



If the door is moulded, the hand operations vary with the type of mould. Thus, if the panels are to have solid mouldings, the face edges of the stiles, rails and muntins will be moulded to the required shape by means of the appropriate moulding plane (see p. 129) before they are assembled. The moulded edges of the stiles will be continuous, those on the rails will be scribed to them (see Fig. 49) and those on the muntins will be scribed to the rail mouldings. If planted mouldings are required, they are formed by moulding planes to the required section shown on the rod. Mouldings are planted in the following manner: The ends of each piece are cut to a 45° mitre—a mitre block (see 51, Fig. 67) being used for this purpose; the two short lengths are placed in position and the two longer pieces are “sprung” into place; the mouldings are nailed to the framing and the nail heads are punched. Each panel is treated in this manner.<sup>1</sup>

The operations involved in framing the casing will be understood from the foregoing description.

*Cutting lists* are prepared which give the reference number of the job, together with the number, lengths and nominal and finished widths of the stiles, rails, etc., comprising the door. These lists are available for the workmen responsible for setting out and preparing the various members.

## WINDOWS

A window includes the frame and one or more sashes which are glazed. The frame may have solid wood members or it may be constructed of comparatively thin pieces to form what is called a *cased* or *boxed frame*. The sashes may be fixed or made to open. The latter, when associated with a solid frame, may be attached by hinges to enable the sash to open either outwards or inwards like a door, or it may be hinged at the lower edge to open inwards, or it may be hung at the top edge to open outwards. Another type of sash is pivoted at the centre to open with the upper half swinging inwards, and another form consists of one or more sashes which slide horizontally. Sashes when made to open in a cased frame slide vertically.

<sup>1</sup> As previously mentioned, the extensive use of woodworking machinery has eliminated most of the labours formerly done by hand, and even if standard machine-made doors as described on p. 104 are not required, many of the operations detailed on pp. 104-107 would be performed by machines. Thus the stiles, rails and muntins would be cut into lengths and widths by the *circular saw*; they would be faced and edged on a *surface planer* and taken to a uniform width and thickness on a *thickness machine*; the tenons would be formed by a *tenoning machine* and the mortices by a *mortising machine*; if required, they would be solid moulded on the *spindle moulding machine*. Many of these operations can be done by a combined machine called a *general joiner*. The panels would be finished by a *panel planer*. Planted mouldings could be prepared on the *spindle moulder*. After being assembled and cramped, the door would be given a smooth finish by a *sand papering machine*.

Whilst some of these larger and more expensive machines are not available in the smaller shops, there are comparatively few firms who have not a circular saw and mortising and tenoning machines, and are thereby enabled to reduce some of the relatively costly hand labours.

Various woodworking machines are described in Chapter One, Vol. III