

diameter, with a centre radius of 24 inches, with flanges 38 inches diameter, to be faced, fitted and bolted to the said inlet pipe and parts to be named hereafter: these flanges are to be $1\frac{1}{2}$ inch thick when finished. 2nd. On the top of the flanges of the quarter turn, which does not connect with the inlet pipe there is to be a second T pipe 4 feet 5 inches breadth between the flanges, exactly of the same dimensions as the one described in the preceeding article of "Inlet pipe." It is to be in cast iron and to be connected to the flange of the quarter turn as shewn on the plan—3rd. On the top of the branch of the T pipe described in the preceeding article there is to be placed, at right angle to its axis, a third T pipe in cast iron 30 inches diameter, 4 feet 5 inches breadth between the flanges, and presenting a flange at right angle 30 inches inside diameter, 38 inches outside diameter, and 24 inches from the centre of said pipe.

Between the four square flanges 3 feet 8 inches by 2 feet 7 inches outside dimensions described in the article "Valve Chests," and the flanges of the branches of the two last named T pipes there are to be four cast iron quarter turns, as shewn on the plan, presenting and connecting, to the same kind of flanges to which they are to be bolted—the flanges of the valve chests being square, the main body of said turns has to be brought gradually, from the round to a square form, of the dimensions given in the outlets and inlets of valve chests.

21st. TURBINE FLUME.—This flume is to be made in boiler iron $\frac{1}{4}$ inch thickness of metal, strengthened with angle iron 3 by 4 inches average thickness $\frac{1}{2}$ inch, riveted every two feet length of the flume. Total length at centre line 34 feet; inside area 9 feet 6 inches by 6 feet, with rounded corners of 24 inches radius. The top to be slightly rounded to an increased height of 8 inches in the centre at the first 12 feet of its length nearest the inlet. At the extremity nearest the Turbine there is to be a cast iron angle iron, or flange, which present a face 5 inches wide, $1\frac{1}{2}$ inch thick when faced, the other part of said flange, or angle iron, is to be riveted to the wrought iron part of the flume. The first named part of this angle iron is to be bolted with $\frac{3}{4}$ inch bolts, placed 6 inches apart, to a corresponding flange of the Turbine Chamber, so as to form a tight joint. At the other extremity of said Turbine flume there is to be another angle iron, of which the part fastening to the wrought iron part of the flume is to be 10 inches wide, and to be secured by a double row of rivets. The other side of said angle iron is to be made square on the outside, 12 feet long by 9 feet wide, and to have 14 holes one inch diameter provided with anchor bolts, 12 inches long $\frac{3}{4}$ inches diameter, said bolts to be firmly secured to the wall. Thereto is also to be secured the cast iron angle piece. Owing to the inclined position of the Turbine flume, the two outside sheets are to be fitted to a bevel shewn on the plan. The joints of said iron flumes