

				Pressure
Between the points <i>a A</i>		the compression would be $3\frac{1}{2}$ units, which, multiplied by the effect of the angle		= $1\frac{1}{2}$
"	<i>AB</i>	"	$10\frac{1}{2}$	$5\frac{1}{2}$
"	<i>BC</i>	"	$16\frac{1}{2}$	$8\frac{1}{2}$
"	<i>CD</i>	"	$21\frac{1}{2}$	$10\frac{1}{2}$
"	<i>DE</i>	"	$25\frac{1}{2}$	$12\frac{1}{2}$
"	<i>EF</i>	"	$28\frac{1}{2}$	$14\frac{1}{2}$
"	<i>FG</i>	"	$30\frac{1}{2}$	$15\frac{1}{2}$
"	<i>GH</i>	"	$31\frac{1}{2}$	$15\frac{1}{2}$
Giving for the sum of the compressions.				<u><u>84</u></u>

This divided by the number of spaces 8, made $10\frac{1}{2}$ as the average depth.

It was, he thought, not improbable that a cursory view of the drawing of the Fink truss might lead to the idea that it was one that must be economical; inasmuch as it appeared to have a compression member only, and to be without any corresponding formal tension member, the diagonal ties being made to serve the purpose of a regular tension member. But even if this were so, and if the ties were made at no greater consumption of metal than the ties and struts of a diagonal girder, which he would prove was not the case, even then the Fink truss would have no advantage; inasmuch as its one compression member contained slightly more iron than the compression member and tension member together of the diagonal truss. He had stated that the compression member of this latter girder contained 84 parts. The tension member contained rather more, thus:—

				Tension.
Between the points <i>b c</i>		the tension would be 4 units, which, multiplied by the effect of the angle		= 2
"	<i>cd</i>	"	11	$5\frac{1}{2}$
"	<i>de</i>	"	17	$8\frac{1}{2}$
"	<i>ef</i>	"	22	11
"	<i>fg</i>	"	26	13
"	<i>gh</i>	"	29	$14\frac{1}{2}$
"	<i>hi</i>	"	31	$15\frac{1}{2}$
"	<i>ik</i>	"	32	16
Giving for the sum of the tensions.				<u><u>86</u></u>

This, divided by their number, 8, made $10\frac{3}{4}$ as the average depth. The amount of metal, 86, in that member, added to that in the compression member, gave 170 parts for the metal in those two members, as compared with 172 parts in the compression member alone of the Fink truss.

He would now revert to the consideration of the Fink truss:—