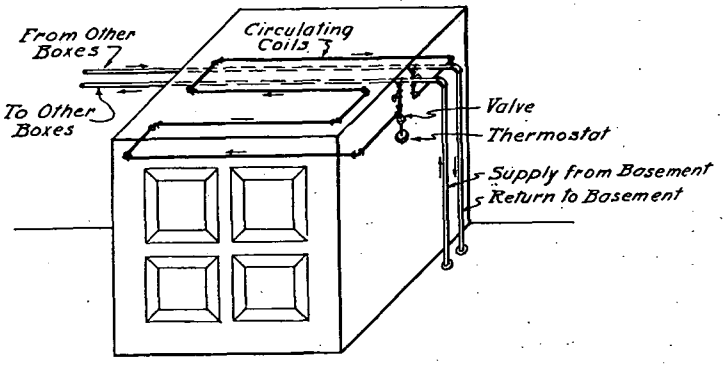

FIG. 11. UNIT THERMOSTAT

Note.—Unit Thermostat on brine refrigeration system automatically controlling flow of brine by temperature of air in box. This installation is also typical of rooms or driers heated by steam or hot water.

68 deg. service, while others can be thrown over to the alternate service and kept much cooler until again required for occupancy.

A familiar scheme similar to the foregoing, with a cooler temperature automatically maintained during the night and increased early in the morning is in use, with the switch operated by a clock, for residence work.

AUTOMATIC HEAT CONTROL IN INDUSTRY

Automatic control of heat in manufacturing processes is believed to be still in its infancy. The promotion and development of automatic heat control was hard pioneering for many years. The reward for this pioneering seems to be in process of realization in the fabulous uses of thermostats in industry.

Without automatic heat control in innumerable manufacturing processes, what now are sure and perfect reactions would be only occasional successes, and the cost of production would be much higher.

In beet sugar making there are at least eleven processes where exact thermostatic control is imperative. In tanning leather there are at least fourteen such stages.

Without exact temperature and humidity control, no fine printing is possible, and no good weaving or dyeing is assured.

In the preparation of most food products automatic heat control is vital.

Thermostats prevent scorching in clothes dryers. They reduce evaporation and are a safety device for oil storage tanks.

They are essential to control gelatine temperature in making photographic films. They are used to control paraffin vats in making waxed paper, milk containers, etc.

They control baking ovens, no matter how the ovens are heated.

They are in use to an enormous extent in the drying and hardening of paints and enamels.

CHAPTER XV

HEAT INSULATION FOR PIPES AND SURFACES

THE first consideration in determining whether or not the pipes and other heated surfaces should be insulated is the magnitude of these losses from such surfaces if they were allowed to remain bare. The losses under still air conditions in B.t.u. per square foot of bare pipe

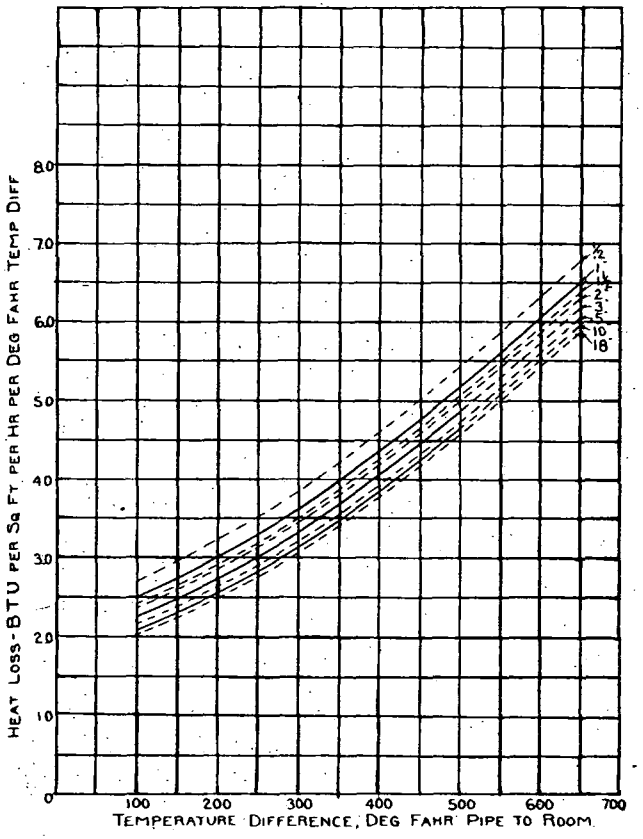

FIG. 1. BARE PIPE LOSS CURVES

surface per hour per deg. fahr. temperature difference for pipes of various diameters are given in Fig. 1.

In Table 1 the B.t.u. loss as well as the loss in dollars and cents and

Compiled from data submitted especially for THE GUIDE by L. B. McMillan, New York, N. Y., and R. H. Heilman, Pittsburgh, Pa.