arranged the same, but should be a little larger, except the middle pair; say 2½ by 6 inches.

The dimensions of the parts of the truss for a 30 feet bridge, should be, for the lower stringer, about 6 inches deep by 7 wide. The braces and top piece, 7 inches square. The sizes of the cross braces have been already given. The bolts at the feet of the braces, 7 8 or 1 inch in diameter. The suspension bolts, about 1½ inches diameter.

The truss should be about 7 feet from top to bottom, for the proportions of parts above given.

A 30 feet rail road bridge will require 180 cubic feet of timber, (including 64 cubic ft. of rail timbers,) and about 375 lbs. of iron.

**Plan for a 40 Feet Bridge,**

Applicable for any length between 36 and 48 feet, and not confined within those limits.—[See Fig. 34, Pl. 8.]

Scale for lengths of timbers, 1 to 100; other dimensions, 1 to 30.

In this truss, the upper and lower horizontal stringers a and b, are each composed of two pieces, 6 inches deep by 4 inches thick, and placed 6 inches apart.

The brace c, is 6×14, edgewise to view, with 6 inches cut out of the middle, at the upper end, to make room for d and e. At the lower end, it is fitted into a boxing of 1 inch depth upon the upper and inner sides of the stringers a, while the middle portion, 6 inches in thickness, runs down to the abutment, being beveled off even with the lower side of a.

The vertical, d, consists of 2 planks, 8×2½, placed 3 inches apart, to receive the upper end of e, and a 3 inch tenon formed on the lower end of f, between.

There is a boxing 1 inch deep at each end to let in the upper and lower stringer pieces, and the vertical pieces should extend at least 6 inches beyond the boxing. There is also a boxing in d, just above the stringer a, an inch deep, in the edge, to receive the cross bearer, and the