

against a high head pressure on the condenser which would necessitate an increased load on your motor driving the ammonia compressor.

It usually takes about $1\frac{1}{2}$ h.p. to produce a ton of refrigeration.

Mr. Ellis,—

I would like to ask what pressure you have got to have to compress the ammonia to get it back into a gas from the liquid state, and what means you have of doing it?

Mr. McRobert,—

This entirely depends upon the amount of cooling water available for ammonia condensing purposes, the lower the head pressure and the higher the suction pressure is maintained, the greater will be the efficiency of the refrigerating machine. The usual pressure required to change the liquid ammonia to gas, in actual practice is between 140 and 175 lbs., this is accomplished on the discharge side of the compressor.

In regard to insulation. As everyone knows soot is probably one of the best insulators, and I have wondered if it could not be put to some practical use as an insulator in regard to refrigerating plants. For instance, if you took the soot out of the back of the boilers and put it into canvas envelopes, about 2 inches thick by 10 inches wide by two feet long, and pressed it in tight and sealed it up, covering the envelopes with some material to make them impervious to moisture, would it not be possible to make some practical use of it in this way. I might say that 1-5 of an inch of soot is equivalent to 1 inch of asbestos as a non-conductor. I should like to hear someone give his opinion on this matter.

Mr. Wickens,—

It seems to me that while there is no question about soot being a first-class non-conductor, either for heat or cold, in this particular case it would be very difficult to make an envelope to hold it to make it serviceable as an insulator, if you pressed it very hard you would take part of its insulating properties away. One reason why it is a good non-conductor, is because of the air between the particles and if you pressed it too hard you would get less air between the particles. Then again, if it was not pressed very tight you would have great difficulty in getting it to hold together, that is to get your envelopes in anything like uniform shape, as soot will not adhere. Soot also has a great affinity for water, and it would appear to me that the envelope you would have to make so that it would