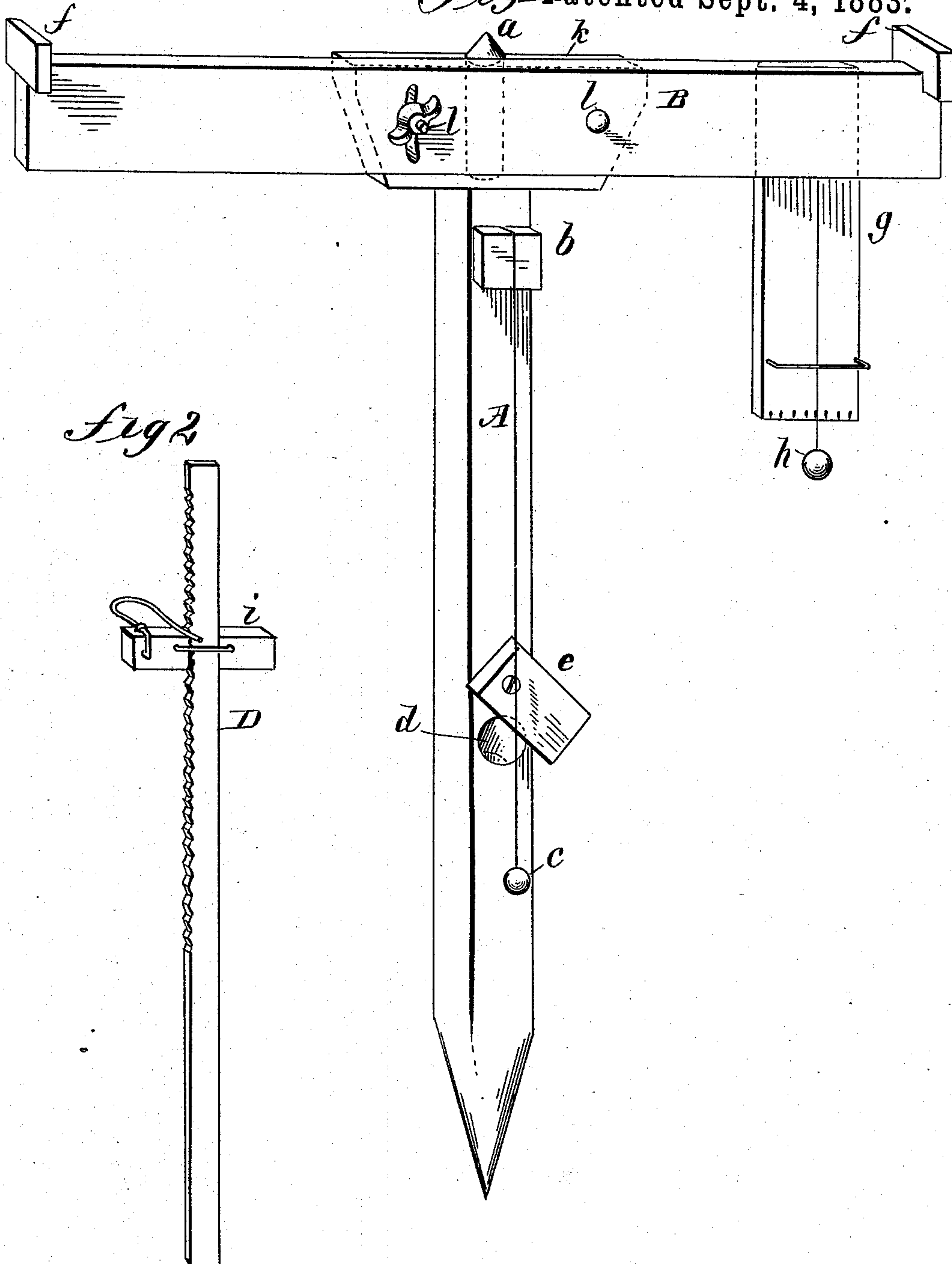


(Model.)

W. C. HOLMES.  
LEVELING INSTRUMENT.

No. 284,424.

*fig 1* Patented Sept. 4, 1883.



WITNESSES:

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BY

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# UNITED STATES PATENT OFFICE.

WILLIAM C. HOLMES, OF ATLANTA, GEORGIA, ASSIGNOR TO HIMSELF AND  
JAMES F. NUTTING, OF SAME PLACE.

## LEVELING-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 284,424, dated September 4, 1883.

Application filed May 23, 1883. (Model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. HOLMES, of Atlanta, in the county of Fulton and State of Georgia, have invented a new and Improved Leveling-Instrument, of which the following is a full, clear, and exact description.

My invention consists in a leveling-instrument designed for use by planters and others in running rows on rolling or undulating land, for making hillside ditches, terracing hilly land, and for any other work of a similar character, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both figures.

Figure 1 is a perspective view of the instrument. Fig. 2 shows the object-staff employed with the instrument.

A is a straight staff or bar, having its lower end pointed for entering the ground readily, and, if desired, shod with metal to prevent wear. The upper end of the staff A is turned down to form a round spindle, *a*, upon which is fitted a horizontal bar, B, which is fastened to an apertured block, *k*, at its mid-length setting over the spindle *a*, so that the bar is supported upon the top of the staff, and may turn freely thereon. The bar B is fastened to the block *k* by means of bolts *l l*, one of which is provided with a thumb-nut, and a slot is formed in the bar on the block, so that the horizontal bar B may be swung on the other bolt *l*.

Upon the staff A, suspended from the block *b*, is a plummet, *c*, and in the staff is a hole or recess, *d*, in which the plummet is received, and covered by a button, *e*, so that it is retained without risk of being injured while the staff is being set in the ground. The thickness of the button *e* exactly corresponds to the thickness of the block *b*, so that when the plumb-line, hanging over the side of the block, just touches the face of the button the staff will be plumb in the plane of the line.

The horizontal bar B is provided on its ends with sights *f f*, and depending from near one of its ends is a perpendicular bar, *g*, which is provided with a plummet, *h*, and the lower end of the bar *g* is provided with marks or

graduations, to aid, in connection with the plummet, in setting the bar B at any desired angle to the staff A.

The object-staff D shown in Fig. 2 may be of any suitable character, and is provided with an adjustable object-piece, *i*, which may be set on the staff at any desired height.

In using the instrument the staff A is set firmly in the ground, and by use of the plummet fixed in a perfectly vertical position. If a level line is to be run, the bar B is to be set level or horizontal by means of the plummet *h*, or the angle may be varied more or less by means of the scale upon the depending bar *g*, so that in running a ditch it may be made to fall one, two, or more inches to the rod, as desired. The object-staff is then set on the ground near the staff A, and the object-piece *i* adjusted at a height equal to the height of the instrument, or on a line with the sights *f*. The object-staff is then carried forward a short distance and set on the ground, and held where the object-piece will be on a line with the sights, which may be ascertained by sighting over the bar B. That point is then marked and the staff carried forward and a second position ascertained and marked in the same way, and so on as far as the object-piece is distinctly visible, the leveling-instrument remaining as first set. The bar B may be turned upon the staff, to the right or left, according to the direction in which the ditch or line is to be run, and this may be done without varying the horizontal position or adjustment.

This construction furnishes a very simple, inexpensive, and convenient instrument, by which rows or ditches can be made, and can be carried out with almost perfect accuracy, and it can be used whenever leveling or grading is to be done.

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

1. A leveling-instrument consisting of the staff A, the horizontal bar B, the depending bar *g*, and the plummets *c h*, combined together substantially in the manner described.

2. In a leveling-instrument, the combination, with the staff A, formed with the spindle *a*, of the horizontal bar B and block *k*, attached together by means of the bolts *l l*, so as to al-



low rotation and adjustment of the horizontal bar, substantially as described.

3. In leveling-instruments, the depending scale-bar *g* and plummet *h*, in combination  
5 with the adjustable horizontal bar B, substantially as described.

4. In leveling-instruments, the staff A, having a projecting block, *b*, and a recess, *d*, in combination with the button *e*, of the same

thickness as the block *b*, adapted to cover hole 10 *d*, as described, whereby the double service of assisting to level the staff one way and of protecting the plummet is performed by the same piece.

WILLIAM C. HOLMES.

Witnesses:

JOS. L. KING,

JAMES R. NUTTING.