matter of Alloys further along. The question is often asked "Can I determine from the color of a bronze valve about what the composition is." You cannot tell definitely. If the metal is bright yellow, that is a brass valve. You will note that we here draw a distinction between brass and bronze. While the general term of all mechanical mixtures of this class is brass still we prefer to use the word bronze to distinguish this strong and hard metal from the ordinary yellow brass which runs high in zinc and lead and is absolutely worthless as a steam metal. If the valve you examine shows a rainbow of colors there is an evidence of poor foundry practice but we will go into this more fully later on.

Perhaps the most important point then arises; you ask "Do these valves admit of easy repair?" All parts should be absolutely interchangeable and the construction such that the wearing parts can be replaced or repaired without removal from the pipe line. This is very important.

Look at the packing. This should be a good, quality, semi-plastic, molded ring packing, well lubricated. There should be a beveled gland follower to keep the packing in place. If the valve is not packed do not consider it at all as you will know at once that this valve has never been tested. There are some valves that come to you packed that have not been tested but certainly a valve cannot be tested unless it is packed. To test and inspect valves costs the maker a pile of money but it is the only way that they can be certain that when you receive the goods that they are perfect. The valve should be so made as to admit of being re-packed under pressure.

The use of the union ring for fastening the hub to the body is a splendid feature in the small bronze globe valves. This method has never been equalled for adding rigidity to the body and at the same time making a joint which absolutely makes it impossible for steam to reach the union thread and so corrode the parts together. It cannot release and allow the trimmings of the valve to blow out.

Do not use the scales to select your bronze valves. If you select a valve on account of its weight you will likely buy a great deal more lead than you bargain for.

The distance or clearance between the threads and the diaphragm on the globe valve should be considerable so that there will not be a chance of distortion if the connecting pipe is threaded too long. The internal areas should be generous and the smallest area greater than that of the nominal diameter of the connecting pipe. The distribution of metal in the valve body should be such as to have the most metal where it is needed to gain rigidity and prevent distortion.

You will have a variety of uses in your plant for stop valves. With your permission we will not discuss the handling of cor-