

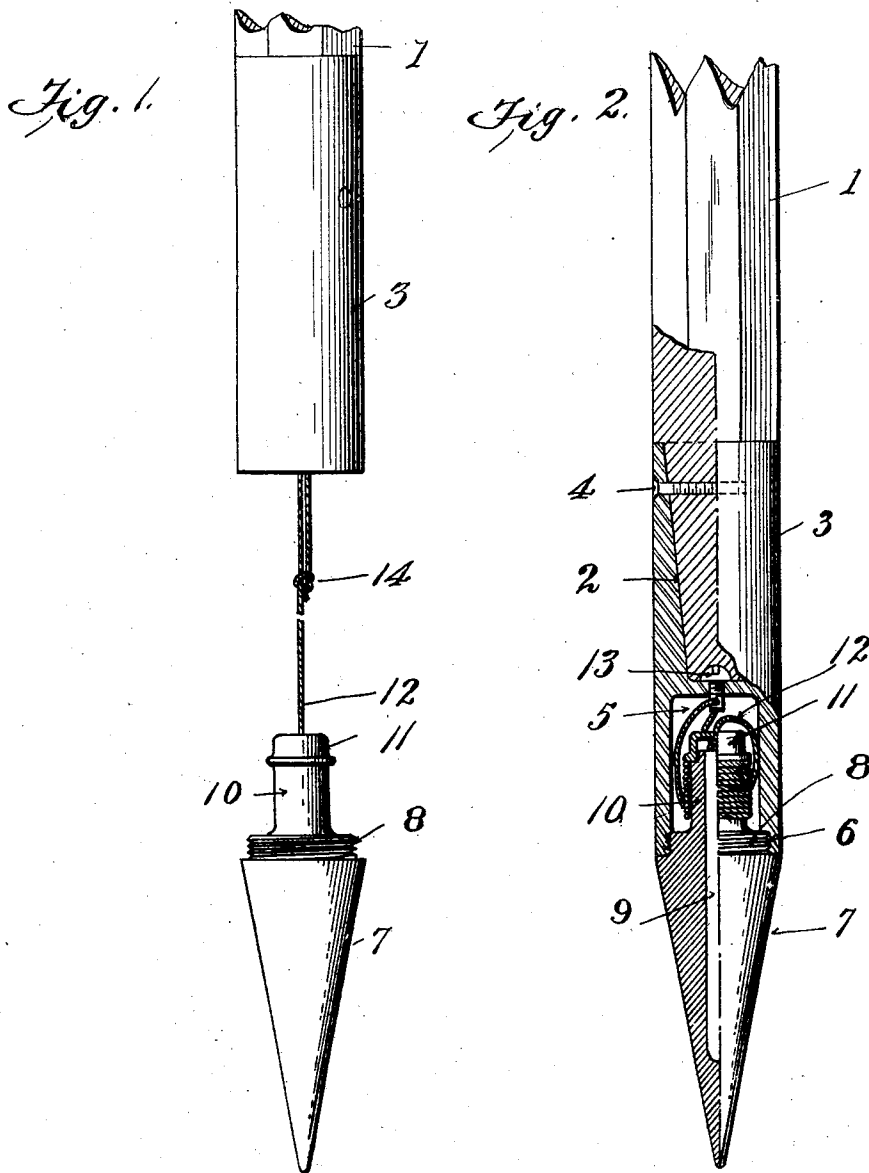
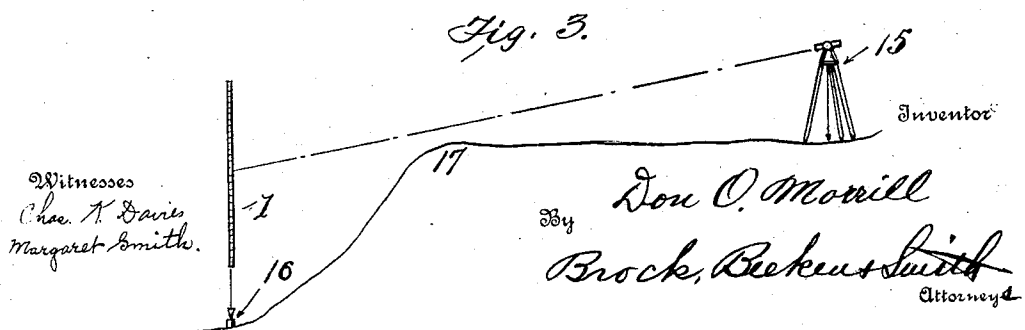
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PATENTED FEB. 25, 1908.

D. O. MORRILL.

PLUMB BOB.

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DON O. MORRILL, OF SPOKANE, WASHINGTON, ASSIGNOR OF ONE-HALF TO LYNN W. MORRILL, OF SPOKANE, WASHINGTON.

PLUMB-BOB.

No. 880,387.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DON O. MORRILL, of Spokane, in the county of Spokane and State of Washington, have invented a certain new and useful Plumb-Bob, of which the following is a specification.

The invention relates to the combination of a plumb-bob with a pole used in surveying, in such manner that the bob may either form the point of the pole or may be dropped from the end of the pole by means of a string and form an extension of the pole, for purposes which will hereafter appear.

In the drawing which illustrates an exemplifying structure embodying the invention—Figure 1 is a view of the lower end of a pole with the bob in detached condition forming an extension of the pole; Fig. 2, a view partly in section showing the bob attached to the pole so as to form the point; and Fig. 3, a diagrammatic view showing the pole in use with the bob detached.

Reference numeral 1 designates an ordinary surveyor's pole, the lower end of which rests in a socket 2 of a metal end piece or pole tip 3 and is secured by screws 4 or other suitable devices. The pole tip 3 has within its lower end a socket 5 and is screw-threaded at 6. The plumb-bob 7, which is shaped so as to form a suitable point for the pole, has screw-threads 8 at its top which engage screw-threads 6 so as to removably secure the bob in the tip. The bob may be made hollow as at 9 and filled with lead if desired. A shank 10 of reduced diameter extends upward from the body of the bob and a cap 11 is screwed upon the upper end of the shank. This cap is arranged to provide a recess between it and the end of the shank and is centrally perforated. A cord 12 is passed through the perforation in the cap and knotted before the cap is screwed onto the shank, this device forming the attachment of the cord with the bob. With the bob in the position shown in Fig. 2 the cord is preferably coiled around the shank and run through an eyelet in a screw 13 centrally located in the top of socket 5, the end of the cord being slip-knotted around the cord as at 14, Fig. 1.

With the parts in the position shown in Fig. 2, the pole may be used in the ordinary manner as a surveyor's pole. When, however, the pole is to be used in locations where

the ordinary length of pole is insufficient to serve the purpose as, for instance, in a location indicated by diagrammatic Fig. 3, the plumb-bob is unscrewed from the tip and dropped to a length adjustable by means of the slip-knot 14 so as to form an extension of the pole.

In Fig. 3, 15 represents a surveying instrument; 16, the location point of the pole; and 17, an elevation in ground or other obstruction between the sighting point of the instrument and the location point 16. Occasions frequently arise in surveying over broken ground, in bridge work, etc., where it is impossible to sight the ordinary pole, and in all of these instances my combined pole and plumb-bob may be made available by extending the bob to the required length from the bottom of the pole.

The various uses of the invention should be apparent to those versed in the art without further description.

I claim:

1. The combination of a surveyor's pole having a socket at one end, a plumb bob screwed in the socket and forming a removable closure therefor, and a cord adjustably connecting the plumb bob and pole and contained in the socket when the bob is screwed therein.

2. The combination of a pole for surveying, a tip thereon having a socket, a pole point adapted to screw into the socket and having a shank of reduced diameter adapted to enter the socket, and a cord connected centrally to the pole within the socket and to the point and serving to adjustably connect the point with the pole when the point is unscrewed.

3. The combination of a pole, a metal end piece thereon having a socket internally threaded at one end, a plumb-bob having a thread to engage the screw-thread in the socket, an extension on the bob adapted to enter the socket, a cord connected to the pole, and a removable cap on the plumb-bob extension having a central hole through which the cord is passed and knotted, serving to secure the cord to the plumb-bob.

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