having a negative rather than a positive action; this may be illustrated by Figure 16, which represents a short truss, in which A, A, is lower chord; B, B, is upper chord; C, C, sustaining braces; D, D, counter braces; E, E, struts; F, suspension rods; W, weight. Assuming the length of the sustaining and counter braces to be originally equal, when the load is applied as at W, the truss is deflected in consequence of the yielding of the braces C, C; this has the effect of shortening the diagonals in the direction of their length, while the diagonals in the direction of the counterbraces are correspondingly lengthened; this, as will be seen, will leave a space between the ends of the latter, and the "bearing block" in the centre of the lower chord.

When the truss is in this condition, if wedges are inserted between the ends of the counter braces and the lower chord, in such a manner as to fill up the whole space, it is evident that the weight W, may be removed without at all affecting the shape of the truss, the deflection originally produced by the weight W, being maintained by the counter braces, the strain upon the sustaining braces and other portions of the truss remaining precisely the same as when the weight was suspended.

Now suppose the original weight W, to have been ten tons, it is evident that as soon as it is removed, each counter brace will be subjected to an upward thrust, equal to five tons, making ten tons, the weight of W.

Now let there be a smaller weight suspended from the same point, say five tons, this weight will not produce any additional strain upon any portion of the truss, nor will the deflection be increased in the slightest degree; the only effect produced by suspending the latter weight, will be the relief of the counter braces, equal to the difference between the first and second weights, viz.: five tons. The writer