operations. Sixteen wooden drums were placed on the Cincinnati anchorage, to hold the wire for these cables. The drums were seven feet in diameter, sixteen inches wide in the clear, with rims 6 inches deep. They were fitted with short spokes, or handles, by which to turn them, and they were hung on horizontal iron shafts. Each drum, when full, would hold one ton of wire.

After being oiled, the coils of wire were placed on upright wooden reels, and passed through the straightening machines, as they were wound on to the drums. The straightening machines were simply wooden blocks, having sliding keys notched into them, in which were placed upright steel pins, nearly on a line, between which the wires passed on their way to the drums. Attached to each straightening block, was a piece of sheep skin, through which the wire passed. This was kept saturated with oil to secure freedom of movement, and to cover the wires in places where the original coating might have been rubbed off.

As soon as one coil was drummed up, another was put on the reel, and the ends of both were spliced together, in this manner. The ends were filed flat and tapering, for a space of about 4 inches. The round edges were then nicked, or cut full of little notches by a punch made for the purpose; then the flat surfaces were placed fairly together, and the whole was firmly wound with No. 20 annealed iron wire, and painted. So strong are splices made in this manner, that experiments prove that they will bear a greater strain without breaking, than the sound wire. A stout block firmly fixed in the floor, to hold a small anvil and vise, with files, nippers and nicking punch, and hand vise, are required for splicing.

**RUNNING OUT THE WIRE**

Was the next operation, and to do it, much ingenious machinery was required; most of which was placed on the Cincinnati anchor pier.

First, there was a large wooden wheel, looking not unlike an old fashioned horse power, with a grooved rim and gearing, for a forward and reverse motion. There were also two wooden sheaves, 4 feet in diameter, running in the same plane with the big wheel; around all three of these passed an endless wire rope, \( \frac{3}{4} \) of an inch in diameter. This rope reached over both towers to the Covington anchor pier,