voussoirs to the correct bedding position.

It has been stated on p. 60 that a well designed centre must be capable of resisting the stresses produced during the construction of the arch. These stresses vary as the work proceeds. Thus, in the early stages of construction, the weight of the haunches is partially resisted by the ribs and the inclined compression members or struts ; the load tends to distort the ribs by thrusting their lower ends inwards and their upper ends upwards, and the downward forces acting along the struts tend to depress the lower end of the central vertical post or strut. The latter, being well nailed to the rib at its top end, resists these forces and at the same time restrains the upward thrust through the ribs ; the post is in tension. During the construction of the upper portion of the arch the additional weight has a tendency to depress the crown and force the lower ends of the ribs outwards. This is resisted by the ties (which are now in tension) and the struts. In effect, the centre acts in a similar manner to a king post roof truss, the ribs (like the principal rafters of the truss) are in compression, the inclined struts are in compression, the lower ties resemble the tie beam of the truss as they are in tension, and the central post (functioning like the king post of the truss) is in tension.

Centre for Semi-elliptical Arch (see Q and S).—The arch is illustrated at J, Fig. 19, Vol. II. The construction follows closely that described on p. 60. The joints between the pieces forming the built-up ribs are normal to the curve. The struts may also be fixed as normals to the intrados (see thick broken line) as an alternative to those shown. Close lagging is shown as a contrast to the open lagging indicated in the other examples. The geometrical construction of the intrados and extrados is described on p. 52, Vol. II.

For spans exceeding 14-ft. the larger members of the centres are usually framed together like a roof truss, and the joints are made rigid by the employment of $\frac{1}{2}$-in. diameter bolts in lieu of nails. These are detailed in Vol. IV.