another, as far as those stresses are equal. The necessary result is, that only one can act at the same time, and that, only with the preponderance of the force tending to act upon it, over the force tending to act upon its antagonist: and, since any weight at either of the points c, d, e, &c., tends to bear more or less at a, which can only be done through the medium of co, it follows that the greatest stress upon bn, must occur when the point b has a full load, and the points c, d, e, &c., are without load.

In the same manner, it is manifest that when b & c alone are loaded, each contributes to the tension of cm, while its antagonist, dn, has no action to diminish that produced upon cm, by the loads at b & c; whereas, any weight at either of the points d, e, f, &c., transmits or tends to transmit, a certain bearing to a, necessarily through the tension of dn, and thereby diminishes the action of cm, due to the loads at b and c. Whence, the maximum weight upon cm, equal to \( \frac{3}{7}w \), occurs when the points b & c are fully loaded, and the other points without load.

Without repeating this reasoning, it must be obvious that the maximum weight upon dl, equal to \( \frac{6}{7}w \), will occur when b, c, & d, alone are loaded;—the maximum upon ek, equal to \( \frac{10}{7}w \), when b, c, d, & e only are loaded; and the maximum on fi, equal to \( \frac{15}{7}w \), when the point g alone is unloaded.

The maximum weight, (producing compression, of course,) upon ih, must take place when the whole truss is loaded, and is equal \( \frac{20}{7}w = 3w \).