

the wooden teeth are to be made in two pieces, but fitted together over the central bridge. It is to be keyed with two keys, $2\frac{1}{2}$ by $1\frac{1}{2}$ in.

8th. CRANK SHAFT.—This shaft is to be made in cast iron, and is to be cast on its end, with a sinking head of the diameter of the shaft, and not less than 3 feet long.

Its total length when finished is to be 14 feet 2 inches, and its diameter varies from 14 to 17 inches, as shewn on the plan. The shaft is to be turned all over, and to be particularly sound in the bearings. A core may be cast in it of $5\frac{1}{2}$ inches diameter.

9th. CRANK SHAFT PEDESTALS.—These pedestals are to be 2 in number, and are to be made in cast iron with movable boxes, lined with Babitt metal, according to a working drawing to be furnished. They are to have a base 4 feet 2 inches long by 18 inches wide, $3\frac{1}{2}$ inches thick, with a projection 3 by $1\frac{1}{2}$ inch, which is to be set in a corresponding depression in the bed plate. From centre to base the distance is to be 13 inches. The boxes are to be 2 inches thick, made round with square flanges, and are to be filled with white metal, as shewn on the working drawing. The pedestal caps are to overlap and are to fit well the sides of the pedestals, and are to be held down each with 4 long bolts, 2 inches diameter. The pedestals themselves are to be held down each with 6 bolts, 2 inches diameter. On the sides there are to be in each pedestal 4 set screws, $1\frac{1}{2}$ inch in diameter, with squared off ends, that are to be fitted in the moveable boxes so as to prevent them from turning.

The caps are to have tallow cups, as shewn on working drawing.

10th. CRANK WHEELS.—The crank wheels are to be two in number and are to be made in cast iron, they are to be 8 feet outside diameter when finished, and are to be made with double disks each $1\frac{1}{2}$ inch in thickness, joining in a rim as shewn on the plan of 8 inches width; these disks are united further by means of 6 ribs $1\frac{1}{2}$ inch thick, that radiate from the hub to the rim, and project on the back part of the hub as shewn on the plan. The hub in each crank wheel is to be 22 inches outside diameter, and is to be bored to 14 and 17 inches between two of the ribs; in each wheel there is to be a boss of metal prepared to receive the crank pin as shewn on the plan, which, when fitted, will present its centre 3 feet from the centre of the crank wheel.

The crank wheels are to be most carefully fitted on the crank shaft, and when turned and faced they are to be keyed on the said shaft each with two wrought iron keys $2\frac{1}{2}$ inches wide, $1\frac{1}{2}$ inch thick, they are to be turned on the outside and top of the rim, which parts are to be polished, also to be turned on both sides of the hub, the back part of which is to fit closely to the sides of the moveable parts of the crank shaft pedestals.