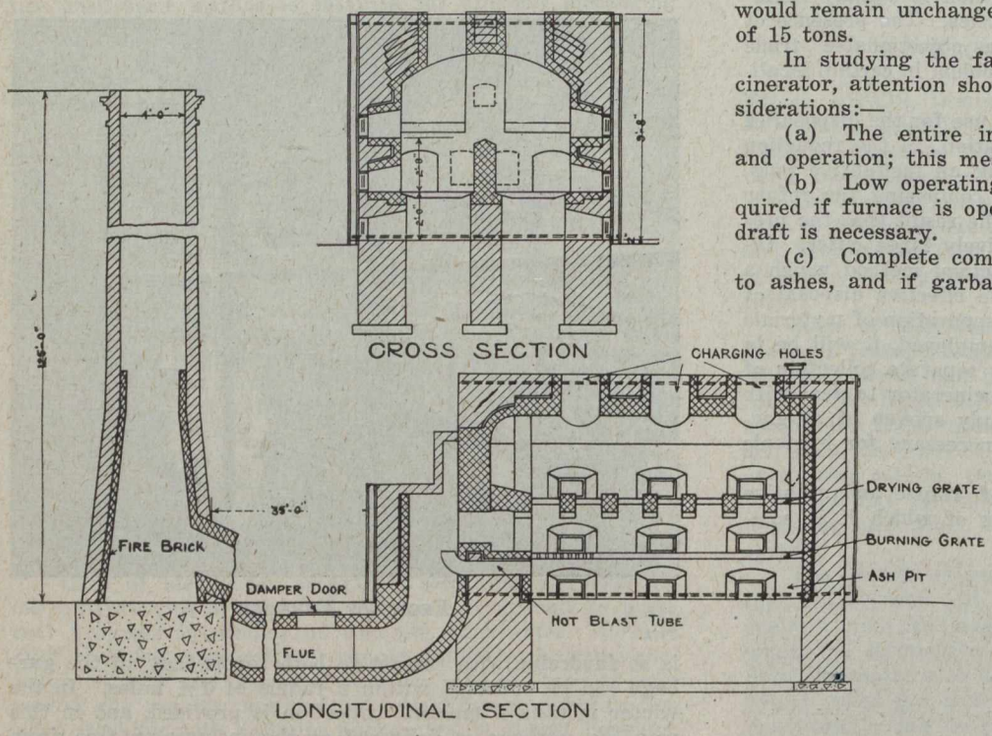
should the garbage to be treated warrant increased capacity. A vertical section through the furnace shows it to consist of three distinct chambers. The upper or refuse chamber receives the garbage, and by means of supporting arches, it is held suspended until the moisture is driven off by the fire underneath. Below this level is the fire chamber having necessary grate area to consume the garbage as it is dried in the refuse chamber. To receive the ashes from the fire chamber a clinker chamber is situated beneath each grate.



The cells of the furnace are so arranged that entrance can be had to each cell at each different chamber by means of outer doors. The entire furnace is supported on reinforced concrete footings.

At the back of the furnace a dust chamber is situated through which the smoke and gases pass on their way to the chimney. The decreased velocity in this chamber allows the deposition of the heavier particles and a clean-out door allows the removal of the same. From the dust chamber the smoke and gases are conveyed by means of a tunnel two feet in diameter to the chimney 90 ft. high 35 ft. north of the furnace. Some details regarding the design of the chimney may prove interesting in this connection. A clear inside diameter of 4 ft. is maintained through the entire height. The thickness of the wall varies from 20 ins. at the base to 8¼ ins. at the top, changing at intervals of 16 ft. The entire chimney is supported upon a concrete base 14 ft. square by 4 ft. in depth. The interior of the chimney is lined with fire brick for a distance of 40 ft. from base, and a similar lining is provided for the tunnel leading from the dust chamber to the chimney.

The operation of the entire incinerator is very simple. As the garbage is deposited upon the dumping floor, the operator forks the contents over to remove such materials as dry papers, bottles, rags, iron, and tin cans.

The dry papers are used to fire the furnace, and from the sale of the rags, bottles, etc., a slight revenue may be recovered. The garbage is then fed into the refuse chambers and a good fire kindled on the grates beneath. Under average conditions, ¼ cord of dry wood together with dry papers will fire the six cells of the furnace, and after maintaining this fire for a period of one hour, the furnace will have absorbed sufficient heat to dry the garbage and consume it as it is dumped from the refuse chamber from time to time, and no extra fuel is necessary to accomplish the complete combustion, if operated continuously. Frequently enough lumber and sticks come with the garbage to kindle the fires.

The cost of operating this incinerator is very low. From a combined population of approximately 5,000 people, 15 tons of garbage are secured every week. Besides the operators' wages and the cost of fuel for the initial fire, the cost of collection might be added in determining the cost per ton of collecting and destroying the garbage. Reckoning the operators' wages at $4.00 per day, fuel at $10.00 per cord, teams with driver at $7.00 per day, the cost per ton of garbage amounts to $6.00, of which $4.50 can be charged against collecting. The cost of destruction in this plant would remain unchanged if 60 tons were consumed instead of 15 tons.

In studying the favorable features of this type of incinerator, attention should be directed to the following considerations:—

(a) The entire installation is simple in construction and operation; this means relatively low first cost.

(b) Low operating charges, as little or no fuel is required if furnace is operated continuously, and no auxiliary draft is necessary.

(c) Complete combustion; material is entirely reduced to ashes, and if garbage is plentiful enough to guarantee continuous operation, such materials as tin cans will be so heated as to quickly rust away when piled.

(d) Absence of objectionable odors; this feature is very important, inasmuch as the incinerator may be built at the most efficient location for the collecting of the garbage and not removed to the outskirts of the municipality because of offensive odors.

(e) Additional capacity; this provision can be readily made by the addition of more cells and the capacity of the present installation could be substantially increased by means of an auxiliary draft.

(f) Compact arrangement of furnace and fireproof construction throughout.

The furnace was supplied and the entire incinerator built and equipped by the Reid Products Company, Ltd., of Toronto, for the municipality of New Toronto. The design of this installation was entrusted to the E. A. James Co., Ltd., consulting engineers, which firm also superintended its construction.

LECTURES BY BARRETT CO.'S STAFF

FOR several years, at the request of a number of universities and colleges, the engineering staff of the Barrett Company has given talks to students in engineering schools on various phases of the use of coal tar materials in highway work. This year another series of such lectures have been prepared, covering the field of the talks of previous years, but with added and new data.

The staff of lecturers for the present season includes P. P. Sharples, manager of the General Tarvia Department; J. S. Crandall, consulting engineer of the company; Walter Buehler, consulting engineer on wood preservation; P. K. Sheidler and C. S. Reeve.

There are eight lectures in the series as follows: (1) Chemistry, manufacture and control testing of refined tars; (2) the laboratory tests to which road tars are subjected; (3) the construction of pavements with refined tar; (4) city pavements of the block type; (5) wood preservation; (6) wood-block pavements; (7) maintenance; and (8) maintenance of broken-stone and gravel roads.

While available dates have already been well filled with engagements, many colleges having requested all eight lectures, there are still some open dates, and any engineering societies, clubs or schools which would be interested in obtaining any of these lectures should address J. S. Crandall, of the Barrett Co., 17 Battery Place, New York City.