

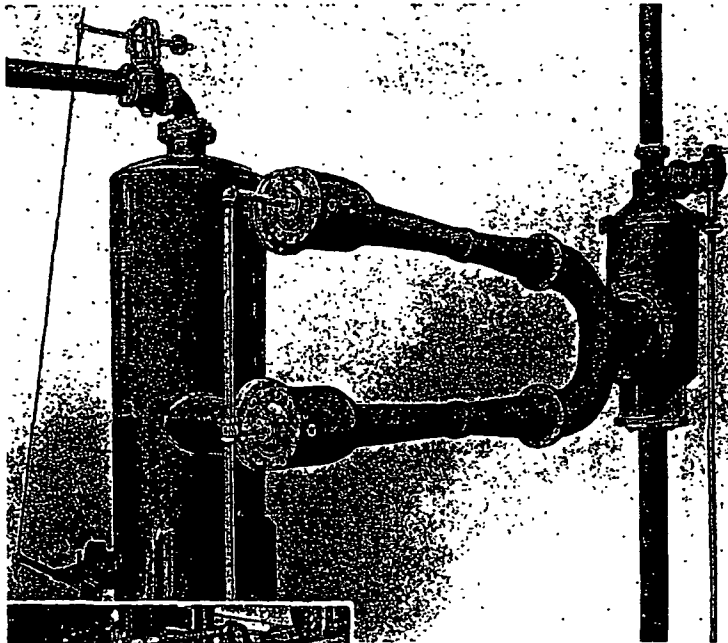
VACUUM REFRIGERATION DEVELOPMENT



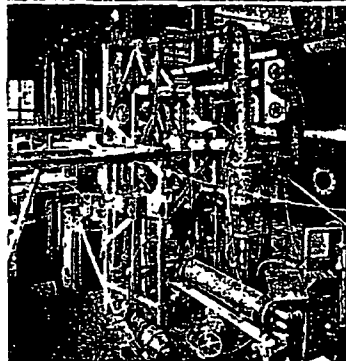
IN the Spring 1933 Issue of POWERFAX, refrigeration by flash evaporation under vacuum was discussed by Mr. L. M. Forncrook. Mention was made of the widespread interest in this method of cooling with its attractive possibilities in cost-saving operation, and its simplicity as compared with other methods.

An experimental vacuum refrigeration unit installed in Elliott Company's Jeannette Works has been used in developing a new and improved unit. The improvements sought have to do with economy of operation, better control methods, and more compact construction. The experimental unit, shown here, does not appear very compact because it was particularly designed to facilitate a wide variety of experimentation without regard for general appearance.

The experimental unit has a capacity of approximately 15 tons and employs three booster ejectors of equal capacity. It has been operated over a wide range of inlet and discharge water temperatures and at various ratings. It is designed to accomplish the rated duty over a wide range of refrigerated water temperatures, with a remarkably small variation in capacity. The design is such as to eliminate the use of isolating gate valves and other expensive and



(Above)—A 60-ton vacuum refrigeration unit especially arranged to fit into available space conditions.



(Left)—Test Floor view of experimental 15-ton vacuum refrigeration unit in Elliott Company's Jeannette Works.

difficultly maintained devices, without sacrificing flexibility of operation. The booster ejectors, being identical in design and capacity, are interchangeable and, therefore, may be economically maintained. The test floor scaffolding unfortunately obstructs a clear view of the flash chamber which is of a new but extremely simple design.

The performance of this experimental unit has exceeded expectations and has confirmed our belief in the relative improvement in economy made possible by the

special features of the design employed.

A refrigeration unit of the type illustrated may be used for cooling water in connection with air-conditioning applications or for cooling process liquors. The Elliott Company has sold refrigeration equipment employing the steam jet principle capable of producing more than 3000 tons of refrigeration.

Also illustrated is a view of a 60-ton vacuum refrigeration unit especially arranged to fit into space, available. In the actual installation, the two booster ejectors were installed in a vertical position, but for photographing purposes in the shop, the latter position was used for the sake of convenience.

*** 7