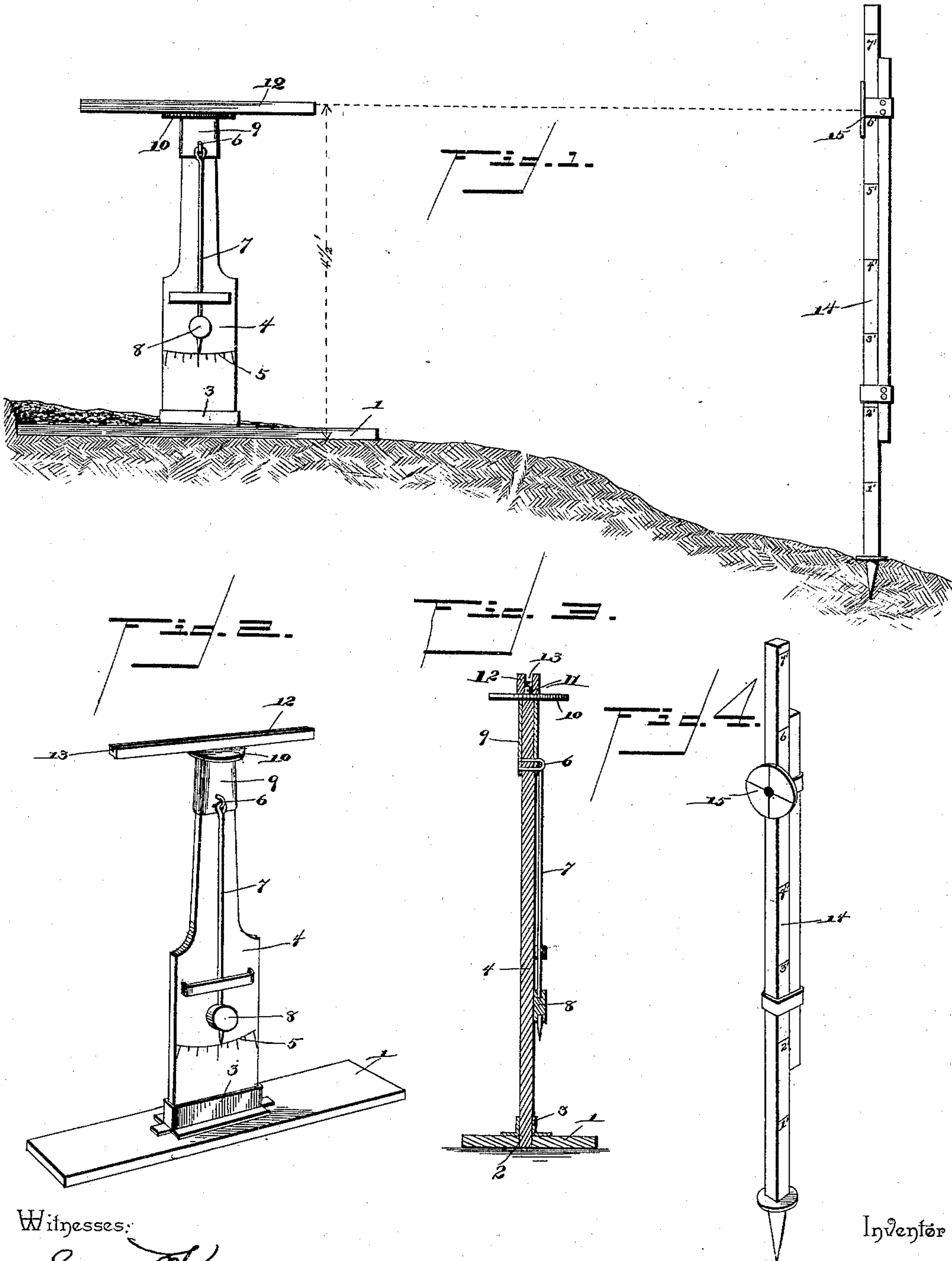


(No Model.)

S. J. TOWNSEND.  
LEVEL.

No. 446,038.

Patented Feb. 10, 1891.



Witnesses:

*Samuel R.*

*W. S. Swall*

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By *his* Attorneys,

*C. A. Snow & Co.*



# UNITED STATES PATENT OFFICE.

STEPHEN J. TOWNSEND, OF SUMTERVILLE, FLORIDA.

## LEVEL.

SPECIFICATION forming part of Letters Patent No. 446,038, dated February 10, 1891.

Application filed May 21, 1890. Serial No. 352,658. (No model.)

*To all whom it may concern:*

Be it known that I, STEPHEN J. TOWNSEND, a citizen of the United States, residing at Sumterville, in the county of Sumter and State of Florida, have invented a new and useful Level, of which the following is a specification.

This invention has relation to levels for use of mechanics or surveyors, and by the first-named for the purpose of leveling up sills, walls, &c., and by the latter for ascertaining the rise or fall of ground.

The objects of the invention are to provide a device to be used as a substitute for the ordinary level of the mechanic and the level of the surveyor, which device shall be extremely simple, cheap, and perfectly accurate.

With the above objects in view the invention consists in certain features of construction hereinafter specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a general view illustrating the manner of using the aforesaid level. Fig. 2 is an enlarged detail perspective of the level. Fig. 3 is a vertical transverse section of the same. Fig. 4 is a detail in perspective of the target-stand.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates a base of a suitable length and planed perfectly true, and in the center of the same is formed a socket 2, around which is fitted a metallic plate or casting 3. Fitted into the socket and rising from the base is a plumb-standard 4, which is at an exact right angle to the base and provided upon one of its faces with a curved scale of inches 5. Near the upper end of the standard, upon a stud 6, is fastened the upper end of a cord 7, which depends at the side of the standard and terminates in a plumb-bob 8, adapted to move over the scale 5 and indicate upon the same the number of inches or degrees the standard is out of a true vertical line, or if in a true vertical line.

As thus far constructed the device is capable of use and extremely handy to the ordinary mechanic in leveling up sills, foundations, walls, &c.

The upper end of the standard is reduced and embraced by flanges 9, to which is secured a disk or plate 10, provided with a ver-

tical pintle 11. Mounted to revolve loosely upon the pintle and maintained in perfect parallelism with the base by means of the plate is a sight-bar 12, the upper edge of which is provided throughout its longitudinal length with a sight-groove 13 or other form of sight.

14 represents the target-stand, similar to those usually employed by surveyors, and the same is divided off into feet and fractions thereof and provided with a sliding target 15. This standard may be formed of jointed sections and adapted to fold for convenience in carrying, if desired.

To illustrate the utility and operativeness of my invention, we will say that, for instance, it is desired to ascertain the fall or declination of a piece of ground. The level is placed at the upper end of the incline and an assistant goes to the lower end and plants the target-stand. The target is adjusted upon the stand so as to be parallel or opposite the level, which may be accomplished and ascertained by sighting through the groove 13 and giving the proper signals to the assistant operating the target. After this has been done the difference in feet or inches between the height of the standard 4 of the level and the number of feet or inches indicated upon the target-stand by the target will accurately indicate the number of feet or inches the ground falls or declines between the stand and the level, which may be readily computed to indicate the number of inches there are of fall to the foot. In this manner ditches, roads, water-ways, &c., may be accurately determined and depth of cut necessary to give the proper fall secured.

Having thus described my invention, what I claim is—

1. The herein-described level, consisting of a base, a standard projecting upwardly from the base at an exact right angle thereto and provided with a curved scale upon one of its faces, a sight-bar mounted upon the upper end of the standard, and a cord suspended from the standard above the center of the scale and provided with a plumb-bob moving over the scale, substantially as specified.

2. The herein-described level, consisting of a base, a standard rising vertically from and at an exact right angle to the base, and a horizontal sight-bar pivotally mounted upon

the upper end of the standard, substantially as specified.

3. The herein-described level, the same consisting of a base having a socket, a standard  
5 rising from the same and having a curved scale, a cord suspended above the scale and provided with a plumb-bob, and a grooved sight-bar mounted for pivotal movement upon the upper end of the standard, substantially  
10 as specified.

4. The herein-described level, the same consisting of a base-board, a standard mortised in the same, and a metallic socket-plate encircling the standard and secured to the same  
15 and the base, said standard being provided with a curved scale, a cord suspended above

the center of the scale from the upper end of the standard and provided with a plumb-bob adapted to move over the scale, a cap fitted on the upper end of the standard, a circular  
20 plate surmounting the cap and provided with a pintle, and a sight-bar mounted for horizontal rotation on the pintle, substantially as described.

In testimony that I claim the foregoing as  
25 my own I have hereto affixed my signature in presence of two witnesses.

STEPHEN J. TOWNSEND.

Witnesses:

W. B. HARE,  
D. C. HULL.