We will confine our discussion to-night to one class, viz.—Stop Valves of which we have samples and blue prints here.

Before we begin to examine these it may be as well to consider the whole question hurriedly.

We will assume that you are about to look into the valve question with the idea of installing the most satisfactory in the plant for whom you are acting as consulting engineer. Before you start this investigation you will have had considerable experience in handling valves and you will have difficulty in approaching this subject free from prejudice.

To decide what valves will give you most satisfactory service the best way, of course, is to make practical tests with different styles of the product of different manufacturers. Use more than one of each as something may happen in testing a single valve that would lead you to wrong conclusions. If you test these valves under actual service conditions and if your test is properly conducted it should show you what valves are best suited to your purpose. But this method is not always convenient. So we will suppose that you get different types and makes of valves before you and you now want to make a wise selection.

The name of the manufacturer should be cast on the goods. You should consider what general reputation these goods have and what experience the manufacturer has had in developing the product. These considerations should bear some weight.

Examining the goods more closely you will ask yourself as to the general appearance of the valves. If a manufacturer is careful of the the general appearance of his goods you will know that he takes pride in his product. The dress of a man has quite an influence with us in the opinion we form of him and also with the regard he has for himself and so it is with valves. They should be well proportioned and symmetrical, nicely machined and finished; in short, good to look at.

When we have gone this far the next step will be to take the valve to pieces and inspect each part and find the relation it bears to the whole. The castings, of course, should be flawless and the machining smooth and perfect. The scheme of seating is one of the main things to consider and here you will have to bring to bear your mechanical knowledge to determine if the method employed is the most approved. As to the wear or service that the seating surfaces will give: You will have in mind that the harder these surfaces are the longer they will wear. The threads on the stem and in fact each detail you will consider carefully.

By this time you will be curious to know what material enters into the composition of the valve. This you can discover from analysis of the metal and as perhaps this is the most important feature we will have something to say about this