The co-efficient of elasticity, as determined by an increment in the deflection of 1.12 ins. between the loads of 5000 and 10,000 lbs., is 503,440 lbs.; as deduced from an increment in the deflection of .84-in. between the loads of 5000 and 12,500 lbs, is 463,768 lbs., and as deduced from an increment in the deflection of 2.13 ins. between the loads of 5000 and 15,000 lbs., is 534,169 lbs.

Table N shows the several readings.

The weight of this beam per cubic foot on Feb. 16th was 37.25 lbs., and on March 14th, 34.78 lbs., showing a loss of weight at the rate of .095-lb. per cubic foot per day.

Beam XXXVII was tested on February 24th, 1893, with the annular rings as in Fig. 82.

Fig 82. Fig 85. Fig 86.

The load was gradually increased until it amounted to 24,000 lbs., when the beam failed by the tearing apart of the fibres on the tension face.

The maximum skin stress corresponding to this load is 3555 lbs. per square inch.

Beams XXXVIII and XXXIX were the two ends of Beam XXXVI which was tested February 16th, 1893, the central portion containing the fracture having been cut out.

Beam XXXVIII was tested on March 14th, with the annular rings as in Fig. 83.

The load on the beam was gradually increased until it amounted to 52,450 lbs., when it failed by the tearing apart of the fibres on the tension side.

The maximum skin stress corresponding to this load is 3075 lbs. per square inch.

The co-efficient of elasticity, as determined by an increment in the deflection of .37-in. between the loads of 10,000 and 25,000 lbs., is 622,640 lbs.

Table N shows the several readings.

Beam XXXIX was tested with the annular rings as in Fig. 84.

The load was gradually increased until it amounted to 51,400 lbs., when the beam failed by the tearing apart of the fibres on the tension side.

The maximum skin stress corresponding to this load is 2696 lbs. per square inch.

The co-efficient of elasticity, as determined from an increment in the deflection of .175-in. between the loads of 10,000 and 25,000 lbs., is 433,250 lbs.

Table N shows the several readings.

Beams XL and XLI are the two ends of Beam XXXVII which was tested on Feb. 24th, 1893, the central portion of the beam containing the fracture having been cut out.

Beam XL was tested on March 17th with the annular rings as in Fig. 85. The load was gradually increased until it amounted to 53,650 lbs., when the beam failed by the tearing apart of the fibres on the tension side.

The maximum skin stress corresponding to this load is 3311 lbs. per square inch.

The co-efficient of elasticity, as determined by an increment in the deflection of .19-in. between the loads of 12,000 and 26,000 lbs., is 693,090 lbs.

Table N shows the several readings.

The weight of the beam per cubic foot on the day of the test was 36.13 lbs.