



FIGURE 17

of the covering material, span of roof, size of members, quality of the timber, etc. No intervening spars are required when large sheets, such as those stated on p. 53, are used as a covering material. A lining to the roof may be provided, if required. Thus, asbestos-cement plain sheets, wall boards, match-boarding, etc., may be nailed to the underside of the purlins, and such may be fixed to vertical battens plugged to the walls. If a plastered ceiling is necessary, ceiling joists must be provided to span the building and be supported by the walls at truss level.

A part elevation of this type of truss, but for a larger span, is shown at L and detailed at M, N and P. The construction is similar to that described on p. 53. Cleats or blocks are shown at the heads of all struts and the feet of the shorter ones, but these are often omitted to minimize labour and therefore cost. In order to provide a firm fixing for the 1-in. outer boards nailed at the feet, either 2-in. thick middle boards or packing pieces must be nailed between the principals and main ties. Thorough spiking is essential. The eaves is shown projecting beyond an 11-in. cavity wall.

QUEEN POST ROOF.—The king post roof truss, illustrated in Fig. 40, Vol. I,

is suitable for spans not exceeding 30-ft. For greater spans up to 45-ft., and if timber is to be employed, the queen post roof truss is the most suitable type. Few of these are now used, as mild steel roof trusses are generally preferred (see pp. 121-128, Vol. II).

The queen post roof truss is illustrated in Fig. 18. The key plan at A shows these at 10-ft. centres, the walls being strengthened by piers to receive them. A part elevation is shown at c (the end of the tie beam being shown by full lines) and the outline indicating the setting out is given at B. A comparison between this truss and that of the king post shows that it has two posts, called *queen posts*, and two additional horizontal members, i.e., a *straining beam* between the heads of the posts and a *straining sill* between their feet; the truss also supports an additional pair of purlins. The posts support the tie beam at one-third points (see B). Many of the details are the same as those of the king post truss, and need not be repeated here. Except for the upper purlin, the centre-line principle is adopted in setting out the truss; as shown at r, this purlin is above the centre in order to avoid awkward cutting at the head of the queen post.