CHAPTER XII.

Construction of Casings for Indirect Heating

There are no standard styles in the shape and construction of casings, they being determined by the location of the indirect radiator, the position of the cold air inlet as well as the position of the register. These form the basis of measurements in the construction of the sheet metal work. To illustrate this Fig. 168

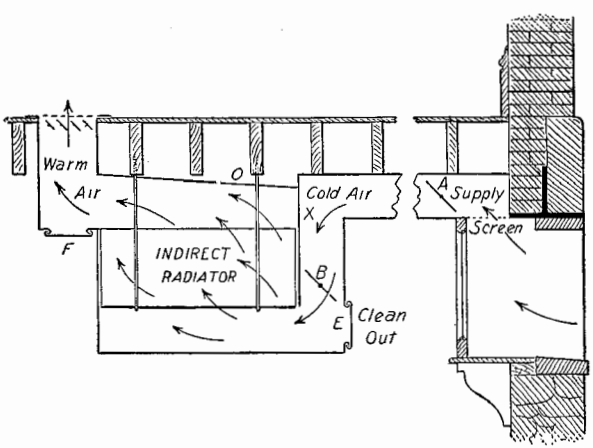

Fig. 168—Cross Section of Indirect Radiator and Floor Register with Cold Air Box Running to Cellar Window

shows a cross section of an indirect radiator and floor register with cold air box running to cellar window, and shows also the conditions which are apt to arise in any building. In this case the cold air supply is

obtained from the top of the cellar window which has been screened. The air is deflected to the under side of the radiator by the partition X. After the cold air is warmed by passing over the radiator it is carried to the room above by the oblique metal top O. Dampers for shutting off the cold air supply are placed at A, which can be operated from above, while another is placed at B, which can be operated from the cellar. Clean out slides are placed at E and F. Dust filters made from cheese cloth set in metal frames are sometimes placed in the cold air supply duct and will form another topic as we proceed.

Casings with Single Walls

Simple methods are employed in the construction of sheet metal casings having single walls as shown

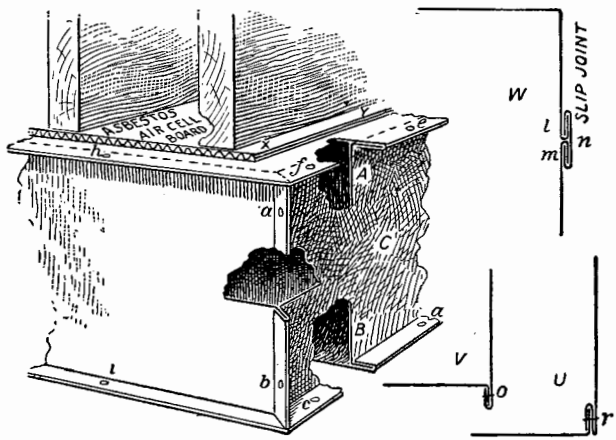

Fig. 169—Construction of Sheet Metal Casings, Single Walls, for Indirect Warming

in Fig. 169. In the views here given A shows the top of the casing and B the bottom, which are locked to the single side wall C as shown. The corners of the

side walls can also be locked as shown and the entire casing secured by means of 3-16 inch round head bolts, which allow the casing to be easily taken apart, when repairs are required to the radiator. These small bolts should be of brass, placed at intervals of 12 inches apart, as indicated by the small letters from **a** to **i** inclusive. Sometimes before the top of the casing is put in place, asbestos air cell boards are first fastened to the timbers as shown at X Y. Should the casings be very deep, the sides can be made up of two sections as shown in diagram W, with a lock at **l** and **m** joined by the slip piece **n**. Two other methods of holding the bottom of the casings are shown in diagrams U and V, which require bolting or wiring at **r** and **o** respectively.

Various Forms of Vertical Joints

Other forms of vertical joints are used as shown in Fig. 170 by A and B. In the former the joint is bent

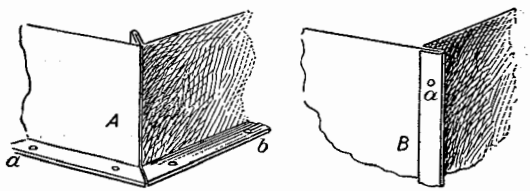

Fig. 170—Two Other Styles of Vertical Corner Joints

toward the inside and held in place by means of the bolts in the bottom at **a, b,** etc. In B the joint is made similar to the top and bottom joints in Fig. 169 and bolted at **a.**

By a little thought and study various styles of locks can be constructed, four different shapes being shown in Fig. 171. That at A has a double lock with a hem edge on the outside, the side wall having a raw edge

at the top and bolts are placed at a and b. C shows another style of lock, in which the side wall has a raw edge at the top. D shows a formation, in which the side wall has an angle bent on same to make the connection, while E shows a form in which the side wall contains the lock and slips over the raw edge of the top.

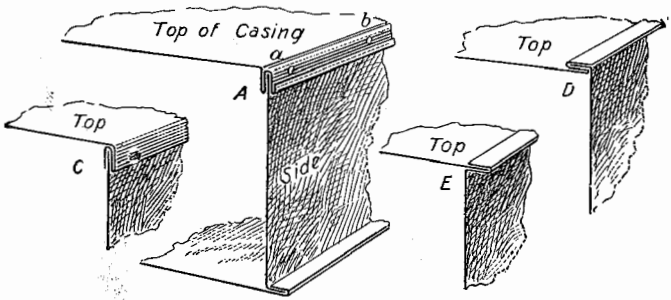

Fig. 171—Other Forms of Casing Construction, Single Walls

When a double lock is required on the corner joints in the side walls it can be constructed as indicated in Fig. 172 with a single edge on the end being slipped into the double edge of the side wall as at A and bolted at a and b. Sometimes the entire four sides can be set together stationary, being only bolted at the top and bottom of the casing. In this case no bolts need be used on the vertical joints, the corner joint being made as indicated in diagram B, in which the double lock is formed on one side of the casing and a single edge on the other side C. After C has been slipped into B, the small edge c is turned over against the side C as indicated in diagram D at d.

Four simple forms of corner joints are shown respectively by E, F, H and J. In diagram E one of the simplest forms is shown. In this the lock is bent on one

side and a right angle edge on the other as shown by **e**, with a bolting at **n**. In diagram F is shown another style, with a slip piece locking over the edges at **f f**, in

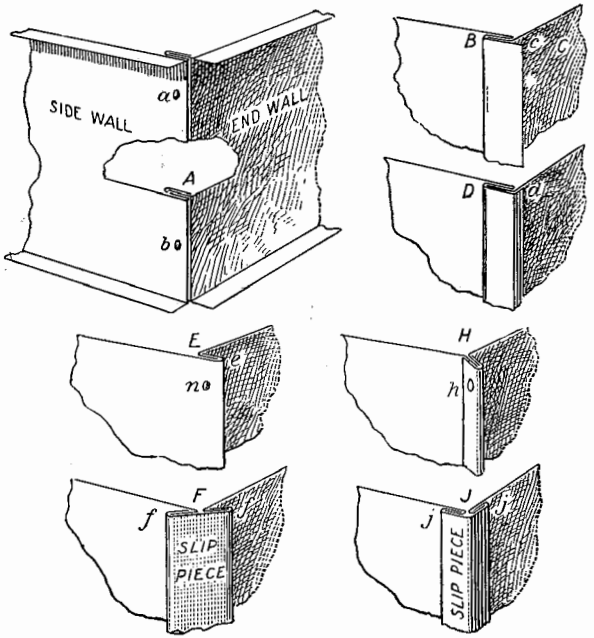

Fig. 172—Various Forms of Vertical Corner Joints in Sheet Metal Casings

which case no bolts are necessary. In diagram H a simple slip is used which requires bolts through as at **h**, etc. In diagram J is shown a good strong corner, which requires no bolting, the angular slip piece locking to the sides at **j j**.

Bending the Double Locks

When bending the double locks just described in diagrams B and D the operations are performed on

the bending brake as shown in Fig. 173, in which it is assumed that A is the shape of the double lock desired. The various bends are referred to by the numbers 1, 2 and 3 as shown. The first operation is shown in B. Place the sheet in the brake, close the top clamp **e** on dot 2, and raise the bending leaf **f** so as to make the angle at 2 a little more than square, as shown by **a**.

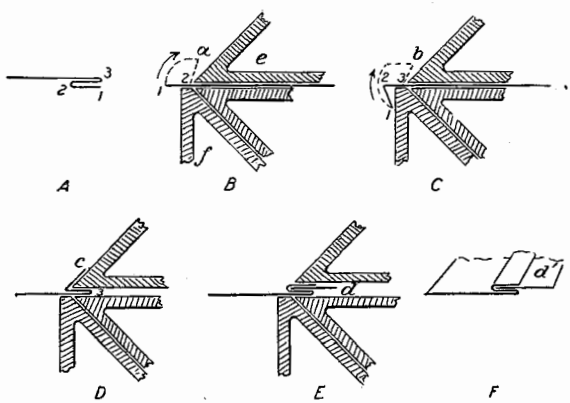

Fig. 173—Bending the Corner Lock

Reverse the sheet as at C, close the top clamp on dot 3 and raise the bending leaf as far as it will go, as indicated by 3 b. Now turn the sheet around and close the bend 3 as shown in D at 3. Place a strip of metal between **c** and 3, of the required length, and press down **c** as shown in E, **d** representing the strip of metal referred to. When this has been done the sheet will appear as shown in diagram F, after which the strip of metal **d'** can be removed.