

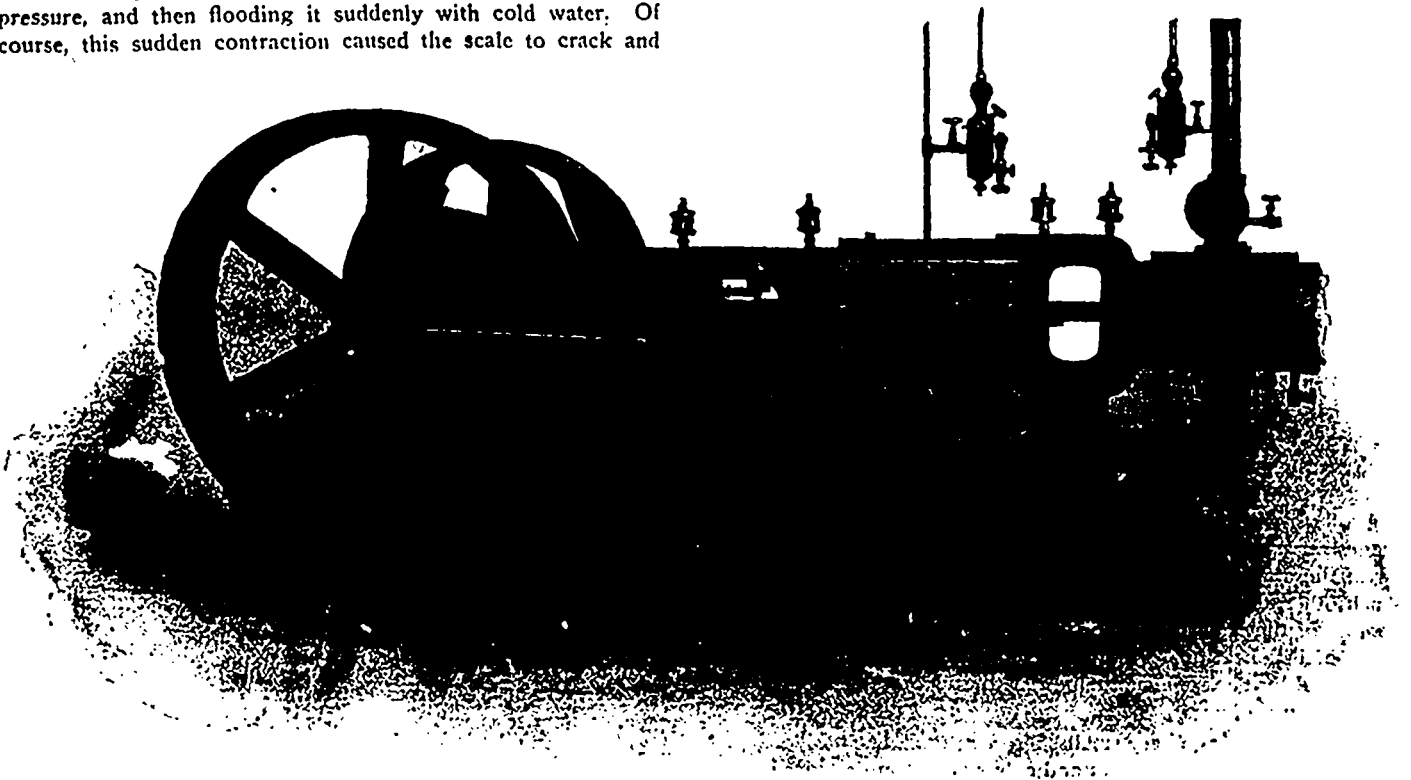
more imposters than exist in almost any other branch of trade. The boiler quack comes along with his remarkable boiler compound, fluid or special apparatus, and without the slightest knowledge of the character of the impurities held in your boiler feed water, he offers his panacea with a long list of letters of recommendation, written often by the heads of concerns who are far better acquainted with the financial end of their business than with the steam plant equipment. These gentlemen generally depend upon what their engineer or other employees tell them. The writer knows of not a few cases where the unscrupulous vendors of certain compounds share their profits with these engineers, firemen or other influential employees, which they can well afford to do, as the stuff they sell seldom costs a fifth of what they get for it. These unscrupulous people, their methods and their wares have been "shown up" from time to time in the technical and trade papers, and they have not escaped the well-directed fire of the Hartford Steam Boiler Inspection and Insurance Company.†

They are often very tricky manipulators, able to give an apparent exhibition of the wonderful disincrusting power of their purges. I caught one at one time cracking the scale out of a boiler by blowing it empty of its water, under steam pressure, and then flooding it suddenly with cold water. Of course, this sudden contraction caused the scale to crack and

let this chemist analyze it. If you are dealing with straightforward people, they will tell you the exact composition of their material, which the chemist can verify easily, after which the chemist or expert is prepared to advise you properly.

#### THE M'EWEN AUTOMATIC ENGINE.

The first McEwen automatic engine was placed on the market in the spring of 1891, and during the eight years which have passed since then, hundreds of these engines have been manufactured and put in operation. They can now be found in operation in all parts of the United States and throughout the Dominion of Canada and for almost every conceivable kind of service. Its makers claim that no engine ever placed on the market has been more uniformly successful in operation, or has better withstood the test of time. While the design of this engine is practically the same to-day as when it was first placed on the market, improvements have been made on the minor details which have kept it fully abreast of the times. Originally designed particularly for simplicity and strength these very



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fall off, but a boiler maker had a nice little job afterwards in making the boiler tight. In another case I found that one of these manipulators had about ruined a boiler by first giving it a dose of muriatic acid before introducing his "compound." These are but two examples of the many tricks resorted to.

The best advice I can offer on this subject is: Never use any boiler compound, fluid, powder or whatever else it may be called, unless you know positively just what it is composed of and how it will affect the impurities in your boiler water and the boiler itself. Many of these quacks pretend to have made a chemical analysis of the water to be treated. This is frequently a mere farce, as the same old compound is trotted out on all occasions. Some submit to their proposed victim what purports to be an analysis, of their feed water. Many a time a subsequent bon-fide analysis, made by competent chemists, has proved to me the absolute worthlessness of these first supposed analyses. In the treatment of boiler waters always start with a careful analysis of the water, made by a competent chemist experienced in this line of work. Next, let an expert in this line of known reputation, and one who is not in any way interested in any method of treatment, suggest the best method of treatment; or should you think of using any "compound," fluid or powder that has been offered for treatment of your boiler water.

important qualities have been carefully kept in view in making later improvements. The character of the workmanship has been steadily improved, and the McEwen engine, as built by the Waterous Engine Works Co., at the present time, is as carefully and thoroughly constructed as any first-class, high-speed engine built anywhere in America. The engine is claimed to have fewer parts than any other engine of this type built anywhere in the world, and for qualities of strength, durability, economy and smoothness of running, it is unexcelled. On the one point of regulation the McEwen engine from the start established a standard, which, in spite of the many imitations by competitors, is said to never have been reached by any other engine in the world. All parts of these engines are made interchangeable, every piece being made to gauge, so that, if for any reason any part needs renewing, it can be supplied from stock, with the assurance that it will fit. All bearing surfaces are unusually large, and are carefully scraped and fitted to surface plates. Every piece is required to pass through the inspector's hands after every operation before passing to the next workman. Under this system it rarely happens that any defective work reaches the testing block, and here, as during the progress of the work, the inspection is rigid. Every engine is carefully and systematically tested before shipment, under conditions as nearly as possible approaching its future working conditions. The valves are set and carefully adjusted by means

†See "The Locomotive," Vol. V, page 59, and Vol. XV, page 90.