WOLF'S PLUMB BOB NEWS 2012
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UPDATE MINING PLUMMETS

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Dear Fellow Collector,
Dear reader of the PLUMB BOB NEWS,

Please, as always I am in search of new photos, catalogs, articles or personal stories about any aspect of PLUMB BOBS from you. Any help is appreciated.
If you have any information or pictures for these themes, please let me know.
Thank you, looking forward to hearing from you

Wolf

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1. INTRODUCTION

Dear Fellow Collector,
this time I will not present a new theme, but start to make UPDATES of former plumb bob articles:
In WOLF'S PLUMB BOB NEWS 2009-03 I wrote about MINING PLUMMETS. I would recommend that you refer to this article before you continue reading. You find it on www.plumbbobcollectors.info on page *download PUBLICATIONS*. Scroll down until you reach 2009-03. The direct link to this page is: http://www.plumbbobcollectors.info/41328.html
In this newsletter 3 years ago I talked about the different ways for surveying mines: I also presented mining plummets, especially from the U.S.A.
The complete article as a PDF-file you get on this link: http://www.plumbbobcollectors.info/media//DIR_42117/DIR_42128/685eee0caaa0dc77ffff8222ac14422f.pdf
From a tip of a friend I found a web site [1] of collectors of mining tools in the Netherlands with the picture of a German mining plummet [2] that I have searched for a very long time.
In June 2012 I got in contact to a former mine worker from the Netherlands, Martin Herbergs, who also has a small collection of mining tools. Furthermore he made a lot of effort to memorialize deceased mine workers from his region. Therefor he supported building a remembrance chapel by modifying a small house on the area of a mining company.
Here in the remembrance chapel [3] in Terwinselen NL (see picture) once a year a ceremony is held to honor and remember the mine workers.
Every Friday this collector works as a guide in the mining museum in Heerlen NL. This museum is in the former coal mine Oranje-Nassau I.

From this collector I could get two German mining plummets: the so called "BLITZLOT" and the "BRAUNSCHU plummet". Blitzlot means "quick-set-up-plumb bob".
Since a very long time I had already a lot of written information (catalog pages and patent drawings) about them, but never saw a photo or an original.
Unfortunately both tools are not totally complete, but you can't get everything 100% on the first try. ☺
If anyone knows where such plummets exist, please let me know.

Martin Herbergs in front of his chapel.

[1] http://www.gluckauf.nl
[2] Link to the page with surveying instruments in mines: http://www.gluckauf.nl/Gereedschap_meet%20materiaal.htm Scroll down until you find the picture with the "Blitzlot".
[3] Pictures of the chapel and text (in Dutch language) http://www.yasni.de/ext.php?url=http%3A%2F%2Fwww.nederlandsmijnmuseum.eu%2Fsite%2Fdemijnstreek%2Fgedachteniskapel.htm&name=Martin+Herbergs&cat=other&showads=1

2. THE "BLITZLOT" BY SCHULTE

At first I will discuss the so called BLITZLOT (QUICK-SET-UP-PLUMMET)

THE IDEA for the plummet came from the German mining surveyor Schulte and was protected by a design patent # 193,259 in 1903 in Germany. The abbreviation D.R.G.M means Deutsches-Reichs-Gebrauchs-Muster (design patent in Germany)

It was PRODUCED by the maker of surveying instruments REISS in Liebenwerda, Germany.

maker mark

In their 1907 catalog (next page) we find a good working instruction. For more information about catalogues, see WOLF'S PLUMB BOB NEWS 2008-09


missing catch button


parts, body, tip

CONSTRUCTION:

The plummet is made of brass with an iron tip. Inside is a string-winding-up mechanism with a spiral spring. (missing in my plummet) ☹

FUNCTION:

By pressing the ratchet release you can pull it down from the ceiling of the gallery quickly to the desired position near to the reference point.

For rewinding the 3 yards long line you press again the button and the spring will help to rewind the line on the reel.

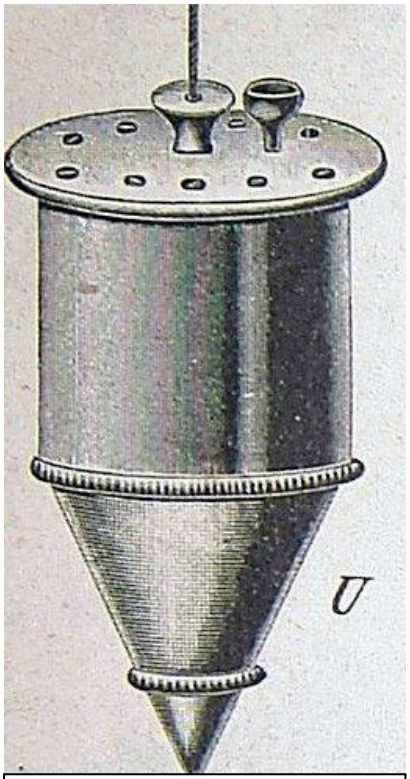
The iron tip you can extend by unscrewing (nearly 1 inch) to come very close to the reference point.

USE:

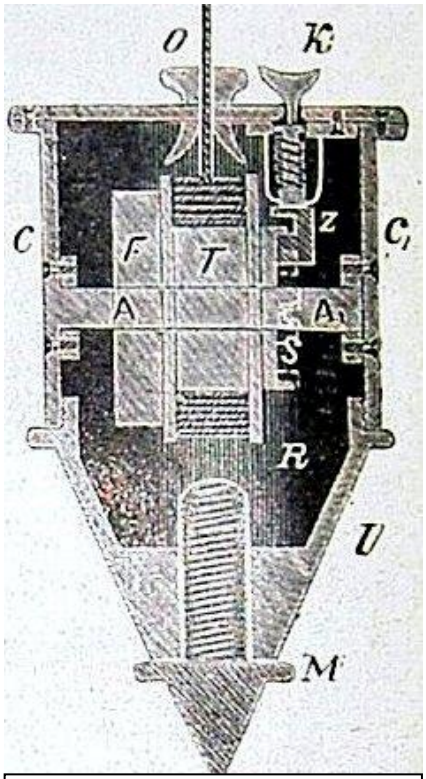
It was used in mines. The theodolite on the tripod was put in position directly under the plummet. More details see NEWS 2009-03.


unscrewed tip

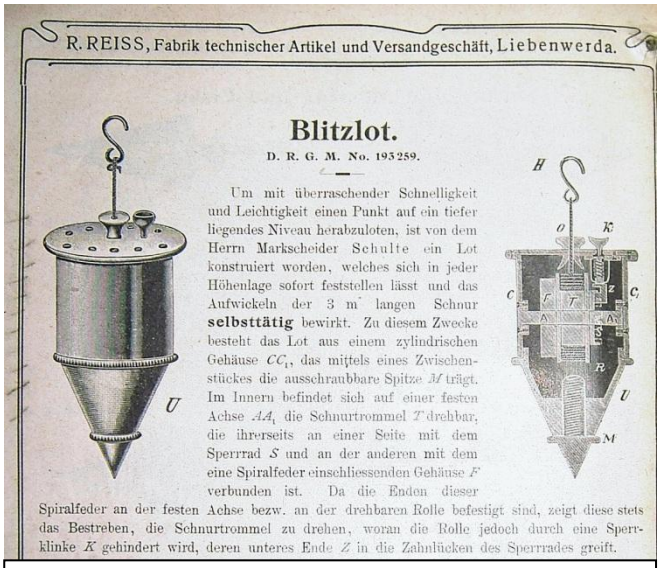
height=5 inch; diameter=2 inch



drawing from „Der Mechaniker"



cross section



R. REISS, Fabrik technischer Artikel und Versandgeschäft, Liebenwerda.

Blitzlot.

D. R. G. M. No. 193259.

Um mit überraschender Schnelligkeit und Leichtigkeit einen Punkt auf ein tiefer liegendes Niveau herabzuloten, ist von dem Herrn Markscheider Schulte ein Lot konstruiert worden, welches sich in jeder Höhenlage sofort feststellen lässt und das Aufwickeln der 3 m langen Schnur **selbsttätig** bewirkt. Zu diesem Zwecke besteht das Lot aus einem zylindrischen Gehäuse CC_1, das mittels eines Zwischenstückes die ausschraubbare Spitze M trägt. Im Innern befindet sich auf einer festen Achse AA_1 die Schnurtrommel T drehbar, die ihrerseits an einer Seite mit dem Sperrrad S und an der anderen mit dem eine Spiralfeder einschliessenden Gehäuse F verbunden ist. Da die Enden dieser Spiralfeder an der festen Achse bezw. an der drehbaren Rolle befestigt sind, zeigt diese stets das Bestreben, die Schnurtrommel zu drehen, woran die Rolle jedoch durch eine Sperrklinke K gehindert wird, deren unteres Ende Z in die Zahnlücken des Sperrrades greift.

Page from the 1903 catalogue REISS

Letterhead of the German patent:

DEUTSCHES REICH

AUSGEGEBEN AM 1. AUGUST 1922

REICHSPATENTAMT

PATENTSCHRIFT

— № 356839 —

KLASSE 42c GRUPPE 11

(B 99429 IX/42c)

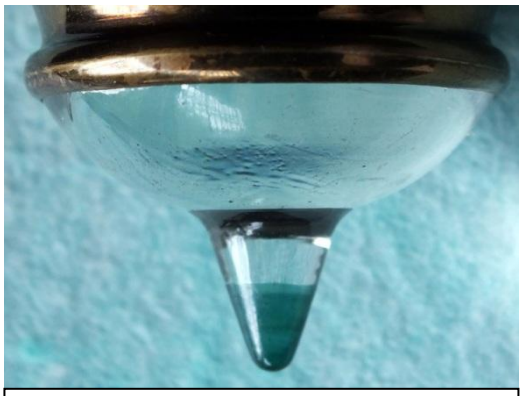
Max Braunschu und Fritz Czuya in Mülheim, Ruhr.

Lot.

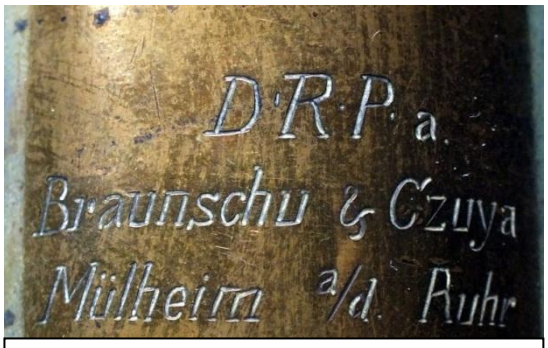
3. THE BRAUNSCHU & CZUYA PLUMMET

This tool is a **combination of a plummet and a lighted sighting device**. It is made from brass. Inside the body there is a battery and a lamp. Unfortunately I did not find a matching battery, but I continue searching for it.

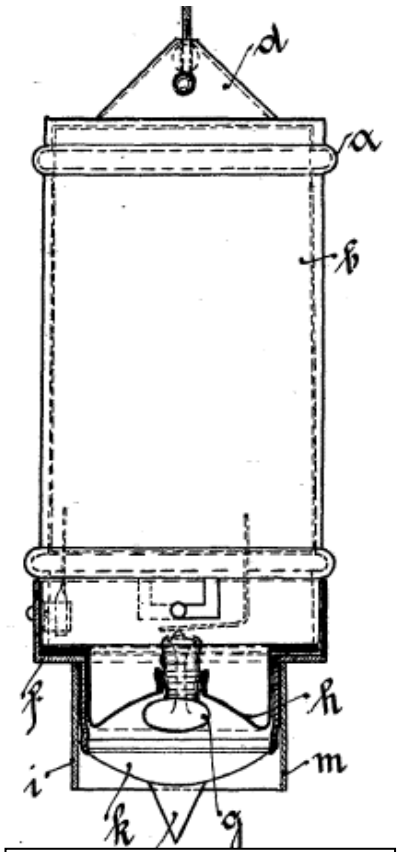
To concentrate the light of the lamp a plano-convex lens is used. This lens is extremely hard to produce. In the patent drawing the lens looks very simple but the original is impressive (Fig. right)



plano-convex lens with glass tip to concentrate the light



DRPa = German patent applied for. Produced before 1922



drawing from German patent DE356839 Braunschu 1922

dimension: h=163 mm; 6 ½in; d=55 mm; 2 in

attachment, lens; body with reflector

Keywords from the patent:

- It is for use in rooms that have not enough (day) light; especially in mines.
- Lighted plumb bob tip
- Different colors for the tip available
- Can also be used as a mining lamp

battery leak damaged the body

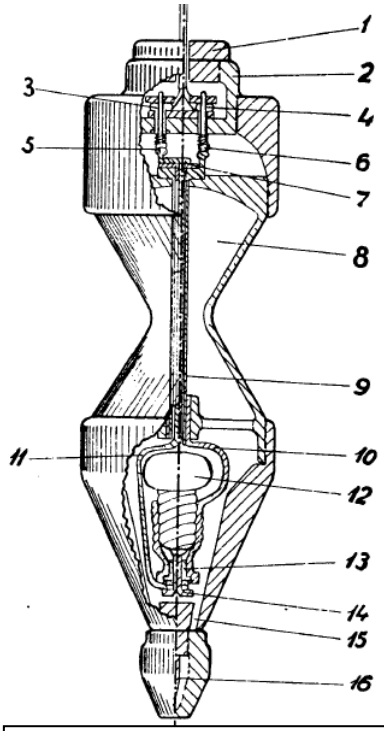
This brass diaphragm covers the lens and lets only free the lighted colored tip as sighting device

This German patent from Braunschu was **cited as reference** 30 years later in two other patents in Germany **DE 843,602**
and the U.S.A. **US 2,583,491**:
Details see next chapter.

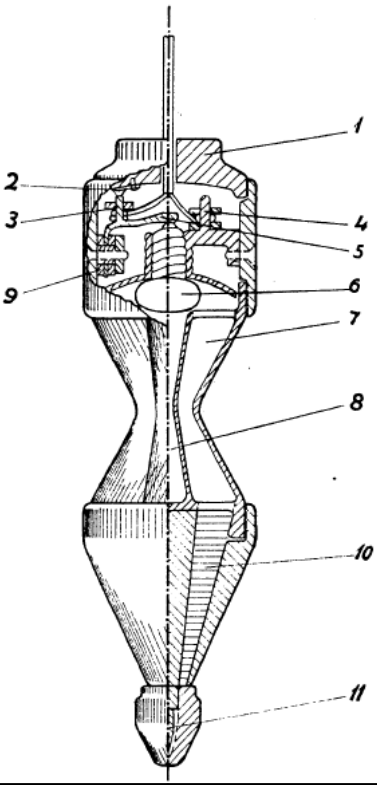
4. OTHER MINING PLUMMETS

1952 Georg Böhm from Stuttgart, Germany was granted a **patent DE 843,602** for a **LIGHTED PLUMMET**. This was a combination of a lighted target and a plumb bob.
The lamp inside lighted a **DOUBLE CONE** that was used as sighting device by the mine surveyors with their theodolites.
The current supply was done by a two-core cable. (no battery inside!)
The tip was additionally painted with a reflecting color.

Below two different designs:



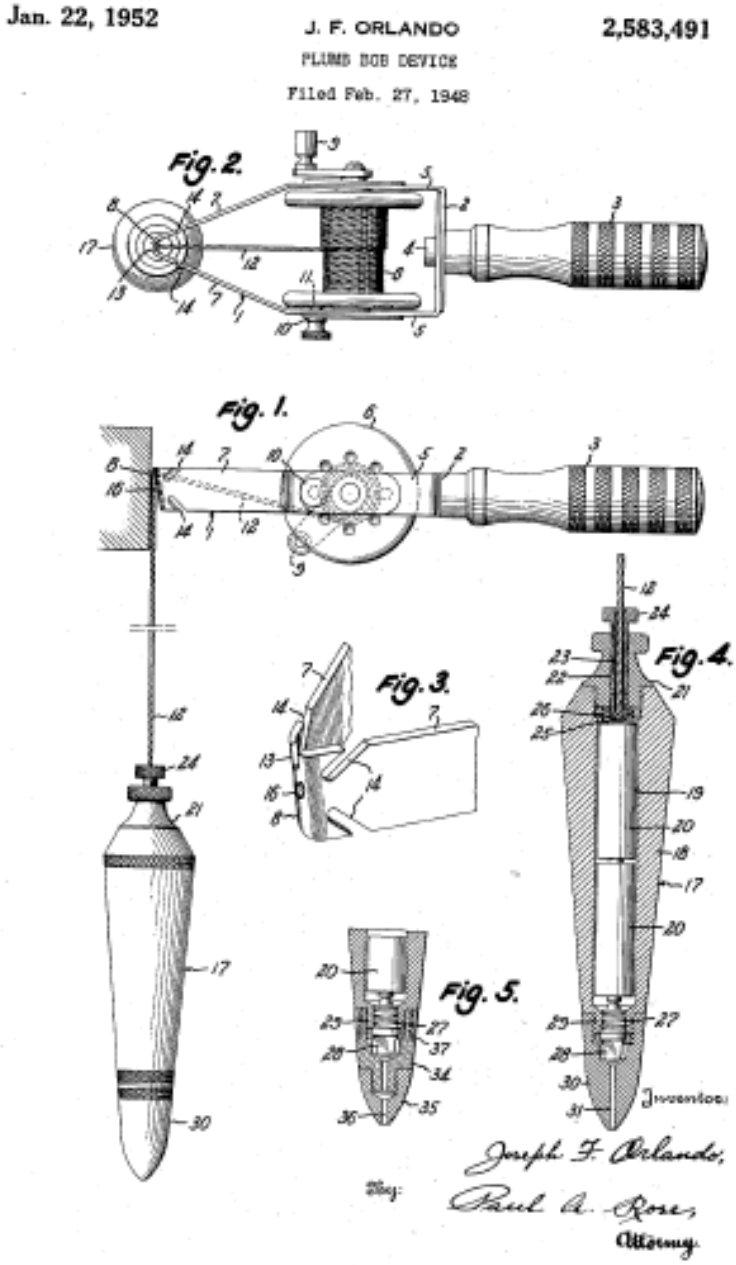
BÖHM 1952 DE843602
Lighted plummet



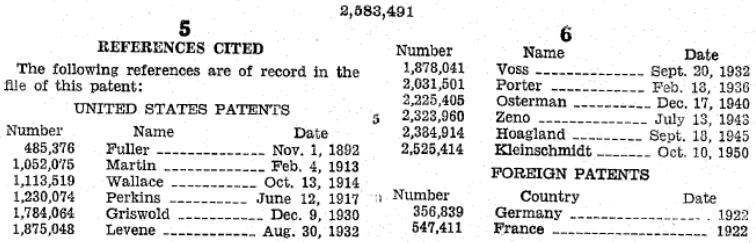
BÖHM 1952 DE843602
Lighted plummet

Unfortunately I never saw this tool on a picture or original. ☹

Also from 1952 is the US patent 2,583,491; **PLUMB BOB DEVICE**; Joseph Francis **Orlando**, from Washington D.C.


Jan. 22, 1952 J. F. ORLANDO 2,583,491
PLUMB BOB DEVICE
Filed Feb. 27, 1948
Fig. 2.
Fig. 1.
Fig. 3.
Fig. 4.
Fig. 5.
Inventor: Joseph F. Orlando
By: Paul A. Rose
Attorney

This patent cited the Braunschu patent as reference and three other lighted plummets:


2,583,491

5

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
485,376	Fuller	Nov. 1, 1892
1,052,075	Martin	Feb. 4, 1913
1,113,519	Wallace	Oct. 13, 1914
1,230,074	Perkins	June 12, 1917
1,784,064	Griswold	Dec. 9, 1930
1,875,048	Levene	Aug. 30, 1932
1,878,041	Voss	Sept. 20, 1932
2,031,501	Porter	Feb. 18, 1936
2,225,405	Osterman	Dec. 17, 1940
2,323,960	Zeno	July 13, 1943
2,384,914	Hoagland	Sept. 18, 1945
2,525,414	Kleinschmidt	Oct. 10, 1950

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FOREIGN PATENTS

Number	Country	Date
356,839	Germany	1922
547,411	France	1922

Below you find three lighted plumb bobs that are mentioned as reference in the "Orlando plummet" from 1952:

The other patents are not of interest for us. They are for such "unimportant" things like

- „light pencil"
- „kite controller",
- „lighter",
- „line winder",
- etc.

More details you will find on the GOOGLE patent search page (for US-patents only) [4]

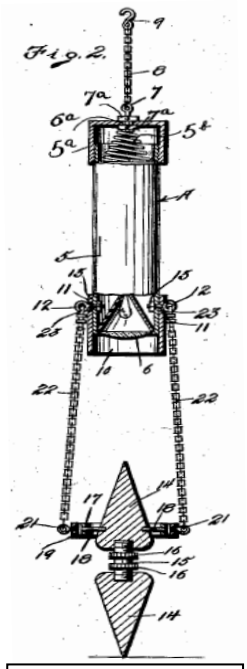
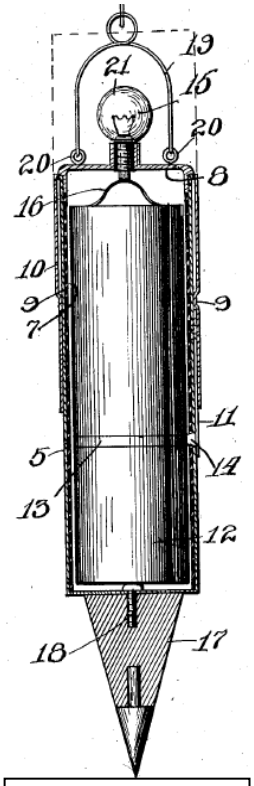
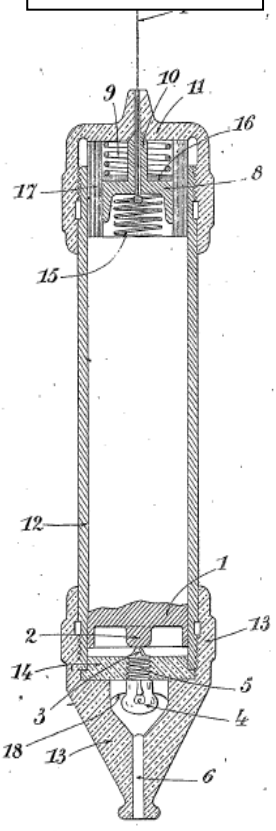


Fig. 2.

MARTIN 1913
PLUMMET
LAMP
US1,052,075



WALLACE
PLUMB LIGHT
1914 US1,113,519



DACHEUX 1922
FR547,411

[4] PATENTSEARCH for American patents: http://www.google.com/?tbm=pts&hl=en

5. IDAHO MINING PLUMMET

Last minute I received from Dale Riedesel, Twin Falls, Idaho this information about plumb bobs used in the shaft:
"*I happen to be in **North Idaho** recently. This area is full of silver mines. I was able to secure a unusual bob as shown in the pictures.*
*It is **brass, filled with lead**. It is **18 inches tall**, **3 inches in diameter, weights 45 pounds.** The brass shell is 0.23 inches thick. **This bob in conjunction with another bob were used to transfer a known azimuth from the surface to the bottom of a vertical shaft.** It is quite a door stopper.*
Dale"

They are not looking as nice as the mining plummets in the next chapter, but what this bob lacked in beauty it made up in practicality. It was extremely important that the surveyor is able to transfer his data from the surface into the mine where the plummets could be used to extend the mine locations under ground.

Below a description from a MINING SURVEYING BOOK:
"*Connecting Surface and Underground Surveys.*
The methods used to accomplish a connection between surface and underground surveys depend mainly upon the character of the opening from the surface to the underground workings. …
… A point of known horizontal location at the surface can be projected down a vertical shaft by plumbing within a linear error of 0.01 ft. in 100 ft. In the case of a vertical shaft, a vertical plane is defined by two plumb lines suspended in the shaft, in a plane of known azimuth determined by connection with the surface survey. Wire known as "electrician's banding wire" is recommended for use for the plumb lines, with bobs weighing 10 to 40 lb. suspended in oil to reduce oscillation.
Underground, a transit is act up close to the wires and in line with them, that is, in the plane of known azimuth. An angle is then turned to some other line, and two points are permanently set on this line, which is then used as a reference line of known azimuth. By this method the underground survey is referred to same meridian as the surface survey. Great care must be taken in lining in the transit with the two plumb lines, because the distance between the plumb lines is necessarily short and a small error in orientation at the shaft will result in a considerable error in the computed locations of points some distance removed from the shaft. This linear error in the location of any point is in a direction at right angles to the line from the shaft to the point, the displacement being equal to the azimuth error (in radians) multiplied by the distance from the shaft to the pint in question."

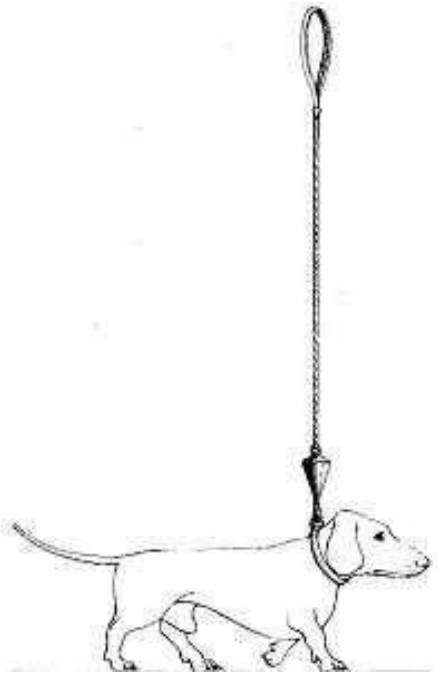
6. MINING PLUMMETS FROM NELSON DENNY COLLECTION

14-BUFFF & BERGER PLUMMETS-C

15-GURLEY-BOXED-PAIR-C

16-YOUNG & SONS -BOXED PAIR-C

7. SOMETHING TO SMILE ABOUT



8. REMARKS

This is an article of the monthly published WOLF'S PLUMB BOB NEWS that is sent on demand as PDF-file attachment by email. FREE.
You can see all former publications on the website www.plumbbobcollectors.info
Remarks and contact by email: plumbbobwolf@t-online.de

Do we meet us on the
4th PLUMB BOB COLLECTORS MEETING
Oct: 5, - 7, 2012 in ATHENS, Greece?