much heavier. Both extend through the whole length of the floor. The lower one, which is placed under the beams, is 12 inches deep; and the other, which lies on the top of the beams, is 9 inches deep. These girders are connected together and to the beams by stirrup rods, straps and nuts; the upper ends being fastened, as may be seen, over the top girders above the floor; and the lower ends in like manner underneath.

The girders are fastened together longitudinally, by heavy wrought iron plates, bolts and nuts, so arranged as to allow expansion and contraction of the girders, by heat and cold, without displacement or injury. Underneath each of the high trusses, which separate the carriage-way and the sidewalks, runs a longitudinal chord of R. R. bars connected together like the girders, and to the floor beams by stirrups and nuts. To give additional strength and steadiness to the floor, and to resist the strain of the overfloor stays, 16 rows of heavy oak bridging are tightly fitted between the floor beams, through the whole length of the suspended portion of the floor.

The covering of the carriage-way is made of three thicknesses of oak plank. The first course is 3½ inches thick, and it is fastened to the beams by iron bolts, ½ inch in diameter. These bolts do not pass through the beams, but close to the edge of the flange, and an oblong wrought iron washer, which rests half on the flange and half on the plank, and is secured by a nut, makes a strong and reliable fastening. There are over 1,600 planks, 20 feet long, in this part of the floor, and 10 bolts to each plank, making more than 16,000 bolts in this part of the work alone. Two tracks for street cars are laid, and it is hoped that at no distant day, these vehicles will run between the three cities of Covington, Newport and Cincinnati. These car tracks are widened to 13 and 14 inches by the addition of flat rails ½ inch thick, so that all but the wheels of the widest vehicles run on iron. Any one who has seen a heavy loaded team toil up the hills from the ferry landing, will appreciate the benefit to horse flesh by this arrangement.

Over the first floor, between the car tracks, is laid a second floor of oak, 2½ inches thick. This floor was soaked in hot coal tar, and laid in a mixture of coal tar and rosin. It is fastened by wood screws, 3 inches long, number 22. There are 22 courses in this floor, of 80 pieces each, and 10 screws in each piece, making 1,760 planks and 17,600 screws. Each screw is countersunk in the wood ⅛ inch, and the holes