The various machines and tools by which the iron is planed, turned, drilled, and handled with expedition and accuracy. Steam-riveting and air-riveting machines replace the din of the hand-hammers and sledge of a decade ago, and do more than double the amount of work almost noislessly. In an adjoining building special attention is given to the riveting of the Phoenix columns, large numbers of which in a great variety of sizes can be very quickly produced by means of the tools specially adapted for the purpose. The heavy links for bridge eye-bars are forged by hydraulic pressure in another shop which is set apart for this particular work. The heads upon these bars are made by a process that insures the development of the full strength of the bar when under strain in a structure. The end of the bar having been heated to a white heat is upset by pressure between dies, and then shaped by reheating and further pressure into the desired form. After cooling and trimming, the pin-holes are bored, both holes at one operation, thus insuring an accuracy in the distances from centre to centre of holes that is essential in the manufacture of work of this character. Powerful testing machines stand ready to prove by actual pull the strength of the bars thus made, and to enable inspectors to determine the elasticity and ductility, as well as the ultimate strength of the material called for by their specifications. Adjoining the hydraulic forge a hammer-shop, with a 6-ton steam-hammer and gas-heated furnace, has recently been put up, and will greatly add to the power and capacity of the forge. Here can be handled and made any parts of a bridge requiring heavy and accurate die-forging, and the use of gas for heating the material will give the same advantages of clean work and control of temperature that is obtained in the mill-furnaces.

The foundry of the Company is a spacious stone building with iron roof-frame and ample light from all sides. It is served with steam-cranes and all modern appliances for producing the best material at the lowest cost, and is kept constantly busy in turning out the various forms and shapes of iron that the ingenuity of the millwright delights to design and the skill of the workman takes pleasure in constructing.

The old frame building that was used for foundry purposes was destroyed by fire April 23, 1882, and the first casting made in the new foundry was in the afternoon of June 16, 1882. The numerous and valuable patterns belonging to the works are stored in a brick building put up expressly for the purpose of affording protection against the risk of their destruction by fire. It is four stories high and is lighted from a skylight in the roof by a central shaft, about which the shelves and passages are arranged in such a way as to afford the greatest amount of storage room with easy access to the patterns and ample light in every corner. The distribution of material from the mills to the shops and about the yards is effected by a system of narrow-gauge railway that ramifications throughout the yards and reaches every part of the works. Four locomotives are constantly employed in the service of this system of distribution, and have with great economy taken the place of the many mules and horses that formerly attended to this very necessary duty.

A large stock of beams and shape-iron of every variety of size and weight is kept on hand for supplying promptly orders for such material, and telegraphic orders from New York, Boston, Chicago, or Baltimore can in this way be filled with accuracy and dispatch, and the iron loaded and shipped in a few hours after the receipt of specifications.

For supplying the many boilers, for cooling the furnace sides, for the service of the condensers, and for a great many other purposes, an abundant supply of excellent water is obtained from the Sankana, or French Creek, along the valley of which the works extend for nearly a mile. A Worthington pump of 21 million gallons capacity raises this water to a storage reservoir on the hill-side, whence it is distributed by a system of mains and service pipes to all parts of the newer works.

Thus the whole establishment is arranged for the production of iron of high quality on a large scale in a great variety of shapes by means of the most modern and improved appliances, and claims to occupy a place among the foremost American mills.