extend vertically and horizontally four feet. Allowing six inches at each end for attachment would make the total length of a bracket about 6.7 feet.

An allowance of 100# for ornamental work will be sufficient.

The equivalent length of a beam hanger can be thus approximately calculated: twice the distance from the centre of the pin to the top of floor beam equals 9"; twice the diameter of pin equals about 6"; twice the depth of floor beam equals 54"; twice the length of hanger below the floor beam equals 6"; allowance for two upset ends and nuts equals 33"; total length equals 108" = 9'.

Let us average the diameters of the fillers at 3 3/8", and their weight at 10# per foot. The average length of filler is not far from 3". Special fillers will be required at the free end of the span, so as to keep the lateral strut clear of the batter-brace channels, also similar fillers at each end of the span to lie between the outer chord bars and the channels. Let us assume that the channel flanges are notched out to a depth of one inch; then the thickness of the last-mentioned fillers will be 1 1/8", and that of the others say 5/8". Let the external diameter be 7", and the internal diameter 2 3/4": the weight per lineal foot will then be (see Carnegie, pp. 105–107) 128.3 – 14.8 = 113.5.

Turn buckles and sleeve nuts have already been included, and there are no connecting chord heads.

Next come the jaws for lower lateral struts. From the centre of the lower chord pin to the top of the floor beam being 5 1/2", the depth of the wooden strut will have to be 9"; but the jaws need not be more than 7" deep, as shown on the accompanying diagram. The width of the strut need not exceed 7", nor that of the jaw plate 6". The thickness of the latter should be 1/2". The greatest stress upon any lateral strut, found by resolving the stress upon the 1 7/16" lateral rod, is about 7 tons, which stress has to be resisted by the rivets connecting the inner and outer jaw plates. The number of rivets required is $7 \times \frac{1}{2} = 9$, which will make the total length of the two jaw