CHAPTER XII.

RIVETING.

The subject of riveting is one, which, like that of pin proportioning, has never received its due amount of attention from bridge designers. Many structures otherwise very strong are extremely weak in detail, owing to the insufficient number of rivets employed in the connections and to their improper arrangement. The principal rules for riveting have been given in Chapter II., pp. 17, 18.

Rivets should be proportioned for bending and for bearing pressure; i.e., for any given connection, the number of rivets necessary to resist properly each of these stresses should be determined, and the greater number chosen.

Tables XXXVI. and XXXVII. give the working bending-moments and permissible bearing-pressures for bridges of Class A and for those of Classes B and C. For the lateral systems of both classes, Table XXXVII. is to be used. In these tables the first and second horizontal lines of vulgar fractions and decimals give the widths of bearings; and the other horizontal lines in the portions pertaining to bearing give the working bearing-stresses for rivets of different diameters. The rest of the tables needs no explanation.

The sizes of rivets ordinarily employed for highway-bridges are from five-eighths to three-quarters of an inch; though half-inch rivets are used for very light channels, and seven-eighths inch rivets for very heavy ones.

The weight of a pair of rivet heads for any diameter can be found in Table XXIX. It is well to memorize these weights.

Where two plates are riveted together, the rivets, driven when hot, contract, or tend to contract, in length when cooled,