Tabulation.

Span (1) with dead load.. $-1,240$
Span (2) with dead load.. $-1,640$
Spans (1) and (2) with (3).. $-1,240-1,640+340=-2,540$

Span (1) with live load .. $-1,240\times\frac{2,100}{980}=-2,654$

Span (2) with live load .. $-1,640\times\frac{2,550}{1,190}=-3,514$

Spans (1) and (2) with live load ..... $-2,654-3,514=-6,168$
Spans (1) and (3) with live load ..... $-2,654+728=-1,926$
Span (1) with dead load.. $+340$
Span (2) with dead load.. $-1,640$
Spans (1) and (2) with (3) $-2,540$

Span (1) with live load.. $+340\times\frac{2,100}{980}=+728$

Span (2) with live load .. $-3,514$
Spans (1) and (2) with live load ..... $+728-3,514=-2,786$
Spans (1) and (3) with live load ..... $-1,926$

Explanation of Fig. 7.—Continuous beam of two unequal spans, carrying both dead and live uniform loads.

(*a*) Inflection points established.
(*b*) Uniform dead load on span L_1 considered.
(*c*) Uniform dead load on span L_2 considered.
(*d*) Diagrams (*b*) and (*c*) combined.
(*e*) Uniform live load on span L_1 taken into consideration.
(*f*) Uniform live load on span L_2 taken into consideration.
(*g*) Diagrams (*e*) and (*f*) combined.
(*h*) The positive areas of diagram (*g*) combined with diagram (*d*) upturned.
(*i*) The negative areas of diagram (*g*) combined with diagram (*d*) upturned.
(*j*) The final diagram resulting from a combination of diagrams (*h*) and (*i*).

Tabulation.

Span (1) with dead load..—1,725
Span (2) with dead load..—1,035
Spans (1) and (2) with dead load .....—2,760

Span (1) with live load .. $-1,725\times\frac{150}{80}=-3,234$

Span (2) with live load ..—1,035 $\times\frac{150}{80}=-1,940$

Spans (1) and (2) with live load .....—5,174

The complete assembling of such a construction may interfere with the pet theories of many, due to the fact of there being no points of contra-flexure shown. Those thoroughly conversant with the behavior of live loads of a variable nature, know that what would be the positions of the points of contra-flexure when carrying a full live load, would be considerably stressed when only partly loaded. The most noteworthy feature of the diagram is that it represents the greatest bending moment that can occur at any section of the beam by translation of the load.

In conclusion, I wish to state that it is not my desire to give the impression that I have derived any new theory upon this subject. On the contrary, the method is based upon the combination of a series of perfectly familiar elementary formulæ, and is a matter of common knowledge in Europe, though little known here. The purpose of this

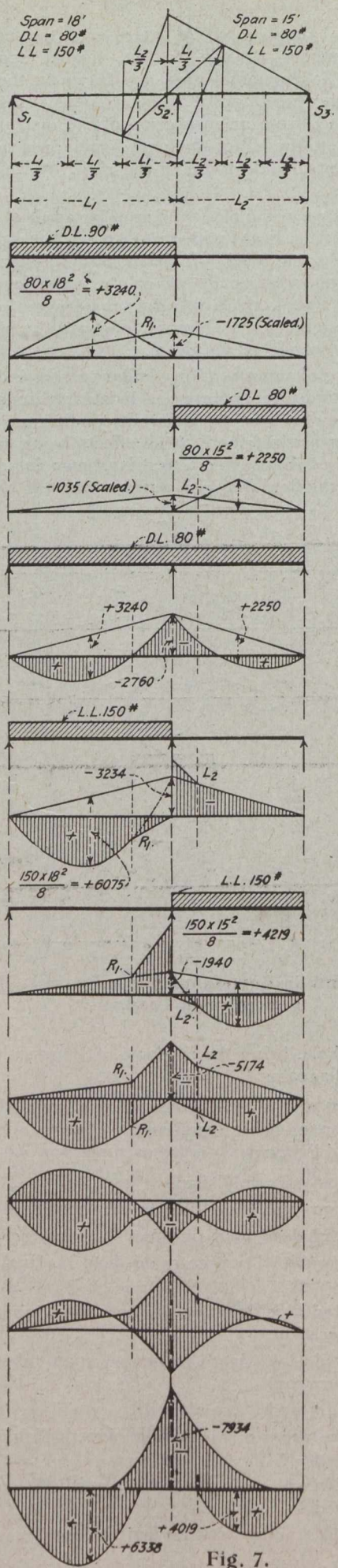

Fig. 7.