Before this time an essentially English design by an English engineer named Carroll. My father, if not the originator was a leader in the development of the "millile diagonal lattice" type differing from the English practice in the tightening of the panels, a consequent change in the film system and a compression of the material in fewer members. He designed but for unimportant pin-connected bridges conforming his practice almost entirely to the riveted form of the 1870s. I am unable to state when he obtained his first structural form.

After 1862 my father designed almost all the bridges on the N.Y.C. Western def. line. At that time around 1866 and designing most of the bridges required when the last two tracks were laid in 1873.

I know of no larger span bridge built by him there. A highway bridge at Sanger's consisting of an open 270 ft. long with a 24 ft. roadway and two sidewalks, built I think about 1870.