

CHAPTER IX.

FASTENING AND ADJUSTING REGISTERS

Register faces are fastened to the wall as shown in Fig. 142, in which *a* and *a* show the wooden frame around the duct outlet, to which, after the plastering is completely completed, the register is screwed as indicated by using brass or enamel headed screws to match the face of the register.

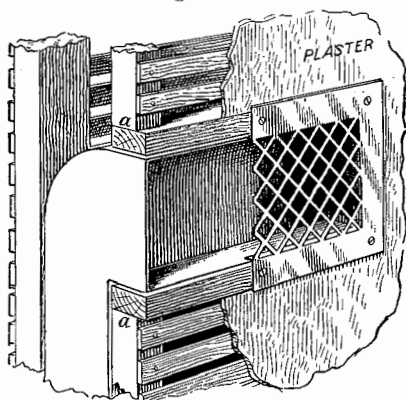


Fig. 142—Fastening the Register Face to Wall Joist

When the wall construction is of angle iron or brick, and no wood work is allowed, the side wall registers are secured, as shown in Fig. 143. An angle iron frame is placed around the duct opening and secured to the upright tees, allowing sufficient space between the T's and angle for the thickness of the plaster, the plaster being held in place by the wire mesh, which

is secured to the upright tees. Holes are drilled and tapped in the angle iron frame at **a a**, etc., to correspond to the holes in the register face **b b**, which can then be screwed in place or removed without injuring the plaster.

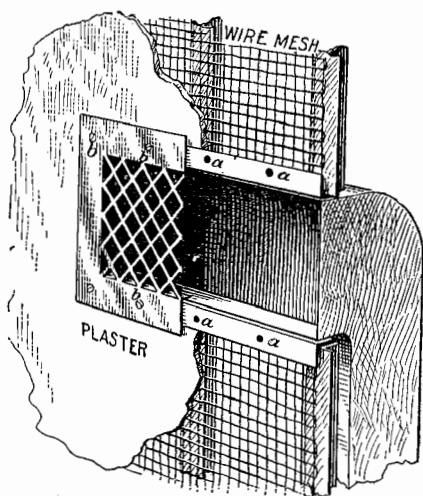


Fig. 143—Fastening the Register Face to Angle Iron

Fastening Register to Metal Duct

When the metal duct is exposed and the register must be fastened direct to the sheet metal, as shown at the left in Fig. 144, an opening is cut in the face of the sheet metal duct of the required size, as shown by **a b**, and the register B bolted to the sheet metal as shown.

Fastening Floor Register

Floor registers are fastened as shown in Fig. 145. After the register box C has been seamed to the duct D at **a a** and set in its proper position, the cast iron floor border A is set, over which the register is placed,

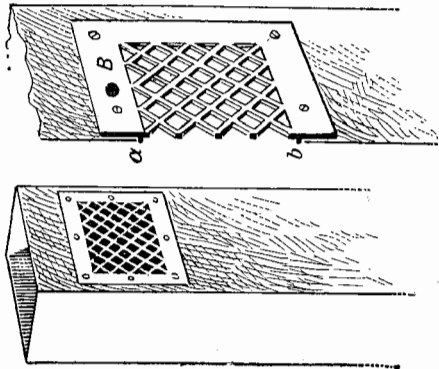


Fig. 144—Fastening Register Face to Sheet Metal Duct

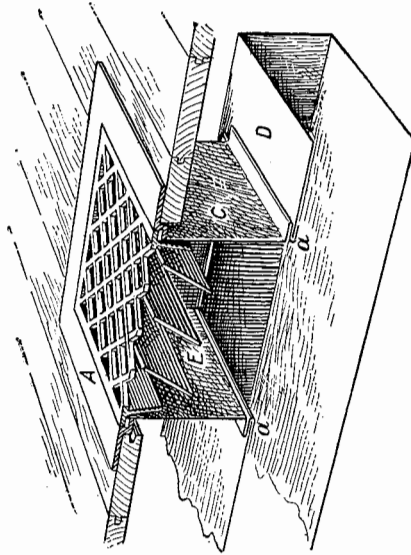


Fig. 145—Attaching Floor Register to Register Box

fitting into the register box or collar as shown. *E* represents the valves, which can be turned in a vertical or a horizontal position, thus opening or closing the register.

The Use of the Heat Deflectors

When the heat registers are placed near the floor, a heat deflector made from galvanized iron or brass, as shown by *A* in Fig. 146, can be used for deflecting the heat towards the floor. The hot air striking the upper shield *A* is deflected in the direction of the

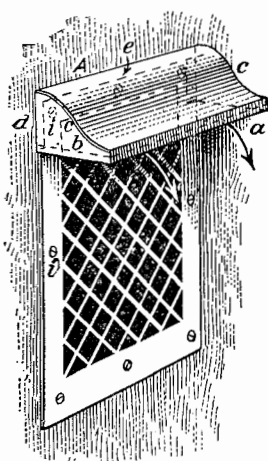


Fig. 146—Heat Deflector
on a Register

arrows. A hem edge is placed along the bottom of the deflector at the sides and front as shown by *a* and *b*, and it is double seamed along the curved part at *c* and *c*. At the back of the sides and top a $\frac{3}{4}$ -inch flange is bent as indicated by *d* and *e*, which is slipped behind the register face, so that when the screws *i i*

are securely fastened, the deflector will be held firmly in place.

Fastening Registers to Marble or Slate Side Walls

When the heat inlets or vent outlets connect to marble or slate side walls, great care must be taken to have the duct properly and accurately located, so

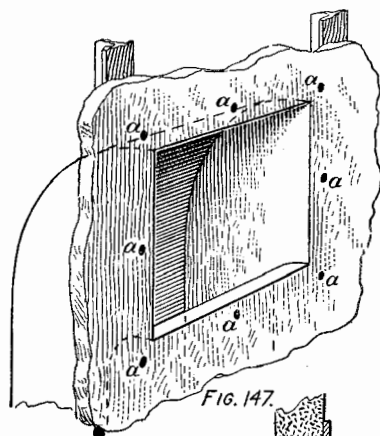


FIG. 147.

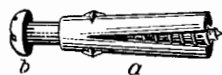


Fig. 148

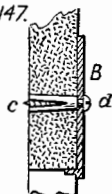


Fig. 147—Drilling the Marble or Slate for the Register
Fig. 148—Screw Anchor for Fastening the Register to Slab

that the marble or slate work will fit accurately, as shown in Fig. 147, when the registers are sometimes fastened by means of plaster of paris, which, however, makes their removal difficult. A better plan which allows for their easy removal, is obtained by holding the register in position, marking the holes and drilling the

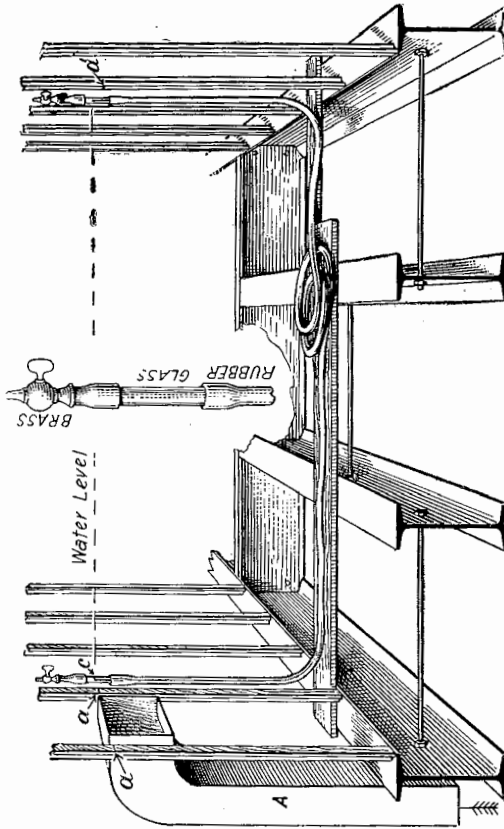


Fig. 149—Apparatus for Obtaining Location of Register with Water Level

marble as shown at **a**, etc. The holes having been drilled in the marble or slate, the register faces are secured by means of a screw anchor and ordinary wood screws, as shown respectively by **a** and **b** in Fig. 148. The screw anchor is made of a lead composition metal in one piece, and is so constructed that the screw cuts its own thread. This enables it to be used with any wood, machine or other screw. As the lead anchor requires a small hole for its insertion, there is no tendency to break, chip or deface the finest marble. The lead composition being non-rusting, no streaks will show on the marble face. The screw can be of brass or nickel plated to suit the register face. The holes being drilled, the lead anchor is inserted flush with the surface of the marble, as shown in the sectional view at the right, after which the register is held in place and the screws passed through holes in same, into the lead anchor, and fastened tightly.

Locating Register Openings by Means of the Water Level

The location of the vent or heat openings being given, or the location being given on one side of the room, it often becomes a question how these openings can be located on a large job, where a great number are required, or how a similar location be found in other parts of the room, when the floors are not laid or the room is filled with various building materials and no measurements can conveniently be made. This can be accomplished by means of a simple contrivance shown in Fig. 149 known as the water level, which consists of a half-inch inside diameter rubber tubing, having a glass tube and a brass cock, on either end as shown in the enlarged detail. The operation

of the water level is as follows: Assuming that the marks at **a** and **a** on the angle irons indicate the given location of the top of the register head of the duct A, similar locations in various parts of the room can be found by first filling the entire hose with water to the top of the brass cocks; this drives out all the air. Sufficient water is now run off, so that the water will show to the middle of the glass tubes on each end. The pet cocks are now closed and the water level is ready for use. To find a location at the same height as **a** in any part of the room, open the pet cocks to allow the water to circulate by driving out or drawing in the air through the openings in same. Now hold the middle of the glass tube to the mark at **a** and raise or lower the opposite glass tube **a'** until the water will come to a level with **a** as indicated at **c**. As water rises to its own level, the water mark on the opposite side will show at **a'** and will indicate the desired location. The pet cocks can now be closed, thus keeping the water in the tube for the next operation. This is a simple contrivance which saves considerable time when a large number of register openings are to be located. Even though the beams are laid and the floor is clear, sometimes the openings could not be accurately measured from the beam, because in most cases the level of the beams cannot be depended upon.