

The roof sticks supporting the slides to be of the size and form, and faced and stiffened with iron plates, in the manner shewn on the drawing. The roof boards to be covered with the best carriage roof cloth, according to sample. Bevel iron bar ties to be inserted round the sides and ends to brace the pillars and stanchions and support the iron panels, and to be let through the corner pillars in a bolt end and screwed up against them.

Each Waggon to have a break, long lever and guard rack, to work blocks on two wheels, the whole to be made of the best scrap or bar iron, and equal in finish to black engine work, and in accordance with the drawing; the blocks to be Willow or Poplar, cut to the proper template, and bolted to the hanger with  $\frac{3}{4}$  inch bolts with sunk nuts.

The iron panels to be countersunk and screwed to the framing with screws  $1\frac{1}{2}$  inches long by  $\frac{1}{2}$  inch diameter at the neck.

"Address Card Holders" to be screwed to the lower board in the centre on each side.

The Buffers are to be of an approved construction of the general size and outline shewn, with wrought heads and of about eight pounds value per set of four Buffers:

The Draw Springs to be of the description shewn on the drawing.

The Bearing Springs are to be 3 feet long from centre to centre of the point of bearing on the shoe, and 3 feet 3 inches extreme length, the point of the top plate is to be thickened and rounded where it bears on the shoe, the back plate is to be 3 inches by  $\frac{1}{2}$  inch, and the 10 other plates 3 inches by  $1\frac{1}{8}$  inch. All to be made from the best quality of cast spring steel, manufactured from Swedish iron, and with such camber as with the strain of the empty waggon shall bring them to the form shewn on the drawing. The whole of the Springs to be finished in the most workmanlike manner, and proved to the straight under a testing machine.

The Axle Boxes are to be clean, sound, strong and well made Castings of approved pattern, with "Vaucher's Patent Metal Bearings," carefully fitted, bedded, bored, and scraped out to fit the double coned Journals.

The Grease Box Covers are to be well jointed in the hinges and closely fitted on the Boxes; each cover is to have a spring to keep it from rattling. The back of the boxes is to be fitted with "Normanville's" Patent Collar Washers, the grooves for the collars, and the Axle Guard Horns are to be well and truly formed, and the holes for the spring clip bolts to be rimmed out true to one uniform diameter.

The Clip Bolts and Plates are to be well and neatly made and fitted, and of approved patterns.

Packings of hardwood shaped as shewn, for the top of the springs, are to be put between the clip bolts and the springs, and the nuts screwed tight to keep the whole together.

## THE WHEELS AND AXLES.

The Axles are to be 6 feet 4 inches long from centre to centre of the journals, by 5 inches diameter in the nave, reduced with a gradual hollow taper to  $4\frac{1}{2}$  inches diameter in the centre between the wheels.

The Journals are to be  $6\frac{1}{4}$  inches in length, of the double coned form, 3 inches in diameter in the centre, and  $4\frac{1}{2}$  inches in diameter at the shoulders. The Cones are to be turned perfectly true, of equal angles and diameters, and the axle to an uniform gauge of 5 inches diameter, to fill the naves, and chased to receive a  $\frac{3}{4}$  inch by  $\frac{3}{4}$  steel key.

The Wheels are to be of solid wrought iron 3 feet 6 inches in diameter at the centre of the tread.

The Spokes are to be 9 in number  $2\frac{3}{4}$  inches wide by  $1\frac{1}{2}$  inch thick inside the rim, tapering to  $3\frac{1}{4}$  inches wide by  $1\frac{3}{4}$  inch thick,  $3\frac{1}{4}$  inches from, and 2 inches thick at, the nave.

The Rim is to be 1 inch in thickness when finished,  $3\frac{1}{2}$  inches in width on the dove-tailed periphery and  $2\frac{3}{4}$  inches wide inside the dove-tail, and to be welded solid throughout.