

14th. — PISTON RODS. — There are to be two of these rods; they are to be made out of the best Bagnol (English) iron; they are $3\frac{1}{2}$ inches diameter when finished at the main body, reduced to $3\frac{1}{8}$ inches where they enter the cross heads, and $3\frac{3}{8}$ at the other end of the cross heads; they are to be 4 inches diameter where they enter the piston and 5 inches in the other end. Total length 12 feet 9 inches. A substantial flat key is to secure each rod to its piston.

15th. OUTLET PIPES. — These pipes are two in number; the first one which connects the two front valve chests is to be in the shape of a T. The two branches to be 6 feet from outside to outside of the flanges; said flanges to be square 3 feet 8 inches by 2 feet 7 inches outside, and to be $2\frac{1}{2}$ inches thick when finished.

These flanges are to be jointed with bolts $1\frac{1}{2}$ inch diameter placed about $5\frac{1}{2}$ inches apart, to the corresponding flanges at the valve chests. This T outlet pipe is to be shaped from the square flanges into a round form of 30 inches inside diameter, and $33\frac{1}{2}$ inches outside diameter as soon as it leaves the flanges. At the base, which is 5 feet from the centre line of the inlet flanges, there is to be a round flange at right angle to the inlet flanges; said flange to be 40 inches outside diameter and 2 inches thick. The second outlet pipe is to be in the shape of a cross; its total length is to be 11 feet 6 inches, breadth 6 feet; at the extremity forming the length there are to be at each end a round flange of 40 inches outside diameter. The body of the pipe forming the length is to be 30 inches inside and $33\frac{1}{2}$ inches outside diameter. At the extremities of the cross forming the breadth there is to be at each end a square flange 3 feet 8 inches long, by 2 feet 7 inches breadth; all these flanges on both outlet pipes are to be $2\frac{1}{2}$ inches in thickness when faced; they are to be fitted and bolted to the corresponding flanges at the two back chests and front chests in such a manner as to present a water-tight joint when the pumps are working. In this second outlet pipe the body is to shape itself into a round form immediately after leaving the square flanges; said round form to be 30 inches inside diameter.

On the top of this second outlet pipe, at 9 feet 3 inches from the end joining the first outlet pipe, there are to be two branches with flanges; one, on which a large air vessel is to be set upon, is to be of 30 inches in diameter, with a flange 42 inches in diameter, 2 $\frac{1}{2}$ inches in thickness. The face of this flange is to be slightly inclined as shewn on plan, presenting, when the outlet pipe is set in its place, a horizontal face. Owing to the weight to be sustained there are also to be 4 ribs as shewn on the plan. On the bottom of said outlet pipe there is to be a second branch, and 9 feet 3 inches from the extremity named; said branch is to be 12 inches diameter, with flange to bolt on a 12 inch pipe.