

reach the shop through a more or less tortuous channel. There is sometimes a tendency on the part of the sales department to assume that all of these complaints are justified, to criticize the shop for turning out on unsatisfactory product and especially to blame the inspection department for failure to prevent the issuance of the material to which the complaints refer. In justice to all concerned, including the sales department, all such complaints should be referred to the executive head of the inspection department for a personal investigation and report, and action on the part of the sales department, except so far as it relates to the replacement of material urgently needed, should be deferred until the report is in hand. This report may entirely change the attitude of the customer with relation to the alleged defective material, as it may clearly show that its failure to meet his expectations was due to no fault of the manufacturer or of the apparatus involved. The trouble may have been due to injury in shipment, rough handling after receipt, failure to install or to apply it properly, lack of proper maintenance on the part of the customer or his employees or to a misconception of the capacity or function of the apparatus itself. Any errors on the part of the factory or inspection department must be freely acknowledged and any steps to prevent their recurrence should be fully explained. An unbiased report, based on all available facts, rendered by the head of the inspection department to the head of the sales department, may be invaluable to the salesman in his negotiations with the customer.

The inspection department is for the mutual protection of the manufacturer and the customer. The salesmen should be informed in regard to the methods and practice of the inspection department, as this knowledge may be of great service in promoting friendly relations with a prospective or actual customer. The customer is often much interested in the means employed to insure accuracy in the manufacture of the apparatus he proposes to use. The head of the inspection department should therefore make it his duty to advise the sales department of any change in procedure or equipment that might be of interest to that department in their dealings.

The relations of the inspection department to the engineering department are most important, especially in the influence that may be exerted on the designs for new apparatus and the improvement of the old. In many places, new drawings, when completed and before their final approval, are submitted to a committee (variously known as "mechanical design committee," "limit committee," "standard committee," etc.) to determine if the limits set by the designers are such as can be met commercially in the factory, and to decide if any changes are desirable on account of methods to be used in the foundry, machine shop or elsewhere. The head of the inspection department should be one of the most important members of this committee; in some instances he is ex-officio chairman. His principal duty in connection with this committee is to advise if the dimensions, tolerances and limits, called for on the drawings, are satisfactory for the various fits and if the quality of finish called for will be satisfactory to the inspection department. Thus, the work of the inspection department should begin even before the designs are approved for manufacture.

It is not within the scope of this paper to consider the internal organization of the inspection department or the means and methods best adapted to carry out the details of its work. These are matters that will depend to a great extent on the management and operation of the larger manufacturing organization of which it forms a

part. A plan of organization that may be highly efficient in one factory may be woefully deficient in meeting the needs of another shop producing a different product or producing a similar product by widely different methods. The organization of inspectors that is perfectly suited to a factory having a large output of a few well standardized articles would be wholly unable to cope with the situations arising in a smaller factory producing a great variety of articles, but making each in comparatively small numbers. It is obviously absurd to try to apply big-shop methods to a small shop and the converse application, while far more usual, is no more logical.

Such matters must, therefore, be subjects of careful investigation and study in each individual plant. In presenting this paper to the Association, the writer has thought best only to call attention to some of the more important matters in connection with the inspection department, and especially in its relation to the management and main sub-divisions of the organization. If it serves to indicate the important place that inspection should occupy in a manufacturing corporation, its purpose will have been accomplished.

ARGENTINE TRADE IN CEMENT.

Argentina is a large purchaser of cement. Up to the outbreak of the present war, Belgium was the largest exporter to that country, according to a recent trade report. This is presumably because the product of that country is cheaper than that of the others, although the English and the French article is said to have the best name. Germany has had a small share of the trade, but the 1912 figures evince a considerable falling-off as compared with the previous year.

It can be expected, owing to the disturbed financial conditions which have been reigning, that some little time will elapse before the trade in cement reaches the figures of 1913. Nevertheless, as this article of construction is so largely used in the Republic, it may be taken for granted that any improvement in commercial conditions will react very quickly on this commodity.

That country's consumption of cement, according to import statistics is denoted by the following:—

	1907-1911.	1911.	1912.	1913	Jan.- June, 1914.
	Tons.	Tons.	Tons.	Tons.	Tons.
Belgium	538,343	156,458	168,558	.....	.....
United Kingdom.	347,587	74,843	60,341	.....	.....
France	309,277	79,617	70,926	.....	.....
Germany	135,352	41,904	24,318	.....	.....
Sweden	42,798	23,858	30,925	.....	.....
All Countries	1,400,965	389,291	375,821	721,461	255,143

The report emphasizes the present time as being a very favorable opportunity for Canadian producers to enter this field.

The Creosoted Block Paving Company, Limited, sales agents for The Canada Creosoting Company, Limited, have moved from the Bell Telephone Building to 408 Royal Bank Building, Toronto.

The use of cement as an anti-sand blast is possibly one that is little known. The sand blast in question, however, is not that which is so familiar to all of us, but is quite of another type. When locomotives stand under steel or iron bridges or viaducts, the blast from the stacks throw out gases and numerous small particles of ashes and coal. This when continuously projected against the overhead iron or steel gradually causes its disintegration. In such cases cement has been successfully used, and now it is common practice for railroads to cover the bottoms of their bridges with wire netting or metal lath covered with a coating of sand and cement which it has been found resists the attack of gases and also the sand blast coming from the locomotives.