

UNITED STATES PATENT OFFICE.

A. GIRARD, OF MOBILE, ALABAMA.

PLUMB-LEVEL.

Specification of Letters Patent No. 4,611, dated July 2, 1846.

To all whom it may concern:

Be it known that I, AUGUSTUS GIRARD, of the city and county of Mobile and State of Alabama, have invented a new Instrument,
5 a Horizontal Inclined Plumb-Level, of which I do declare the following is a full and exact description.

The three representations marked A, B, C. A represents the horizontal level. B
10 the inclined plane. C the plumb level. The letter *a* being a pole or rod from six inches to six feet long. *b*, the movable piece attached to the lower part by a hinge having a spirit level in its center sliding or open-
15 ing and shutting on a graduated circle or quadrant, divided into ninety degrees. In the end of the moving piece is a screw. When the two pieces are laid together, or when the level is shut as is the case with the
20 one marked A, then when applied on a horizontal plane, the air bubble in the spirit level will stand on the center. In that position it is used as a horizontal level. In raising the heel or part near the hinge, the
25 degree of the inclined plane formed by the long pole will be read on the quadrant by opening the moving piece until the bubble of air is standing again in the center, you can level any inclined plane from horizon-
30 tal to plumb. For instance, the one marked B, is an inclined plane of about 45 degrees, the long rod making the same angle as the horizon, by opening the moving piece to the last graduation or 90 degrees, then when
35 the bubble stands in the center, the long rod is plumb.

This instrument is useful and even necessary to every mechanic, architect, and engi-

neer as they can be made from six inches to a foot long. Those of a foot having
40 a joint in the middle so as to be able to shut and used as a pocket foot rule and also as a square and bevel. Also horizontal inclined and plumb levels of sizes up to six feet in length of wood garnished with brass
45 for the use of bricklayers, carpenters, engineers, and architects.

For an illustration of one of the numerous conveniences and usefulness of this invention, let us suppose an architect wishes to
50 build a square tower a hundred feet high, having 20 feet length at its base on each side, and 10 feet at the top, taking the difference between the top and the base, which is 10 feet, half of which is 5 feet, the amount
55 which each side must recede, calculating by the tables of latitude and departure or any other table. The angle that 5 feet would give on forty feet, by shutting the level from the right angle or plumb as many degrees
60 as found, beginning the foundation of the wall with a width of 20 feet and while erecting it holding the level so that the air bubble will stand in the center, the builder will arrive at the top of the tower of 100
65 feet just on the angle required.

What I claim as my invention and desire to secure by Letters Patent is—

The combination of the rod *a*, the movable piece furnished with a spirit level, and the
70 graduated quadrant as is herein set forth.

AUGUSTUS GIRARD.

Witnesses:

CHARLES MIFFLIN,
ARCH. CAMPBELL.

