

G. F. HARRIS.
LEVEL.
APPLICATION FILED JULY 18, 1911.

1,025,086.

Patented Apr. 30, 1912.

FIG. 1.

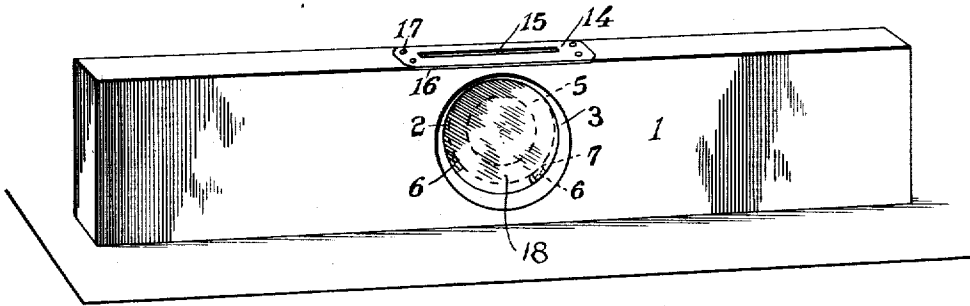


FIG. 2.

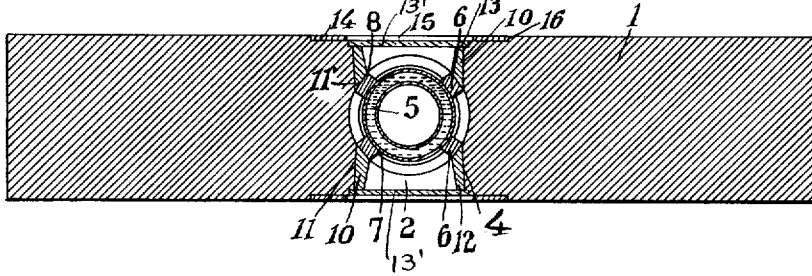


FIG. 3.

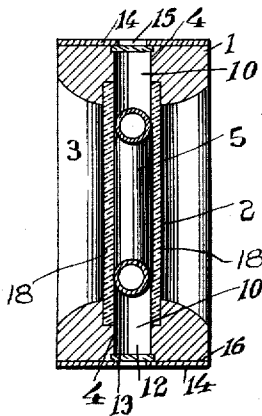
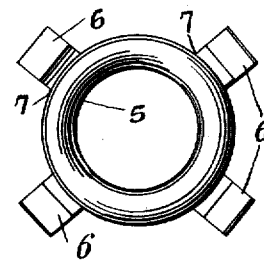


FIG. 4.



Witnesses
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LEVEL.

1,025,086.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE F. HARRIS, a citizen of the United States, residing at Logansport, in the county of Cass and State of Indiana, have invented new and useful Improvements in Levels, of which the following is a specification.

This invention relates to certain novel and useful improvements in levels and has particular application to spirit levels such as are employed by builders, contractors, engineers and mechanics in general.

In the present instance, it is my purpose to provide a spirit level which will embody the desired features of simplicity, efficiency and convenience.

Furthermore, I aim to provide a level which may be readily and quickly placed in position for use by the operator, even though he be using but one hand to manipulate the level as a proper indicating surface is always uppermost for observation.

Another object of my invention is to provide a spirit level having a groove or opening cut therethrough, said groove communicating with sides and ends of the level. Within this groove I arrange an annular tubular ring adapted to contain the liquid or spirit, the openings or windows at the side being covered with glass or other transparent material, while the slotted entrance to the openings at the edges of the level bar are covered with suitable plates which retain the glass cover, so that the position of the liquid bead within the level will be readily observed.

With the above recited objects and others of a similar nature in view, the invention consists in the construction, combination and arrangement of parts, set forth in and falling within the scope of the appended claims.

In the accompanying drawing:—Figure 1 is a perspective view of a level embodying my invention. Fig. 2 is a vertical longitudinal sectional view through the same. Fig. 3 is a transverse vertical sectional view through the indicating portion of the level. Fig. 4 is a detail view in elevation of the annular ring and its retaining arms.

Referring now to the accompanying drawings in detail, the numeral 1 designates the body of the level which is formed of wood or other suitable material. This body is provided approximately centrally thereof with an orifice 2 extending entirely there-through, an inwardly extending circular

flange 3 being formed in the sides of the body or bar, said circular flange comprising the walls of the orifice. Communicating with the central transverse orifice of the body are the slots 4, one at each side edge of the body or bar. Within the opening or orifice through the body portion is arranged an annular tubular ring 5, of glass or other transparent material adapted to be nearly filled with a spirit or other suitable liquid, said ring being arranged concentric with the circular flange surrounding the orifice, so that said ring may be visible both at the sides of the body and through the slots at the side edges thereof. In order to maintain the tubular spirit-containing ring in its proper position as shown in the drawings, I provide a suitable number of radiating arms 6 which are connected as at 7 to the ring, the opposite or outer end of each of said arms being secured to the adjacent portion 8 of the wall of the orifice. To further support and hold the ring, especially against lateral movement, I provide wedges 10 which are driven downward alongside the end walls 11 of the slots in the side edges of the body or bar until the relatively wide ends of the wedges abut against the top surfaces of the radial arms, the narrow or tapered ends 12 of the wedges being approximately flush with the shoulder 13 of the slot. This shoulder 13 forms a flange for the reception of a piece of glass or other transparent material shown at 13' which is retained in position by means of a top plate 14 of metal or other suitable material having an elongated slot 15 therein in alignment with the glass plate so that a view may be had through the slot and plate of the annular spirit-containing ring. Each top plate 14 is seated in a recessed portion 16 in the side edge of the level, and surrounding the slot, said plates being retained in position by screws or other fastening means 17 until the upper surface of such plate is flush with the edge of the body portion of the bar.

From the above description, taken in connection with the accompanying drawing, the construction and manner of employing my improved level will be readily understood. It will be seen that the level is always in position to be handled by the operator, even though he be using but one hand as either of the longitudinal edges when used will indicate whether or not the

surface to which the level is applied is plumb or level. Furthermore, it will be seen that the spirit containing ring is visible through the slots in the side edges and also through the circular glass plates or windows 18—18, retained in position against the inner faces of the circular flanges in the side faces of the bar. Therefore, the workman can determine at a glance whether or not the surface to which the level is applied is in plumb. Furthermore, it will be seen that I have provided an exceedingly simple yet efficient means for retaining the annular tubular spirit-containing ring in proper position relatively to the circular openings and slots communicating therewith so that the level is always in position for use. Furthermore, it will be seen that the tubular ring is securely retained in position and amply protected from damage and injury.

I claim:—

1. A level comprising a body portion having an orifice extending therethrough from side to side, and slots in the side edges of the body portion communicating with the orifice, flanges surrounding the orifice, transparent sheets retained at the flanges, a tubular ring arranged within the orifice,

retaining arms extending from said ring, to the walls of the orifice, holding means abutting against the said arms and projecting into the slots communicating with the orifice, transparent plates overlying said slots, and slotted plates extending over the transparent plates at the side edges of the body.

2. A level comprising a body portion having an orifice extending therethrough from side to side, and slots formed in the side edges of the body portion and communicating therewith, a ring arranged in the orifice concentric with the outer walls thereof, said ring being filled with a liquid, radially extending arms connected to the tubular ring and to the adjacent walls of the orifice, wedge-shaped members lying within the slotted side edges and bearing against said arms, and a slotted plate at each side edge overlying the slot communicating with the orifice.

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

GEORGE F. HARRIS.

Witnesses:

DYER B. McCONNELL,
JOHN W. MARKLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."