Fig. 11.—Shews a straight or flat arch, the joints radiating to a common centre.

On the right-hand half the joints are not continued through to soffit or top, but have a small portion squared on, thus relieving the acute angles of arch blocks, which are otherwise liable to fracture.

The springer on left hand has additional strength in having a square seating on skewback.

In flat arches a camber of an eighth of an inch in a foot to soffit is usually given to allow for any depression or settlement.

Fig. 12.—Is another example of the flat arch; the left-hand half has rebated or step joints, and the right-hand half has joggle joints. All these joints converge to a common centre.

Fig. 13.—In this figure a lintel with double joggle vertical joints is given.

Fig. 14.—Shews a lintel with curved joggle joints, and is an example not often met with.

The form of joint in figs. 12, 13 and 14 is a little wasteful of material; but where stone is plentiful and in small blocks, good lintels may be obtained. Many examples of these may be seen in our modern Gothic buildings.

Fig. 15.—Illustrates a window or door head with quadrant corners; the stretching-piece or key is in one stone, with arch-joints resting on the skewbacks.

Fig. 16.—Is another form of head, the square seating on each stone giving additional strength, and the joints converge to a common centre.

Fig. 17.—Shews three joints used in landings.

A is a joggle joint, commonly called He and She joggle. A tongue is cut slightly tapering on one edge, fitting into a corresponding groove worked in the other edge. Run in with cement it forms a strong and secure joint.

B is a rebated joint; this is sometimes undercut.

C is a bird's mouth joint. Grooves are roughly cut in on the edges of these joints opposite each other, and the cavities run with cement grout. Slate dowels are also laid longitudinally in the joint and run with cement.

ARCHES AND JOINTS

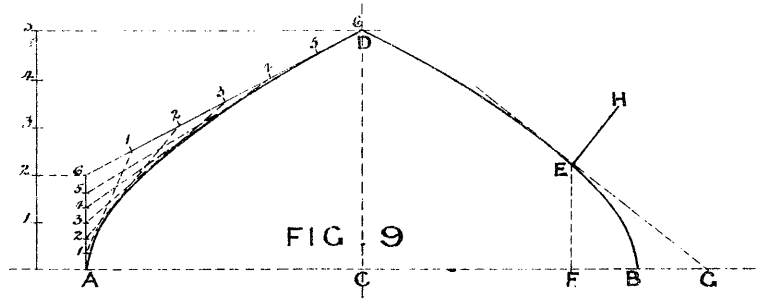

FIG. 9

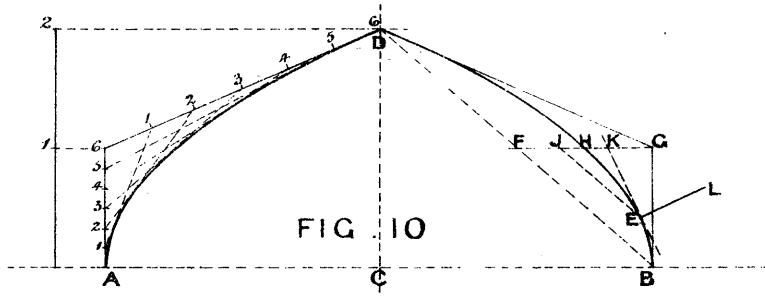

FIG. 10

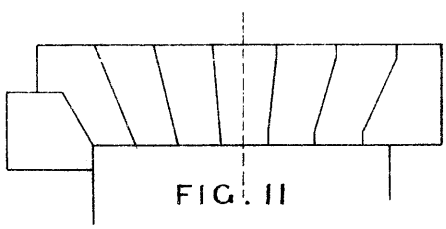

FIG. 11

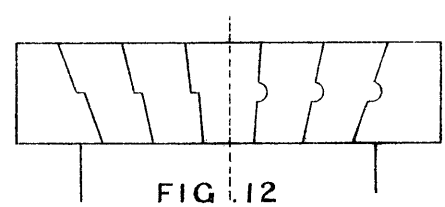

FIG. 12

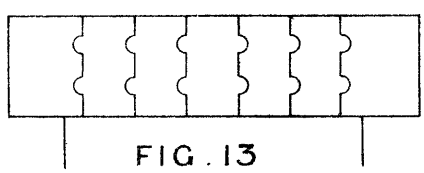

FIG. 13

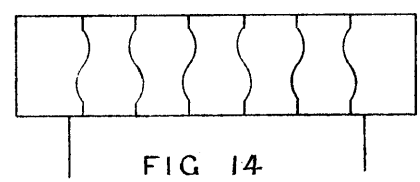

FIG. 14

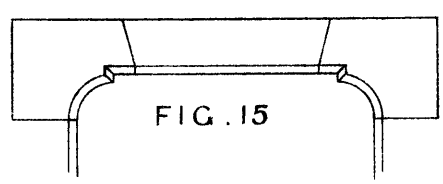

FIG. 15

being a plain arch without mouldings, the stones are reversible; this is apparent on looking at the elevation, but should there be an architrave moulding on one face, a mould to each stone is then required.

To construct a SPHERICAL NICHE in a straight wall with horizontal splay beds, and with vertical joints.

Figs. 6 and 7.—Shew the elevation and plan of the niche.

Let *A E* be the face line of the niche on plan (Fig. 7), *B D* the opening and *C* the centre; with *C B* or *C D* as radius, and *C* as centre, describe a semi-circle *B K D*, which is plan of extreme size of inside of niche; project *A B C D E* to the springing line on elevation (Fig. 6), as *a b c d e*, and at *c* erect perpendicular for the centre line. With *c* as centre and *c b* or *c d* as radius, describe the semi-circle *b k d* for the outer curve, and divide this into five equal parts as at *f g h i*; from *c* draw radiating lines through these points of division, cutting the horizontal bed at *l m n o*, giving the joints, the bevel of which will be continued horizontally round the niche as at *f i* and *g h*. For joints to the plan draw ordinates at *f g h i* and *l m*, &c., and project them on to line *A E* on plan (Fig. 7), as *F G H I* and *L M*, &c.; at *L F M G* describe the semi-circles, giving the horizontal line of splay joints. For dividing joints on the plan, take the second course first and divide the line of semi-circle *F Q I* into four equal parts as *P Q R*, and from *C* draw radiating lines through these divisions, producing them on to the line *L N O*, which gives the joints. The springers 1 *L* and 1 *R* in the first course will require to be about half the depth of others in the same course, in order to break the bond (as will be seen by reference to the plan); therefore, on the line *B K D*, set off say little more than half for the two springers as *B S* and *D V*, dividing the remainder into three equal parts as at *S T U V*, and draw the lines through, radiating from the centre to the back, giving the joints in the bottom course.

The top course No. 3 is in one stone, and to prevent any tendency to slip out of its place forward, the upper part of bed may be kept square; this would require notching on the inside, as *M M* 2 and *N M* 2 on the plan, and *m* 4 4 and *n* 5 5 on the elevation.

NICHE — ELEVATION

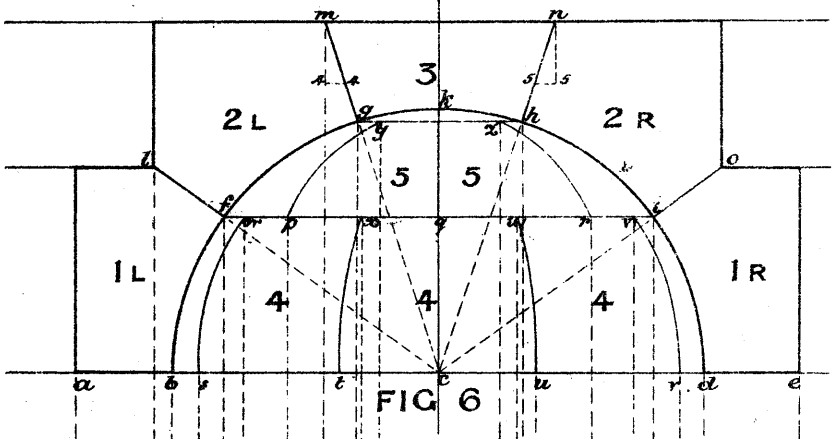

FIG 6

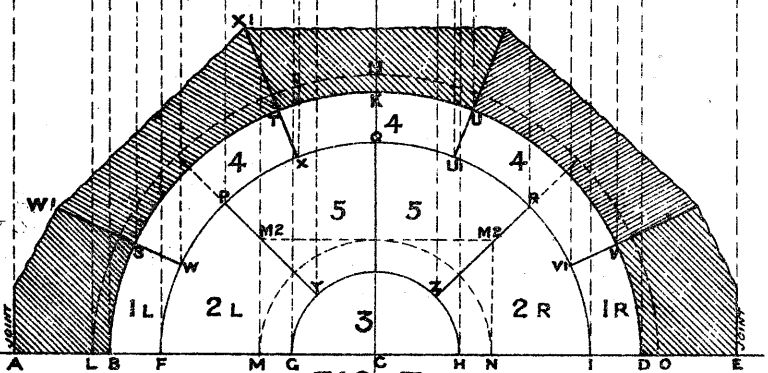

FIG. 7

PLAN

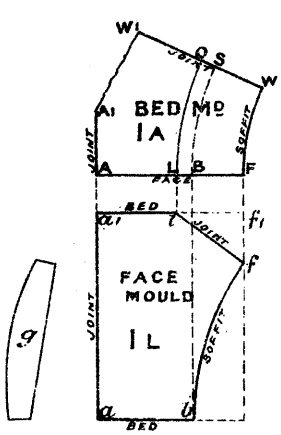

FIG. 8

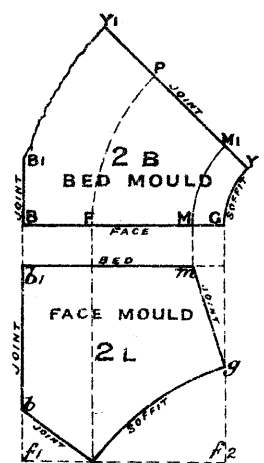

FIG. 9

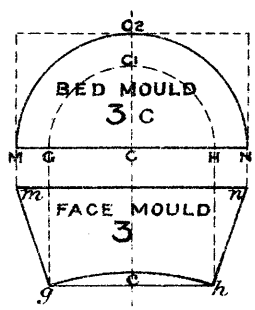

FIG. 10