requires no further care after it is once finished. When iron is neglected, it is only a question of time as to its final destruction. A large bar will rust out only less rapidly than a small one, or a thick plate than a thin one, and there are circumstances of location that will cause rusting to proceed with varying rapidity. It is with a view to permanence of iron structures that it is recommended in no case to allow of plates or parts to be used less than one quarter of an inch in thickness, and perhaps five sixteenths of an inch would be still more desirable as a minimum thickness. It is further advisable to have iron bridges so designed that all parts of the work should be open to inspection, and within reach of the paint-brush. When not so designed, concealed surfaces should be hermetically sealed, so that by no possibility can moisture find its way within to work a sure destruction. Town authorities should insist upon more care being exercised at the construction-works, in preparing iron for shipment, than is usually given to such matters, particularly in times of close competition, when the profit of a contractor is made up from small economies. This extra care will amply repay the very small addition to the price that it would necessitate.

At the manufactory, each individual piece can be examined and protected with a care impossible to exercise after the parts are all assembled in position at their final location. All new iron, as it comes from the rolling-mill, has a scale on its surface easily detached under vibration. More or less falls off while it is undergoing fabri-