

Ward & Nash sand blast apparatus was used. From the air receiver the air was carried by a pipe to the third floor of the building and from thence by a hose to the portable sand blast apparatus. The velocity given to the sand was quite high, and the bombardment of the particles cut away the discolored surface in a very rapid and satisfactory manner. The pointing between the stones was cut away, but that had nearly all been cracked by the fire and would have had to be done over again in any case. The sandstone arches and facing around the windows were cut away very rapidly, and care had to be taken that the dressed edges were not spoiled."

A NEW PROCESS FOR CASE-HARDENING INGOTS.

The Demenge process of hardening steel ingots, which is in use at one of the principal steel works of France, consists in directly carburizing one of the faces of the ingot, at the time of casting, by lining one of the vertical sides of the mold with carburizing substances. The carburizing action is prevented from penetrating too deeply into the inside of the ingot by casting the vertical side opposite to the carburizing side. The carburization of the one face by this method is said to be quite uniform.

The case-hardened surface is rather rough; but all irregularity disappears in forging, which may be effected without special precaution and at a comparatively low temperature, by the press rather than the steam hammer. Ingots of $\frac{1}{2}$ to 3 tons have been cast in this manner; and a 3-ton ingot, 16 inches thick, reduced by forging and rolling to one-fourth that thickness, was found to contain from 1.78 to 1.5 per cent. of carbon between its hard surface and a depth of $\frac{3}{16}$ inch; from 0.60 to 0.40 per cent. between 1 and 2 inches from the surface, and from 0.35 to 0.15 per cent. between $3\frac{9}{16}$ and 4 inches.

This method appears to be capable of accomplishing substantially the same results as those attained by the so-called "Harveyizing," but more simply.

W.

APPLICATION OF WIRELESS TELEGRAPHY TO NAVIGATION.

Mr. W. J. Clarke, an American electrician, has suggested a means of detecting the presence of a ship or an iceberg by wireless telegraphy. The apparatus which he proposes is so arranged that when two ships approach each other a large vibrating gong will ring in each, and the transmitter is so arranged that the signal would be operated at a distance of from one to ten miles. Mr. Clarke claims that if it were made compulsory that sea-going vessels should be so equipped with the necessary outfit, it could be carried out at a small cost.

W.

IMPROVEMENT IN THE ART OF SEPARATING METALS ELECTRICALLY.

Tomassi, an Italian expert, has proposed a mechanical improvement in the operation of the electrolytic bath used for the extraction, separation and refining of metals, which may prove to be of practical value. The aim of the inventor is to reduce the resistance in the electrolytic cell, and thereby reduce the cost. His electrolyzer consists of a rectangular tank in which are placed