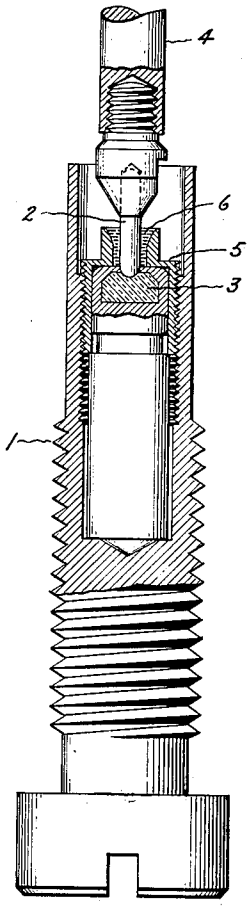
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METER PIVOT

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METER PIVOT

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5 Claims. (Cl. 308—159)

The present invention relates to pivots and more particularly to pivots which are adapted for use in measuring instruments such as watt hour meters and like devices.

Heretofore pivots employed in such devices generally have been made of steel, the pivots being about 37 mils in diameter and having a bearing end with a radius of about 18½ mils. Such pivots are entirely satisfactory from the standpoint of hardness and resistance to impact but when employed in meters which are exposed to the elements and particularly to salt air conditions the pivots quickly corrode. The resultant oxide coating on the pivots slows down the meter and may even cause it to stick and fail to operate.

It is an object of the present invention to provide a meter pivot which has a satisfactory degree of hardness and which resists impact.

The novel features which are characteristic of my invention are set forth with particularity in the appended claims. The invention itself, however, will best be understood from reference to the following specification when considered in connection with the accompanying drawing in which the single figure is a view on an enlarged scale partly in section and partly in elevation of a meter pivot embodying the features of my invention.

Referring more particularly to the drawing, I have indicated at 1 a pivot assembly of the character generally employed in watt hour meters. It comprises a pivot member 2 supported on a sapphire bearing 3. The pivot 2 is rounded at each end and carries a shaft 4 at its upper end. The lower portion of the pivot extends through a guide bushing 5 which holds a lubricant 6 which is supplied to the bearing 3.

In carrying out my invention, I employ as the pivot 2 a precipitation or age hardened cobalt tungsten alloy such as disclosed in the copending Sykes application Serial No. 525,025, filed May 24, 1931, and assigned to applicant's assignee. The alloy may be fabricated in the manner disclosed in the Sykes application either by casting the alloy and then heat treating it as hereinafter disclosed or by fabricating the alloy from powdered ingredients. In the latter case about 20 to 35% of powdered tungsten is mixed with about 80 to 65% of powdered cobalt. The mixed materials are pressed into a desired shape and sintered at an elevated temperature in an inert or suitable reducing atmosphere such as hydrogen. The sintering may be carried out at temperatures above 1100° C., for example about 1400 to 1450° C. and the sintering period employed will vary with the temperature employed. The alloy may be quenched or cooled slowly from the sintering temperature after which it is aged or precipitation hardened by heating at a temperature between about 500 and 800° C. for a period of time varying from about 20 to 100 hours.

The alloy offers a high resistance to impact and the products of corrosion, unlike the products of corrosion of steel, are non-abrasive. It preferably should be carbon free but a small amount of carbon, for example .05% does not materially affect the hardness of the alloy. However, if the carbon content is as high as .20% the hardness of the alloy is noticeably lessened.

Although I prefer to employ an age hardened alloy consisting of cobalt and tungsten, as hereinbefore set forth, my invention is not limited to the use of that alloy. Other age hardened alloys, for example cobalt-molybdenum, nickel-molybdenum or alloys consisting of about 20% to 35% of metal from a group consisting of tungsten and molybdenum with about 80% to 65% of metal from a group consisting of cobalt and nickel, may be employed if desired, although it will be found that the best results are obtained with the cobalt-tungsten alloy having a composition such as hereinbefore set forth.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A pivot consisting substantially of about 20% to 35% of metal from a group consisting of tungsten and molybdenum and about 80% to 65% of metal from a group consisting of cobalt and nickel.

2. An age hardened meter pivot consisting substantially of about 20% to 35% of metal from a group consisting of tungsten and molybdenum and about 80% to 65% of metal from a group consisting of cobalt and nickel.

3. A meter pivot consisting substantially of about 20% to 35% tungsten and about 80% to 65% cobalt.

4. An age hardened meter pivot consisting substantially of about 20% to 35% tungsten and about 80% to 65% cobalt.

5. In combination, a bearing member, a rotating member cooperating therewith, one of said members consisting of an age hardened alloy containing about 20% to 35% tungsten and about 80% to 65% cobalt.

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