

run short. The Electricians has the
greater part of their work done - most of
the lamps & fixtures in place.

The engines & generators of electric plant
have been run a few times but has
not yet been thoroughly tried out.
chiefly owing to a refusal of all parties
to supply gasoline for engines.

The Heating plant has been well
tested. same has been in use for some
time & is in satisfactory shape.

same thing applies to the plumbing.

The insulation covering of Boilers &
steam mains has been finished but

must mention that the small steam
laundry boiler or of the jacket heater or the
hot water storage tank has not be so
covered as the contractors maintain.
that this work is not in their specification
for those parts. & have refused to do it.
& as it is not specifically mentioned, I cannot
compell them to do it.

I expect, however, to be able to report
entire & satisfactory completion of the
building at the end of the month.

I remain

Obediently yours

Frank W. Bate

Inspector of Construction

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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be on no 15



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ADDRESS REPLY TO THE
SECRETARY, DEPT. OF INDIAN AFFAIRS,
OTTAWA



IN YOUR REPLY REFER TO

No. 165-0-5.....

ALSO TO THE DATE OF THIS LETTER

PLEASE WRITE ON ONLY ONE SUBJECT
IN EACH LETTER

DEPARTMENT OF INDIAN AFFAIRS
CANADA

Feb. 23, 1928.

Rev. Sir,-

Replying to your letter of the 1st instant, with reference to the providing of cold storage at the new St. George's Indian Residential School, I beg to say that it will be impossible to install a plant similar to the one at the Kamloops School, as we would not have sufficient power from our electric lighting plant to satisfactorily operate same. As you probably know the Kamloops School is connected up with the power lines at Kamloops, and they have all the electric power required to operate such machinery. The only type of mechanical refrigeration that could be installed at your school would be one of the models similar to the Frigidaire, and this would be, as you know, directly connected up with a suitable refrigerator. Mr. Ditchburn arranged recently for the installation of one of these outfits at the Sechelt Indian Residential School, and if you would communicate with him he could probably advise you if same is giving satisfaction. You might look into the matter, and let me have your recommendation, as to the size you think suitable.

Your obedient servant,

A. F. MacKenzie,
Acting Asst. Deputy and Secretary.

Rev. A. R. Lett,
Principal, St. George's Indian School,
Lytton, B. C.

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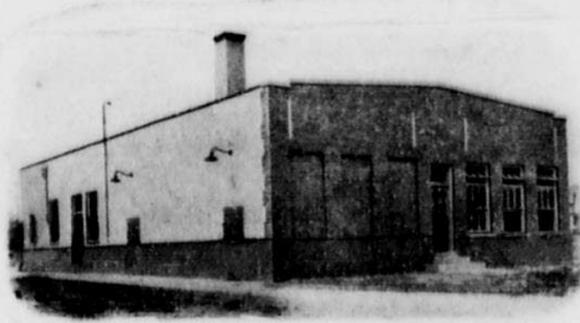
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In the Dairy Products Industry refrigerating machinery has proven to be of immense value. Absolute control of temperature in storage rooms and freezer rooms, chilling of brine for ice cream freezers and the maintaining of low temperatures in ice cream hardening rooms are the principal functions of refrigerating machinery in this industry.



Nicolai Fur Co., Milwaukee, Wis.

In the Packing House Industry and in its branches such as wholesale and retail markets, sausage factories, etc., temperature control is of primary importance. Our many years of experience are available for the correct design and construction of Meat Chilling, Freezing and Storage Plants.



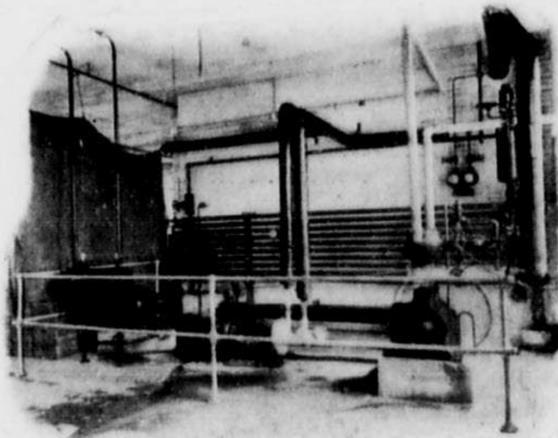
Quality Dairy Co., Milwaukee, Wis.

Cold Storage design and construction for the storage of food products in general is a class of work which we are well qualified to build. Special types of refrigerating plants such as Fur Storages, Oil Cooling, Water Cooling, etc., are to be found in our list of installations.

When contemplating changes or an entire new plant we would urge you to avail yourself of our consulting service embracing our many years of experience in designing and installing an increasingly large number of plants of all types.



Trapp Bros. Dairy, Milwaukee, Wis.



Machine Room, Quality Dairy Co.

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When writing to us for Quotations please include
information along the lines indicated on this page

1. Kindly state character and quantity of goods to be cooled or stored in each room or refrigerator, and the time during which goods should be cooled to room temperature.
2. Give temperature of goods when received and the temperature required in the rooms or to which goods must be cooled.
3. Describe the insulation, and location, South, North, etc., of the rooms, how protected from outside temperatures.
4. Send sketch showing relative positions of rooms and machine, giving distances.
5. Give length, width and height of each room to be refrigerated.
6. If it is desired to make ice, state amount required per day, size of blocks and if opaque ice will serve your requirements.
7. Do you wish us to furnish the motive power for operating the compressor? If so, state kind desired. When electric motors are wanted, state whether direct or alternating current will be used and give voltage; for alternating current also give number of phases and cycles.
8. How many hours per day do you intend to operate the equipment?
9. Give particulars concerning water supply, quantity, highest summer temperature etc.
10. If drinking water system is to be installed, state time during which water will be used and number of gallons per day.
11. In confectionery installations or others in which persons are employed continually within the refrigerated space, it is important to state number of persons so employed and number and kind of lights used in the rooms.
12. If the machine is to be used for manufacturing ice cream, state number of gallons per day.
13. If you expect to furnish any part of the equipment, please state fully what such parts consist of, sizes, capacities, etc.
14. Do you desire estimate on machinery f.o.b. cars factory or delivered and erected?
15. When do you expect to place order for machinery?
16. Do you desire us to send a representative to confer with you relative to the economical arrangement of the plant.

Full information will save time and enable us to make a comprehensive and close estimate.

The Vilter Manufacturing Company

MILWAUKEE,

WISCONSIN.

WISCONSIN.

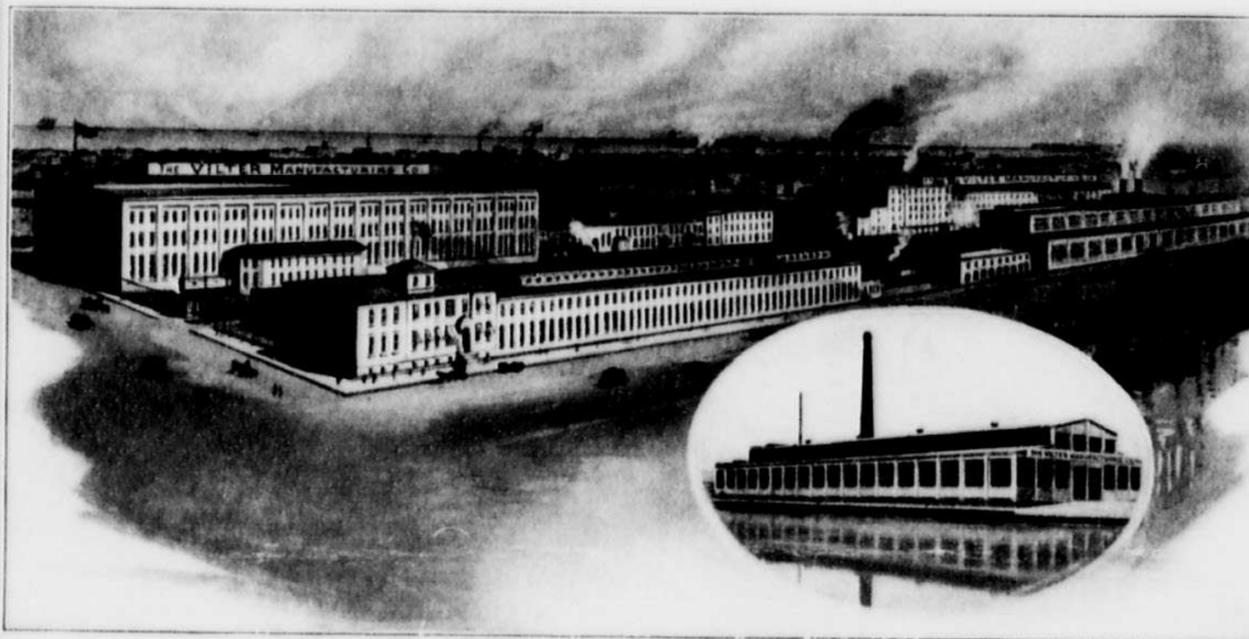
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BULLETIN No. 29R

The Vilter Twin Cylinder Vertical Enclosed Type Ammonia Compressor



Plant of The Vilter Manufacturing Company

THE VILTER MANUFACTURING CO.

Milwaukee, Wis., U. S. A.

SALES OFFICES:

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2723 Bennett Court

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INTRODUCTION

We have been engaged in the design, manufacture and installation of complete Refrigerating and Ice Making Plants for a great many years, having been one of the pioneer builders of this class of equipment in the United States.

Our policy has always been to conduct a careful study and a thorough analysis of the requirements of each installation which we have built, to the end, that the equipment installed would be thoroughly satisfactory in operation with regards to reliability and economy. As a result of this policy it can be readily appreciated that we have gathered no little amount of data and information in our many years of experience in building an increasingly large number of refrigerating and ice making equipments for various industries.

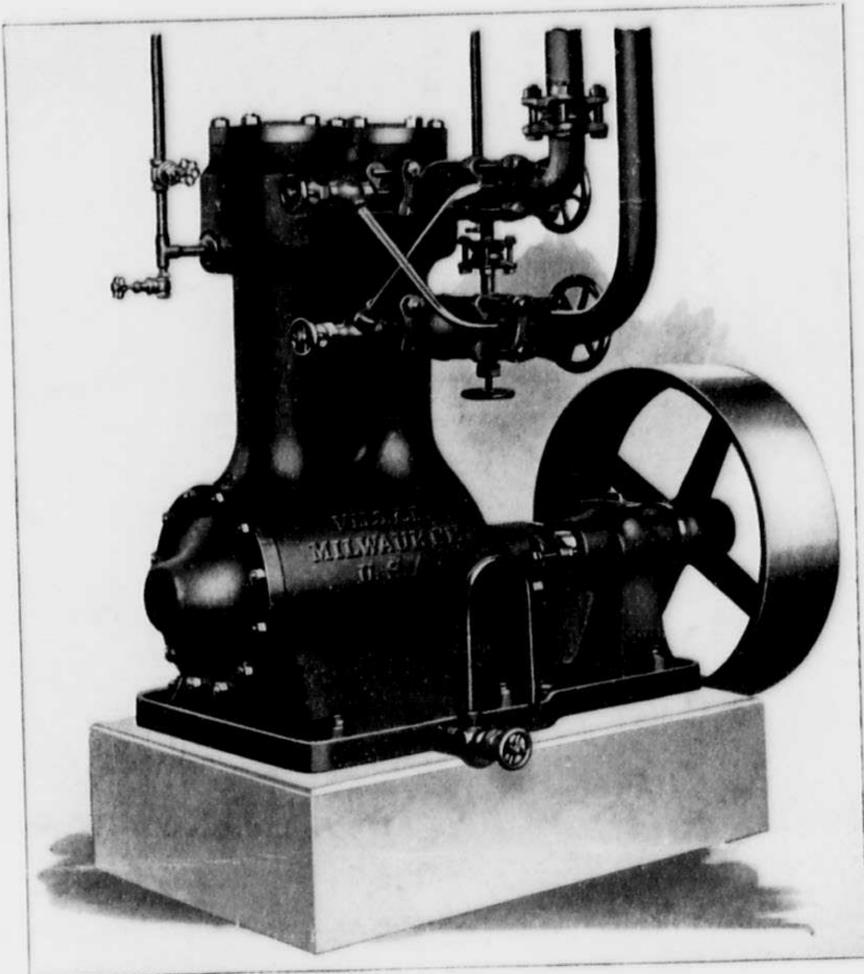
This bulletin has been prepared for those who are interested in the smaller sizes of refrigerating and ice making plants and in the following pages brief descriptions and illustrations are given of the compressor and component parts of the so called "high pressure side", the Vilter self contained units, the coil work or "low pressure side", ice tanks, brine tanks, ammonia fittings, etc., all to the end that those who are contemplating the installation of equipment of this class may be enabled to form a comprehensive idea as to what we have to offer.

The Vilter Manufacturing Company
MILWAUKEE, WISCONSIN.

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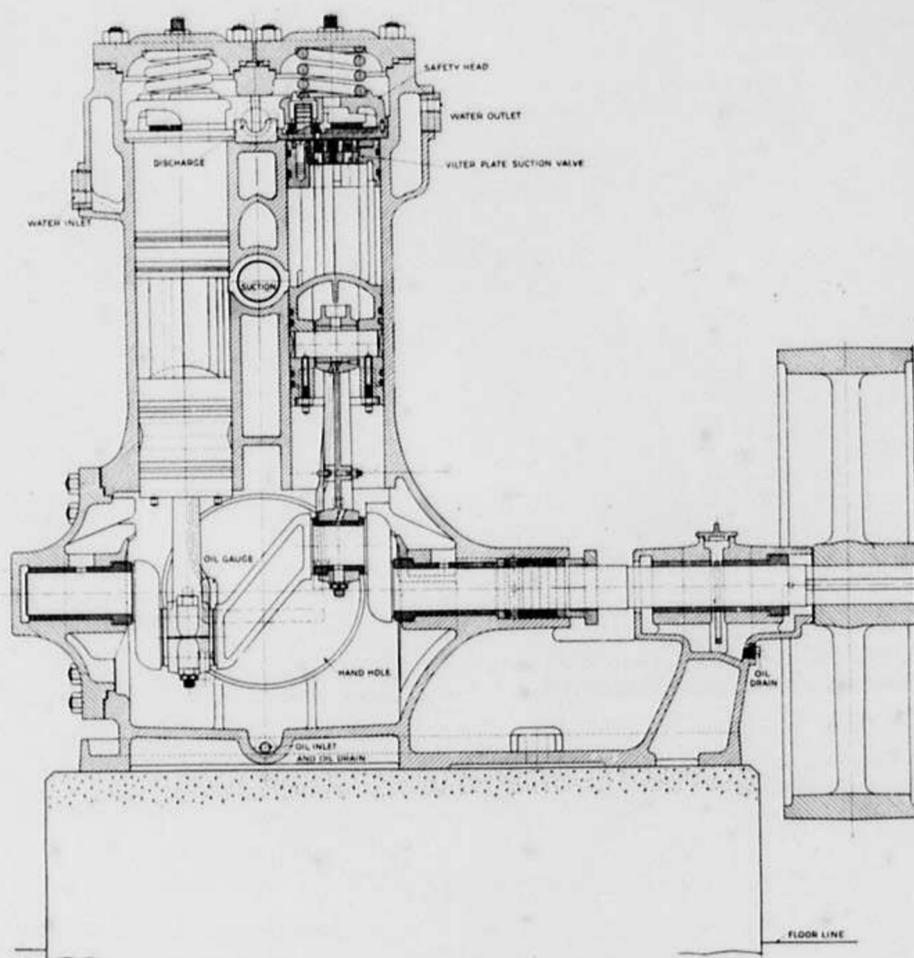
*The Vilter Vertical Twin Cylinder Single-Acting
Enclosed Type Ammonia Compressor*

Built in various sizes from one to eighteen tons of refrigeration (Standard Rating) (A. S. R. E. Code). All sizes being of the same general design, described and illustrated in the following pages. This VILTER ammonia compressor is a logical development of our many years experience in the construction of this class of machinery and has resulted in a very successful unit. It has proven to be very economical and reliable in operation requiring but a minimum of attention. It is made of high grade materials carefully assembled, tested and finished prior to shipment.

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Section of the Vilter Enclosed Type Ammonia Compressor.

THE FRAME

The twin cylinder frame is made of semi-steel and combines the crankcase, cylinders, outboard bearing and water jacket in one integral casting. The metal is amply thick, of a dense strong composition and the design is one with a low center of gravity thus assisting in securing stability of operation. The base of the frame is provided with a lip around the edge and in addition the base has an opening through it in the central part which admits of grouting being poured under the base at this point.

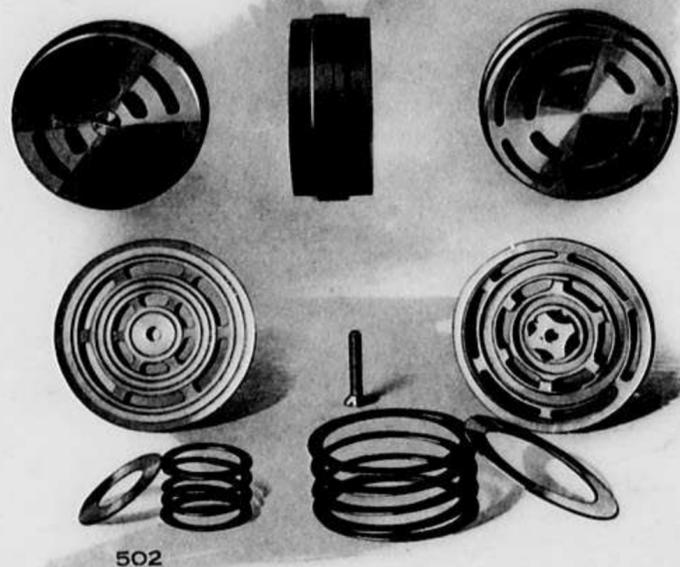
In the manufacture of the frame the casting is first carefully cleaned and sand blasted to remove any imbedded foundry sand before any machine work is started. For the accomplishment of the machine work on the frame specially designed machine tools are utilized which not only permit of many operations being performed at one setting of the frame but also insures absolute alignment of the cylinders with reference to the crank shaft. After the frame casting has been machined it is tested under air pressure to make sure that it is absolutely tight. As shown on the opposite page the frame is provided with a large hand hole in the base which is placed there to permit of inspection and adjustment of the crank pin bearings.

LUBRICATION

Proper lubrication of the compressor is obtained in part by means of the splash system. The crank case is filled with oil to a point indicated on the oil gauge and the churning of the crank shaft and connecting rods splash oil up on to the cylinder walls and up into the basins which are a part of the frame and which introduce the oil into the end bearing and also to the bearing where the stuffing box is located. Attention is invited to the oil lantern in the stuffing box into which oil is introduced by means of an oil duct coming from the crank case. The outboard bearing which supports the flywheel is lubricated by means of an oil ring which rides on top of the shaft. The lower portion of this oil ring is immersed in oil and thus oil is continually brought to the top of the bearing when the compressor is in operation. Provision is made for draining the oil from this bearing whenever desired. To insure positive lubrication of the piston pins oil tubes carrying oil pumps on the lower ends are fastened to the connecting rods. When the compressor is operated oil is constantly carried from the crank case up to the piston pins by means of this device, thus insuring proper lubrication.

BEARINGS

The bearings for the crank shaft and crank pins are all die cast and made of high grade Babbitt Metal. The bearings in the piston ends of the connecting rods consist of accurately finished close grain cast iron bushings pressed into the connecting rod ends. The design of all the bearings is such that large bearing surfaces are obtained which together with the thorough lubrication obtained results in a compressor which will function extremely well over a very long period of time.



*The Vilter Plate Type Suction Valve
Patent Applied For*

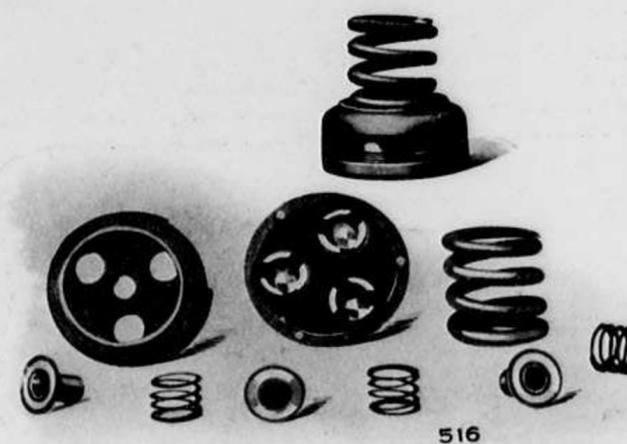
THE SUCTION VALVE

The suction valve is our plate type of valve, the same as is now placed in all of our compressors. As seen in the figure it is made of one or more thin steel rings, hardened and ground down to a perfect surface. These rings are held in place by light helical springs, and all is safely secured within two cages fastened together by a special machine screw. The method of construction and the manner in which the valve is secured in the piston eliminates the possibilities of a part ever falling into the cylinder.

The suction valve is located in the piston and is made as large as conditions will allow. The gas is drawn into the cylinder during the down stroke and the change of direction of piston movement, augmented by the spring, closes the valves. As the valve is held flexibly and is ground to a surface, there is no loss of ammonia by leakage past the valve.

THE VALVES

Some of the greatest losses in ammonia compressors are in the type of valve used. For best economy the suction line on the indicator card should coincide with the suction pressure outside the cylinder in the suction header. This is a physical impossibility inasmuch as it requires some drop of pressure in order to make the gas flow from the header to the cylinder. In order to decrease this loss of pressure to a minimum the valves must be light, of little inertia, and easily operated. The valve ports must be straight and the ports and the valve openings must be ample in cross sectional area.

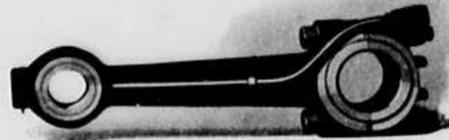


*The Vilter Plate Type Discharge Valve.
Patent Applied For*

THE DISCHARGE VALVE

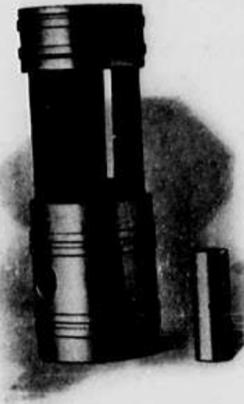
The discharge valve is also of the plate valve construction, although in a modified form. It consists of a plate valve with a cylindrical recess which makes a tight running fit on its inside with a projecting lug in the safety head of the compressor. The valve is held flexibly in place by a light helical spring. By means of our special patented construction this valve will operate with practically no noise.

The discharge valve is made single or in multiple depending on the size compressor, this is done to secure the necessary area. The safety head construction is used which permits of a very small clearance being obtained and also insures safety in operation.



CONNECTING ROD

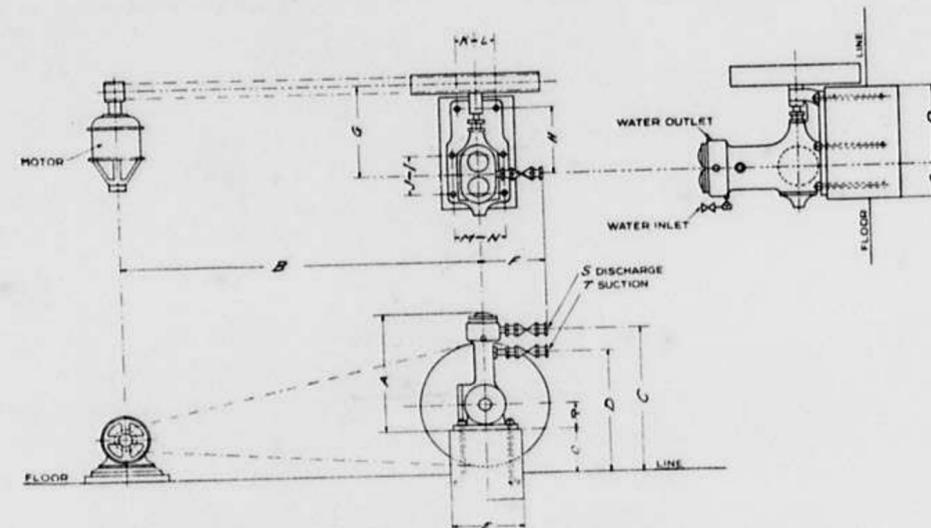
In the manufacture of our connecting rods the greatest care is taken. Special machinery is used for the boring and reaming of the ends. The rods are made of cast steel with a strong H section and are fitted with a cast iron bushing on the piston end and a die cast pure Babbitt Metal bearing on the crank end. Special attention has been given to lubrication and ample oil holes and grooves have been provided.



THE PISTON

The piston which is of the trunk type with ample space between the two parts for clearance opposite the suction gas inlet is made of semi-steel and ground to a micrometer fit. It is carefully fitted with the required number of piston rings of a high grade type to insure the proper functioning of the piston. The top part of the piston carries the suction valve and the lower part of the piston carries the piston pin which is made of a special hardened steel ground to fit and properly secured in place. This construction results in proper piston lubrication with generous bearing areas.

Size of Compressor Cylinders		Ramshead			Size of Connection		Water to and from jacket	Overall Dimensions Over Iron			Head Room - Foundation to Ceiling for removing Piston	Dimensions of Base	
Diameter	Stroke	Diameter	Flare	Weight lbs.	Discharge	Suction		Width	Length	Height		Width	Length
2½"	2½"	22"	3½"	150	¾"	¾"	¾"	21"	24"	2'2"	3'0"	15"	23"
4"	4"	32"	5"	250	1"	1½"	½"	28"	4'0"	3'3"	4'8"	21½"	2'10"
5½"	5½"	38"	8"	425	1½"	2"	½"	36"	4'5½"	3'10"	5'8½"	2'0½"	3'3"
6½"	6½"	50"	9"	530	1½"	2"	½"	42"	5'4"	4'4"	6'4"	2'2½"	3'10½"
7½"	7½"	60"	10"	750	2"	2½"	½"	5'0"	5'8"	4'11"	7'6"	2'4½"	4'1½"



Size Machine	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
2½"x2½"	2'1½"	10'0"	2'5½"	23"	18"	13"	22½"	16"	6"	3½"	5"	5"	5½"	5½"	8½"	8½"	19½"	7"	7"	¾"	¾"
4"x4"	3'2"	11'0"	3'6"	29½"	2'2"	23½"	2'5½"	21"	6"	6"	7"	7"	8½"	8½"	11½"	2'1½"	9½"	9½"	1"	1½"	2"
5½"x5½"	3'9½"	12'0"	4'2½"	3'5"	2'6"	2'2"	2'10½"	2'0"	7½"	7½"	8½"	8½"	10"	10"	13"	2'5"	11"	11"	1½"	1½"	2"
6½"x6½"	4'3½"	13'0"	5'2"	4'1½"	2'8"	2'2½"	3'5½"	2'6"	8½"	8½"	9½"	9½"	10½"	10½"	14½"	2'11½"	16½"	11½"	1½"	1½"	2"
7½"x7½"	4'10"	14'0"	5'11½"	4'10"	2'10"	2'5"	3'7½"	2'8"	9½"	9½"	10"	10"	11½"	11½"	15½"	3'1½"	20½"	12½"	2"	2"	2"

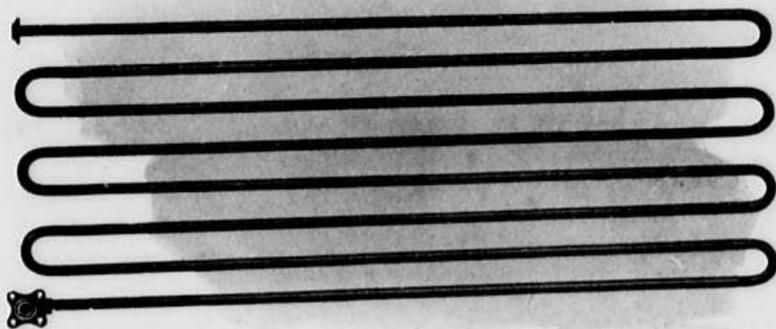


Drop Forged Steel Ammonia Flanges

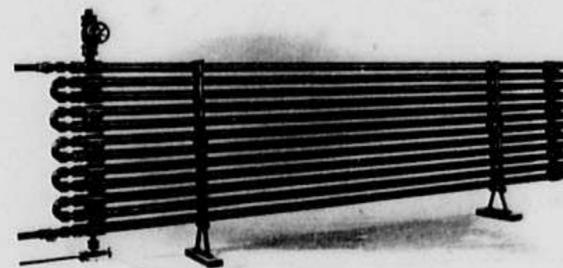


Ammonia Pipe Return Bends

Vilter ammonia expansion piping, or as it is sometimes designated, ammonia evaporating piping, is very carefully fabricated. The pipe used is of high quality and specially built tools and equipment are utilized in this work. As may be noted from the illustration, the ammonia flanges or couplings are made of drop forged steel and fitted with tongue and groove joints in which metallic gaskets are secured by means of a minimum of four bolts. In the illustration shown below attention is invited to the fact that the finished coil is one homogeneous length of pipe which has been made possible by means of electric welding. The flanges are sweated and soldered on to the pipe when the coils are built up in our shops. After the coils have been fabricated they are carefully tested with air pressure while submerged in water and after testing they are painted.



A Typical Flat Coil



The Vilter Double Pipe Ammonia Condenser is made up of $1\frac{1}{4}$ inch and 2 inch high grade selected ammonia pipes placed one within the other. The inner $1\frac{1}{4}$ inch pipes, connected at the ends by the usual form of flanged return bends of 4 inch centers, enclose the water circulation, while the annular spaces between the inner and outer pipes form the ammonia condensation chambers. The 2 inch outer pipes are screwed into special return bends at one end and connected to similar return bends by four bolt flanges at the other end. The inner water pipes pass through stuffing boxes on the outer side of the return fittings and can be disconnected and withdrawn separately without interference with the rest of the apparatus. The direction of water and gas circulation in this type of condenser are countercurrent.

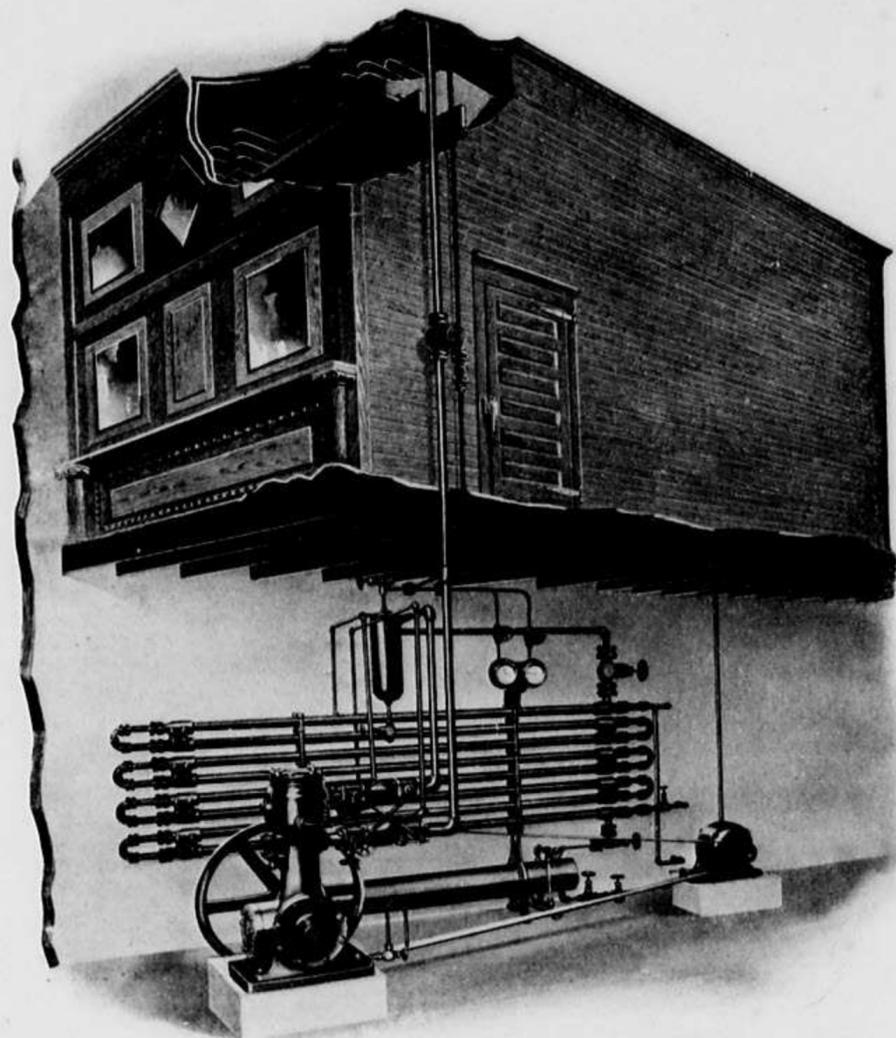


Horizontal Liquid Receiver



High Pressure Oil Trap

Vilter Liquid Receivers and Vilter High Pressure Oil Traps are all made of heavy wrought material with welded heads and with nipples and sleeves welded on. Extreme care is observed during construction and each receiver and trap is carefully tested under pressure prior to shipment.



A Typical Installation of a Vilter Twin Cylinder Vertical Ammonia Compressor.

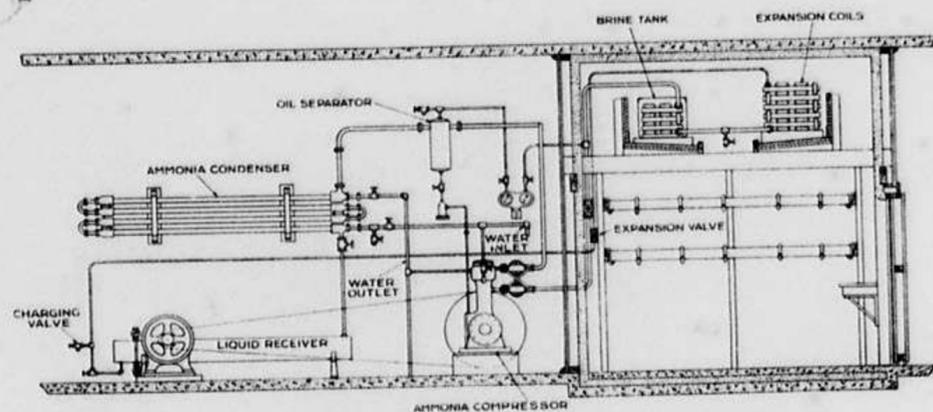
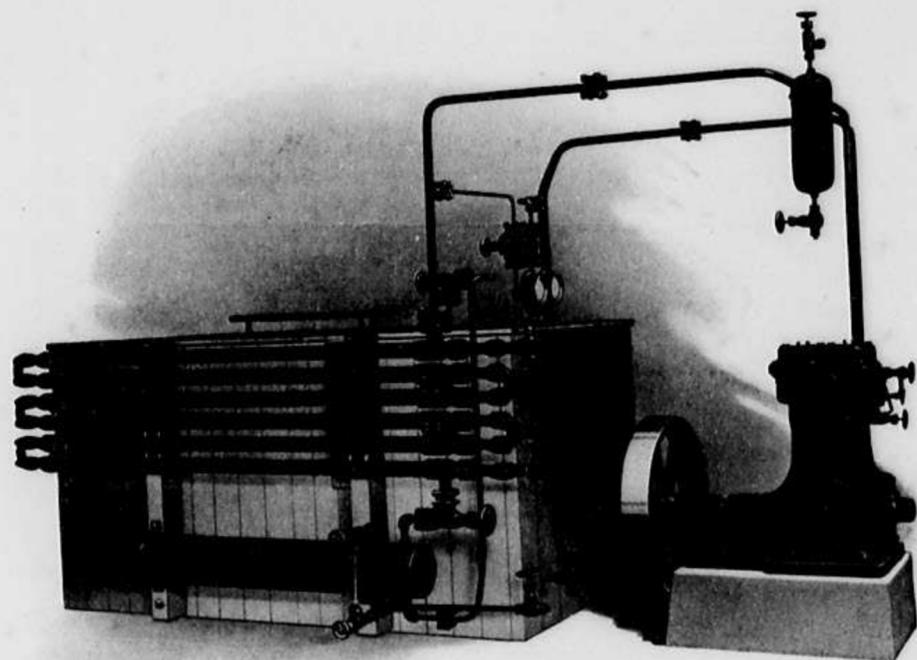


Diagram showing the names of various parts of a small Vilter installation.

The illustrations on these two pages outline in a general manner the application of mechanical refrigeration to a single refrigerator box. That portion of the equipment in the refrigerator box is known as the "low pressure side" and consists of the ammonia expansion piping and brine holdover tank, both of which are placed in the loft of the refrigerator box. Plants such as these are designed to operate but a portion of every 24 hour period depending upon conditions. The holdover tank contains ammonia expansion piping submerged in a brine solution. This piping cools the brine in the tank during the period when the compressor is operating and this body of cold brine prevents any undue rise in temperature in the refrigerator when the compressor is shut down.

That portion of the equipment outside of the refrigerator box is known as the "high pressure side" and consists of the ammonia compressor, belt and motor, ammonia condenser, oil trap, liquid receiver, pressure gauges and ammonia connections, water supply and drain connections to the ammonia condenser and ammonia compressor are also included.

There are numerous arrangements found in practice depending upon the number of refrigerators, freezers, brine or ice tanks which are to be placed in operation but they are elaborations of the fundamental system illustrated. In general liquid ammonia passes through the expansion valve into the expansion piping where by virtue of its low boiling temperature it absorbs heat from the interior of the refrigerator and thus evaporates into a gas. The compressor takes this gas and forces it through the condenser where the gas, due to the pressure generated by the compressor and coming into contact with the cold water pipes in the condenser, condenses into a liquid form, flows into the liquid receiver and from the liquid receiver the liquid returns to the expansion valve again.



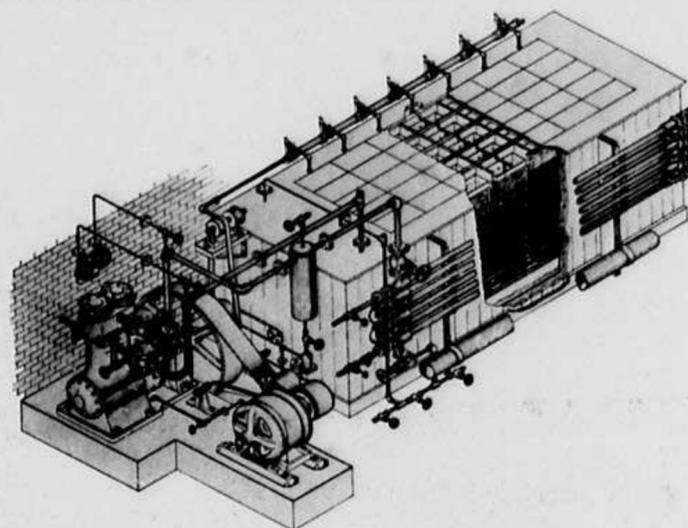
SMALL CAN ICE PLANTS

Our tanks and coils are so designed and proportioned, and a sufficient number of cans furnished, to permit slow freezing of the ice. A high grade product of uniform quality is thus secured.

The freezing tank is made from sheet steel, well riveted and braced, so that it will not leak or bulge when filled with brine. It is insulated in a first class manner and the insulating material covered with a neat and substantial, dressed and matched wooden lagging. The top is provided with a wooden framework and insulated covers for the ice cans.

The evaporating coils are of loop construction, each made from one continuous length of extra strong ammonia pipe, connected by heavy manifolds and also to the liquid line leading from the expansion valve and to the suction line leading to the compressor. A valve and connection for blowing air, oil or scale from the coils, or charging the system with liquid anhydrous ammonia, is accessibly located near the bottom of the tank.

The brine agitator is of the horizontal type, usually driven by a link belt chain from a sprocket on the compressor shaft.



Schematic View of a Small Vilter Can Ice Plant.

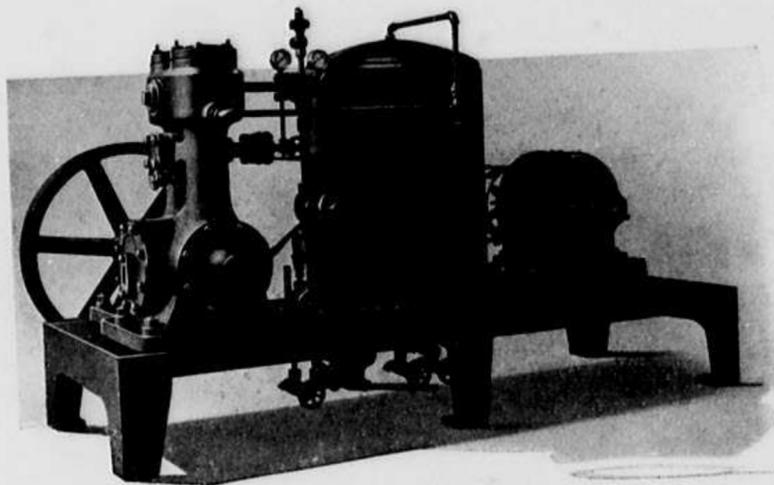
In this illustration the air agitating equipment which is employed to make clear ice is shown. This equipment is furnished only when the water which is to be frozen is suitable for making clear ice.

As these ice tanks are often used in combination with other refrigerating work, such as the cooling of refrigerator boxes and rooms, the following table giving general data pertaining to our standard size plants is listed.

Plant No.	Compressor, Twin cylinder type	Wheel diameter and face	H. P. Electric Motor	Ice Making capacity 24 hours		Ammonia	Salt in Lbs.	Shipping weight complete plant packed and boxed, Lbs.	Floor space required for Ice Tank
				Lbs.	Kilog.				
0	2½x2½	22x37	2	550	250	50	600	4505	9'x2'
1	2½x2½	22x37	2	1000	455	50	650	4575	6'-6" x 3'-9"
2	4x4	32x5	3	1320	600	50	750	6400	7'-9" x 4'-9"
3	4x4	32x5	3	1650	750	100	900	7230	9'-0" x 4'-9"
4	4x4	32x5	5	2000	910	100	1050	8020	10'-2" x 4'-9"
5	4x4	32x5	5	2200	1000	100	1200	8340	8'-6" x 6'-0"
6	4x4	32x5	5	2750	1250	100	1400	9570	9'-9" x 6'-0"
7	4x4	32x5	7½	3300	1500	150	1500	10670	11'-0" x 6'-0"
8	4x4	32x5	7½	3850	1750	150	1640	11530	12'-2" x 6'-0"
9	5½x5½	38x8	7½	4400	2000	150	1770	13600	13'-4" x 5'-9"
10	5½x5½	38x8	10	6050	2750	200	2260	21050	17'-0" x 6'-0"

All Ice Tanks are 4'-6" high from floor to top of cover.

Note: As the ice cans normally freeze solid in a 12 hour operating period these ice tanks may be operated but 12 hours per day in which case the capacity of the plant will be but one-half of that amount appearing in this table.

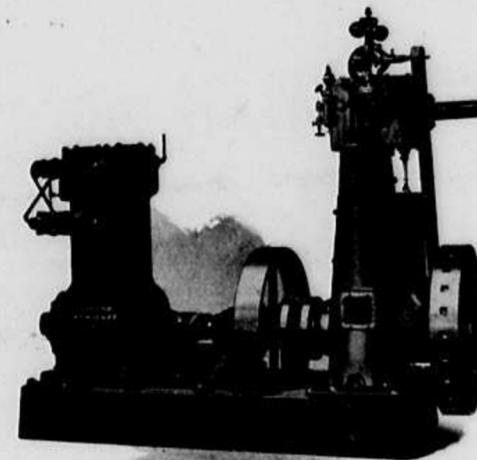


Self Contained Unit

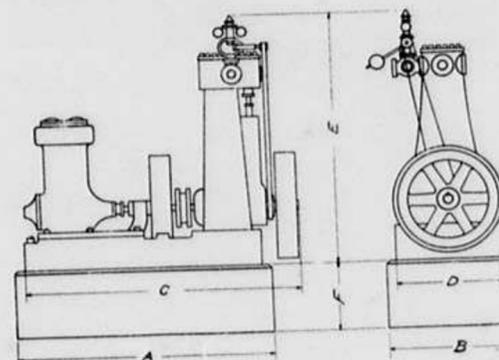
In certain types of installations it has been found desirable to utilize a refrigerating machine which is of the so called self contained design, which consists of the complete high pressure side including the motor all mounted on one base.

In the unit illustrated one of the smaller Vilter twin cylinder compressors is utilized. The condenser and liquid receiver used in this unit are of the submerged type and are mounted on the base between the motor and compressor. These units are assembled, tested and finished in our shops prior to shipment thus reducing the work of installation to a minimum. Special foundations are not required for this unit as in the case when a unit of the type illustrated on page 12 is installed.

The operation of this unit is quite simple and easily understood and as it is very quiet in operation owing to the Vilter plate valves being used in the compressor it has met with very favorable consideration since its initial appearance on the market.

The Vilter Twin Cylinder Vertical Ammonia Compressor
Direct connected to a Vertical Steam Engine.

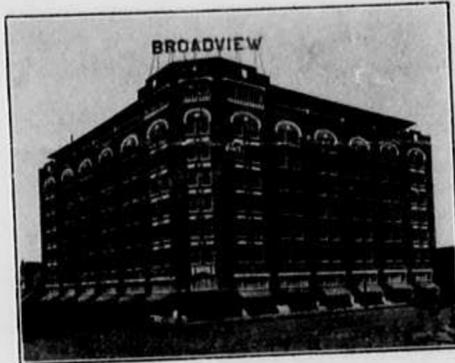
In certain types of plants where steam is available for motive power refrigerating units such as this are desirable. To fulfill these conditions this unit has been developed. It consists of a Vilter twin cylinder compressor direct connected through a flexible coupling to a high grade steam engine. The engine and compressor are mounted on a cast iron base and the entire unit is secured to a built in foundation.



SIZE MACHINE	A	B	C	D	E	F
2½x2½	4'6"	2'0"	4'7"	2'0"	4'3"	2'0"
4 x 4	6'0"	2'8"	6'4"	2'3½"	5'5½"	2'6"
5½x5½	6'11"	3'0"	7'3"	2'8½"	5'7½"	3'0"
6½x6½	7'10"	3'4"	8'3"	2'11"	6'6"	3'6"
7½x7½	8'9"	3'6"	9'3"	3'1"	7'1"	3'6"

APPLICATION

In the development of the application of refrigerating machinery the field is constantly being extended, in various ways, and consequently no attempt is made here to list all types of plants. The several illustrations are of organizations wherein Vilter Twin Cylinder Compressors and other Vilter equipment have been installed and are the types of applications most generally met with in practice.



Broadview Hotel, Wichita, Kansas.

The question of whether or not a brine system should be used or an ammonia system employed is best solved by the existing conditions. If there are many boxes to be cooled and they are of small size and not all centrally located the brine system is usually to be desired. Hotels, Clubs, Hospitals and Institutions usually employ brine systems, as in these types of installations there are usually numerous refrigerator boxes in several different locations in the building. In many of these installations an ice making tank is also installed to furnish the ice required for table use. In the event that there are but a few refrigerator boxes which are to be cooled and these boxes are located very close together the direct expansion system is usually to be desired, as in this case the employment of a brine tank, brine pump and brine coils can be dispensed with as the ammonia is expanded directly in the ammonia expansion or evaporating coils properly placed in the several refrigerator boxes.

In some installations a combination of the two systems is desirable. A typical example of this being in dairy and Creamery plants where the brine holdover tank in the refrigerator box is made large enough to not only act as a holdover tank for this box but also supplies brine to the milk and cream cooling apparatus.



Atlas Bread Factory, Milwaukee, Wisconsin.

Bakers have found that a refrigerating plant is of great value to them in the manufacture of bread. Temperature control from day to day regardless of outdoor conditions is obtained by a properly designed and installed refrigerating plant.

Candy manufacturers have also found that a refrigerating plant is a very desirable item of plant equipment especially so in the manufacture of chocolate confections.



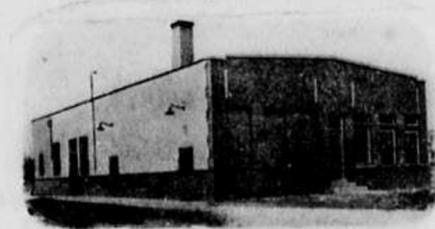
Milwaukee Athletic Club

In the Dairy Products Industry refrigerating machinery has proven to be of immense value. Absolute control of temperature in storage rooms and freezer rooms, chilling of brine for ice cream freezers and the maintaining of low temperatures in ice cream hardening rooms are the principal functions of refrigerating machinery in this industry.



Nicolai Fur Co., Milwaukee, Wis.

In the Packing House Industry and in its branches such as wholesale and retail markets, sausage factories, etc., temperature control is of primary importance. Our many years of experience are available for the correct design and construction of Meat Chilling, Freezing and Storage Plants.



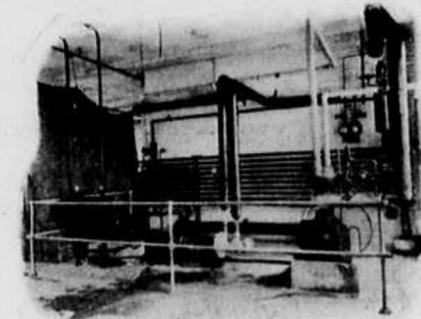
Quality Dairy Co., Milwaukee, Wis.

Cold Storage design and construction for the storage of food products in general is a class of work which we are well qualified to build. Special types of refrigerating plants such as Fur Storages, Oil Cooling, Water Cooling, etc., are to be found in our list of installations.

When contemplating changes or an entire new plant we would urge you to avail yourself of our consulting service embracing our many years of experience in designing and installing an increasingly large number of plants of all types.



Trapp Bros. Dairy, Milwaukee, Wis.



Machine Room, Quality Dairy Co.

When writing to us for Quotations please include
information along the lines indicated on this page

1. Kindly state character and quantity of goods to be cooled or stored in each room or refrigerator, and the time during which goods should be cooled to room temperature.
2. Give temperature of goods when received and the temperature required in the rooms or to which goods must be cooled.
3. Describe the insulation, and location, South, North, etc., of the rooms, how protected from outside temperatures.
4. Send sketch showing relative positions of rooms and machine, giving distances.
5. Give length, width and height of each room to be refrigerated.
6. If it is desired to make ice, state amount required per day, size of blocks and if opaque ice will serve your requirements.
7. Do you wish us to furnish the motive power for operating the compressor? If so, state kind desired. When electric motors are wanted, state whether direct or alternating current will be used and give voltage; for alternating current also give number of phases and cycles.
8. How many hours per day do you intend to operate the equipment?
9. Give particulars concerning water supply, quantity, highest summer temperature etc.
10. If drinking water system is to be installed, state time during which water will be used and number of gallons per day.
11. In confectionery installations or others in which persons are employed continually within the refrigerated space, it is important to state number of persons so employed and number and kind of lights used in the rooms.
12. If the machine is to be used for manufacturing ice cream, state number of gallons per day.
13. If you expect to furnish any part of the equipment, please state fully what such parts consist of, sizes, capacities, etc.
14. Do you desire estimate on machinery f.o.b. cars factory or delivered and erected?
15. When do you expect to place order for machinery?
16. Do you desire us to send a representative to confer with you relative to the economical arrangement of the plant.

Full information will save time and enable us to make a comprehensive and close estimate.

The Vilter Manufacturing Company
MILWAUKEE, WISCONSIN.

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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DEPARTMENT OF INDIAN AFFAIRS
CANADA

IN YOUR REPLY REFER TO

No. 15/11168.

ALSO TO DATE OF THIS LETTER

COMMISSIONER'S OFFICE,
P. O. BOX 666

VICTORIA, B.C. March 19, 1928.

Dear Mr. Lett:-

I beg to acknowledge receipt of your letters of the 4th and 17th instant in which you desire information as to the kind of cooling plant established at the Sechelt Indian School.

In reply I beg to say that the plant at the above mentioned school was one manufactured by the Vaughan Motor Works, 3/4 ton, operated with 2 H.P. Fairbanks Morse Z. type engine, and the price of the same was \$1,050.00 f.o.b. Vancouver. This was for the compressor and engine alone and the cooler cost \$396.00, making a total cost of \$1,471.00. At first the Rev. Principal of the School wished to put in the Vilter system, but this compressor with cooler would have run into more money than was voted and, consequently, a 3/4 ton Twin Vaughan machine was decided upon.

I am herewith enclosing Bulletin No. 29F dealing with the Vilter Twin Cylinder Vertical Enclosed Type Ammonia Compressor, and I believe the Vaughan machine is very similar to the Vilter.

The prices of these two types of colling plants are as hereunder, but does not include the cooler:-

1 1/4	ton twin Vaughan machine costs (\$ 1300.00)	3 H.P. engine
2 1/4	" " " " " " (\$ 1600.00)	5 " "
2 1/4	" " Vilter Manufacturing Co., costs (\$ 1650.00)	

George E. Mitchell Company, of 453 Thurlow Street, Vancouver, B. C., are the agents for these compressor plants and I would suggest that you should write to them.

I regret some apparent delay in this matter but upon receiving your letter of the 4th instant I wrote to Mr. Mitchell asking him to send to this office immediately some literature dealing with refrigerating plants, but as no literature came with his letter, I again had to write to him on the 10th instant.

Attached hereto please find copy of letter from Mr. Mitchell, dated the 13th instant, to myself dealing with the subject.

WED/KD.

Enclosures:-

Yours respectfully,

W. E. Ditchburn

W. E. Ditchburn.

Indian Commissioner for B. C.

Rev. A.R. Lett,
Principal St. George's Indian School,
Lytton, B. C.

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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COPY.

GEORGE E. MITCHELL
Refrigerating and Consulting Engineer
Ice Making Machinery.

453 Thurlow Street,
Vancouver, B. C., March 13th, 1928

Department of Indian Affairs,
Victoria, B. C.

Gentleman:- Attention of Mr. W.E. Ditchburn.

Your letter of March 10th No. 15/11130 to hand and note what you say as regard to small refrigeration equipment, and sorry the printed matter did not go forward and which I am mailing you today under separate cover.

We are agents for three makes of refrigeration machines, the Excelsior made by the motorcycle Co. of the same name, and are made in the following sizes, 1/4 ton, 1/3 and 1/2 ton, they are equipped full automatic controll.

The Sechelt plant was of the Vaughan Motor Works 3/4 ton operated with 2 H.P. Fairbanks Morse Z. type engine, and the price of the same was (\$1050.00) F.O.B. Vancouver, where these plants are installed out of town add freight and the expense of a man, fare both ways and board, we take care of his wages, this price does not include building of the cooler, price of which depends on the size cooler required.

1 1/8 ton twin Vaughan machine costs (\$ 1300.00)	3 H.P. engine
2 1/8 " " " " " (\$ 1600.00)	5 " "
2 1/8 " " Vilter Manufacturing Co. costs (\$ 1650.00)	

In reference to the school at Lytton if you would let me have the size of cooler they would require to cool, I could then give you a price on the size plant to take care of same, and let you have it by return mail.

Thanking you for the enquiry, I remain

Yours very truly,

(Sgd) Geo. E. Mitchell.

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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165-0-5

Voucher No. 495 M. *[Signature]*

Vote No. *[Signature]*

GOVERNMENT OF THE DOMINION OF CANADA
DEPARTMENT OF INDIAN AFFAIRS, BRITISH COLUMBIA

Lytton AGENCY

To *Excelsior Lumber Co., St. Victoria Drive, Vancouver, B. C.*

DATE	DETAIL	AMOUNT
1928	St. George's School (Root Cellar)	\$504.45
Mar. 19.	To Lumber, Cement & Lime supplied for building root cellar, which was authorized by departmental letter No. 165-0-5 dated January 16, and February 16, 1928,	\$504 45

PHONE HIGHLAND 816

item of the same is a fair and just charge against the Government of Canada.

Form No. 11

[Signature]
[Signature]

[Signature]
Indian Agent

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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CANADA

POOR-COPY

Mar. 19. To Lumber, Cement & Lime supplied for building
 root cellar, which was authorized by depart-
 mental letter No. 165-0-5 dated January 16,
 and February 16, 1928,

\$504 45

PHONE HIGHLAND 816

EXCELSIOR LUMBER & SHINGLE CO. LIMITED

WHOLESALE AND RETAIL

LUMBER, LATH AND SHINGLES

No 8124

FOOT VICTORIA DRIVE

VANCOUVER, B. C.

Feb 27 1928

DELIVERED TO *Can Nat Ply*

YOUR ORDER NO _____

DELIVERY SLIP

SOLD TO *Mr A Graham*

Lytton B.C.

QUANTITY	SIZE	DESCRIPTION	FEET	PRICE	AMOUNT
<i>Shipped to St. Georges Residential School Lytton B.C.</i>					
<i>64 Pcs</i>	<i>2x4</i>	<i>Com Syd.</i>			
<i>30 -</i>	<i>-</i>	<i>-</i>			
<i>40 -</i>	<i>-</i>	<i>-</i>			
<i>20 -</i>	<i>-</i>	<i>-</i>			
<i>3500 ft</i>		<i>Shiplap</i>			
<i>3000 ft</i>	<i>1x6</i>	<i>Siding</i>			
<i>10 At</i>		<i>#1 3x Shgles</i>			
<i>15 Rolls</i>		<i>Roofing</i>			
<i>30 BBls</i>		<i>Portland Cement</i>			
<i>5</i>	<i>-</i>	<i>Lime</i>			
					<i>\$ 504 45</i>

JWS

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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Voucher No. *495 M. [initials]*

Vote No. *Sole vote*

GOVERNMENT OF THE DOMINION OF CANADA
DEPARTMENT OF INDIAN AFFAIRS, BRITISH COLUMBIA

..... *Lybba* AGENCY

To *Wassilios Lushan Co., St. Victoria Drive, Vancouver, B. C.*

DATE

DETAIL

AMOUNT



DEPARTMENT OF INDIAN AFFAIRS

6691

Int 29-3-28.

0504 45

I hereby certify that this Voucher is correct, that the material has been supplied, the work performed and that the charges are fair and just; also that all expenditure has been incurred legitimately and that each item of the same is a fair and just charge against the Government of Canada.

[Faint signature]

H. Raham

Indian Agent

Form No. 11

J. W. Shore

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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CANADA

POOR-COPY

165-0-5



DEPARTMENT OF INDIAN AFFAIRS
CANADA

OFFICE OF
INDIAN AGENT

789-06

R

Lytton, B. C.,
March 26, 1928.

Sir:-

In reply to departmental letter dated March 14, re getting quotations on the old heating plant at St. George's School, there have been several people looked at this, and asked what it could be bought for.

After I received your letter I asked them to quote on it, but have only received one quotation, that of Mr. E. F. Mitchell, for \$300.00, some others having since told me that they would not quote on it.

If the Department considers this a fair offer kindly advise me.

I have the honor to be,
Sir,
Your obedient servant,

(H. Graham)
Indian Agent.

Assist. Deputy & Secretary,
Department of Indian Affairs,
Ottawa.

HG/MD

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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St. George's Indian Residential School

Originated by the New England Company
(The oldest English Missionary Society, founded 1649)

C. P. R. ST.
C. N. R. STATION
TELEGRAPH OFFICE
POST OFFICE

LYTTON 2 1/2 MILES

VISITOR: THE BISHOP OF NEW WESTMINSTER.
PRINCIPAL: REV. A. R. LETT.
BANKERS: BANK OF MONTREAL, VANCOUVER, B. C.

Lytton, B. C., March 24th, 1928.

Mr. H. Graham,
Indian Agent,
Lytton, B. C.

Dear Mr. Graham:-

Re Grading.

I have to date, with my own teams and help, with only a small amount of additional Indian labor, removed approximately 2000 yds. of earth, and the grading is still unfinished.

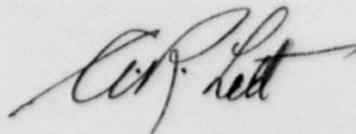
In regard to this the nature of the material here is such that it will be necessary to gravel part of the grading to keep it from drifting.

I have also had to take my own teams off to do the spring work, necessitating the hiring of teams to finish.

In consequence of this, I would therefore like, if it is possible for the Department to do so, to have an extra grant of (\$200.00) Two Hundred Dollars, which would enable me to finish grading, gravelling and to put up the fences. Also help in changing lighting poles and install telephone poles.

I am,

Yours very sincerely,



Principal.

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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DEPARTMENT OF INDIAN AFFAIRS
CANADA

OFFICE OF
INDIAN AGENT

DEPT. OF INDIAN AFFAIRS
MAR 29 1928
RECORDS

165-0-5

781-06

165-0-5

Lytton, B. C.,

SCHOOLS BR
MARCH 24, 1928.
APR 4 1928 I

[Handwritten signature]

Sir:-

I herewith beg to enclose a letter from the Reverend Principal of St. George's Residential School, in which he asks for a further grant of \$200.00, for grading, etc.

I have examined this and find that they have removed a good deal of earth, and up to yesterday, he had moved 2133 yards, and as the money is just about expended, I would like to recommend this extra \$200.00 be granted, which I think will about complete the gravelling. It is most essential that this be done, as all the soil around is more or less sand which drifts very badly. Also as he says if he had had to hire other teams altogether this money already expended would not have lasted this long.

*Accountable
c/c for \$200
ok
[Signature]*

I have the honor to be,
Sir,
Your obedient servant,

[Signature: H. Graham]
(H. Graham)
Indian Agent.

Assist. Deputy & Secretary,
Department of Indian Affairs,
Ottawa.

HG/MD

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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CANADA

POOR-COPY

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781-06
789-06.

Ottawa, April 4, 1928.

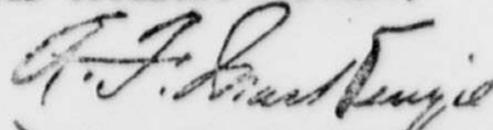
WITH CHEQUE.

Sir:

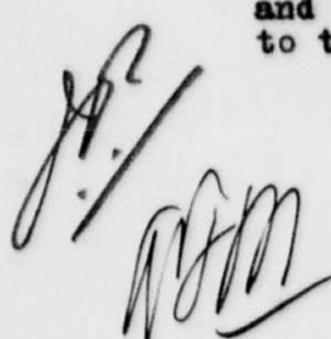
I have your letter of the 24th ultimo, enclosing a communication from the Principal of the St. George's Indian Residential School, requesting a further grant of \$200 to finish the grading, gravelling, etc., of the school grounds. In reply I enclose herewith accountable cheque No. 1, in your favour, for the sum of \$200. This should be accounted for in the usual manner.

I have also your letter of the 26th ultimo, regarding the quotation which you received for the old heating plant. It is considered that the offer of \$300 which you received would be a fair price, and you may accept same. You should obtain payment and forward the amount to the Department for credit to the Appropriation for Indian Education.

Your obedient servant,



A. F. Mackenzie
Acting Asst. Deputy & Secretary.



H. Graham, Esq.,
Indian Agent,
Lytton, B. C.

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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DEPT. OF INDIAN AFFAIRS
APR 10 1928
RECORDS
OFFICE OF
INDIAN AGENT

DEPARTMENT OF INDIAN AFFAIRS
CANADA

860-06

[Handwritten signature]

Lytton, B. C.,
April 4, 1928.

Sir:-

SCHOOLS BRANCH
APR 12 1928

Sometime ago I think the Department advised the Provincial Boiler Inspector to inspect the boilers that have been recently installed in St. George's School.

The Inspector states that you also asked as to what class engineer would be needed. He also states that the Indian Department uses its discretion as to whether or not they use an engineer, as the Provincial Government has no jurisdiction in the matter.

He might be given a trial

Mr. Lett and I have talked the matter over, and he says he has a handyman, the blacksmith, now at the school, who has also been running the boiler in the old school, for several years. He could obtain a fourth class certificate, if the Department would consent to this. This man could be used as he is now for blacksmithing and other work, having been at the school now for the last four years, but if we had to employ an engineer, he would not want to do anything else, and would take double wages to keep him. During summertime he would be needed only one day a week, on wash day.

I would like to suggest that the Department give its sanction to allowing us to run these boilers with the man that we have. An early reply to this will oblige,

Assist. Deputy & Secretary,
Department of Indian Affairs,
Ottawa.

Your obedient servant,

HG/MD

[Handwritten signature: H. Graham]
(H. Graham) Indian Agent.

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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165-0-5.

86C 26.

READ

Ottawa, April 12th, 1928.

Sir:

I have your letter of the 4th instant, relative to obtaining the services of an engineer to attend to the boilers at the new St. George's Indian Residential School, and recommending that the services of the blacksmith now at the school be engaged for the purpose.

In reply I beg to say that the Department will approve, temporarily, of the blacksmith attending to the boilers, his retention in the position to depend upon his services being entirely satisfactory to the Principal and yourself. Later, I should be pleased to have a report regarding the services he is performing in attending to the boilers and whether you consider he is capable of continuing the work.

Your obedient servant,

A. F. MacKenzie
A. F. MacKenzie,
Acting Asst. Deputy and Secretary.

H. Graham
AGM
H. Graham, Esq.,
Indian Agent,
Lytton, B.C.

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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ST. GEORGE'S SCHOOL
STATEMENT OF EXPENDITURE OF LABOR ON HORSE BARN,
GRADING AND ROOT CELLAR.

To Cheques:

#3807	-----	\$500.00
#5404	-----	200.00
#5869	-----	150.00
#5819	-----	700.00
# 1	-----	200.00
		<u>\$1750.00</u>
Overdrawn	--	4.64
		<u>\$1754.64</u>

By Labor as per Paylists:

Horse Barn	---	859.06
Grading	----	329.60
Root Cellar	--	565.98

1928-29

Total Authority \$1900
Materials Root Cellar \$794
Labour cheques 1100
1894

for 1927-28 - 818.94
" 1928-29 204.64
1023.58

211.20
118.40
96
210
100.80
68
129.18
60
1023.58

Joe for 224.05
A.M.

Indian Affairs (RG 10 Volume 6464, file 888-5, part 2)

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