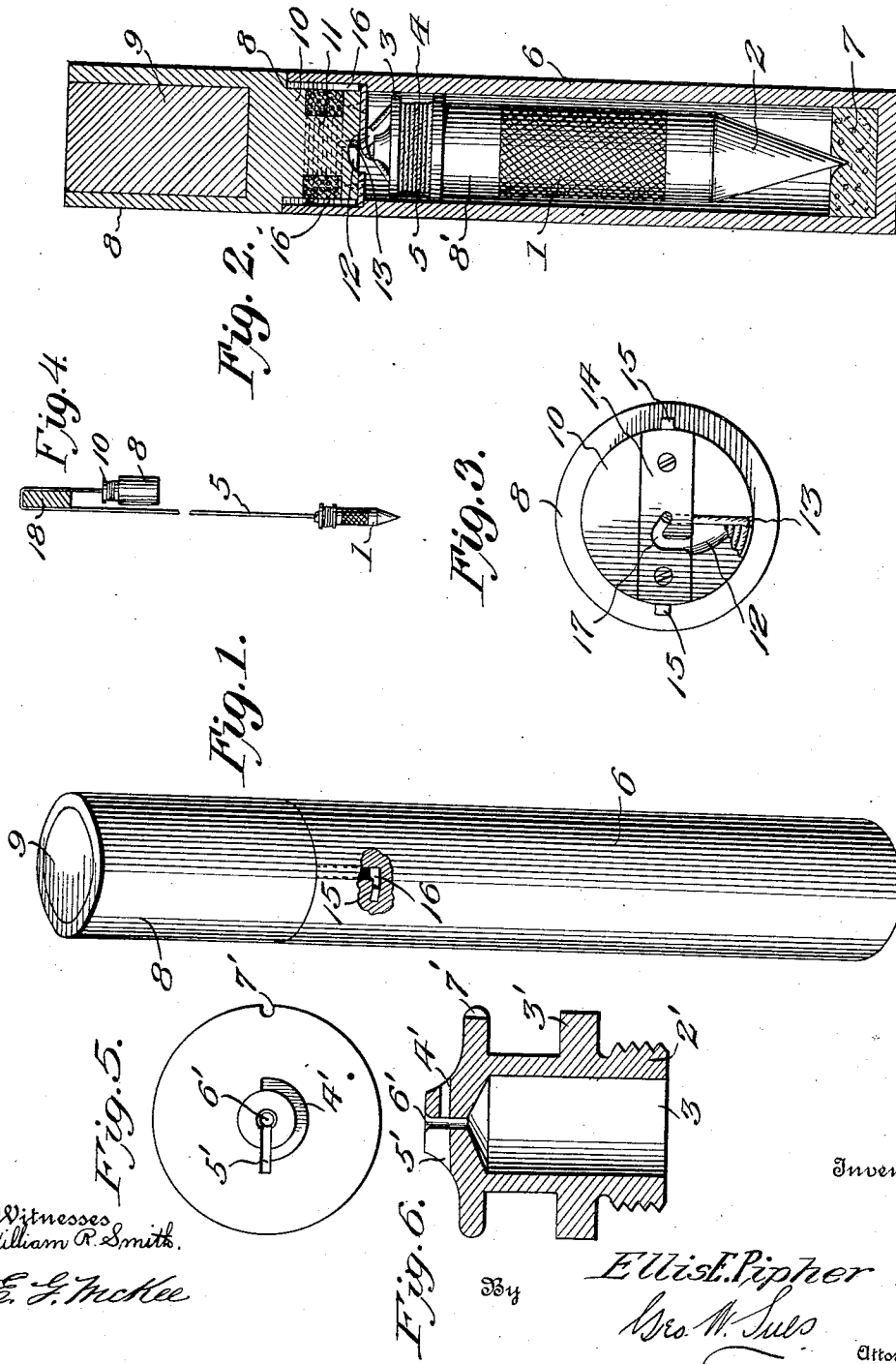


E. E. PIPHER.
 PLUMB BOB.
 APPLICATION FILED OCT. 12, 1911.

1,060,855.

Patented May 6, 1913.



Witnesses
 William R. Smith.
 E. L. McKee

Inventor

Ellis E. Pipher
 By Wm. M. Sues
 Attorney

UNITED STATES PATENT OFFICE.

ELLIS E. PIPHER, OF MILTON, OHIO.

PLUMB-BOB.

1,060,855.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed October 12, 1911. Serial No. 654,297.

To all whom it may concern:

Be it known that I, ELLIS E. PIPHER, a citizen of the United States, and a resident of Milton, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Plumb-Bobs, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to plumb bobs and has as its primary object to provide a plumb bob which may be more quickly and conveniently used than the ordinary instrument.

The ordinary plumb bob is suspended from a string which must be tied around the work or suspended from a nail or the like driven into the work.

The present invention aims to provide a bob which will not require such attachment to the work and may be more readily and quickly adjusted than the ordinary ones.

With this end in view, the invention contemplates the provision of a plumb bob connected by a string or other flexible connection to a counter weight, the string being laid over the work and being slid back and forth thereover to properly position the plumb bob.

The invention further aims to provide means for readily adjusting the length of the string so that the bob may be used in connection with work of practically any dimensions.

The usual workman will carry his plumb bob unprotected in his tool chest and in carrying the chest from place to place the contact of the heavier tools with the bob is liable to bend or fracture the point, thereby rendering the entire instrument useless. To overcome this, the present invention contemplates the provision of a novel casing for the plumb bob, the closure for the casing being the counter weight employed in connection with the bob. By the provision of such a casing, not only is the point of the bob protected, but also the bob and its counterweight are prevented from separation, and the cord connecting the two is prevented

from becoming tangled or wound about other tools among which the bob is placed.

With these and other objects in view, the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and finally pointed out in the appended claims, it being further understood that changes in the specific structure shown and described may be made within the scope of the claims, without departing from the spirit of the invention.

In the accompanying drawings forming a part of this specification, and in which like numerals of reference indicate similar parts in the several views: Figure 1, is a perspective view with a part broken away, of the device embodying the present invention. Fig. 2, is a vertical sectional view thereof. Fig. 3, is an end view of the counterweight of the device. Fig. 4, is a view illustrating the manner of using the device. Fig. 5, is a top view of the head, and Fig. 6, is an elevational view partly in section of the head.

In the drawings, the plumb bob proper is, as illustrated, of the ordinary form and comprises a tubular body 1, which is to be filled with mercury or shot and is provided with a point 2, for indicating plumb. This body is threaded interiorly near the upper end to receive the hollow removable head 3, shown in Fig. 6, having a neck 4, about which a greater or less length of the plumb line, indicated by the numeral 5, is to be wound. This head has a central opening 6', shown in Fig. 5, from which extends the laterally running slot 4', and the lengthwise extending kerf 5', an opening 7, being formed in the head opposite the kerf. The threaded collar 2', is arranged to screw into the upper end 8' of the tubular body 1. The line 5, has its knotted end held within the head 3, and extends through the opening 6'. In order to enable the head being readily removed, to insert the line for instance, I provide the milled collar 3'. When not in use, the bob proper is housed within a casing consisting of a tubular body 6, and a closure

which will be presently specifically described. In the bottom of the body 6, of the casing, there is arranged a cushion 7, of cork or similar material, upon which the point of the bob seats, the said point being in this manner protected.

The closure for the casing comprises the counterweight heretofore mentioned and consists of a head 8, in which is fitted a weight 9. This head is formed with a reduced portion 10, which is in turn reduced to form a neck 11, about which the other portion of the length of the string is wound while the plumb bob is incased. A recess 12, is formed centrally within the end of the reduced portion 10, of the head 8, and for a purpose to be presently explained, this portion of the head is formed in its periphery with a notch 13, opening into the said recess. The reduced portion of the head 8, is of a diameter to be fitted into the open end of the casing and a plate 14, is countersunk in the end of the said reduced portion of the closure and is formed at its ends with lugs 15, which project beyond the periphery of the reduced portion 10, and are arranged to engage in bayonet slots 16, formed in the wall of the body of the casing when the closure is assembled with the said body, as clearly shown in Figs. 1 and 2, of the drawings. The engagement of the lugs 15, in the bayonet slots in the wall of the body of the casing serves to hold the closure in place, as will be readily understood. As illustrated in Figs. 2 and 3, of the drawings, the plate 14, extends across the recess 12, in the end of the reduced portion of the closure head and is formed with a retrorse slot 17, the open end of which is coincident with the throat of the recess 12, and the inner closed end of which is located midway between the ends of the plate in which it is formed, and centrally within the closure.

In using the device, the closure for the casing is first removed and the plumb bob proper is withdrawn from the casing. The string is then unwound from the bob and is wound upon or unwound from the neck 11, of the closure head, depending upon the dimensions of the work to be tested. After a sufficient length of the string has been unwound, it is engaged first in the notch 13, and is then led into the recess 12, and into the notch 17, in the plate 14, until it seats at the closed inner end of the last mentioned notch, at which time it will extend axially from the closure or counterweight. The string is then passed over a straight edge 18, or some part of the work to be tested, as shown in Fig. 4, of the drawings and is slid thereover until the plumb bob is properly positioned.

From the foregoing, it will be readily un-

derstood that by unwinding a greater or less length of the string from the neck of the counterweight, the device may be adapted for testing work of practically any dimensions. It will also be understood that the bob proper may be quickly and readily adjusted with respect to the work to be tested by merely sliding the string over the straight edge 18, or the work piece over which it is passed, thus obviating the necessity of tying the string to the work or to a nail or the like driven therein. Furthermore, it will be understood that the cushion 7, in the bottom of the casing for the bob, serves effectually to protect the point thereof.

In its incased condition the plumb bob has the line 5, partly wound upon the portion 11, of the closure and the neck 4, as shown in Fig. 2.

Having thus described my said invention, what I claim as new and desire to secure by United States Letters Patent is:

1. In an instrument of the class described, a bob, a casing within which the bob is removably housed, a counterweight removably fitted in the open end of the casing and serving as a closure therefor, and connection between the bob and counterweight.

2. In an instrument of the class described, a bob, a casing within which the bob is removably housed, a counterweight removably fitted within the open end of the casing and serving as a closure therefor, and a flexible connection between the bob and counterweight, the said counterweight being provided with a reduced neck in its portion fitting within the said end of the casing upon which neck the said flexible connection is adapted to be wound.

3. In an instrument of the class described, a casing, a cushion in the bottom of the casing, a bob removably fitted within the casing and having its point resting on the said cushion, a closure for the casing, and a flexible connection between the bob and closure adapted to be wound upon the said closure.

4. In an instrument of the class described, a bob, a counter weight therefor comprising a head formed with a recess, the said counterweight having a portion spanning the said recess and formed with a retrorse slot, and a flexible connection between the bob and counterweight adapted for engagement in the said slot and to seat at the inner end thereof, the said inner end of the slot being located at the vertical axis of the counterweight.

5. In an instrument of the class described, a bob, a counterweight therefor formed with a recess and having a portion spanning the recess and formed with a slot having its inner end located at the vertical axis of the

counterweight, and a flexible connection between the bob and the counterweight adapted for engagement in the slot at the inner end thereof.

- 5 6. In an instrument of the class described, a bob, a counterweight formed with a recess and having a portion spanning the recess and formed with a slot having a closed end located at the axis of the counterweight,
10 and a flexible connection between the bob

and counterweight adapted to be adjustably wound upon the counterweight and engaged in the said slot.

In testimony whereof I affix my signature, in presence of two witnesses.

ELLIS E. PIPHER.

Witnesses:

J. W. OSBORN,

MARTIA PIPHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."