

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

THE PATENTED DEVIL LEVEL

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1. INTRODUCTION

When browsing through my pieces in the museum recently I found a small plastic instrument with the inscription "devil level".



When I looked at the "devil" in the device, I remembered the Bottle Imp (right) from my childhood, a small glass devil, which emerged in a glass bottle up and down. At that time we had only glass bottles and had to slip over a rubber cap for correct use. Today, you can also do this

with a closed plastic bottle. I have seen that such a small "bottle devil" is offered for 10 €.

On YouTube you can also see the action on video:
<http://www.youtube.com/watch?v=sNOXFiJ4IDU>
http://www.youtube.com/watch?v=4Wwz_BISA7w
<http://www.youtube.com/watch?v=84f63FsqxK0>



But with this "Bottle Imp" our "devil" in the angle measuring device - which I will describe today – has nothing to do. Only the shape and size are similar. Correctly the Bottle Imp is called "Cartesian Diver", as you can be read in Wikipedia:

http://en.wikipedia.org/wiki/Cartesian_diver
There you can also read that the devil is partially filled with water, but is not completely closed. The "Cartesian Diver" responds to PRESSURE, whereas we for a plumb bob need the GRAVITY (or - BUOYANCY - in the opposite direction). Coming back from my childhood and have a closer look on this in the USA patented "devil level", an **angle and slope meter**. I will describe the devices in my museum and the patents.

2. THE MEASURING INSTRUMENT „DEVIL LEVEL“

The instrument is a plastic container 2 inch x 2 inch x 1 inch and is used as INCLINOMETER or LEVEL.

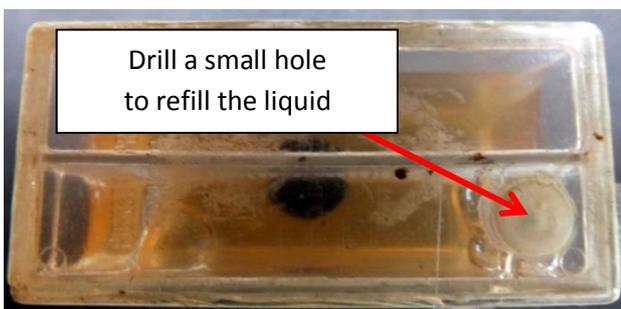


At the bottom the container is triangle shaped to put it on a pipe.

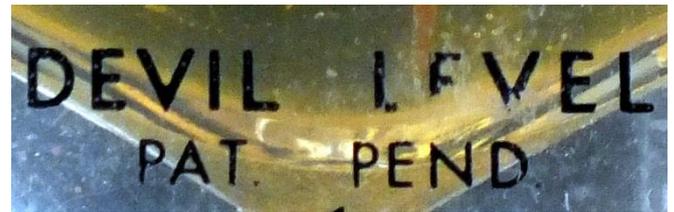


It is filled with a liquid, perhaps a kind of oil or anti freezing liquid. (In the patent description **Glycerin** is mentioned)

In most of the known Instruments we find not enough liquid so that the “devil” can’t swim and is not in a correct position. But **you can refill some water** by drilling a small hole in the top. After filling it correctly you can shut it with a drop of glue.



I found different labels / markings:



„PAT. PEND.“ = „patent pending“ shows that this instrument was produced before the patent was granted/published (1957 -1960).

If a tool is marked “patent pending” you can’t be sure that a patent exist.

Without the name of the inventor or a date it is difficult to find the patent. I searched on different ways but could not find a matching patent. ☹.

Later I found a “devil level” marked “patented” and **with two patent numbers**. Now it was very



easy to find the patents for this instrument. ☺

What a surprise when I stored the files in my archive: I knew these patents already since 2007, but did not remember them. (I get older!).

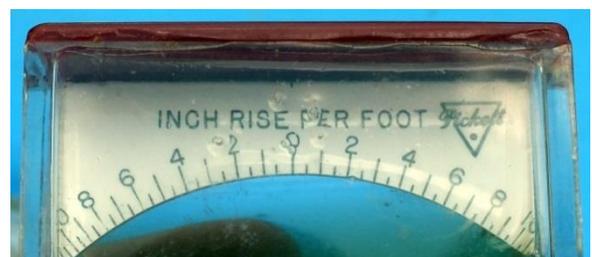
More about the patents you find in chapter 3.

The scales on the front a back show different units and allow different measurements.

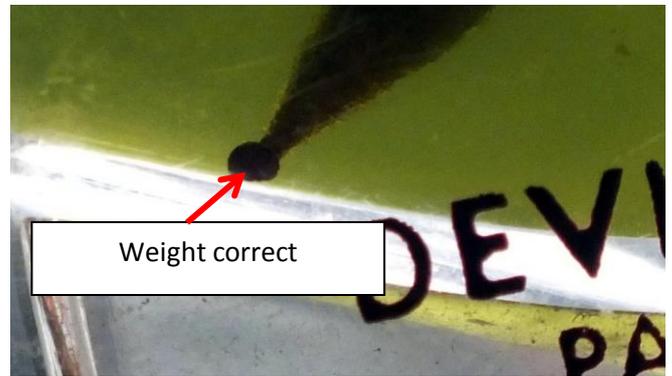
Front: „ELEVATION IN DEGREES“



The other side is marked: INCH RISE PER FOOT



Let's look at the **central/main part** of this instrument, the "small devil". It is a double cone from plastic that contents AIR in the upper part and METAL as weight in the lower part. In the tip is a ball (20) pressed in. The air lets swim the body so that the top points upside.



THE DOUBLE CONE WORKS IN THIS INSTRUMENT LIKE A PLUMB BOB. IT IS THE GUARANTEE FOR THE VERTICALITY. IT IS A "FLOATING PLUMB BOB" For advertising some instruments are colored and/or printed with company names.

The weight holds the devil in the V-shaped bottom of the instrument.

The "Devil" (the plumb bob) sits with the round ball down in a defined position (central point) in the V-shaped recess.

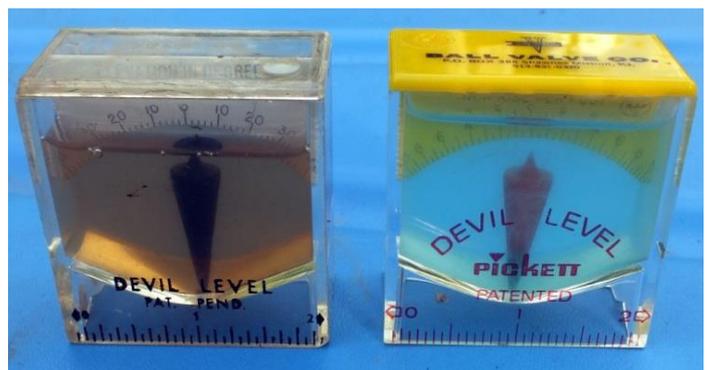
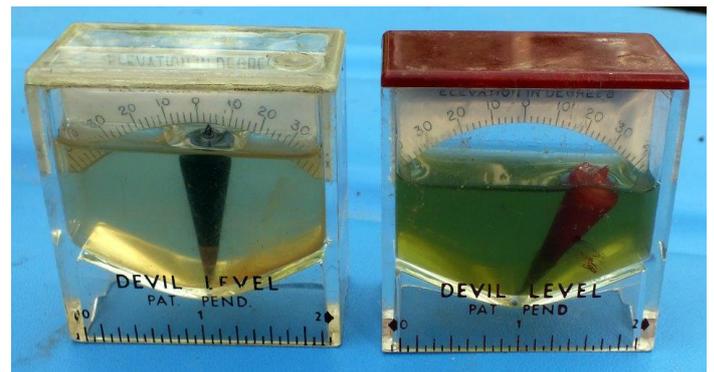
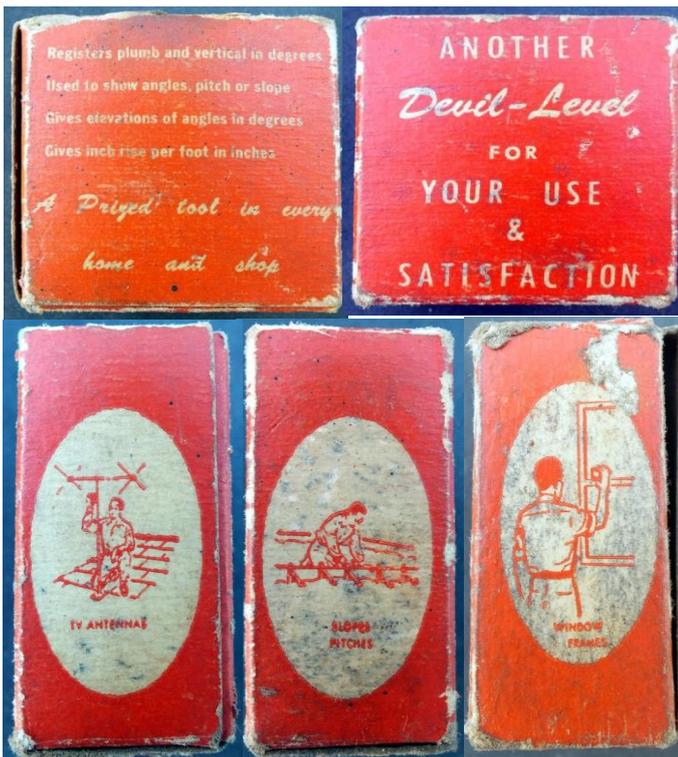
The air-filled upper part having a tip is pointing to the surface of the liquid. If you now put the instrument not horizontally, but keeps it on a slope, the top still shows to the water surface above the central point. On the arc-shaped scale, the corresponding value can then be read.

Maker is the company PICKETT in California. Pickett is also the owner of the patents. I think the devil level was **produced between 1956 and 1975**, but this period is not sure.



Below: text and use of the instrument on a box

Four of my six "devil levels":



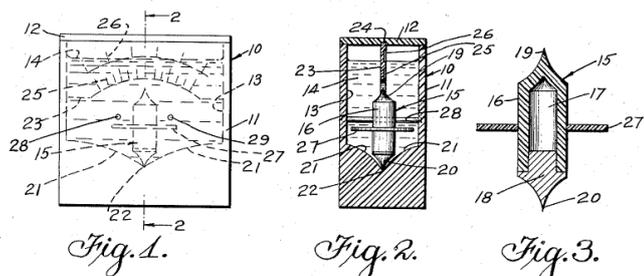
3. THE PATENTS

The history of the different patents: The first patent was US 2,841,880 granted to Christopher M. Golemon from Covina, California, in 1958 that was filed in 1954.

Processing time more than 4 years!

July 8, 1958

C. M. GOLEMON
LEVEL
2,841,880
Filed March 2, 1954



Golemon got the rights for the basic principle of a display part:

- - An elongate body
- - Air chamber in the upper part
- - Mercury as a weight below
- - Tip ends of the top and bottom
- - Floats in liquid

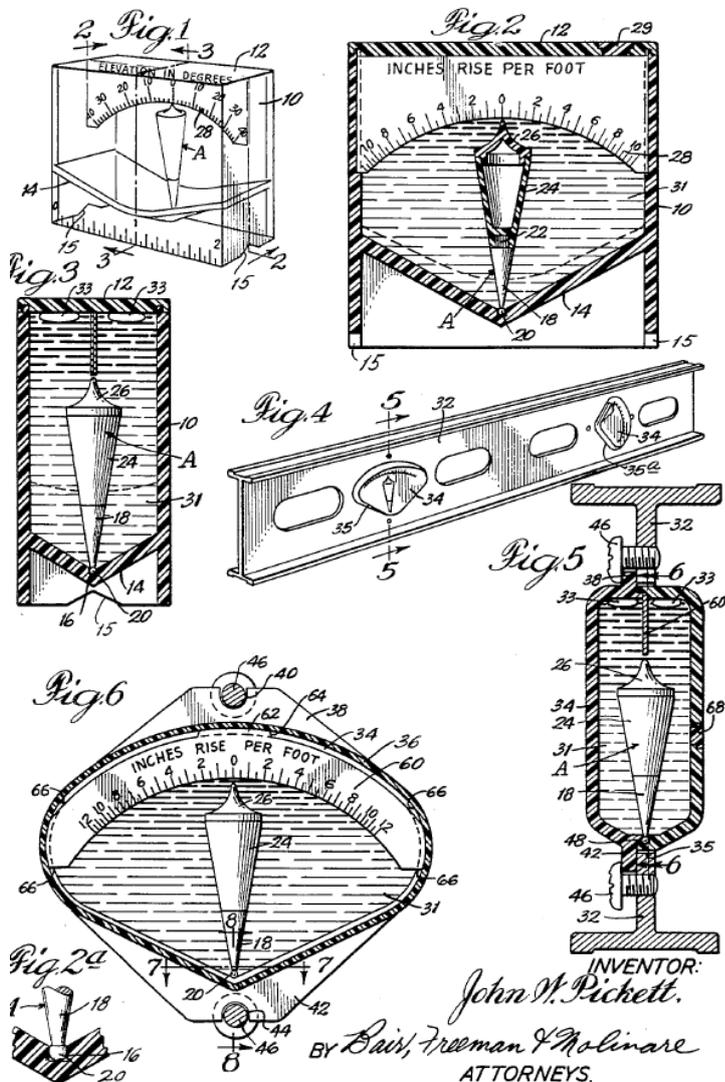
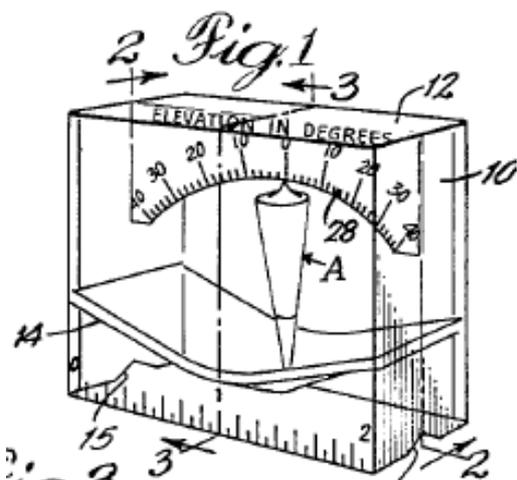
June 7, 1960

J. W. PICKETT
LEVEL
2,939,221

Filed May 13, 1957

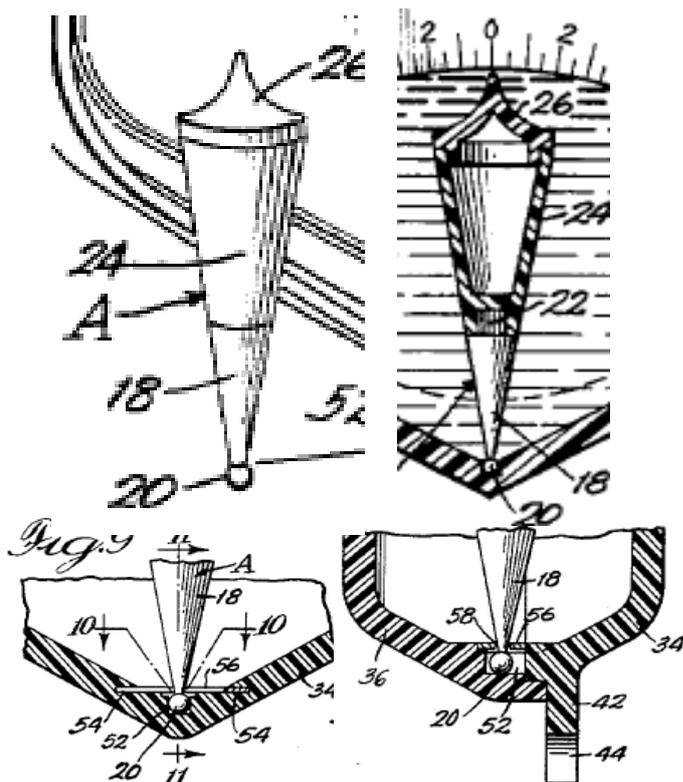
2 Sheets-Sheet 1

John W. Pickett from Altadena, California from Pickett Products Inc. seems to have heard (Unknown how) of the patent. Because he applied on May 13, 1957, (before the patent from Golemon was published) an own patent U.S. 2,939,221 that was accepted in June 1960 three years later.



INVENTOR:
John W. Pickett.
BY *Dwight Freeman & Molinare*
ATTORNEYS.

In this patent he proposed some embodiments / implementations of the "water level". He also wrote extensively on the peak and the shape of the floating devil.



In both patents, we find a **list with earlier patents** that were considered in the assessment. Let's have a closer look to some of them. (x)

References Cited in the file of this patent

UNITED STATES PATENTS

807,992	Barclay	-----	Dec. 19, 1905
898,349	Fielding	-----	Sept. 8, 1908
1,116,452	Lorraine	-----	Nov. 10, 1914
1,399,090	x Spencer	-----	Dec. 6, 1921
1,541,455	x White	-----	June 9, 1925
1,855,664	Budge	-----	Apr. 26, 1932
2,092,179	Nosal	-----	Sept. 7, 1937
2,249,728	Cross	-----	July 22, 1941
2,438,229	Price	-----	Mar. 23, 1948
2,653,389	Butterworth et al.	-----	Sept. 29, 1953

FOREIGN PATENTS

117,161	Great Britain	-----	July 11, 1918
182,540	Great Britain	-----	June 30, 1922

2,989,221

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References Cited in the file of this patent

UNITED STATES PATENTS

895,311	Stettler	-----	Aug. 4, 1908
970,729	Lingle	-----	Sept. 20, 1910
x 1,836,079	McBride	-----	Dec. 15, 1931
1,855,664	Budge	-----	Apr. 26, 1932
2,495,646	Schultes et al.	-----	Jan. 24, 1950
2,554,133	Von Arx	-----	May 22, 1951

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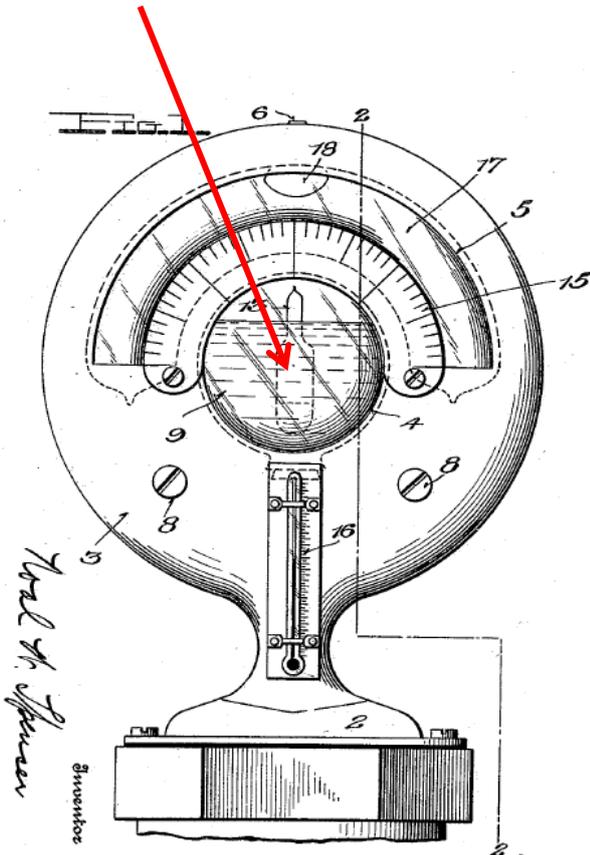
FOREIGN PATENTS

x 7,203	Great Britain	-----	Mar. 27, 1903
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OTHER REFERENCES

x	Popular Mechanics Magazine	for April 1956, page 95.
x	Serial Age Weekly,	May 3, 1920, page 257.

SPENCER 1921 US1399090 describes a floating plumb bob for the use in an airplane.



WHITE 1925 U.S. 1,541,455 describes a water level with a pointer that is held in the center by an elongated hole:

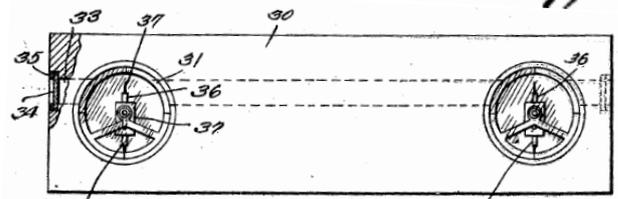
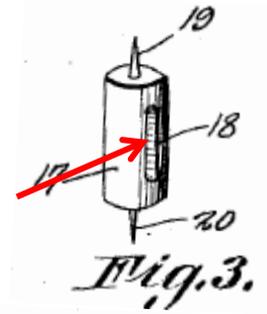


Fig. 6.

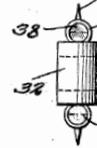


Fig. 7.

Inventor
G. C. White
By **C. A. Snow & Co.**
Attorneys

McBRIDE 1931 US1836079 shows a floating pointer fixed by a hinge at the bottom:

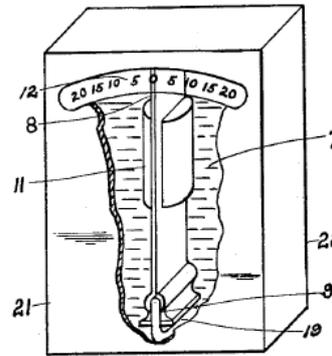


Fig. 3.

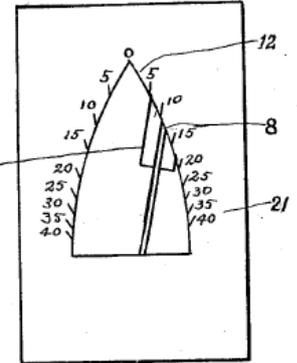


Fig. 4.

VON ARX 1948 US2554135 invented a plumb bob integrated in a surveying rod (ranging pole). It shows the verticality of the rod.

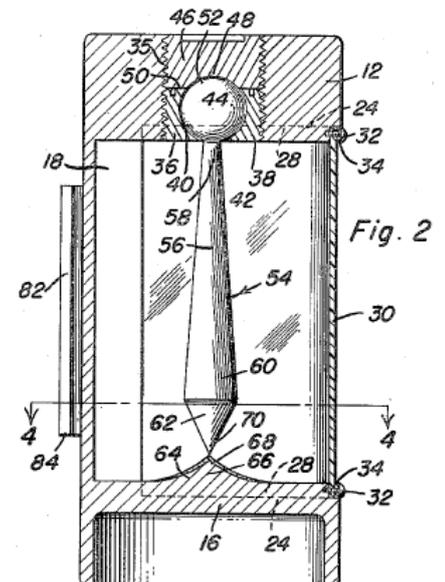
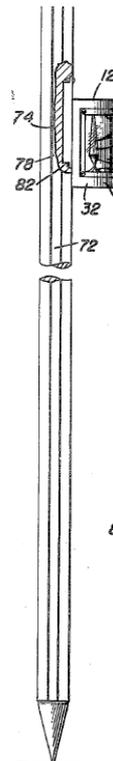


Fig. 2

The foreign patent from England **GB7203** from **1903, Theodor Hillmer** shows a floating plumb bob used in earth drilling equipment to show and register the inclination of the bore hole.

N^o 7203



A.D. 1903

Date of Application, 27th Mar., 1903

Complete Specification Left, 10th Nov., 1903—Accepted, 21st Jan., 1904

PROVISIONAL SPECIFICATION.

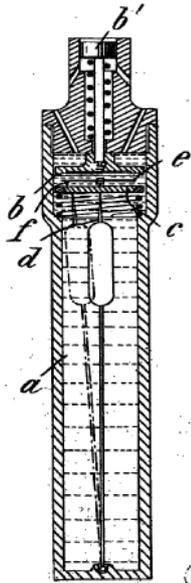
Improved Bore-hole Plummet or Deviation Recorder.

I, THEODOR HILLMER, Commercial Director, of the Actien Gesellschaft H. Lapp, of 11, Linden Strasse, Aschersleben, Germany, do hereby declare the nature of this invention to be as follows:—

For this purpose a plate from the top was pressed against the tip of the floating plumb bob, and then later read the angle.

Theodor Hillmer was a German and lived in Aschersleben in Germany.

More about “Plumb bobs used in bore holes” you will find in my newsletter WOLF’S PLUMB BOB NEWS 2009-12.



In the information from the patent offices are not only found references to earlier patents that were included in the review, but there are also indications in which newer patents the patent to **Pickett** was taken as a reference base.

This is eg. the case with the patent of **Marie Pierre Poitevin de Fontguyon** from Paris, France. His idea about a floating (inversed) plumb bob (eg. for use in dams) was patented in 1967, U.S. Patent **3,348,315**.

Oct. 24, 1967 M. P. POITEVIN DE FONTGUYON 3,348,315
 DEVICE FOR THE STABLE DETERMINATION OF THE VERTICAL ABOVE A GIVEN POINT
 Filed March 5, 1965 5 Sheets—Sheet 1

More about this kind of floating or inversed plumb bobs you will find in my newsletter 2010-12 PLUMB BOBS IN DAMS.

You should read this newsletter. ☺

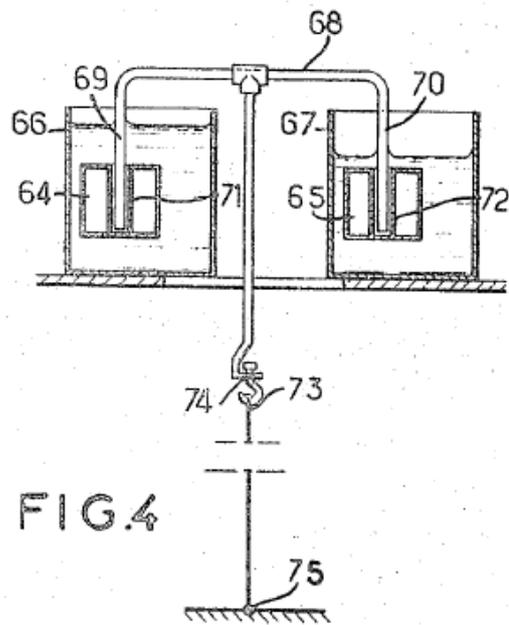


FIG. 4

INVENTOR

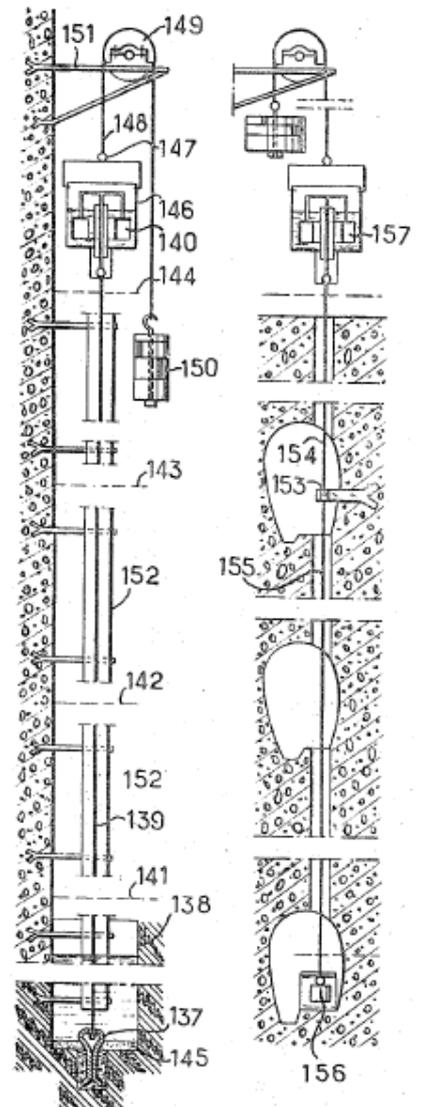
MARIE PIERRE POITEVIN DE FONTGUYON

By Iwan S. Thompson

ATTY.

FIG. 11

FIG. 12



In this case the wire is attached/fixed in the rock below the dam, and then guided along measurement instruments in the dam to the top. There, the wire is fixed to a float member that swims in a trough, which is rigidly fixed to the dam. By this way you can make visible changes in the dam in relation to the rock underneath.

In July 1959 it is offered in the Sarasota-Herald-Tribune for \$ 1.95.

THE DEVIL LEVEL IN THE WORLD WIDE WEB

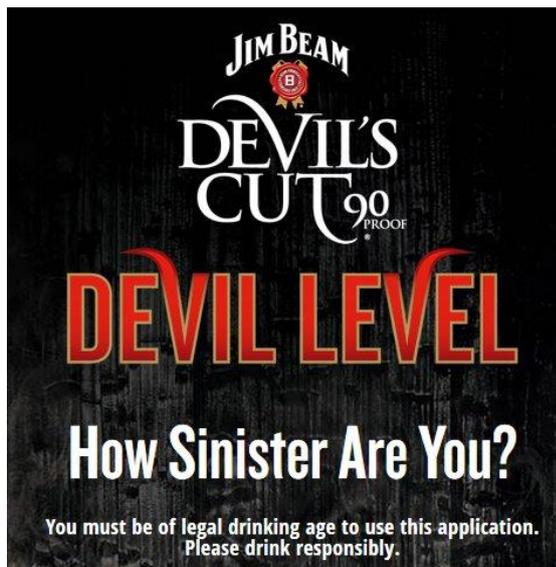
In the www the devil level is hard to find. Documents are very rare.

The term “devil level” is also used in other areas like religion or music (where Rana presents a song called “devil level”).

JIM BEAM is advertising with the slogan: ☺

How sinister are you?

You must be of legal drinking age to use this application. Please drink responsibly.



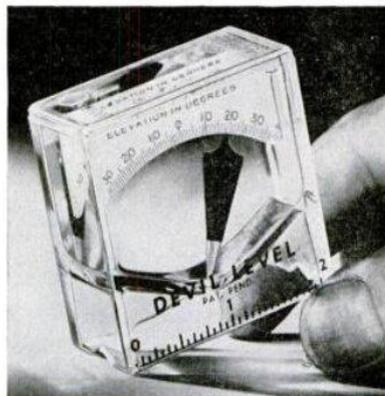
I found “our” devil level some times on Ebay in the U.S.A. and bought them.

In the literature, only **some ads** occur.

In the famous magazine **Popular Mechanics** we find in April 1956 this advertising:

Level's Floating Pointer Measures Tilt in Degrees

You can measure degrees of tilt with a new level that has the size and appearance of a big ice cube. An air-filled pointer immersed in oil instantly flicks to vertical when the level is tilted. Read from the side, it has two faces, one for degrees and another for feet. Suitable for leveling pictures and furniture, for terracing, roofing and for registering roll and pitch of boat.



APRIL 1956

95

DEVIL LEVEL

A precision instrument for home craft and professional use — new, intriguing, an excellent gift. Level window frames . . . level pictures in your home, etc. The Floating Bob Principle.

ONLY

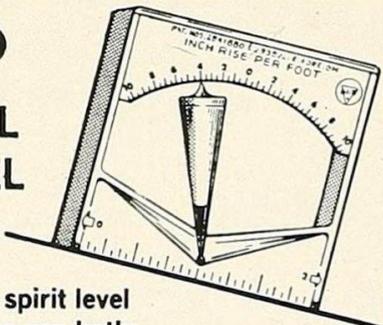
\$1.95



In February 1974 it is described in the newsletter THE CARPENTER as **NEW** and offered for \$2.25.

NEW

DEVIL LEVEL



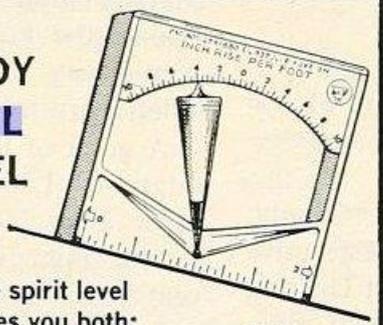
The unique spirit level that gives you both:

- The rise in inches per 12 inches of run. **Only \$2.25**
- The angle of incline in degrees.

Excellent for rafter and stair calculations. Use the **DEVIL LEVEL** on any job involving rise or incline. 2" x 2" Safe arrival guaranteed.

In July 1974 the price rises to \$ 2.75.

HANDY DEVIL LEVEL



The unique spirit level that gives you both:

- The rise in inches per 12 inches of run. **Only \$2.75**
- The angle of incline in degrees.

Excellent for rafter and stair calculations. Use the **DEVIL LEVEL** on any job involving rise or incline. 2" x 2" Safe arrival guaranteed.

4. SOMETHING TO SMILE ABOUT

On eBay U.S.A. regularly is offered such a shoe with an integrated plumb bob. Another example of plumb bobs used by artists:

JUST THE RIGHT SHOE CUSTOM MADE 25115 MINIATURE COLLECTABLES



"This auction is for one #25115 Custom Made Shoe in the original box with paperwork and certificate of authenticity in excellent condition. Official JTRS sticker on the bottom of the sole. For those who like their fashion custom made, this clever shoe really measures up. Craftswomen of all kinds will appreciate the tape measure ankle

5. REMARKS

Last but not least: GOOD NEWS:

NEXT YEAR I WILL CONTINUE WRITING AND PUBLISHING MY MONTHLY NEWSLETTER ABOUT PLUMB BOBS AND RELATED INSTRUMENTS.

DON'T FORGET THE NEXT MEETING IN JUNE 2014 IN PISA, ITALY!

I WISH YOU A MERRY CHRISTMAS AND A HAPPY NEW YEAR!

Wolf

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

On subpage "download publications" or on page "WHAT'S NEW?"

Remarks and contact by email: plumbbobwolf@t-online.de

Enjoy it

Wolf

Ps. For the members of our group **the whole world turns around the plumb bob** as shown in our logo right. ☺

strap fastened with a designer's triangle and golden screw. To keep things "on the level," a carpenter's plumb bob dangles from the heel. This shoe is from a smoke and pet free home. Just The Right Shoe miniature collectibles are known for brilliant design and authentic look. No other artist has captured the glamour and excitement of footwear fashion like Raine. Putting her best foot forward, award-winning artist Raine offers a delightful commentary on art, culture, and taste with her popular collection Just the Right Shoe. From earliest memory, Raine has always been passionate in the pursuit of her art. Expanding her love of art into three dimensions, she created large scale works for public spaces and showed limited edition bronzes in galleries before creating the miniature shoes that are now part of the successful Just the Right Shoe™ line. What wonderful collectable that are both topically interesting and intricate art as well. The unseen anatomy of the foot, with the creasing and wear on the shoe, creates the illusion of this tiny sculpture as having been worn by someone. The level of detail: satin, suede, rubber, cork, all executed in exquisite detail complete the realism, allowing collectors to enjoy an amazing shoe fantasy collection."



Logo of the International Plumb Bob Collectors Association IPBCA