$$C o : C p :: o n : p D$$

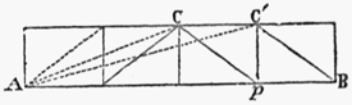
and $$C p : o n' :: A p : o n$$

Hence, $C o : o n' :: A p : p D$ a result, which, as it makes the pressure upon A and D proportional to their distances from the line of application of the weight, must be correct.

We have seen, that in estimating the effect of a weight at C'', it is necessary to resolve it into components in the directions $A\,C''$ and $B\,C''$.

In the same manner, it can be shown that the forces which act at C must by the connection of the system be transferred to the points B and A, in the directions of the diagonals $A\,C$ and $B\,C$.

FIG. 50.

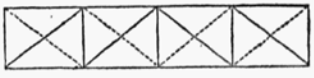


The effect of the oblique force $C''\,A$ upon the angle C evidently is to force it upwards, and the strain would be the diagonal of a parallelogram constructed upon $A\,C$ and $C\,C''$.

This result is of the greatest practical importance, and the existence of a force acting upwards appears to have been overlooked by many practical builders, as in some very important structures no means have been used to guard against its effects.

The consequence is, that in a straight as well as in an arched truss, a weight at one side produces a tendency to rise at the other side.

FIG. 51.



The effect of this upward force is to compress the diagonals in the direction of the dotted lines and extend them in the direction of the braces; but as the braces, from the manner in which they are usually connected with the frame, are not capa-