

Although internal doors are generally fixed to casings, there are certain exceptions. Thus, heavy internal doors (such as the framed, ledged, braced and battened type), as used for warehouses, etc., are sometimes hung with straps and gudgeon hooks fixed in jamb stones (see p. 94), and the casings are then dispensed with. Another exception is shown at F, Fig. 45, where a frame and not a casing is used. Internal coal-house, etc., doors are often fixed to frames instead of casings.

TWO PANELLED DOOR (see B, Fig. 48, and Fig. 52).—The construction of the framing is similar to that described for the single panelled door with the exception that provision has to be made for the *middle* or *lock rail*, so called as the lock is usually secured to it. The height of this rail depends of course upon the design, and whilst it was the invariable practice to make it at a convenient height for the door handle (which is approximately 2-ft. 9-in. to the centre of the rail), this height is now often departed from. The position of the middle rail in the door shown at B, Fig. 48, is such as to give two panels of equal height, whilst the centre of the lock rail of the door in Fig. 52 is 4-ft. 8-in. from the floor. It will be observed that, whilst the appearance of this latter door is satisfactory, the position of the lock is not conveniently accessible for small children. If this door is to be fitted with a rim lock, the middle rail will be formed with a single tenon at each end when the rail is only 4-in. deep as shown, and with a pair of single tenons at each end when the rail is 7-in. or wider. If, however, a mortice lock is to be used, the door is often 2-in. thick, and the ends of the lock rail will be prepared as follows: If it is a narrow rail, the end to be fitted into the "hanging" stile will be prepared with a single tenon and the opposite end will have two tenons (to form what is called a *twin tenon*) which are equal in width to that of the rail less the depth of the panel grooves and with a space between them equal to the thickness of the lock; for a wider rail, the end secured to the hanging stile will have a pair of single tenons (as shown at A, Fig. 54) whilst the opposite or "striking" end may have four tenons, usually called a *pair of twin tenons* (see Fig. 53), in order that the preparation for the lock will not weaken the joint. This latter figure shows the mortice lock in position. Note that the combined thickness of the twin tenons equals one-third that of the rail.

Mortice locks are now available which are only $\frac{1}{4}$ -in. thick and they obviate the necessity for using twin tenons unless, for some special reason, a large lock is required. Another type of lock is triangular or wedge-shaped and necessitates for its accommodation the removal of only a small portion of the tenon.

A mortice lock is illustrated at H and J, Fig. 45, and its mechanism is described on p. 90. Note that the steel case is fixed to a steel *fore-end* to which is secured a brass *face plate* by two set-screws.

It is necessary to keep the bottom of the door at least $\frac{1}{2}$ -in. clear of the floor to enable it to pass a carpet with underfelt. It is advisable to screw to the floor a $\frac{3}{8}$ -in. thick hardwood slip with splayed or rounded edges in order to minimise draughts (see J, Fig. 52). Alternatively the door may be hung with a pair of 4-in. polished brass *skew butt hinges* (sometimes called *lifting* or *rising*

butt hinges) instead of the ordinary butt hinges (see Z, Fig. 45). These lifting hinges cause the door to rise $\frac{1}{2}$ -in. (and thus clear a mat or carpet) on being opened on account of the helical knuckle joint. The top edge of the door and the rebate on the soffit of the casing must be splayed to permit of this vertical movement. These hinges are very conspicuous and are objected to for this reason, although their appearance is somewhat improved if the knuckles are provided with moulded ends.

A *door stop* is often used to prevent a door handle or projecting key from damaging the plaster or a piece of furniture situated near to a door. This stop

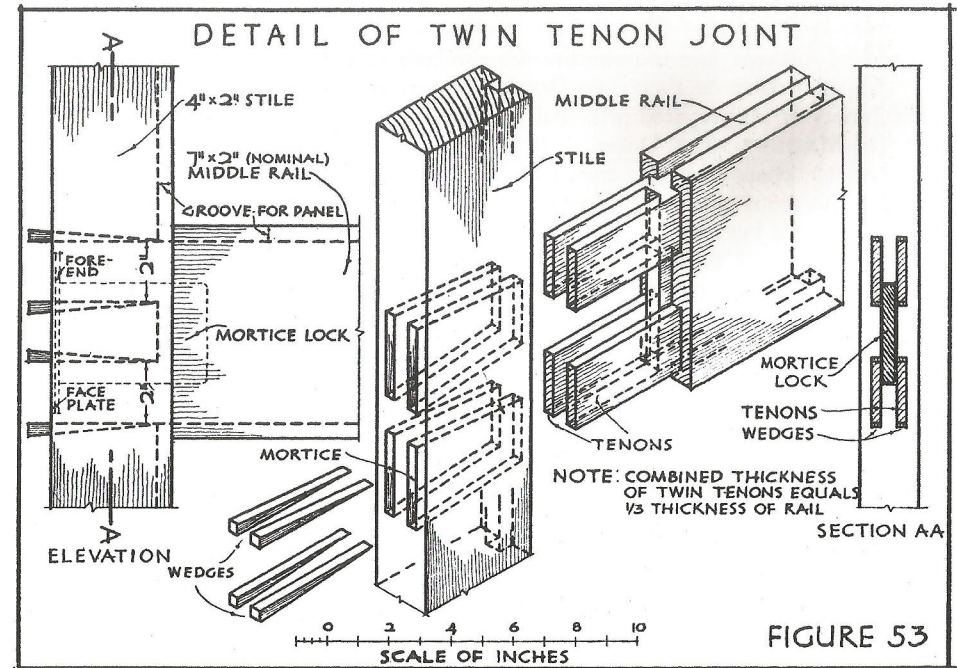


FIGURE 53

may be entirely of rubber or a rubber pad in a bronze fitting (see R, Fig. 54), and it is screwed to the floor in such a position as to restrict the swing of the door.

FOUR PANELLED DOOR (see D, Fig. 48, and Fig. 54).—This introduces two central members of the framing called *muntins*. Note that the stiles are continuous for the full height of the door, the rails are tenoned into the stiles, and the muntins are stub tenoned into the rails for about 2-in. (see A and F, Fig. 54). The general construction follows very closely that already described. One special advantage of this door is the narrow panels which are employed. These can be obtained in one width, and therefore jointing (described on p. 98) is eliminated.