longer than twenty-four times the radius of gyration, com-
pressive strains much higher have been taken for the posts of
the Delaware Bridge Company's bridge. This accounts for
any difference there may appear to be in the weight per foot
in favor of the latter bridge.

To this superiority of form and fewness of parts of the main
elements is incidental a comparative smallness of exposed sur-
face, which is hence more easily and inexpensively protected
from corrosion.

VI.—Rigidity.

In this important feature—one of no secondary importance
when the subjection of the bridge to railway trains moving at
full speed is considered—it surpasses, in virtue of the essential
character of the design (alluded to under I. head) all others.
A reference to the deflections under live load of the bridge in
question, and the Delaware Bridge Company illustrates the fact,
for the former, .30 of a foot (in the centre); for the latter .356
(end of cantilever), to which must be added the deflection of
the 200 foot span (.16 of a foot) connecting truss, making the
total .517 of a foot, or nearly double the former. The Passaic
Company's cantilever furnishes about the same result.

VII.—The completeness and thoroughness of the design as it
is actually presented for your consideration.

No "modifications" materially affecting the design as now
presented have been suggested and none are required. It is
not pretended by the designers that all the details have been
worked out; that there might not be, with improvement, some
changes made. But what is maintained here is, that such
requirements refer rather to filling up of details than to actual
modifications.

VIII.—Economy.

As this is determinable from the estimate, the cost is about
the same as for the three or four least costly competing bridges,
the Delaware Bridge Company's bridge included.

In consideration of the completeness of the design of Clark,
Reeves & Co., the superiority of its component parts, and the