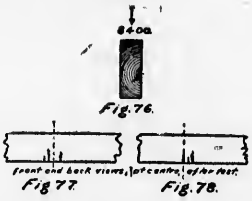
The weight of the beam on May 7th, date of test, was 128 lbs. 8 ozs., or 31.87 lbs. per cubic foot.

Beam (Plank) XXXIV. This beam was tested May 8th, 1894, with the annular rings as in Fig. 76.



The load upon the beam was gradually increased until it amounted to 5600 lbs., when the fibres on the compression face crippled to a small extent. On still further increasing the load, the fibres on the compression face were completely crippled, Figs. 77, 78, and fracture also simultaneously occurred on the tension side when the load amounted to 8400 lbs.

The grain of this beam was straight and parallel with the axis, and the timber was apparently free from knots for a distance of about 24 inches on each side of the centre.

The maximum skin stress corresponding to the breaking load of 5600 lbs. is 5079 lbs. per square inch, and the skin stress corresponding to the load of 8400 lbs., which caused the fracture on the tension side, is 7597 lbs. per square inch.

The co-efficient of elasticity, as deduced from an increment in the deflection of 1.14 ins. between the loads of 500 and 5600 lbs., was 1,784,800 lbs.

Table M shews the several readings.

The weight of the beam on May 8th, date of test, was 96 lbs. 2 ozs., or 36.59 lbs. per cubic foot.

Beam (Plank) XXXV was tested May 8th, 1894, with the annular rings as in Fig. 79. The heart of the tree was very nearly coincident with the axis of the beam, and the grain ran in the same direction. Season cracks occurred intermittently throughout the beam.

The load upon the beam was gradually increased until it amounted to 7600 lbs., when the beam failed by the crippling of the fibres on the compression face, Fig. 80. The load was still increased, and well defined crippling occurred when it amounted to 10,050 lbs. When the load had reached 13,700 lbs. the beam failed by the tearing apart of the fibres on the tension face, Fig. 80.

The maximum skin stress corresponding to the breaking load of 7600 lbs. is 4339 lbs. per square inch.

The co-efficient of elasticity, as determined by an increment in the deflection of .92-in. between the loads of 500 and 7600 lbs., is 1,589,250 lbs., and as determined by an increment in the deflection of .025-in. for the corresponding increase of 200 lbs. it is 1,642,900 lbs.

Table M shews the several readings.

The weight of the beam on May 8th, date of test, was 128 lbs. 12 ozs. or 37.69 lbs. per cubic foot.