

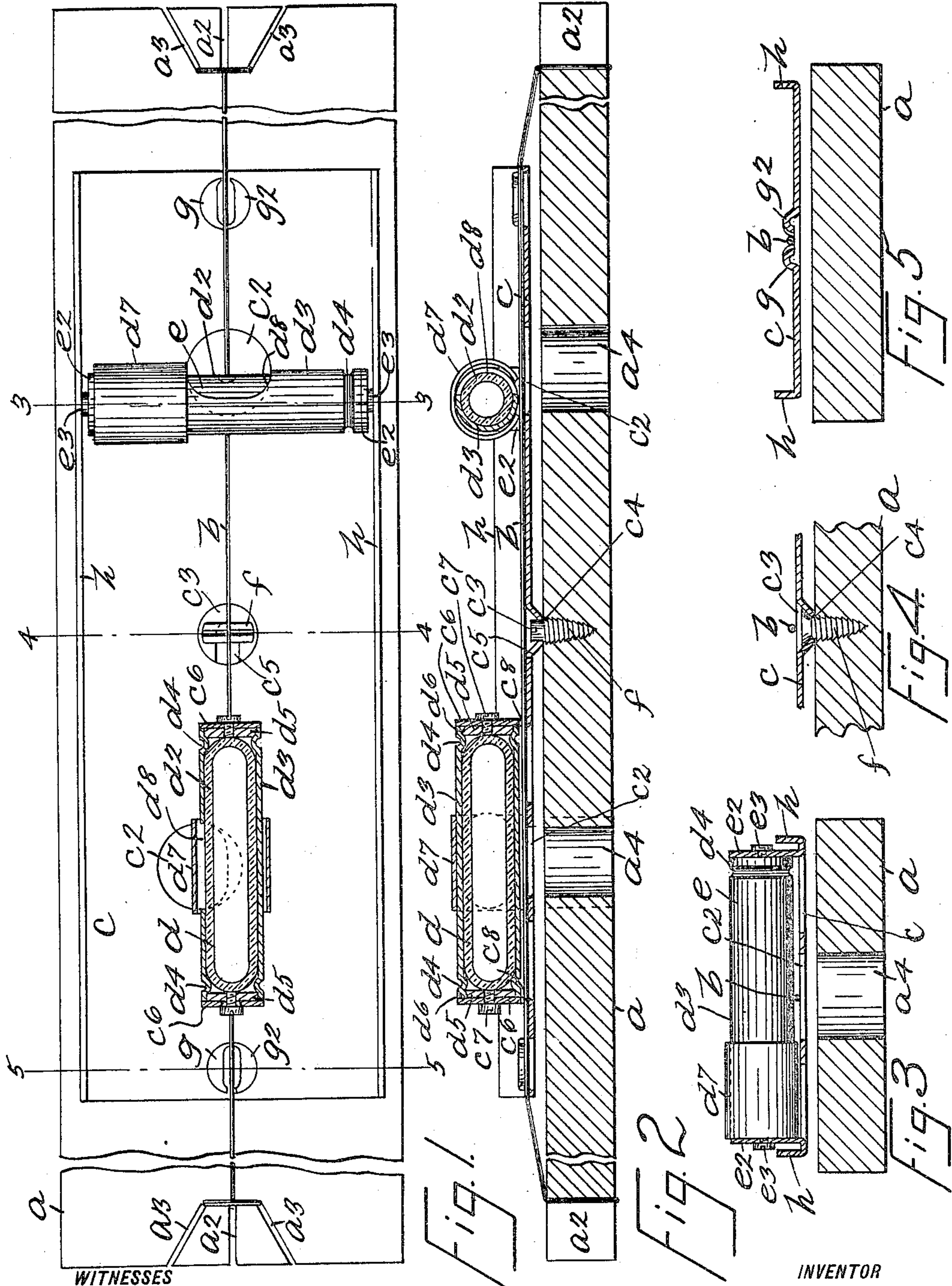
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PATENTED FEB. 13, 1906.

W. POTTER.

LEVEL.

APPLICATION FILED MAR. 18, 1905.



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LEVEL.

No. 812,449.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM POTTER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Levels and Plumbs, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide a level and plumb for use in connection with straight-edges and which may also be used independently thereof, a further object being to provide devices for attaching said plumb and level to a straight-edge and detaching the same therefrom expeditiously and in a manner to insure an accurate relationship thereof, and a still further object being to provide a device of this class which is simple in construction and operation, which is composed of few parts, and which is comparatively inexpensive.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a plan view of a plumb and level constructed according to my invention mounted on a straight-edge, said view being partially in section; Fig. 2, a central longitudinal section thereof; Fig. 3, a section on the line 3 3 of Fig. 1; Fig. 4, a section on the line 4 4 of Fig. 1, and Fig. 5 a section on the line 5 5 of Fig. 1.

In the drawings forming part of this specification I have shown at *a* a straight-edge, which may be of any desired length, and said straight-edge is provided in each end thereof with central longitudinal slots *a*² and with inclined slots *a*³, said slots being adapted to hold the ends of a wire or cord *b*, and mounted on the straight-edge *a* is a plate *c*, provided with a spirit-tube *d*, arranged for use as a level, and a spirit-tube *e*, arranged for use as a plumb, and said plate *c* is provided with openings *c*², as is also the straight-edge *a*, as shown at *a*⁴, whereby the said spirit-tubes may be visible from the back of said straight-edge.

Centrally of the plate *c* I provide a cup-shaped recess *c*³, which is provided with a central opening *c*⁴, and said central opening *c*⁴ communicates with an opening *c*⁵ through the cup-shaped recess *c*³ and in a direction to-

ward the spirit-tube *d*, and permanently secured in the center of the straight-edge *a* or at a point adjacent to the center thereof is a screw *f*, the sides of which are cut away, as clearly shown in Fig. 1, to permit of said screw passing through the slot *c*⁵ of the recess *c*³.

Adjacent to either end of the plate *c* are two raised segmental members *g* and *g*², which are separated from each other at their innermost ends a distance equal to the thickness of the wire or cord *b* and which are separated from each other a slightly-greater distance at their outermost ends, as clearly shown in Fig. 1, and the wire or cord *b* passes between the raised segmental members *g* and *g*² and is held therein when my invention is ready for use.

The spirit-tubes *d* and *e* are similar to each other and comprise the usual glass bulb or tube *d*², mounted in a metal casing *d*³ and held therein by means of annular grooves *d*⁴, and in the ends of the metal casing *d*³ are plates or blocks *d*⁵, which bear against the grooves *d*⁴ of the casing *d*³, and said plates are provided with depressions in the tops thereof, in which a similar depression *d*⁶ in the casing *d*³ rests, thereby holding the block *d*⁵ therein, and slidably mounted on the casing *d*³ is a sleeve *d*⁷, which serves as a cover for the opening *d*⁸ in the casing *d*³, and thereby protects the tube *d*² from injury.

The plate *c* is provided at each end of the stationary tube *d* with an upwardly-directed member *c*⁶, through each of which are passed screws *c*⁷, which enter the plates *d*⁵ and serve to hold the spirit-tube *d* in position, and the upwardly-directed members *c*⁶ are also provided at the bottom thereof with an opening *c*⁸ therethrough to permit of the passage therethrough of the wire or cord *b*, and the spirit-tube *e* is held in a similar manner in upwardly-directed members *e*² of the plate *c* by means of screws *e*³, as clearly shown in Fig. 3.

It will be evident by means of this construction that upon removing the screws *c*⁷ or *e*³ the casings *d*³ may be removed from the plate *c*, and when so removed the plates *d*⁵ may be removed from said casing, thereby giving access to the tube *d*², and it will be understood that the openings in the members *c*⁶ and *e*², through which the screws *c*⁷ and *e*³ pass, may be made slightly greater than the diameter of said screws, thereby permitting of slight transverse movement thereof, and for the sake of adjustment in the manufac-

ture of my invention and in practice I prefer to arrange the sleeve d^7 so as not to pass entirely around the casing d^3 and to form the same so that the transverse diameter thereof is slightly greater than the transverse diameter of the casing d^3 , whereby if pressure be exerted on either side of the sleeve d^7 said sleeve may be moved longitudinally of said casing, and upon releasing said pressure said sleeve is held in any desired position.

When it is desired to use my invention in connection with a straight-edge, the plate c is held at right angles to the straight-edge a and the screw f is passed into the opening c^5 of the cup-shaped recess c^3 , after which the plate c is rotated to the position shown in Fig. 1, at which time the ends of the cord or wire b are secured in the slots a^2 and a^3 , and because of the arrangement of the segmental members g and g^2 and of the slots a^2 the plate c is held parallel to the edge, and this permits of very rapid attachment to and detachment from said straight-edge, and if it is desired to use the level or plumb independent of the straight-edge a all that is necessary is to use one of the longitudinal edges of the plate c as a guide, said edges being turned up, as shown at h , to enable the said plate to be supported thereon.

The reason for the inclined arrangement of the segmental members g and g^2 is to insure a perfect alinement of the plates c by means of the space between the inner ends of the said segmental members, said space being of the size equal to the cord or wire b employed, and when the plate c is in position on the straight-edge and the said plate be accidentally struck or the straight-edge a be dropped the slightly-greater space between the segmental members g and g^2 at their outer ends will permit of very slight movement, and thereby return the plate c to its previously-alined position, and in this way my invention is always in position for accurate use, and my invention would then serve as a quadrant or in determining grades and angles, and various changes in the construction herein shown and described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An instrument of the class described, comprising a plate, a spirit-tube thereon, a straight-edge, a device arranged centrally of said plate for connecting the same to said straight-edge, a cord connected with said

plate and secured to both ends of said straight-edge, said cord insuring a predetermined relation between said plate and said straight-edge, substantially as shown and described.

2. In an instrument of the class described, a straight-edge, a plate pivotally connected therewith, a spirit-tube on said plate, and a cord secured to the ends of said straight-edge and in operative connection with said plate, said cord insuring a predetermined relation between said plate and said straight-edge, substantially as shown and described.

3. In an instrument of the class described, a straight-edge, a plate thereon, and devices connecting said straight-edge and said plate, said devices including a cord secured to the ends of said straight-edge and in operative connection with said plate, substantially as shown and described.

4. In an instrument of the class described, a straight-edge, a plate detachably connected at the center thereof, a spirit-tube on said plate, a cord secured to the ends of said straight-edge, and devices on said plate in operative connection with said cord for holding said plate in a predetermined position on said straight-edge, substantially as shown and described.

5. In an instrument of the class described a straight-edge, a plate, a spirit-tube mounted thereon, said plate being provided with a central cup-shaped recess and said recess being provided with a radial slot, a screw in said straight-edge engaged in said recess, and devices connected with a cord for detachably connecting said plate with said straight-edge in a predetermined position, substantially as shown and described.

6. An instrument of the class described a straight-edge, a plate, a spirit-tube mounted thereon, a cord detachably connected with said straight-edge, devices on said plate for holding said cord comprising two segmental members at each end of said plate, the inner ends of said segmental members bearing against said cord and the outer ends of said segmental members permitting slight movement of said cord, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 15th day of March, 1905.

WILLIAM POTTER.

Witnesses:

F. A. STEWART,
C. J. KLEIN.