#### **WOLF'S PLUMB BOB NEWS 2010**

Issue 06 June 01, 2010

"FROM THE FANS OF THIS NEWSLETTER- Highlights from my Readers' Collections"

Editor: Wolf Ruecker www.plumbbobcollectors.info

### HIGHLIGHTS FROM MY READERS' COLLECTIONS

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#### 0. INTRODUCTION

Dear Fellow Collector,

Over the years I have attempted to make inroads on the dissemination of information on the subject of plumb bobs. At first it was unclear how many men had been captivated by the appeal of these simple tools. In time I have discovered that there is a significant community spread worldwide that have for one reason or another have assembled collections of examples, sometimes rare, sometimes mundane, of this universally known tool.

One of the sad realities of plumb bob collecting is that it is a somewhat isolated activity. Although of late there has been a sharing of information on this topic, it is relatively rare for most collectors to be able to share the depth of their collections. For this reason I have embarked on a plan, a questionnaire about special plumb bobs from the collections of my readers that for one reason or another, are noteworthy.

Most contributors found it difficult to isolate just one example to illustrate each question or topic so I was pleased with the number of illustrations each respondent provided. The result shows the diversity of our hobby.....

This Newsletter is not an end to this inquiry. If YOU want to contribute too, feel free to send me an email with your own special selections; they will be posted in future editions. Thank you.

#### Remark:

In the text I use the following initials from collectors who sent me back the answers and allowed me to publish their names:

**BR** = Bernard Ridens USA; **DB** = Dogan Basak TR; **DR** = Dale Riedesel USA; **EK** = Eric Klimp NL;

JA = José Asturias Rudeke GT; JMT = Jean-Marc Tranchant FR; KB = Ken Burris USA; KHR = Karlheinz Riess GER;

MM = Michel Mailhot CA; ND = Nelson Denny USA; RC = Riccardo Chetoni I; DJ = Dick (Richard) Jones GB;

WRo = Wayne Robbins USA; JW = John Wittersheim USA; WRu = Wolf Rücker GER

In the **FOOTNOTES** on the last page you will find the publications, where you can read more details.

Here are some answers from the readers of the PLUMB BOB NEWS:

### 1. YOUR OLDEST plumb bob?

**DB**: bought from Austria, according to the seller from c. 4<sup>th</sup> century AD, 370gr



**DR**: this bob is an Ottoman from Turkey and I assume very old <sup>1</sup>



EK: My oldest bob is a detector find from Amsterdam. I think it is about 16/17th century and made of lead.



**JA:** No significant old plumb bob. I do have a c. XIV archipendolo.



JMT: believed to be Roman



**KB**: 1-3 AD Roman Plumb



**ND:** FOUND AT ANCIENT CITY OF NIKOPOLIS AD ISTRUM IN THE EASTERN ROMAN EMPIRE PROVINCE OF MOESIA INFERIOR. (PRESENT DAY BULGARIA) c. 3<sup>rd</sup> Century AD



**DJ**: This is my oldest 1880's or there about's.



**RC:** oldest found in Athens, Greek. Stone. 2500 years old ???



# 2. YOUR BIGGEST / HEAVIEST plumb bob?

**DB**: from British shipyards, 7kg



WRo:

The Laird plumb bob <sup>2</sup> is my largest bob and weighs 8 pounds, 2 oz. I feel it is also my most beautiful one, and my most valuable.



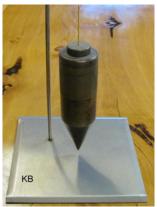
**DR**: This bob is a mining or shaft bob it weighs 45 pounds and is 18 inches tall.



EK: Biggest one, 10 inches



**KB**: 10" long, 12 lbs used on 10 story bank building in the 60's in Albuquerque, NM



**DJ**: talest, biggest, heaviest









**ND:** from the seller: As for the plumb bob (16 in long), in the earlier years we used it mostly on bridge and trestle projects to transfer centerline control to the ground in connection with re-driving wood and steel bridge pile bents. Also used it over some of the coastal lakes on the Coos Bay Branch between Reedsport and CoosBay. This was usually necessary in order to transfer centerline when replacing upper portion of bents above water with fabricated frame bents. The piling below water level was sound so existing bents would be cut-off when water level was lowest in the lakes and the new frame bents would be set on the freshly cut-off piling. From talking to some of the older guys, the plumb bob was probably around as far back as the 20's or 30's, maybe earlier.

ND: Named "ESMERALDA" for her voluptuous and exotic proportions, she intimidates my collection with never ending demands for group encounters. She's hollow and over 18" from tip to toe. Her purported use, construction erection. (Arrow shows the smallest bob)



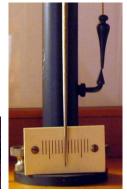
### 3. YOUR SMALLEST plumb bob?

DB: on a business card: 23mm



**BR**: The small one I mentioned is in fact in the analytical balance photo I sent you a year or so back. (German balance August Sauter, sold in Chicago)





**DR**: this bob is a charm, it weighs 0.05 oz. and is 0.40 inches tall



**EK**: Smallest bob, 3 cm, also a detector find



**JA**: From a Keuffel & Esser optical square (Ø 3/4", 1")



**DJ**: I am not sure if this is a bob or is it a mouse for threading the cords through box frame windows.



WR: I have a lot of very small ones. Most from balances / scales or parts of old instruments.



# 4. YOUR MOST BEAUTIFUL plumb bob?

DB: 185gr Ottoman Type 1



**DR**: this bob is English, weighs 69 oz., is 7 3/4 inches tall, Plymouth dock, animal and floral etchings.



EK:
Most beautiful,
sorry I got three
FAVORITE BOBS
the first 2 with
their original
spacers.



### **JA**: Mint and boxed largest Leistner PB,<sup>4</sup>



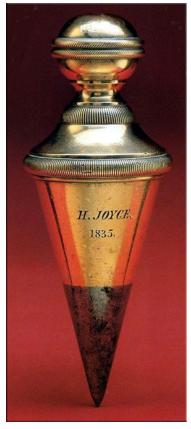
**KB**: Ivory w/ sterling silver point



**DJ**: With so many bobs it is very difficult to select the most beautiful.



ND:



**KHR**: some home made brass plumb bobs from a very good friend





# 5. YOUR MOST UNSIGHTLY plumb bob?

**DB**: 700gr



DR: these 2 bobs are what I consider the ugliest. The longer one is home made with a dowel center and a cut off nail as a point.

The other one is a lead bob which looks like I poured it.



EK:



**JA:** More than "Ugly" is a useless, stupid and expensive PR

**Remark WR:** If you want to know, why he is so angry about it, ask me. ☺



LASERMARK plumb bob

**KB:** I don't think this was meant to be a plumb bob, I think it might have been part of a steam valve. It has five different patent dates stamped on the side from 8-4-1875, \*\*\* 1875, 7-1-1881, 6-28-1885, & 1-12-1888. Under the dates is \*\*\*mer & Poole, Philada. Notice how lopsided it is.

**Remark WR**: The **story** of this plumb bob you'll find in answer # 10





**DJ**: This one has been chosen because it has a hexagon headed stud as its final.



ND: OWNER CONTRIVED "OIL CAN" WITH WINDING BOBBIN INSIDE



JMT:



: no comment



# 6. YOUR MOST UNUSUAL / EXTRAORDINARY plumb bob?

**DR**: this bob is hollow with inserted batteries and a small lamp so that when you hold it by the string it shines a lite thru the hollow point at the place you want to mark. It is called a brass plumb lite by Griffin Industries. Remark WR: GRIFFIN US patent from 1986



EK: Looking forward to it......

**JA**: Köln 2,010 commemorative plumb bob

Remark WR: José designed this very interesting plumb bob for the 3<sup>rd</sup> Plumb Bob Collectors Meeting in Cologne, Germany Oct 1<sup>st</sup> – 3<sup>rd</sup> 2010 More about it on the meeting in Cologne

JMT: some
friends made it for
my birthday, with a
granite pavement!





**KB**: Reed & Knaus Auto Bob US Pat 3027977 Knaus 1962<sup>6</sup>



**DJ**: This one is made of some sort of white metal in the shape of a diamond with a hard steel point.



**Remark Wolf:** All extraordinary (except the COLOGNE-PLUMB-BOB from José Asturias Rudeke) – and whimsical - plumb bobs that we have in our collections are nothing in comparison with the work of Prof. John Wittersheim. Currently, a Professor of Art at Siena Heights University, in Adrian, Michigan. He gave me the permission to use his pictures for the NEWS. Below some samples of his work of 30++. More you can find on

http://www.johnwittersheim.com/

JW: I'm a sculptor / educator
who's principle subject has been
the plumb bob. As you can tell

from the site I've been producing, but also collecting, plumb bobs for over thirty years.



















#### 7. YOUR "DARLING"?

**DB**: 648 gr, Ottoman<sup>7</sup> Type 3



**WRo**: Also, I am attaching a couple of photos of another very old bob---most likely French, which I really appreciate. To my eye, it has a great shape, and is a favorite of mine.



**DR**: My darling is a steel bob I picked up with a home made leather holder.

Don't know why but I like it.



EK:



JA:



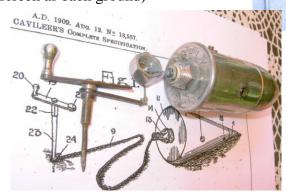
**KB**: Unused A.L. Thompson # 5 Lowell, Mass



**DJ:** Again it is very difficult to choose which one is your favourite one, but it must be this one because of the ebony band around the middle. It also doubles with my collection of ebony tools.



WR: It is an "Al Thompson #5" (I like this shape) followed by a RIDGELY 8 patented (US909846 CAVILLEER 1909) chalk line / plumb bob combination. I use a photo of the Ridgely on my computer screen as back ground)



ND:





# 8. YOUR MOST EXPENSIVE plumb bob?

**DB**: 550£, 366gr. Patented WIESENER Plumb bob: <sup>9</sup> + <sup>10</sup>





**DR**: this bob is a Buff and Buff mining plummet <sup>11</sup>, with a wick in the top for lighting and a body which would be filled with oil. Cost was \$1649. The second most expensive was \$481.



**EK**: Most expensive one, from France - bought on E-Bay



**JA**: It will be the triple PB Köln 2,010 commemorative



**KB**: KNAUS US PATENT 3037977 from 1962 12



**DJ**: This one cost me £ 200.00 sterling when I bought it about 10 years ago.



ND: BOXED YOUNG AND SONS PLUMMETS 13



# 9. YOUR MOST INTERESTING plumb bob?

**DB**: found by a treasure hunter using metal detector in the East Turkey



**DR**: This bob is the standard (recent) plumb Robert. <sup>14</sup>



**DR**: this bob is a paperhanger bob sold as a promotional item (I think) Veritas made in Canada.

Remark WR: more see 15



EK: Most interesting bob, bob and spacer are from the same material and by screwing the spacer on the bob it feels like putting a silencer on a gun (9)



**JA**: It will be the triple PB Köln 2,010 commemorative



The text in Latin around the "equator":
"TERTIUS PLVMBIA ORBIS
CONGREGATIORVM SYMPOSIVM
GERMANIAE COLONIA CLAVDIA ARA
AGRIPPINSENSIVM \* MMX"
Means: 3<sup>rd</sup> PLUMB BOB COLLECTORS
MEETING IN THE GERMAN COLOGNE 2010

**KB**: Mound Indian culture from the Mid Ohio river valley about 900 AD



**DJ**: E.R. Watts optical bob that was part of a surveyors Transit.



### 10. YOUR plumb bob with the **BEST STORY or HISTORY?**

**DB**: used for the construction of minarets. 2140gr



JA: My main master in life: José Luis Franco Carrazco. Mexican Renaissance man, had the c. XIV Archipendolo hanging on his office door.

It was his most precious asset! He told that it was a Master Mason's tool (Architect) from



the Strassburg Masonic Lodge, according to the geometrical grid that was used in its design (Matila Ghyka).

Master masons had to prove their identity, besides other things, pointing the origin's center of a circle, with a particular lodge's grid (in this case equilateral triangles, Strassburg), explaining how the tool design was developed.

When I visited him, I always admired the big "A".

He got cancer in his 80's, the last time I saw him, before I went out... through the mentioned door... he put the big "A" inside my coat... and we embrace in a long farewell...! José Asturias Rudeke

About plumb levels see <sup>16</sup>

**KB**: This is a pair of Buff & Buff earrings that were given out to the ladies by Mary McAllister. The story is Mary caused the breakup of Buff & Berger and that Louis Buff



had to make Mary a sales Engineer to "officially" keep her around. The men received the famous small Buff watch fob plumb bob.



WRo: For the "LAIRD-story" see NEWS 2009-06 English Plumb Bobs Part 2



**WR:** After KB sent me his most unsightly plumb bob with the FIVE PATENT DATES, (see question #5 and figure right) I tried to find out the different patents. With the help of Bruce Cynar and new close up photos we found the correct patent dates. You know, it must be a Tuesday, because all patents of the last week were dated on the next Tuesday. Now Bruce searched in a



local library all patents of these dates, but did not find any patent that looks similar to a plumb bob. His conclusion: "I've had a nagging suspicion ever since seeing the photos, that this plain, everyday bob did not qualify for even a single patent, much less 5 of them." So we thought this would be one of the unsolved secrets of "patented plumb bobs". Some days later I started a new search on Google patent search and finally I found one name that came up on all five dates between 1874 and 1886: SCHOFIELD. This is the name that we could not read clearly. All patents given to Schofield had something to do with FAUCETS and COCKS.

- Aug. 11, 1874 patent 154,090 STEAM **GAUGE COCKS**
- May 11, 1875 patent 163,263 FAUCET
- July 12, 1881 patent 244,320 DEVICE FOR ATTACHING FAUCETS TO **BARRELS**
- June 23, 1885 patent 320,705 FAUCET
- Jan. 12, 1886 FAUCET

A look to one of the drawings of the last patent gave us the solution. All instruments had a HANDLE where the patent dates were stamped. One of the handle was broken off and a worker (or

(No Model.) P. SCHOFIELD. FAUCET. No. 334,291. Patented Jan. 12, 1886. FIG.1.

anyone else) modified this part to a "patented plumb bob" with a new thread and screw at the top and some work with the file where the handle was broken. See below my combination of the plumb bob and the drawing.

KB: Wolf,

You are right on with your findings. I can't believe the great expedition I started. I have had this plumb for many years and now I have a great story to go along with it. .... I would like to thank you for the great effort in solving this mystery. I have a great belief in the fact that this is what a group of collectors should be about. It is a collecting moment that I will always remember and file away with the thought of having my chance to help a fellow collector when called upon. Again Thanks.

**DJ**: A set of 3 bobs made by apprentices at Rolls Royce Darby for use within their own works. There is a stores commodity # on them, as with all things at Rolls Royce everything had to be accounted for at the end of your working shift.



**WR**: MERCEDES ordered 1980 a lot of 15,000 plumb bobs for the "BAUMA '80" (International trade fair for construction machinery) in Munich.



The factory Gampper produced them in "silver plated" and nearly 2,000 in "gold plated". The base was a common 8 oz (250 gr) zinc-diecast plumb bob with iron tip<sup>17</sup>.



For the golden cover it was sent to Idar-Oberstein, the German Capital of Gemstone Industry nearby. These plumb bobs were used as a present (conversation tool) to the clients of Mercedes on the fair BAUMA '80 in Munich.

Later some of the remaining (golden) plumb bobs were used for special events, like the laying of the foundationstone of a new Mercedes sales office in Mainz 1986



#### ND:

MR. GRIFFIN (see figure right), WITH SIGNED GRIFFIN PATENTED PLUMB BOB 18. I HAVE THE SIGNED BOB IN MY COLLECTION.





## 11. Which plumb bob TRAVELLED THE LONGEST DISTANCE?

**DB**: travelled from Germany to New Zealand and then to Turkey. 784 gr.



**DR**: I would guess it came from Turkey to Southern Idaho, USA.



**EK**: **Longest distance bob**, it is the same as my darling bob, coming from the North of the USA to the Netherlands.

**JMT**: from Beijing China to France



**KB**: This is a Large A.L. Thompson that from Lowell, Mass. Ended up in New Zealand and then I purchased on Ebay and it ended up in Albuquerque, NM USA



**DJ**: Surveyors Service Co. Los Angeles. From California U.S.A. to Wales.



Pencil bobs (left: patented)

inquisition.

WR: I bought from Australia a 24 oz brass plumb bob marked FHP and produced by Gampper Germany in the 1930s for the tool dealer F.H.
PRAGER from Remscheid-Lüttringhausen.
A trip around the world back to the roots.



More about the markers see <sup>19</sup>

12. YOUR MOST WHIMSICAL plumb bob?

**DR**: This bob is just a brass egg shaped bob.



**EK**: I think I'm going to make that one myself soon.

**WR:** I think some of the art work of Prof. John Wittersheim (see Question # 6) could also be placed here. ☺

**ND:** DECORATED WITH AN ARRAY OF CARNIVAL ANIMALS

Some more from the ND-collection



"Plumb bob with propeller, helps bring the plumb bob to rest." ☺

Plumb bob as tool of torture during









### 13. YOUR RAREST plumb bob?

DR: The brass bob is what I believe a W & L E Gurley. I purchased a 1880 surveyors transit and this bob was in it, I believe that it is original but I can't prove it.

The second on is old cast with a Robert Duplex Gauge Cock. How old, don't know

EK: Rarest bob, a detector find from Amsterdam I think it is about 16/17th century and made of lead





**JA**: It will be the triple PB Köln 2010 commemorative





**DJ:** The Edward Preston with the pierced Edward Preston logo on the reel, as well as being stamped on it



**WR:** A chalk line / plumb bob combination from Keller & Knappich from Augsburg Germany. Produced in the 1910s. <sup>20</sup>



**ND:** DATED AND INSCRIBED PLUMB BOBS ARE RARE ESPECIALLY IN IVORY



More of these fine tools you can see on <sup>21</sup>

### 14. YOUR VERY FIRST plumb bob?

**DB**: Ottoman Type 2



**BR**: At age four, 1942, I was caught playing with my dad's machinist bob (a mercury filled Starrett<sup>22</sup>) and got my fingers smacked. That taught me that there is something special about



such objects. I have that specific bob today and it gives me very special memories. I started collecting bobs at age 15. I could not afford to buy the really neat bobs that I would come across. I do have 525 very common but different bobs. Remark WR: Photo right is not this original plumb bob.

**DR**: Being a surveyor I've had many plumb bobs since about 1955, but this one probably got me started. I found it in an old tool box under a cabin. Purchased in northern Idaho in about 1963.



EK:



**JA**: Lost long time ago. I was an architect before becoming a collector. It was a WILD HEERBRUG surveyor PB, included with a 1,962 T1 theodolite.

JMT: It's the reason of my colloection, When I bought it, it was the first time I saw a Plumb bob different of the "cylindrics"...



**MM**: given by my grandfather



**DJ**: It is my oldest and first bob.



**WR**: My "very first plumb" bobs for my collection were twins!

This morning I saw very different shapes of plumb bobs on a local flea market and these two where from brass, a not very common material for plumb bobs in German. Most of the plumb bobs are from iron, lead or zinc-die-casted.



**KB**: No picture, but was 1978 as I started the sheet metal worker apprentice program, I wanted a nice Plumb bob so I bought a nice brass bob at the flea market, which is still in my tool box today. I used to tease my dad as to the poor quality of the plumb bob he carried in his tool box and he asked me one day why I didn't remember it. Turns out I had made it in 9th grade metal shop.

Remark WR: really a nice story. ©©©

# 15. Which plumb bob would you most like to add to your collection?

Now we know what special plumb bobs exist in some collections. Very interesting is now to know which plumb bobs our Fellow Collectors want to add to their collection.

**DB:** I want to get an Italian medal from the 17<sup>th</sup> century showing a plumb level. A very high symbolic scene.





Description from a BALDWIN auction 23.

**440** Cosimo III de' Medici (1642-1670-1723), Grand Duke of

Tuscany, cast Bronze Medal 1684, draped bust right wearing breast plate with image of Hercules fighting the Laernean Hydra, COSMVS III D G MAGNVS DVX ETRVRIAE VI, *rev* Cosimo III stands dressed as a Roman general, pointing to a **plumb line** held over an altar by a crowned female, behind them a circular temple on whose architrave the word PACI, in exergue SIC STABIS, 90mm (V&T 35; M&E *Lankheit* 121). This highly symbolic reverse is designed to represent the Grand Duke's political impartiality

An extremely fine contemporary cast with brown patina. £400-600

WRo: Your question is a hard one for me to answer, as I am not looking for any specific type of bob. I am visually oriented when keeping an eye out for my next bob. It takes me a couple of seconds to make up my mind if I like a certain one or not. I appreciate unique shapes and styles, some being very beautiful over others.

**JMT**: My wish to add to my little collection an ancient plumb level used by many works.

**EK**: An original Roman plumb bob like on the photo right.



**MM**: a dream for me that I'll probably realize someday.

I want to make a plumb bob in bronze or stainless steel 24-inch diameter by 3 or 4 feet long, to hang outside in my garden, I'll run in a foundry and machine do its would fantastic

**ND:** Actually, I have no particular wish for a specific bob, now that "Joyce" has been captured. Any American mechanical would be gladly accepted, patented preferred.

However, I do want an original letter from Paul Leistner to J. O. Heimbach thanking him for the idea of adding plumb bobs to his list of manufactured items. I root for the underdog.

**WR**: On my "*list to Santa Claus*" I have four plumb bobs:

• A Roman plumb bob like on the photo right <sup>24</sup>



• A Russian <sup>25</sup> plumb bob like this one





 A pair of mining plumb bobs in a wooden box



And last but not least a German "Hamburg plumb bob" from the 1820s <sup>26</sup>





Did **YOU** already answer the questions above for **YOUR** collection?

Good luck.

#### A REMARK:

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 and future publications on my website www.plumbbobcollectors.info

Remarks and contact by email:

plumbbobwolf@t-online.de

Thank you for your interest! Wolf Ruecker

#### **B FOOTNOTES and SOURCES**

All publications are available on www.plumbbobcollectors.info

<sup>&</sup>lt;sup>1</sup> WOLF'S PLUMB BOB NEWS 2009-08 Ottoman and Anatolian Plumb Bobs

<sup>&</sup>lt;sup>2</sup> WOLF'S PLUMB BOB NEWS 2010-05 English Plumb Bobs Part 2

<sup>&</sup>lt;sup>3</sup> WOLF'S PLUMB BOB NEWS 2008-10 Wooden and metal spacers

<sup>&</sup>lt;sup>4</sup> See www.plumbbobcollectors.info on page LEISTNER and HEIMBACH

<sup>&</sup>lt;sup>5</sup> WOLF'S PATENT NEWS 2007-08 + update Light / Laser plumb bobs

<sup>&</sup>lt;sup>6</sup> WOLF'S PATENT NEWS 2007-46 Mechanized plumb bobs

<sup>&</sup>lt;sup>7</sup> WOLF'S PLUMB BOB NEWS 2009-08 Ottoman and Anatolian Plumb Bobs

<sup>&</sup>lt;sup>8</sup> WOLF'S PATENT NEWS 2007-22 Combination with c halk lines 2

<sup>9</sup> WOLF'S PLUMB BOB NEWS 2010-05 English Plumb Bobs Part 2

<sup>&</sup>lt;sup>10</sup> WOLF'S PATENT NEWS 2007-47 Mechanized plumb bobs

<sup>&</sup>lt;sup>11</sup> WOLF'S PATENT NEWS 2007-15 and WOLF'S PLUMB BOB NEWS 2009-03 mining plummets

<sup>&</sup>lt;sup>12</sup> WOLF'S PATENT NEWS 2007-46 Mechanized plumb bobs

<sup>&</sup>lt;sup>13</sup> See www.plumbbob.de on page EXHIBITIONS / DISPLAY the article: How collectors display their collections

<sup>&</sup>lt;sup>14</sup> WOLF'S PATENT NEWS 2007-26 Barbara and Robert (figural plumb bobs) and WOLF'S PLUMB BOB NEWS 2009-10

<sup>&</sup>lt;sup>15</sup> WOLF'S PATENT NEWS 2007-04 and 2007-39 VERITAS Update

<sup>&</sup>lt;sup>16</sup> WOLF'S PLUMB BOB NEWS 2009-01 The plumb levels

<sup>&</sup>lt;sup>17</sup> Production of this type see WOLF'S PLUMB BOB NEWS 2008-01 Production of plumb bobs

<sup>&</sup>lt;sup>18</sup> WOLF'S PATENT NEWS 2007-08 + update Light / Laser plumb bobs

<sup>&</sup>lt;sup>19</sup> WOLF'S PLUMB BOB NEWS 2008-01 Production of plumb bobs

<sup>&</sup>lt;sup>20</sup> WOLF'S PLUMB BOB NEWS 2008-11 History of chalk lines, snap lines, sumitsubo

<sup>&</sup>lt;sup>21</sup>See www.plumbbobcollectors.info on page SPECIAL PLUMB BOBS or directly: http://plumbbobcollectors.info/58143.html

<sup>&</sup>lt;sup>22</sup> WOLF'S PATENT NEWS 2007-31 Mercury of lead filled

<sup>&</sup>lt;sup>23</sup> http://www.baldwin.co.uk/auction64/Auction-64-MichaelHall-Collection-part-3.pdf

<sup>&</sup>lt;sup>24</sup> Photo from the collection of Hans-Tewes Schadwinkel

<sup>&</sup>lt;sup>25</sup> WOLF'S PATENT NEWS 2007-40 Russian plumb bobs

<sup>&</sup>lt;sup>26</sup> WOLF'S PLUMB BOB NEWS 2008-06 German plumb bobs