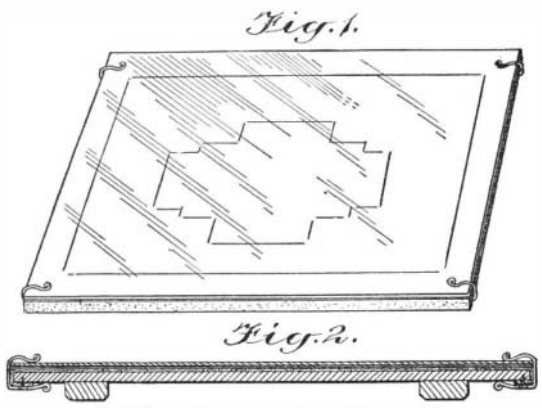
Handy Man's Workshop

SIMPLE BLUE-PRINTING FRAME.

BY C. L. SWEZEY.

For those desiring to make a few small blue prints, and having no regular printing frame, the following may prove useful.



SIMPLE BLUE-PRINTING FRAME.

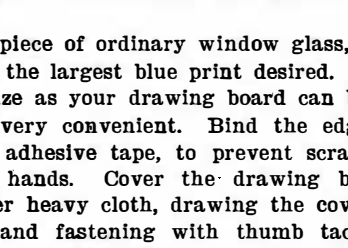
Secure a piece of ordinary window glass, somewhat larger than the largest blue print desired. If a piece the same size as your drawing board can be secured it will be very convenient. Bind the edges of the glass with adhesive tape, to prevent scratching the tracing or hands. Cover the drawing board with felt or other heavy cloth, drawing the covering over the edges and fastening with thumb tacks. Make four clips, as shown in the accompanying illustration using thin spring brass or wire. The exact size of clips depends on the thickness of board and glass.

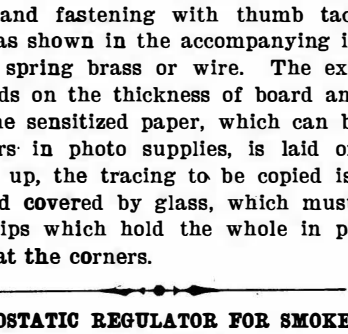
In use the sensitized paper, which can be obtained from dealers in photo supplies, is laid on the felt coated side up, the tracing to be copied is placed in position and covered by glass, which must be clean then the clips which hold the whole in position are slipped on at the corners.

THERMOSTATIC REGULATOR FOR SMOKE PIPES.

BY B. A. JOHNS.

The accompanying illustration shows a simple way in which to make a thermostatic regulator that will automatically open passages in the smoke pipe, to admit cold air, thus checking the draft of the furnace, and eventually cooling off the fire. The regulator should be placed as near the furnace as possible. Fig. 1 shows a sectional side elevation of the thermostatic regulator, and Fig. 2 a horizontal section of same. In a short piece of pipe, say about 6 inches long, a number of openings are made. These openings





REGULATOR FOR SMOKE PIPES.

are covered with the thermostatic band, which is made as follows: A ring about 2 inches wide, and about 1 inch larger in diameter than the pipe, is made of galvanized iron. The edges are turned down by hammering, as shown in Fig. 1. These turned-down edges are fitted closely to the pipe. In the recess thus formed, a strip of brass or preferably copper is fitted and riveted very closely, say about 1 inch apart, so that when the copper expands, it will not buckle.

To the above-mentioned galvanized ring, opposite the joint, small lugs may be provided for the purpose of fastening same to the pipe. The ring is now cut at the joint, and the ends turned in and fitted closely to the pipe. Two small lugs are riveted to these ends of the ring, with holes to receive a small stove-bolt. Between the head of this bolt and the lug on one side, place a stiff coil spring. This serves the purpose of regulating the tension of the ring, so as to make it more or less sensitive to heat.

As the fire gets too hot, the copper expands more than the iron ring, causing it to move away from the pipe, and cold air from the outside will pass between this ring and the pipe into the holes of same, thereby checking the draft to the furnace, and preventing it from over-heating.

Under normal conditions, of course, the spring does not open, but only under excessive heat; then it will stay open until the furnace cools off.

CIRCULATING PIPE FOR HOT-WATER FAUCETS.

BY J. A. BEBGSTROM.

In turning on a hot-water faucet, it is always necessary to let the water run for some time before it gets hot. The cause of this is that the water standing in the pipe soon cools off, right up to the boiler, owing to the fact that there is no circulation in same, and of course a great deal of water is wasted. It is an easy matter to overcome this by connecting the back of the faucet to the bottom of the boiler with a small

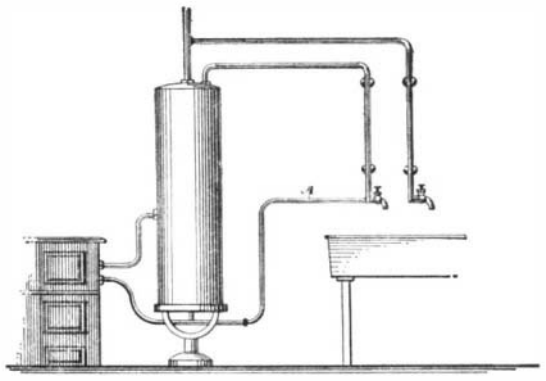
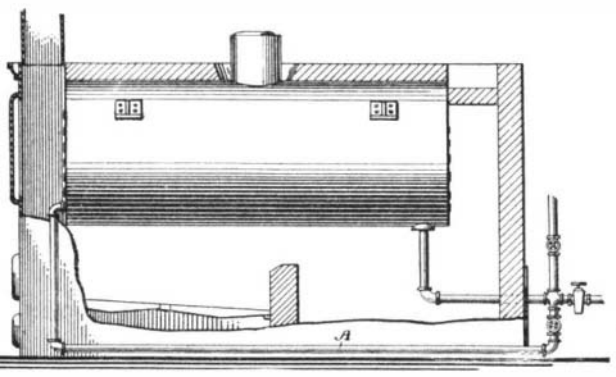


Fig. 1



CIRCULATING PIPE FOR HOT-WATER FAUCETS.

pipe *A*, shown in the accompanying drawing, Fig. 1.

It is now evident that as soon as the hot water in the supply pipe cools off, owing to the change of specific gravity, it will pass downward into the circulation pipe and back to the boiler; and of course a fresh supply of hot water will flow constantly from the boiler to the faucet, and will keep up as long as there is a difference in temperature at the top and bottom of the boiler.

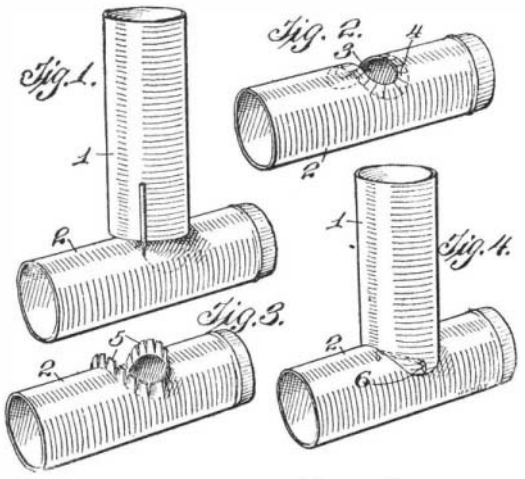
This also holds good in a steam boiler. Fig. 2 shows an ordinary horizontal tubular boiler. Most of these boilers are fed through the blow-off pipe. This pipe is considered a weak part of the boiler, owing to the fact that the boiler is not fed constantly, but at intervals. Therefore these pipes are always required to be covered with asbestos, and sometimes protected from the hot gases by a brick wall. If the boiler were fed constantly, that is to say, if there were a circulation of water in this pipe at all times, the gases would have little effect on same. As soon as the feed water is shut off, or rather between the intervals of feeding, this pipe is full of water, which cannot circulate, and is liable to be overheated and burn. To overcome this, a circulating pipe *A* is connected inside the blow-off cock to some part of the boiler, say to the lower part of the front end. A check valve may be inserted into the line, to prevent the feed water passing through the same. This pipe will at all times establish a circulation in the blow-off pipe, and eliminate all danger of being burned out.

HOW TO CONNECT STOVE PIPES.

BY H. G. L.

The man who desires to connect two stove pipes together and has not the tools ordinarily used for this purpose can do the work as follows:

Place one end of pipe 1 against the side of the pipe 2 at the point where it is to be connected. With pencil flat against the side of pipe 1, as in Fig. 1, trace off the curve on pipe 2. Leaving about 1 inch margin, cut out a disk 3, slit the margin back to the line as at 4, and turn up the tangs 5. Force the end of pipe 1 through the opening, and trace off the curve of pipe 2. Withdraw pipe 1, and cut off the end as marked. Now fit the pipe 1 into place with the tangs



SIMPLE METHOD OF CONNECTING STOVE PIPES.

5 on the inside, and bend the tangs up to a tight fit. If carefully executed, the joint will be sufficiently tight for all purposes.

To hold the pipes rigidly together, punch small holes through the opposite sides with a sharp punch, and put in a piece of stiff wire 6. Bend the ends of the wire on the outside. The wire should pass through the tangs on the inside.

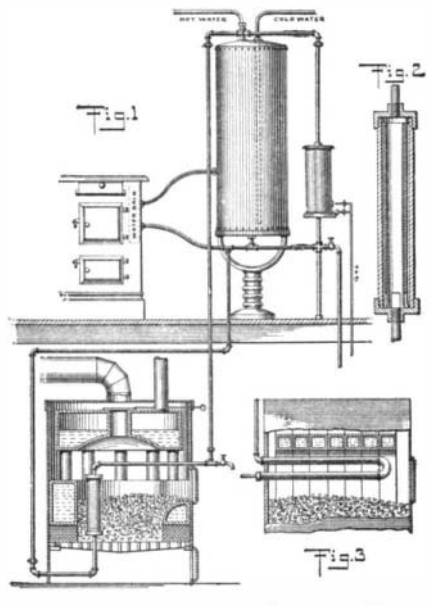
HOT-WATER CONNECTION FOR KITCHEN BOILERS.

BY JOHN B. ALLEN.

In houses where the cooking is done exclusively by gas, and with no fire in the kitchen range, in the winter, the question of having hot water in the kitchen boiler has been quite a problem in many a household, especially as it is very expensive to heat this water by gas.

One solution of the problem is to connect the heating apparatus in the cellar with the kitchen boiler, and if this be done properly, there will be an ample supply of hot water at all times; in fact, more than needed in extreme cold weather, besides keeping the kitchen warm, in the absence of any other source of heating. Of course, a steam or hot-water radiator, placed in the coldest part of the kitchen, will improve conditions in severe weather.

It must be understood that it takes a little more coal to run the heating apparatus, although some contend that it does not. Fig. 1 shows a steam boiler in the cellar, connected up with the kitchen boiler, also a separate gas heater, for use in the summer. It will be noticed that there are three independent circulations for the water, which will not interfere with



CONNECTING THE KITCHEN BOILER TO THE FURNACE.

each other—the circulation from the kitchen range, the one from the furnace, and the other from the gas heater. The connection from the furnace, steam, or hot-water heater in the cellar or basement, may of course be varied according to local conditions. The accompanying illustration shows two good and reliable ways of making the connection. Assume that the kitchen range is connected to the boiler in the usual way; then the connection with the furnace is made