with, as its effect on the whole of the boom is greatest when it is at the outer end of the cantilever, and on any member of the web when it is concentrated as nearly as possible above the outer end of that member. Thus the process of getting at the weights of eantilevers of various lengths loaded as in (a) and (b), is merely one of successive summation, one panel after another being adden i and no calculations repeated, as they would have to be in independent girders of different span. Next (c) let the loads be calculated which are imposed on the end of the cantilever by central spans of different lengths. This load is made up of half the dead weight of the central span and of more than half the moving load (if the moving load is not assumed as uniform). Finally make a list of the probable weights of material in the main trusses of center spans of various lengths, taking care that the weights correspond to the kind of truss which it is actually intended to use, and that they include only such parts as enter into the estimates previously made of weights of cantilevers. This list can be obtained from weights of existing bridges, by e-timating for one span in the same manner as the cantilever was estimated for, and then comparing the result with the usual weight of bridges of the same span and type, which will give a factor for reducing the usual weights of other spans so as to make them comparable with the cantilever weights. We now have material for filling up a Table such as the following :

1	2	3	4	5	6	7	8
Length of each cantilever.	Length of Central span.	Load on Cantilever from central span resting on it, in hun- dreds of tons.	Weight of Canti- lever for every hun- dred tons of load on its ends.	Weight of Canti- lever due to loud of central syan resting on it	Weight of Canti- lever due to its own load.	Weight of § Central span.	Weight of one Can- tilever and of \$ cen- tral span together.
ft.	ft.						
200	20						
290	40						•
200	60					ļ	
260	80					ļ	ļ
250	100					ļ	
240	120						
230	140						
&c.	&c.						I

We have here supposed the Table to be formed for a total span of 600 feet, which is to be made up of 2 cantilevers and a central span resting on them, and we have supposed it to proceed by differences of 20 feet in the centre span. All the rows of figures in such a Table as this need not necessarily be calculated. Some may be filled up by interpolation. Columns 4, 6 and 3 are the results of the preliminary calculations (a) (b) and (c) described above. Column 5 is obtained by multiplying the figures in column 3 by those in column 4. Column 8 is the desired total weight and will show the relative economy of different arrangements. The figures in column 8 will not of course, agree with those of an actual bridge, but the differences between them will, if the calculation is properly made, be the differences between the weights of actual bridges, because in the estimates, everything will have been considered which could cause a difference to arise. The Table given above by way of illustration, must of course be modified to suit the circumstances of different sites. For instance, instead of two equal