0. INTRODUCTION

Dear Fellow Collector,

As a specialist in patents and patented plumb bobs, I feel I must devote at least one issue a year to the subject of patents. Unfortunately I forgot it last year 😞.

Today we will see those patents celebrating their centennial birthday, filed or issued in the year 1909 or 1910. These patents were issued for plumb bobs or instruments which incorporate a plumb bob.

Since I am also collecting CHALK LINES I added some CHALK LINE HOLDER PATENTS. A

Only few of the following patents were mentioned in my WR PATENT NEWS 2007, so the rest is new material to my faithful readers.

- FR 406122 SCHOTT (France) 1909 fil à plomb rationnel. The rational plumb line.
- US932218 WILSON 1909 REEL FOR PLUMB BOBS
- US927790 HALL 1909 CHALK LINE HOLDER
- US995938 AIRESMAN filed 1910 PLUMB BOB
- US995872 JOICE filed 1910 PLUMB BOB
- US971752 HULL 1910 LEVELLING AND GRADING INSTRUMENT
- US944654 BERGER 1909 MINING TRANSIT CENTER FINDER
- US916608 SCHMIDTKE 1909 SENKLOT
- US922171 LOEVEN 1909 PLUMB BOB
- US921302 STARR 1909 LINE CHALKER
- US953131 FERRIS 1910 SHAFT CENTERING DEVICE
- US909846 CAVILEER 1909 PLUMB BOB AND CHALK LINE HOLDER
- US947892 EASTMAN 1910 CHALK-LINE HOLDER
- US1004443 LAUT 1911 CHALK LINE HOLDER
- US922171 Loeven 1909 plumb bob
- US953131 Ferris 1910 shaft centering device
- US909846 CAVILEER 1909 plumb bob and chalk line holder
- GB18557 CAVILEER 1909 improved combined plumb bob and chalk line holder
- US921302 STARR 1909 line chalker
- US947892 EASTMAN 1910 chalk-line holder
- US927790 HALL 1909 chalk line holder
- US1004443 LAUT 1911 chalk line holder

I was unable to find pictures for some of the devices that were actually made and have survived the century. Like most ideas that are patented, one is never sure if that idea was ever made or survived as a prototype or even more unlikely, achieved any level of commercial success. Nevertheless these patents remain important artefacts in the evolution of plumb bobs.

If anyone knows of any of these patented instruments, please let me know.

Thanks.

Wolf

If you want to know more about other PATENTED PLUMB BOBS, see www.plumbbobcollectors.info on page PATENTS. There you can see and download all 50 articles, written in 2007.

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1. FR 406122 SCHOTT (France) 1909 fil à plomb rationnel. The rational plumb line

Original text:
Le fil à plomb rationnel est un instrument qui permet d'établir un plan horizontal renferment l'œil de l'observateur.
Il est basé sur le principe suivant:
Un cercle horizontal a pour image apparente une ellipse chaque fois qu'il est situé dans un plan horizontal plus élevé que l'œil de l'observateur.
Sa forme apparente est encore une ellipse quand il est situé dans un plan horizontal plus bas que l'œil de l'observateur. A la même hauteur que l'œil de l'observateur, son image apparente est une ligne droite horizontale. Cette ligne droite horizontale détermine dans l'espace le plan horizontal qui renferme l'œil de l'observateur.
Le fil à plomb rationnel, est construit en tout métal et en toutes dimensions. Il se compose (fig.1), d'un cercle perpendiculaire à l'axe du cône qui le surmonte.
Il sert, aux dessinateurs à trouver sur la nature la hauteur de la ligne d'horizon, aux architectes, aux ingénieurs militaires, etc., à opérer des nivellements, à apprécier des hauteurs et des altitudes, à tracer le profil des routes et à déterminer l'éloignement d'un point à un autre.

Translation
The "rational plumb line" is an instrument which makes it possible to establish a horizontal plane containing the eye of the observer.
It is based on the following principle:
A horizontal circle has as an image an ellipse each time it is located in a horizontal plane higher than the eye of the observer. Its apparent form is still an ellipse when it is located in a horizontal plane below the eye of the observer.

With the same height as the eye of the observer, its image apparent as a horizontal line right. This horizontal straight line determines in space the horizontal plane which contains the eye of the observer.
The "rational plumb line" is built in any metal and all dimensions. It is composed of a circle perpendicular to the axis of the cone which surmounts it.
It is useful for the draughtsmen to find on nature the row height of horizon, for the architects, the military engineers, etc, to operate levellings, to appreciate heights and altitudes, to trace the profile of the roads and to determine one point with another.

I understand it as follows:
(The arrow shows the direction of viewing)

DID ANYONE SEE THIS PLUMB BOB?
2. US932218 WILSON 1909 REEL FOR PLUMB BOBS

A. WILSON.
REEL.
APPLICATION FILED FEB. 6, 1909.

What he claims is:

1. A plumb-bob comprising a casing formed of two sections detachably connected together and embodying a weight housing a spool chamber and a handle; a sleeve journaled in the sections of said casing; a spool mounted upon said sleeve, a collar carried by said sleeve at one side of said casing, a handle hinged to said collar, a crank carried by said handle and adapted to extend into said sleeve when said handle is closed, a line attached to and wound upon said spool and having one end thereof extending into said housing; a weight carried by the end of said line within said housing, a brake lever extending into said casing; a shoe carried by said brake lever for engaging said spool, and a spring arranged within said casing for normally holding said shoe in engagement with said spool.

Who saw this invention ?????

3. US927790 HALL 1909 CHALK LINE HOLDER

J. G. HALL.
CHALK LINE HOLDER.
APPLICATION FILED DEC. 14, 1908.
927,790. Patented July 18, 1909.

What he claims is:

...
To all whom it may concern:

Be it known that I, JAMES G. HALL, citizen of the United States, residing at O'Fallon, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Chalk-Line Holders, of which the following is a specification.

This invention relates to chalk line holders, and has for its object to provide a device of this kind so constructed that one or a plurality of chalk lines can be quickly and easily attached thereto or removed therefrom, and also one which when secured in an operative position will hold the lines taut to permit their manipulation in transferring a working line to the work under operation.

A further object of the invention is to provide a simple, constructively cheap and efficient running line holder which may be used upon all character of construction work, and which may be securely held in any desired position to properly retain the ends of the line without the use of nails or other attaching means.

The invention comprises essentially, a body portion provided with a handle at one end and having its opposite end extended longitudinally from the handle and provided with a series of longitudinally disposed grooves terminating in openings, and a transversely thickened portion intermediate said extended end and handle, the shoulder formed thereby being adjacent to the openings.

4. US995938 AIRESMAN filed 1910 PLUMB BOB

This is one of the “build in reel” plumb bobs that was never produced. Or do you know one?

If you want to see more mechanical patented plumb bobs, see www.plumbbobcollectors.info on page “PATENTS OF PLUMB BOBS” or download on page “THE PLUMB LINE continuum” the full issue.
5. US995872 JOICE filed 1910
PLUMB BOB

This patent was already mentioned in WOLF'S PATENT NEWS 2007-11 MARKING PLUMB BOBS
At the first view I didn't see that the tip was formed for marking......

C. JOICE.
PLUMB BOB.
APPLICATION FILED APR. 25, 1910.

995,872.

Patented June 20, 1911.

I claim:—
A plumb bob comprising a member formed with a central bore, a plug closing one end of the bore and detachably engaged therein, the bore being enlarged at its opposite end, a member fitted in the enlarged end of the bore and constructed to form a valve seat, the said member having an outwardly extended hollow threaded portion, the said member having an opening establishing communication between the opening in the hollow threaded portion of the second named member and the bore of the first named member, a spring controlled valve movably mounted in the second named member, the spring operating to normally hold the valve against the said seat to close the opening in the said second named member, a stem extending through the hollow threaded portion of the said second named member, and a cap detachably engaged with the said threaded extended portion of the second named member.

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

CHESLEY JOICE.

The valve member is threaded exteriorly for the reception of an interiorly threaded cap 11. When the cap 11 is engaged with the valve member the plumb bob may be used as in the ordinary manner.
6. **US971752 HULL 1910 LEVELLING AND GRADING INSTRUMENT**

This invention is not so interesting for plumb bob collectors, but I like the drawing with the two surveyors. See drawing below 😊

To all whom it may concern:

Be it known that I, Lorain T. Hull, residing at Ada, in the county of Hardin and State of Ohio, have invented certain new and useful Improvements in Leveling and Grading Instruments, of which the following is a specification.

My invention is an improved leveling and grading instrument which generically has for its object to provide an instrument of this character that can be easily and cheaply manufactured and which will be of strong durable construction and accurate in its operation.

More specifically the invention resides in providing a support or frame in the form of a right angle to which a level is pivoted and which removably carries a curved segment plate that is graduated on one side in divisions representing grade per foot and grade per rod, and on the other side the segment is graduated in divisions representing yards and ten foot intervals; a hinged arm assists in supporting the level in its various adjusted positions on the support and has means for clamping to the arc or curved segment to retain the arm and level in its set positions, the arm having indicating pointers to cooperate with the graduations or scales on the arc or curved segment.

[Diagram of leveling and grading instrument]
7. **US944654 BERGER 1909 MINING TRANSIT CENTER FINDER**

To all whom it may concern:

Be it known that I, WILLIAM A. BERGER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Mining-Transit-Center Finders, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

My invention is a device for enabling the mine surveyor to locate the center of his instrument more readily than heretofore with relation to an overhead object; and with this end in view, my invention consists in providing means at the intersecting point of the line of collimation and of the transverse axis for cooperating with a plumb bob or the like suspended from overhead, whereby the surveyor can determine quickly and accurately the desired center.

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8. **US916608 SCHMIDTKE 1909 SENKLOT**

To all whom it may concern:

Be it known that I, HERMAN A. SCHMIDTKE, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Plumb-Bobs, of which the following is a specification.

This invention relates to plumb bobs, and the particular object of the invention is to provide a plumb bob having a reel contained therein and on which the plumb line may be wound and from which any length or portion of the line may be unwound as occasion requires, thus preventing the line from becoming snarled or tangled and enabling it to be wound up and inclosed so as to be out of the way when the bob is not in use.

A further object of the invention is to provide a novel construction of chambered bob and mode of mounting the reel, as well as novel means for winding the line, permitting unwinding of the length of line desired, and locking the line from movement, whereby a simple and efficient plumb bob of this character is produced.
9. US922171 LOEVEN 1909 PLUMB BOB

To all whom it may concern:

Be it known that I, WILLIAM LOEVEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Plumb-Bobs, of which the following is a specification.

This invention relates to devices for ascertaining whether parts of a building structure are at a true perpendicular and if not, to what extent they are out of plumb.

The particular invention which forms the subject matter of this application comprises a plummet, means for attaching same to a steel square, and means for adjusting the plummet relative to its attaching means.

10. US921302 STARR 1909 LINE ChALKER

I never saw a produced chalk line with fixed guides. The commonly used metal chalk lines have no guides. (see figures right)
11. US953131 FERRIS 1910 SHAFT CENTERING DEVICE

UNITED STATES PATENT OFFICE.

ROGER A. FERRIS, OF HOLYOKE, MASSACHUSETTS, ASSIGNEE OF ONE-THIRD TO CHARLES ROUSE AND ONE-THIRD TO GEORGE A. WHITTERMORE, BOTH OF HOLYOKE, MASSACHUSETTS.

SHAFT CENTERING DEVICE


Application Filed February 26, 1909. Serial No. 482897.

This patent was already mentioned in WOLF'S PATENT NEWS 2007-12

This invention relates to improvements in devices for instruments for quickly and accurately finding the center of a line of shafting.

The objects of the invention are: (1) to provide means whereby the center of a line of shafting may be quickly and accurately projected onto the floor below the shafting; (2) to produce a device that can be used and placed on the line of shafting at any longitudinal part of its length, without regard to the diameter of the shafting, or whether various lengths of the same are composed of different diameters; (3) to provide means whereby a plumb-bob can be readily adjusted near the floor or at any convenient height therefrom in the space between the floor and shafting.

In this class of devices as heretofore constructed, it has been the common practice to suspend a plum-line, by means of a suitable weight, so as to just touch or graze the side of the shafting, and then mark on the floor a point indicating the curved side of the shafting; then caliper the shafting and measure back from the point on the floor a distance equal to the radius of the shaft. These several steps are very slow and more or less inaccurate since errors are very apt to arise in taking the various measurements, and the larger the number of measurements required to be taken, the greater the probability of mistakes in effecting the final result.

This tool is from my collection.
12. US909846 CAVILLEER 1909 PLUMB BOB AND CHALK LINE HOLDER

Below the text from the WOLF’S PATENT NEWS 2007-22
This combination tool is one of my favorites that I have on my computer screen as background.

Produced by RIDGELY

Another very interesting combination of plumb bob and chalk line is the invention of Cavilleer from San Francisco CA in 1909.

This patent was accepted also in England as GB190918557 on 28th Oct., 1909. The text of the patent is not exactly identical, the last paragraph is shorter in the English version. Also did they translate some American phrases (that’s my impression): to coil = be wound; color= colour; set screw = set-screw; opposite the same = opposite thereto……..

The drawings are not exactly the same. The numbers are different, the hatching is different and the size of the Fig.2 is longer in the US version.

That shows that these drawings and the text are especially made for the other country.

This tool was produced by RIDGELY in Ohio, a far distance from San Francisco.

Bruce Cynar told me in 2003: “The Ridgely Company was located in Springfield, Ohio and to my knowledge no longer exists. Back at turn of the century and up thru at least the 1930s, they made and or distributed (I don't know if they were a manufacturer or only a distributor) wall paper supplies.”
Since this is one of the rare examples that achieved some level of commercial success, let’s look at some DETAILS:

Examples that have survived have some modifications that I will describe later on:

1. The shape
2. The top with the wiper and the set-screw
3. The crank and axe
4. The tip

The SHAPE is very different. Perhaps the engineers in the factory told the inventor what shape would be better. The shape, however, is not a critical part of the claim of originality.

The TOP is described as follows:

A very detailed description of this parts 14, 13 and 16, but I don’t believe that this construction would work a long time!

Also the SET-SCREW 15 was not designed for the normal use of a carpenter.

In the later produced item they used a simpler but better working system: A rubber piece that was pressed by the screw cap to fix the line at a wanted length. This rubber also wipes off the superfluous chalk. In my chalk line # 377 unfortunately after almost 100 years of life the rubber was rigid, so that the “BRAKE” did not work. I added a small piece of rubber and now it works again. 😊
Inside the line is fixed to the axe by a screw.  
Length of the original line: 5.60 m = 20 feet.

The CRANK 19 has two modifications:  
The counter-balance 21 that was proposed does not exist. I don’t think that the carpenters turn the handle so fast that it would be balanced 😊  
On the axe of the crank 22 is fixed a movable piece of metal longer than the handle. This is a very smart solution to prevent that the line will be confused with the handle while winding. It works excellent!  
Also the crank can’t get lost. It is fixed to the line now.  
The power transmission from the crank to the axe is also modified.  
Let’s come to the TIP.  
The invention says:

Referring again to the tip 4, it will be observed that this tip is removable, for which purpose the side of the bob is provided with a removable set screw 18 which screws up against the shank 3 as indicated, as shown. The tip 4 is hollow and the cavity within the same is provided with a bath 5 of mercury, which materially increases the specific gravity of the lower end of the bob, insuring that it will hang in a vertical position.

“It was produced with a fixed BIG tip from iron or filled with lead, but NOT filled with MERCURY as the inventor proposed. I don’t think that this small quantity of heavier metal would bring a better result.”
13. US947892 EASTMAN 1910
CHALK-LINE HOLDER

This chalk line is the most common chalk line in the U.S.A. (with modifications also from DANDEE-Reel, WARNER Accuracy, etc. The handle is different in the drawings and in the picture. I never saw the shape shown in Fig. 8. Have you?
My invention relates to chalk-line holders, and the object is to provide an efficient device for holding and chalking the string or cord used by carpenters and others for marking straight lines.

What I claim is:

1. A chalk-line holder comprising a hollow body comprising a cylindrical chalk chamber and a semicylindrical drum chamber, a fixed partition between the two chambers; the chalk chamber having a hinged cover and means for holding the same closed, said cover having a downward rim near the wall of the chamber and a diametrical open slot across the cover and partly into the rim, a chalk receptacle having a solid bottom and external means to guide it centrally in the chalk chamber, a spring supported upon the solid bottom, a plate supported by the spring and adapted to support a piece of chalk placed in the receptacle against the slotted cover, a coupling member at the lower side of the bottom of the chalk receptacle, a shaft journaling in the drum chamber, a crank at the outer end thereof, a coupling member at the inner end thereof and adapted to engage the first-mentioned coupling member; a drum fixed on the shaft, a line wound on the drum and having its outer end extended outward through the large side-opening of the semicylinder, and open guiding means for guiding the line from said large opening to and along in the slot in the cover.
15. REMARKS

The full patents you can find on http://www.google.com/patents

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

^ An article about THE INTERNATIONAL HISTORY OF THE CHALK LINES you find on www.plumbbobcollectors.info on page CHALK LINE / SUMITSUBO as WOLF’S PLUMB BOB NEWS 2008-11 CHALK LINES