

October 1, 1915: Survey executed with a Young and Sons light mountain transit, No. 8572, with solar attachment. The horizontal limb is provided with two double verniers, placed opposite to each other and reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs.

The instrument was approved for use in this survey by the Assistant Supervisor of Surveys for Nevada.

I examine the adjustments of the transit, and find them correct.

Oct. 2: To test the solar apparatus, by comparing its indications, resulting from solar observations, made during a.m. and p.m. hours, with a meridian determined by observations made on Polaris, I proceed as follows: At my camp situated near the cor. of secs. 21, 22, 27 and 28, in approximate latitude  $39^{\circ}34'N.$ , longitude  $117^{\circ}56'W.$  I set off  $39^{\circ}34'$  on the lat. arc;  $3^{\circ}25'S.$  on the decl. arc; and at 3h 50m p.m., l.m.t., determine with the solar a meridian and mark the direction of the line thus determined by a nail driven in a box, set firmly in the ground, about 5 chs. N. of my station. At 6h 51m p.m., l.m.t., by my watch which carries correct l.m.t., I observe Polaris at eastern elongation in accordance with the Manual of Instructions and mark a point in the line thus determined, on a peg driven in the ground, about 5 chs. N. of my station.

Oct. 2, 1915.

Oct. 3: At 8h 30m a.m., l.m.t., I lay off the azimuth of Polaris  $1^{\circ}28\frac{1}{2}'$  to the west, and mark the meridian thus determined by a nail driven in the box set Oct. 1, on which the meridian falls 30" to the right of the mark determined by the solar.

At 8h 50m a.m., l.m.t., I set off  $39^{\circ}34'$  on the lat. arc;  $3^{\circ}42'S.$  on the decl. arc; and mark a point in the meridian determined with the solar, by a nail in the box already set about 5 chs. N. of my station; this mark falls 15" to the left of the meridian established by the Polaris observation.

The solar apparatus by p.m. and a.m. observations, defines positions for the meridian, respectively 30" and 15" to the left of the meridian established by the polaris observation; therefore as the error is less than 1' of arc, I conclude that the adjustments of the instrument are satisfactory.

No magnetic bearing taken, because of defective needle.

Steel tapes, 5 chains and 8 chains long, were used in the field work, together with a clinometer for determining slope angles, and the reduced horizontal distances only appear in the field notes. The tapes were tested, comparison being made with a steel, standard tape, 1 chain long, kept and used for that purpose.

#### EAST BOUNDARY OF T. 20 N., R. 36 EAST

Sept. 27: At 8h 51m a.m., l.m.t., I set off  $39^{\circ}32'N.$  on the lat. arc;  $1^{\circ}22'S.$  on the decl. arc; and determine a meridian at the cor. of T. 20 N., Rs. 36 and 37 E., heretofore described.

Latitude  $39^{\circ}32'N.$ ; Longitude  $117^{\circ}52'W.$

Thence I run

North, bet. secs. 31 and 36, on range line.

Over high rough mountainous land, through dense forest of pinon pine and cedars.

Ascend along SE. slope, 190 ft.