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## United States Patent

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*Attest*

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# United States Patent [19]

Lin

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[54] **TWIN-AXIS PRESTRESSED SINGLE-TEE BEAM WITH LOWER FLANGE AND PROCESS OF CONSTRUCTION**

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[ * ] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

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[52] **U.S. Cl.** ..... **52/223.8**; 14/6

[58] **Field of Search** ..... 52/223.8; 14/3, 14/4, 6–8, 13, 27

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[57] **ABSTRACT**

A twin-axis prestressed single-tee beam with lower flanges and process of construction is previded. The process includes construction of a cantilever prestressed beam and a simple-support prestressed beam. Both of them have a steel skeleton of roughly Y-shaped section including a pair of upward tilted flanges on the top and a pair of narrower flanges on the bottom. The steel skeleton of a cantilever prestressed beam has a flat top and a arcuate bottom, and the steel skeleton of a simple-support prestressed beam has an upwardly arcuate generally rectangular body. Pressures are applied to the upper and lower flange by a plurality of hydraulic presses, so as to force the skeletons to be deflected to become nearly straightened. Then mounts an outer mold conforming the outer shape of the skeletons prior to grouting the concrete. When the concrete is cured. The cantilever prestressed beam shall exert the resilient forces both along the longitudinal direction as well as the transverse direction and the simple-support prestressed beam exerts the resilient forces both along the longitudinal and transverse directions either. So that the downward pressure and the tension stress of the traffic load will be offset and/or obviated by these resilient forces.

**18 Claims, 9 Drawing Sheets**