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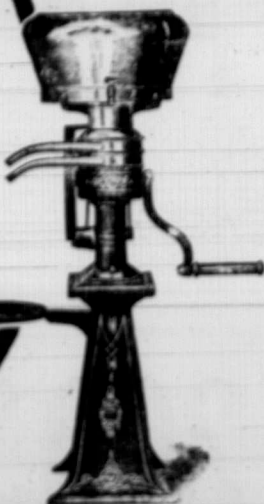
uses a greatly improved disc skimmer of the type developed by the DeLaval Company, and now used by all the most successful separator manufacturers. So that the "Superior" is not only the cleanest skimmer and the easiest to operate, but the cost, too, is very moderate for a high quality separator. It is the best all-round Cream Separator on the market today.

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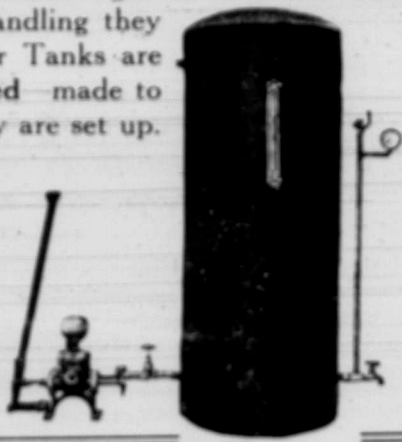
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Space will not permit of full description. Write today. Ask our experts to assist you in planning your heating. Plans and specifications furnished free of charge.

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Heating Farm Homes

Any home can be made comfortable by installing an up-to-date heating system

The question of heating the house is one which is important to the city dweller and country householder alike. For a considerable portion of the year enough heat has to be supplied to keep a comfortable living temperature throughout the whole house. And upon the ease and thoroughness with which the system of heating is installed, depends the general health, comfort and well being of all the dwellers in these prairie provinces. There are various systems in common use for heating houses. While there can be no distinct line or division made between the kind of system best suited to existing conditions, yet in a general way they may be classed as follows. For the small three or four roomed house the stove is the most satisfactory way of furnishing heat. Next in order, for the ordinary sized house, comes the hot air system. Following this and larger again is the house which is suitable for installation of the hot water system, and last in order, scarcely suitable for the majority of prairie farm homes, is the steam heating system.

The requirements of the stove are well known, and the choice is simply a matter of the purchaser satisfying his individual tastes, but at the same time bearing in mind that an article made by a well established, reliable firm, even if it does cost a little more, is more likely to give lasting satisfaction than one which has not been in such general use.

Nowadays the heating of houses and buildings generally has developed into a distinct branch of engineering work. By far the best way for the intending builder to do is to get in touch with one or other of the firms which make heating a specialty, supplying a plan of the structure to be heated, and they will furnish complete working drawings for the proper installation of an efficient heating system, either hot air, hot water or steam.

The hot air system is one which at present finds a great deal of favor in country districts, and on the whole, if properly installed, will give excellent satisfaction.

The location of the furnace will generally be governed by the exposure of the house and the location of the chimney. In all exposed rooms on the windward side of the house the temperature will be lower and the air pressure higher than in other parts of the house. The increase in atmospheric pressure makes it necessary to supply such rooms the hottest air possible. The conducting pipes therefore should be most directly connected with the furnace and with the best run of horizontal pipe. The proper place for the furnace is as near as possible the coldest place of the house. It is a common practice to place registers near the inner corner of the room in order to economize in conducting pipe in horizontal runs. A small amount of economy in first cost is thus secured, but the efficiency of the apparatus is sacrificed. The greatest objection to placing the registers and conducting pipes in the outer walls of buildings is that of loss of heat due to exposure to the outside cold and the resulting loss in circulation.

Any trouble experienced with this system is mainly due first to faulty installation, usually this is lack of sufficient radiation surface to properly heat all the house, and secondly, to faulty design and poor quality of the materials of which the furnace is made. In buying a hot air furnace it is important to get as large a radiation surface as possible in proportion to the size of the grate area. The larger the surface from which heat is given off, the greater the amount of air which will be heated, and on the other hand, the smaller the grate area required to furnish sufficient heat, the less the amount of fuel which will be consumed.

Hot Water System

On account of its high specific heat water at a temperature much below the boiling point furnishes the heat necessary to keep the temperature of a house at the desired degree.

The objection to the use of hot water as a means of heating is that once the heat of the house is much reduced the furnace is a long time raising the temperature to normal. This is due to the fact that the temperature of the water of the entire system must be uniformly raised because of its continuous passage thru the heater. But, on the other hand, this uniformity of temperature prevents sud-

den changes in the heat of the house, the heat will, be maintained for a longer period and water heating systems can be so regulated to suit outside temperatures, that the heat of the water will just supply the amount to suit prevailing conditions, hence it lends itself to being worked very economically.

There are several different systems of hot water heating but the one generally installed is the gravity system. According to the general layout of the house the pipes are run in the most economical way, and at the highest point in the system an expansion tank is put in. This tank is fitted with an overflow pipe and a gauge glass. The purpose of the tank is to receive the excess of water due to expansion caused when the temperature is raised from normal to working heat. Since heat is given off by the hot water system by contact with the radiating surface, it is apparent that this surface must be quite large. Sometimes due to a poorly arranged system or a badly built house it is found that the radiators are not sufficiently large to heat the rooms to the desired degree except when the furnace is fired very heavily. It is always poor economy to keep a very hot fire in any kind of a heater because a hot fire sends most of its heat up the chimney. If the radiators could be safely raised in temperature they would of course give out more heat and, as a result the rooms would be more quickly heated and kept at the required temperature with less loss in the furnace. The difficulty in this case lies solely in there being insufficient radiator surface to supply heat as fast as required. This can be remedied by attaching a pressure regulating valve to the end of the riser in the pressure tank. The valve is kept closed by a weight that is intended to hold back a pressure of, say, ten pounds to the square inch. This pressure will require a temperature of about 240 degrees F, this being 28 degrees above boiling point, which is the highest temperature possible with a low pressure system. When the pressure of the water goes over ten pounds the valve is lifted and an amount of water escapes into the tank sufficient to relieve the pressure. Should enough water be forced out of the system to fill the tank to the top of the overflow pipe the overflow water will be discharged thru this pipe into the sink in the basement. When the house has been warmed sufficiently the demand for high radiator temperature is reduced, the furnace drafts are closed, the water in the system cools and as it shrinks the system will not be completely filled. It is then necessary to take back from the tank the water that has been forced out by excess pressure. Here the check valve comes into use. So long as there is pressure in the pipes this valve is held shut and no water can escape, but as the inside pressure is lowered by cooling there will come a point where the water in the tank will flow back thru the valve into the system.

Humidity Important

Radiators are manufactured in all shapes and sizes to suit any condition required. Both cast iron and steel radiators are now on the market.

An important point in any heating system is the maintaining of the proper humidity in the air throughout the house. It should be so arranged that a certain percentage of moisture be kept in the air, and this is provided for in various ways. Hot air furnaces usually have a water pan from which the hot air evaporates sufficient moisture.

With hot water and steam systems usually a shallow pan kept full of water and placed over or alongside of the radiator furnishes the moisture required. It is scarcely necessary to any more than refer to steam heating as a house heating system. In the ordinary run of houses it is scarcely ever installed, but it is the system best suited for the larger buildings, apartment and business blocks and big structures generally.

When considering the purchase of a modern heating system, it is best to get the advice of a good firm which makes a specialty of heating. By supplying rough plans of the house the firm will be able to make an estimate of the cost of a complete system and, if satisfactory, will supply full working drawings for the proper and effective installation of the plant.