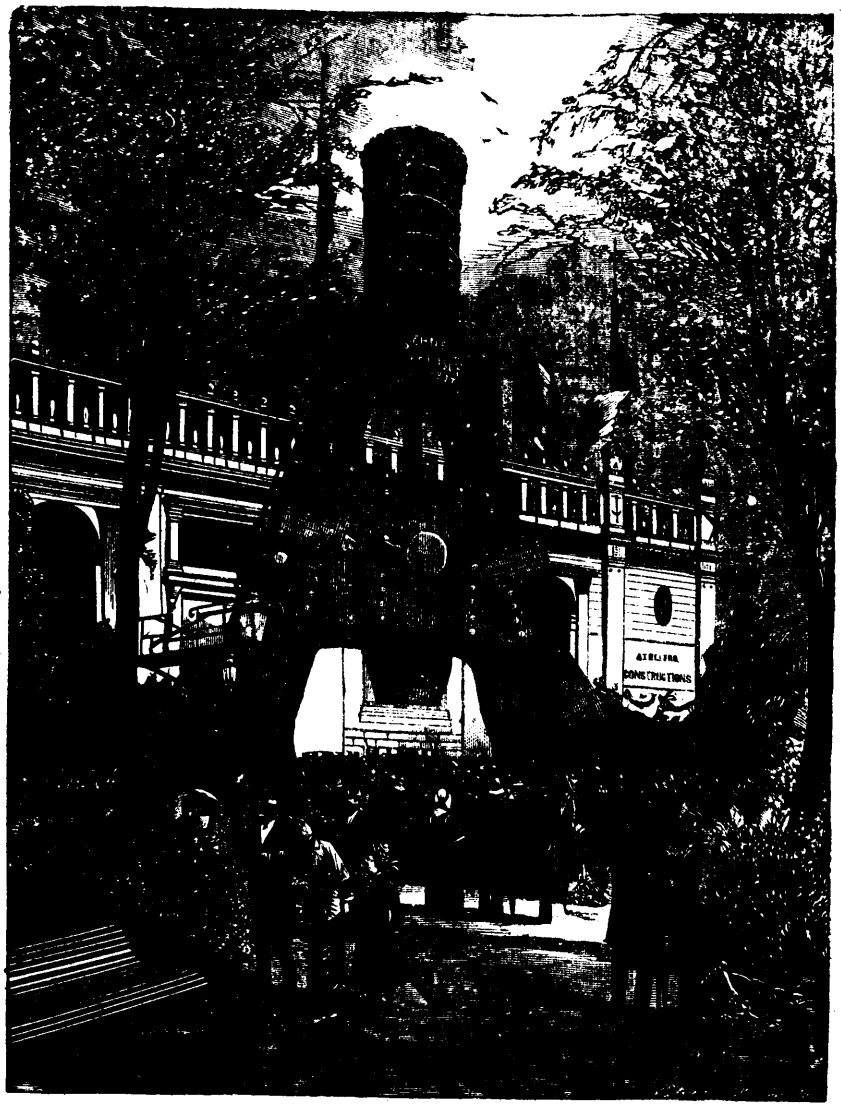

THE CREUSOT EIGHTY-TON STEAM-HAMMER.—(See Editorial.)

MACHINE RIVETING.

We select from the bulletin of the Hartford Steam Boiler Inspection and Insurance Co., the following article, which will be found to contain same pertinent comments on the merits of machine riveting.

There has been no little discussion among engineers as to the relative merits of hand and machine riveting. Those belonging to the old-school class of engineers have been slow to recognize any advantage in riveting by machinery, and in many boiler shops hand riveting is the practice to-day. Sir William Fairbairn advocated machine riveting more than twenty years ago. He says: "In hand riveting, it will be observed that the tightness of the joint and the soundness of the work depend upon the skill, and also upon the will, of the workmen, or those who undertake to form the joint and close the rivets. In machine riveting neither the will nor the hand of man has anything to do with it; the machine closes the joint and forms the rivet with an unerring precision, and in no instance can imperfect work be accomplished so long as the rivets are heated to the extent compressible by the machine. This property of unvarying soundness in the work constitutes the superiority of machine over hand riveting." Sir William says much more, and while in the main his statements are correct, there are certain important qualifications which will appear farther on. The machine which he used, and which is illustrated in one of the volumes of "Useful Information for Engineers," was driven by a belt, and far inferior to the steam and hydraulic riveting machines of to-day. Still, with this machine he accomplished some good work, as is shown by the experiments on the strength of joints riveted up with it. The steam and hydraulic machines, as first constructed, were too light to accomplish the best results; there was more or less vibration, and consequent imperfection in the joint. This difficulty has been mainly overcome by the additional strength and weight which has been given to the machines.

If, however, careful men and men of good judgment are not employed, very poor and inferior work may be done with the best machines. It is well known to those familiar with steam or hydraulic riveting machines, that there is a cup-shaped die on the end of the piston rod which presses against a fixed die. The work is brought into position for riveting by cranes. The rivet is placed in position by hand, the pressure is admitted to the cylinder and the die on the piston rod presses against the