

of-fact men. The frequent accidents which have happened to them have led to many modifications in their structure, and they can only be regarded, thus far, as experiments out of which the genius of the future may realize the anticipations of their over zealous advocates. The causes of their failure have sometimes been apparently trifling, and in many instances there has been no assignable cause, so that their destruction is enveloped in considerable mystery. For these reasons I do not believe that a suspension bridge is suitable to our wants, even if the public mind could be brought to look with confidence and favor upon such a structure. Among all the various plans upon which bridges have been constructed, I regard the tubular iron plate bridge as the one peculiarly adapted to our wants and circumstances. This idea I conceived several years ago, and I have sought by its means to solve the great problem upon which the destiny of St. Louis, as a commercial and manufacturing metropolis, in a great measure depends. As the result of much thought and extended inquiry upon the subject, I beg leave to offer the following general description and the accompanying design of

A BRIDGE ACROSS THE MISSISSIPPI RIVER, AT ST LOUIS

The superstructure is a rectangular iron plate tube, fifteen feet wide, thirty-two feet high in the centre, and thirty feet high at the ends, comprising eight smaller tubes along the top, and six along the bottom, with a large one intermediate for the railroad track to pass through, and in which three rails will be laid to accommodate both the broad and narrow guaged roads. The top of the tube will have a light railing on each side, and a division along the centre, forming two avenues, each seven feet wide, for foot passengers—one avenue for the eastern travel, and the other for the western. At the bottom of the tube, on each side, a 2½ inch pine plank floor is extended out, sixteen feet wide, upon iron girders and joists riveted together and to the sides of the tube, and suspended at the outside, at intervals of twenty feet, by rods hung to lateral trusses, the top chords of which are fixed to the top of the tube, and the bottom chords riveted to and abutted against the side of the tube, with a strutt across the inside of the tube to prevent it from collapsing at the points of abutment. The roadways on each side, for the common travel of vehicles, horsemen and animals, will be wide enough for two vehicles abreast; one roadway will be for the eastern traffic, and the other for the