

machine, and results in the compression side being too cold for the water on the condensers to extract very much heat. Generally speaking, when starting in the morning, it is a good practice to give a machine all the back pressure it will carry, and to gradually close down the valves as the work is got in hand. The sooner a dry-compression machine freezes through to the main return pipe, and the sooner a wet-compression machine freezes back to the expansion-valve, the better. The fact that a return pipe shows frost does not prove, however, that a machine is doing its best work. It shows that the returning ammonia is below freezing-point, but does not show how many degrees below.

Many of the older cream-vats in use have very little expansion-coil, and cause expense in cooling. It pays to have more coil put in, and at least 9 in. of 1 in. coil to a gallon of cream should be provided.

When the refrigerator was first introduced into butter-factories the brine-wall was the popular means of cooling insulated rooms. This system has the advantage that it will keep the room down for a time after the machine has stopped, but it causes dampness. The very shallow drip-tray provided very soon filled up, or was neglected and ran over, and the floor of the room was soon spoiled. A better idea is a wooden tray about 3 in. deep, and provided with a pipe carried through the cool-room wall to allow the water to flow away as it accumulates.

Coils have largely replaced the brine-tanks of late years, and they are usually hung on the walls with wooden baffles in front to cause a circulation of air. Where the height is available they are sometimes placed in an insulated chamber on top of the cool-room, the air being circulated by means of a fan. The drip-tray is also necessary where coils are used. Coils have the advantage of cooling a room more quickly than a tank, but do not hold it down so well as a brine-tank after the refrigerator is stopped. They give a very much purer atmosphere in a cool-room, and are not so liable to cause dampness. About 9 in. of 1 in. coil to every box of butter is necessary in a cool-room.

The ordinary square 400-gallon tank without insulation of any kind is still in use for chilled water, and is a source of considerable loss during the season. As a rule it is placed up in the ceiling, where all the hottest air in the factory collects. If iron is used it must be insulated, but with wooden tanks of 2 in. to 2½ in. timber insulation is not so necessary. A foot of piping to a gallon of water is not too much to allow, and a big saving can