No. 721,694. PATENTED MAR. 3, 1903.

H. V. GREEN.

COMBINATION LEVEL AND PLUMB.

APPLICATION FILED JAN. 27, 1902.

NO MODEL.

Fig. 1.

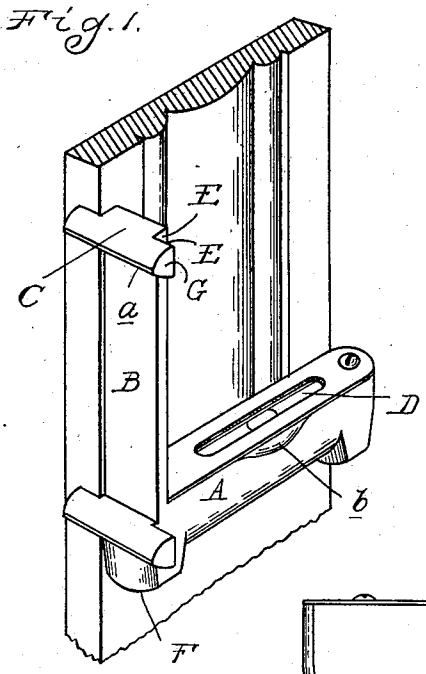


Fig. 2.

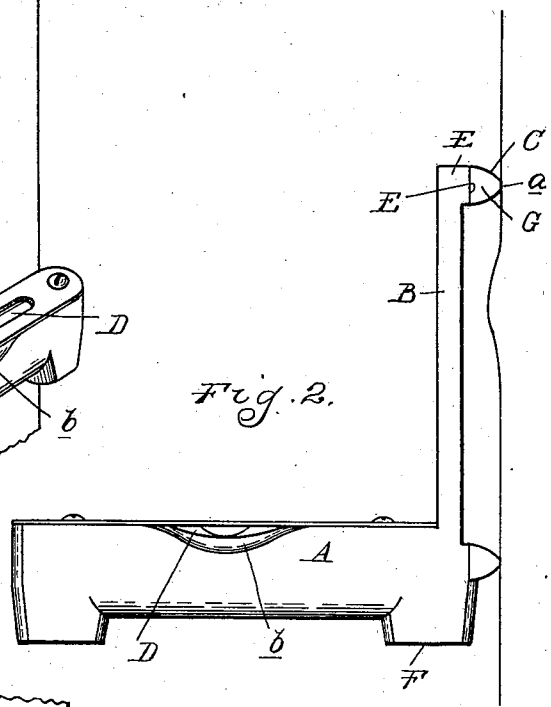
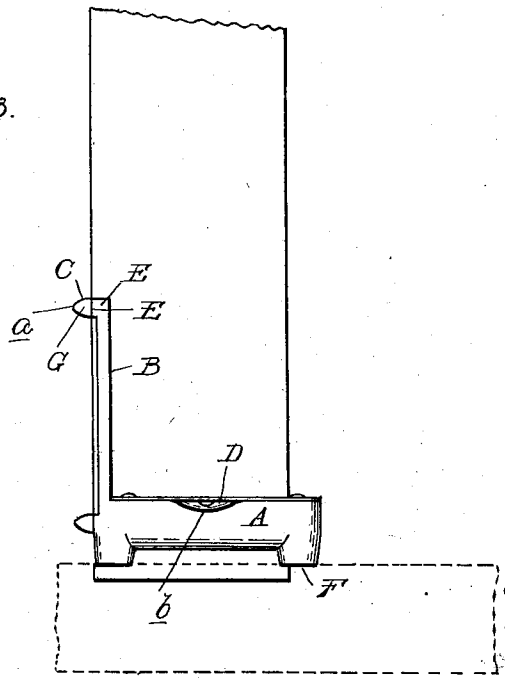


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

HOMER V. GREEN, OF FLINT, MICHIGAN, ASSIGNOR OF ONE-HALF TO IRVING B. BATES, OF FLINT, MICHIGAN.

COMBINATION LEVEL AND PLUMB.

SPECIFICATION forming part of Letters Patent No. 721,694, dated March 3, 1903.

Application filed January 27, 1902. Serial No. 91,427. (No model.)

To all whom it may concern:

Be it known that I, HOMER V. GREEN, a citizen of the United States, residing at Flint, in the county of Genesee and State of Michigan, have invented certain new and useful Improvements in a Combination Level and Plumb, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to a combination level and plumb especially designed for use by paper-hangers in ascertaining whether the walls, doors, and window-casings are plumb and in determining the angle at which the paper should be hung.

The invention consists in the construction as hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of the device as and for determining whether a casing is plumb. Fig. 2 is a side elevation showing it in relation to the wall. Fig. 3 is a similar view showing it in connection with a straight-edge.

The frame of the device is preferably formed of cast metal and comprises the body A, the arm B at right angles thereto, and the lugs or bars C, extending transversely to the arm B. The latter are preferably of substantially V-shaped cross-section, so as to form a thin straight-edge *a*, adapted to bear against the wall or surface. These lugs C are so arranged that when the edges *a* thereof are bearing against a vertical surface the body portion A will be level and will extend horizontally to said surface or conversely when the body A is not level. Lugs C are used instead of a continuous bearing-surface, as casings and surfaces often have raised bunches upon them caused by bruises, &c. Hence it is often impossible to find bearings for a continuous surface, while these lugs reach over such hillocks in wood or wall.

D is a leveling-tube set into the body and partially covered and protected with a metal cap, said tube containing the usual liquid and air-bubble. At the center of the tube the edges of the body are beveled off, as shown at *b*. The body is also provided with feet F, as shown, their bottoms being level to tube D, so that if these feet are placed on any horizontally-extending surface the device can be readily leveled.

The lugs or bars C extend beyond the arm B, forming a perfect right-angle bearing E E in a plane perpendicular to the level-bearing-surface, so that by placing the body A across the face of any casing, allowing the corner of casing to fit into angle E E, as shown in Fig. 1, it can be determined whether such casing is plumb or not and if not the correct angle at which paper should be hung.

When the casing is of molding having no square corners, so that angle E E cannot be used, by placing the edges *a* of lugs C against the edge of rounded casing and the ends of the lugs C, (marked G,) which are exactly parallel with tube D as set in body A, against wall the same result is obtained.

To determine whether a corner is plumb, the instrument is used in connection with a paper-hanger's wood or metal straight-edge. This may be done either by placing the edges *a* of the lugs C against the straight-edge or by placing, as shown in Fig. 3, with the straight-edge bearing against the bearing-face E of the projecting ends of said lugs. By placing the paper-hanger's straight-edge horizontally on any wall or vertical surface and setting the feet F upon upper edge of it a level line is secured to paper, tint, or decorate to, as indicated in dotted lines, Fig. 3.

The device being constructed as described, it is obvious that it can be used not only for determining whether the wall, casings, or other surface is exactly perpendicular, but also to establish correct lines to paper, tint, or decorate to when such surfaces are not plumb or level, as the case may be, by the following method: Place foot of paper-hanger's straight-edge at any given mark on floor or top of base, place side of body A across outer face of paper-hanger's straight-edge, allowing angle E E to fit snugly onto corner of straight-edge, then move paper-hanger's straight-edge to right or left along wall until bubble shows plumb, and then make line along straight-edge with pencil.

One advantage of combination level and plumb is that it can be used on short ruler or any straight-edged stick in places where,

owing to its length, a regular paper-hanger's straight-edge cannot be used, also in places where common spirit-levels cannot be used—*i. e.*, in short angles, curves, corners, &c.—and that it can be used equally well in right or left handed spaces from workmen, whichever is necessary.

While explanation is made in relation to paper-hangers' work, the combination level and plumb is as useful to painters, sign-painters, carpenters, masons, and other mechanics.

What I claim as my invention is—

1. In a combined level and plumb, the combination with the level-body of an arm projecting therefrom in a vertical plane and a pair of horizontal bars extending across said arm, substantially perpendicular to the longitudinal plane of the level-body, and having their edges in a plane exactly perpendicular to the level bearing-surface.

2. In a combined level and plumb the combination with the level-body of an arm extending therefrom in a vertical plane and a pair of horizontal bars extending across said arm substantially perpendicular to the longitudinal plane of the level and projecting laterally beyond said arm, the outer edges of said bars lying in a plane exactly perpendicular to the plane of the level bearing-surface and the inner edges of the laterally-projecting portions lying in a parallel plane to the outer edges.

3. In a combined level and plumb the combination with the level-body, of an arm extending at an angle therefrom, one edge surface of said arm being continuous and flush with the adjoining side surface of the level-body, and a projection on the outer face of the arm forming with said edge thereof a right-angle bearing; substantially as described.

4. In a combined level and plumb, the combination with the level-body, of an arm extending at an angle therefrom, one edge surface of said arm being continuous and flush with the adjoining side surface of the level-body, and separated projections on the outer face of the arm forming with said edge thereof two like right-angle bearings; substantially as described.

5. In a combined level and plumb, the combination with the level-body, of an arm at one end thereof extending at an angle therefrom, and separated lugs C on the outer surface of the arm and projecting in a direction away from the level-body, said lugs being tapered to form extended bearing edges *a* disposed transversely of the arm; substantially as described.

6. In a combined level and plumb, the combination with the level-body, of an arm at one end thereof extending at an angle therefrom, and separated transversely-disposed elongated bearings C on the outer surface of the arm and projecting in a direction away from the level-body; substantially as described.

7. In a combined level and plumb, the combination with the level-body, of an arm extending at an angle therefrom, and separated lugs on the arm arranged transversely of the outer surface thereof and extending outwardly beyond the plane of one of the side edge surfaces thereof, the outer ends of said lugs being fashioned to constitute bearing-surfaces; substantially as described.

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

HOMER V. GREEN.

Witnesses:
M. B. O'DOGHERTY,
H. C. SMITH.