rear end; a strong draught being necessary for the combustion of the fuel.

The fuel, a heavy, residual oil, is burned in a series of thin, shallow pans at the very front of the furnace, the upper one being supplied directly from the tank by means of a pipe, and the lower ones by the overflow of the upper.

The wrought-iron, in convenient form, is placed in large crucibles, and these set down into the chambers, which open from the top of the structure, and through which the hot air and fumes of combustion pass on their way to the chimney; thus the reducing gases come in direct contact with the iron.

In about three or four hours the metal is melted, and then, the fireman tells us, some chemical is added which preserves the identity of the wrought-iron, and on which the success of the whole method depends. What this addition is we were unable to find out, as that is the secret of the process.

After a thorough examination of the furnace, the foreman showed us some of the castings. He took a small curved one, something the shape of a half horseshoe, placed it on an anvil, and hammered it out straight with the greatest ease. He then put the piece in a forge, heated it, and then hammered an end over on itself, and readily made a weld; thus proving that the casting had all the properties of wrought-iron.

It is supposed that a very minute quantity of metallic aluminum is added, and that this reduces its melting point materially.

The temperature reached by the furnace is about 6,000 degrees. The advantages of a cheap process for accomplishing these results will be readily appreciated by all interested in the iron business and its many branches.

On our way home we stopped off at South Framingham, and visited the Para Rubber Works, an immense establishment, employing over twelve hundred hands. This is a modern plant, and probably the best in the country. The connected buildings are arranged in a circle, and are all of low structure. This company manufactures all kinds of rubber shoes and boots, also gossamer waterproofs.

The crude rubber comes from Para, in large, ham-shaped lumps. It is first boiled, and then worked into long, rough strips, by means of heavy corrugated rollers, allowed to season, and then worked again between rollers until it has lost all its elasticity, for otherwise it could not be worked or rolled into sheets. The rubber now has a dark, gummy appearance, and this is the stage at which the sulphur, whiting, and other bodies, in large proportion, are worked in, and then the mass is rolled, by large calenders, into a wide and thin continuous band, from which the parts of the shoe are afterward stamped. At this stage the rubber is soft and gum-like, so that two surfaces brought together will adhere so firmly that they cannot be separated without tearing: to prevent this, the surfaces are separated by means of a layer of cloth, to which it does not adhere. These rolls, some of them plain, others stamped with the pattern of the sole or upper, are carried to another department, and then are cut up by men, using hand-stamps, into the different forms required for the formation of the shoe. These stamped patterns are laid away between the leaves of a large cloth book, and in this manner are carried to the girls in the next department. Boot-heels and other heavy parts are stamped out by machinery. Before the girls is placed a rack full of lasts; to these lasts they successively apply the rubber cuts from the cloth book.

The formation of the shoe is progressive, and they may be seen in all stages of completion. Seams are made by simply lapping two edges, and pressing them together by running a little wheel along the line of contact.

The racks holding the covered lasts are now placed on a large iron frame, borne on truck-wheels, care being taken that the rubbers do not touch each other. The frame is now run into another building, and then into a hot-chamber, when the last process, that of vulcanizing, takes place.

During this heating, the sulphur previously added to the rubber asserts itself, an action takes place, the rubber changes its properties, and a vulcanized product is the result.