(3) An increase of the sectional area of the main plate relatively to the sectional area of the two cover plates causes an increase in the proportion of the stress which the top rivets carry, while a decrease causes an increase in the proportion of the stress which the bottom rivets carry.

(4) In joints in which the area of the two cover plates equals the area of the main plate, the rivets equidistant from the centre of the riveting are stressed equally, the end rivets being stressed more than the intermediate ones. In the case of joints with two rivets only there is an equality of stress on the two rivets.

(5) The effect of increasing the rivet spacing, if it be kept uniform, is to render the distribution of stress among the rivets more unequal.

Although these generalizations have been made with reference to connections with two cover plates, they hold equally well for lap joints, one of the plates taking the place of the two cover plates in the above discussion.

CONCLUSION.

What modifications should we make, then, in our designs of riveted connections if this normal law of the distribution of stress substantially holds? Evidently something must be done to throw a greater proportion of stress on the intermediate rivets than they carry under the conditions assumed in the foregoing discussion. There are two practical methods of doing this:

First, we might in some way increase the resistance of the plates to slipping at the intermediate rivets. This would throw additional load on these rivets because of the principle that when a load has to travel over several paths it divides itself in direct proportion to the rigidities of these paths. This extra resistance of the intermediate rivets to slipping might be secured by using larger rivets or by maintaining the pressure of the riveting tool on these rivets until they become black, instead of releasing it immediately after driving, as in the case of the end rivets.

The second method is to decrease the spacing of the rivets near the centre. The reason of this is evident from conclusion (5). The shortening of the spaces over the entire connection will also tend to further equalization of stress on the various rivets.