

the cylinder fitting N is passed through the hole from the outside; the back plate (see Q) is screwed to the back of the door; two long screws are then passed through holes in the back plate to secure the lug attached to the case; the end of the spindle is passed through the bush of the latch O, and the latter is screwed to the back of the door. The staple is screwed to the edge of the door.

One pair of antique bronze *flush bolts* may also be provided (see S, Fig. 45). These are not so conspicuous as the barrel bolt type, as the back plate is screwed through the stile in a housing formed to bring the plate flush with the face of the stile. The end of the bottom bolt slides into a metal socket (S') let into the floor or step, and the top bolt engages in a socket fitted into the head of the frame.

Sometimes a *letter plate*, preferably of antique bronze, is required (see K and L, Fig. 54). The flap opens inwards and is suspended on a horizontal rod round one end of which is coiled a spring which forces the flap tightly against the back of the plate. A mortice, approximately 6-in. long and 2-in. deep, is made in the door with the horizontal edges splayed downwards (see L), and the fitting, which entirely covers the hole, is secured to the door by means of two screws which are threaded to stumps.

A door chain as described on p. 94 may be fixed.

DOOR CASINGS OR LININGS.—Whilst external doors are hung to solid frames, it is customary to fix internal doors to casings or linings which provide a suitable finish to the openings. Casings are fixed to either (a) pallets, (b) plugs or (c) grounds.

(a) *Pallet pieces* or slips, $\frac{3}{8}$ -in. thick, are built into the bed joints at the jambs of the openings as shown at Q, Fig. 44, and D, Fig. 51, and at intervals as described on p. 87. This method of fixing is very general.

(b) A cheaper and less satisfactory method is to plug the jambs. *Wood plugs* (which should be of hardwood but are often made from pieces of floor boards), shaped as shown at F, Fig. 51, are driven into holes formed in the mortar joints; they are driven tightly up to their shoulders and would take the place of the pallets shown at D, Fig. 51. The plugs indicated at D would be used for the fixing of architraves (see p. 122).

(c) *Grounds*.—As implied, the purpose of these is to provide a groundwork for the casings and architraves. This method of fixing is now only adopted in the best practice. The simplest form consists of $\frac{3}{4}$ -in. thick pieces of undressed timber (when they are called *rough grounds*),¹ and are usually 3-in. wide, although this depends upon the size of the architraves. They provide a continuous means of fixing for the casings such as is not afforded by plugs or pallets. One edge is sometimes splayed to afford a key for the plaster (see A, E, J, K, L and N, Fig. 51). The jamb grounds are fixed in true alignment on each face of the walls to plugs at intervals, and the head or soffit grounds are nailed to the lintel (see A). They project about $\frac{3}{4}$ -in. beyond the jambs, depending upon the size of the brick or stone opening and that of the door. In good work, the head

¹ These are distinct from *wrought grounds* which are used in conjunction with architraves (see M, Fig. 51).

grounds are haunched tenoned and wedged to the jamb grounds (see P and E). This preparation is all that is necessary for $4\frac{1}{2}$ -in. walls; for thicker walls, however, 2-in. wide by $\frac{3}{4}$ or 1-in. thick short horizontal *backing pieces* are fixed to the edges of the grounds (see A, C, K, L and N). These cross pieces provide extra means of fixing the wider casings and, if the ends are dovetailed and fitted into notches formed in the grounds (see A and E), they are effective in preventing the grounds from expanding and twisting when they absorb moisture from the plaster, which is applied subsequently to the walls. The backings are fixed near to the top and bottom of the jambs and at about 2-ft. intervals.

There are three types of casings, *i.e.*, (1) plain, (2) skeleton and (3) framed.

(1) *Plain Casings*.—These are usually prepared from $1\frac{1}{2}$ -in. thick boards and are suitable for openings in walls which do not exceed 9-in. thick. They may be either single rebated (see D, G and H, Fig. 51, and H and K, Fig. 52) or double rebated (see A and K, Fig. 51, and B, C and D, Fig. 54). Alternatively, in cheap work, a $\frac{1}{2}$ or $\frac{3}{8}$ -in. thick stop is nailed to the casing, when the thickness of the latter may then be reduced to 1-in. (see J, Fig. 51). Double rebating a wide lining gives it a balanced appearance which is noticeable when the door is open. The soffit casing is grooved or *trenched* to receive the tongues formed on the jamb linings (see G, Fig. 51). This groove extends to the outer edge when softwood is to be used and which would be painted, but if the linings are of hardwood and subsequently polished the groove in the soffit does not extend right across but is stopped to house the abbreviated tongue as shown by thick broken lines at O, Fig. 51.

(2) *Skeleton Casings* (see B and L, Fig. 51).—This type consists of a skeleton jamb and soffit framing comprising 3-in. by $1\frac{1}{4}$ -in. stuff to which $\frac{1}{2}$ or $\frac{3}{8}$ -in. thick boards or stops are nailed to give the appearance of a double rebated lining. The short rails of the framing are tenoned to the long members, and the latter of the soffit framing are tenoned to the jamb framing (see B). The short rails should coincide with the backings and be nailed to them after the long members have been secured to the rough grounds; the stops are then nailed to the framing. An alternative detail is shown at M to introduce a dressed or wrought ground which requires only a small architrave. Skeleton linings for thick walls are cheap and effective, although there is a danger of the wide stops splitting if they shrink excessively, as movement is restricted when they are securely fixed at their edges.

(3) *Framed Casings* (see C and N, Fig. 51).—This is the best form of lining for openings in thick walls. It consists of panelled jamb and soffit frames, and the construction conforms to the principles of panelled door construction. The treatment of the panels should be in keeping with the design of the door. This casing is fixed to the grounds and backings as described for a skeleton lining.

Casings secured to grounds are less liable to damage during the subsequent building operations than those fixed to plugs or pallets, as they are not fixed to the grounds until after the plastering has been completed.