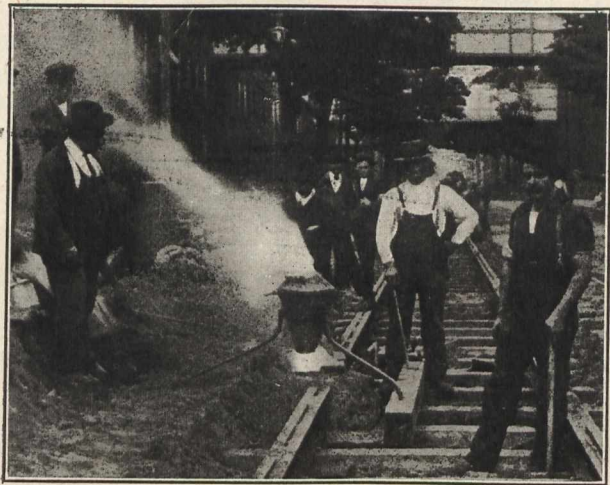


That steel foundries should have been the first to recognize the possibilities of liquid steel that can be produced anywhere in half a minute, goes without saying. There are already several of the largest with whom Thermit is as much a necessity as foundry sand. Some prefer



Welding Trolley Rail at Holyoke, Mass.

—for no apparent reason—not to disclose the fact that they repair faults in castings by Thermit, but all can openly admit that they use it to reduce the size of their risers, an application which, through its simplicity, recommends itself to all foundries—gray iron as well as steel. Thermit thrown loosely or in a paper parcel on steel, will ignite and keep the contents of the riser fluid even after the metal has become plastic in the casting. Liquid cast iron will only ignite Thermit in the presence of the ignition powder.

The application of Thermit to reduce the piping in ingots, although very simple in itself, necessitates some liquid steel being held in readiness to fill up the piping after the solidification has been interrupted by a Thermit reaction. This should not be impossible to arrange.

#### Riehle Bros. Testing Machine Co.

Tests on Malleable Iron Bars Cast at Pennsylvania Malleable Co.'s Works, McKees Rocks, Pa.

##### Before Titanium Thermit Reaction.

No.	Dimensions.	Ultimate Strength,	
		Pounds.	Deflection.
I—1	1.000 x .999	4,100	1.00"
I—2	.995 x .999	4,500	.98"
I—3	Lost in anneal.		
2—7	1.060 x .998	4,540	1.28"
2—8	1.012 x 1.006	4,610	1.40"
2—9	1.006 x 1.005	4,500	1.40"
Average before treatment.		4,450	1.212"

##### After Titanium Thermit Reaction.

No.	Dimensions.	Ultimate Strength,	
		Pounds.	Deflection.
1A—4	1.011 x 1.010	5,920	1.30"
1A—5	.999 x 1.000	4,260	1.27"
1A—6	.989 x .995	4,850	1.55"
2A—10	.995 x .996	4,620	1.47"
2A—11	.998 x .996	4,410	1.37"
2A—12	1.011 x 1.000	4,810	1.44"
Average after treatment.		4,811	1.60"

Another branch of Alumino-Thermics which will be of interest, is the improvement of gray iron castings, by the introduction of Titanium Thermit in the ladles, by immersing it in a cartridge below the surface of the metal. Some experiments, thanks to our fellow-member's, Dr. Moldenke, kind intercession, were made at the Pennsylvania Malleable Works, with the foregoing results, the bars having been

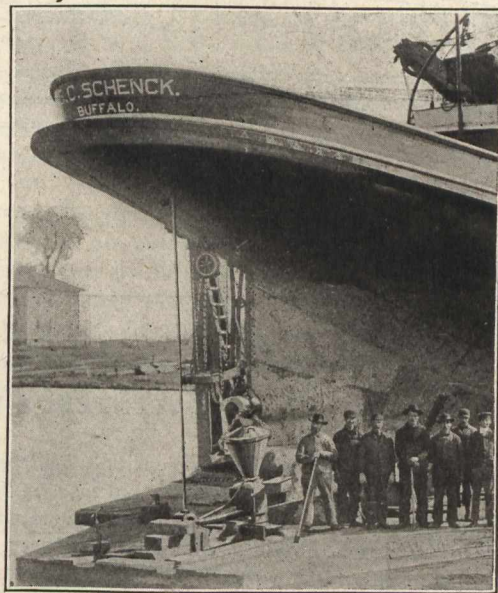
poured out of the same ladles, one before, the other after, the Titanium Thermit reaction.

Experiments with lower grades of iron showed the same favorable results.

At the Featherstone Foundry, Chicago, Titan Thermit treated test bars showed a tensile strength of 3,550 lbs., against average untreated, 3,250 lbs.

The metal, after treating, is much denser, but can be easily machined.

Incidentally it may be mentioned that by the introduction of a 1½ lb. cartridge of ordinary black Thermit into an 800 lb. ladle, 40 lbs. of steel borings can be melted without difficulty.



Welding Rudder Stock of Tugboat "Schenck" on Marine Railway, Sault Ste. Marie.

This necessarily very short account of what is doing in Thermit cannot, of course, cover the entire field of the applications, but will perhaps tend to convince those who had rather be guided by results obtained elsewhere than spend time and money from what they think experiments, and encourage others who are doubtful from lack of experience, by showing them what has been accomplished in actual practice.

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## Made in Germany.

For the Benefit of Canadian Manufacturers.

A circular letter has recently been issued in Prussia to manufacturers and their agents warning them against giving information of the condition of the markets and of manufacturing interests in their reports to the press, etc. The following is an extract from the letter:—"The reports in our technical and trade papers are most assiduously studied abroad, and by representatives of our foreign competitors residing in Germany. . . . The articles published in our journals and trade papers should not state the selling prices of our manufactured goods, how their cost compares with that of similar goods produced in competing countries, of what ingredients the articles are composed, what the tariff rates are, etc. Such detailed reports, which often expose even the secrets of manufacturing, form an excellent weapon in the hands of our competitors, and serve to injure German business interests. All public reports should refrain from giving details. No complaints about bad business should be published, as this is hurtful to our export trade. . . ." The circular concludes with the suggestion that German factories should be kept closed to foreigners.—(Hardwareman).

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—The Coast Line Telephone Co. has been formed with a capital stock of \$1,000,000. This company will unite with other independent companies in the New England, middle and Southern States in opposition to the Bell Companies.