T. M. WOODELL.

LEVEL.

APPLICATION FILED JAN. 3, 1916.

1,209,922. Patented Dec. 26, 1916.

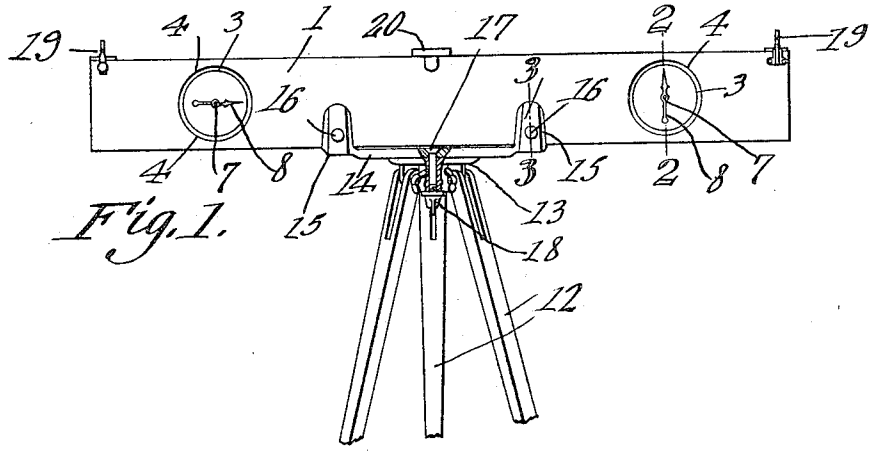


Fig. 1.

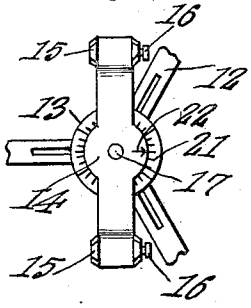


Fig. 4.

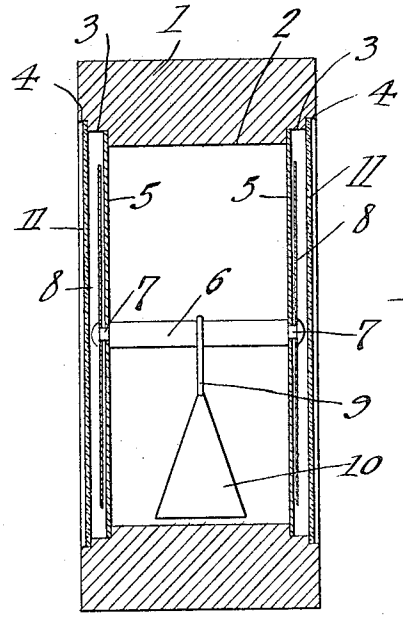


Fig. 2.

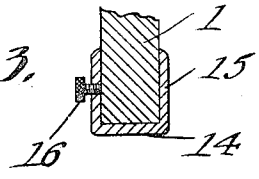


Fig. 3.

T. M. Woodell
Inventor

Witnesses
J. P. Fowler
R. Z. Parker.

by Cushman & Co.
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS M. WOODELL, OF GLENWOOD, NORTH CAROLINA, ASSIGNOR OF ONE-HALF TO CHARLES W. JENNINGS, OF GREENSBORO, NORTH CAROLINA.

LEVEL.

1,209,922. Specification of Letters Patent. Patented Dec. 26, 1916.

Application filed January 3, 1916. Serial No. 69,949.

To all whom it may concern:

Be it known that I, THOMAS M. WOODELL, a citizen of the United States, residing at Glenwood, in the county of Guilford and State of North Carolina, have invented a new and useful Level, of which the following is a specification.

The present invention appertains to levels, and aims to provide a novel and improved instrument of that character.

It is the object of the invention to provide a level embodying a stock having means for indicating the angular position thereof and the object to which the stock is applied, and novel means for mounting the stock upon a tripod.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein:—

Figure 1 is a side elevation of the level, a portion of the tripod being broken away. Fig. 2 is an enlarged cross section on the line 2—2 of Fig. 1, and Fig. 3 is an enlarged sectional detail taken on the line 3—3 of Fig. 1. Fig. 4 is a fragmental plan view of the tripod and turret carried thereby.

The present level embodies an elongated stock 1 constructed of wood, metal or other suitable material, and provided adjacent its ends with circular openings 2, the opposite sides of the stock 1 being provided with annular rabbets 3 surrounding the openings 2 and secondary annular rabbets 4 surrounding the rabbets 3. Metal dials 5 are fitted within the rabbets 3, and disposed centrally within each opening 2 is a rock shaft 6 having reduced ends 7 journaled through the centers of the dials 5. Pointers 8 are secured to the reduced ends 7 upon the outer sides of the dials 5 and coöperate with the graduations thereof. A hanger 9 is secured to each shaft 6 within the opening 2 and has attached thereto a weight 10, one pair of pointers 8 being parallel with the respective hanger 9 so as to normally lie vertically, while the other pair of pointers 8 are arranged at right angles with their hanger 9 to be normally arranged horizontally, as seen in Fig. 1. The two sets of pointers thus act as a check upon one another. Glass or transparent covers or panels 11 are fitted in the rabbets 4 to shield the pointers.

By means of the weighted pointers, it is easily possible to determine the angle at which the stock 1 is located, for purpose of leveling an object, or determining the angle thereof with respect to a horizontal or a vertical line. There is a normally vertical and a normally horizontal pointer upon each side of the stock, which renders the level convenient in use.

The stock is adapted to be rotatably carried by a tripod 12 having the head 13 to which the legs are pivoted, and to this end an elongated turret 14 is mounted for rotation about a vertical axis upon the head 13. This turret is provided at its ends with U-shaped socket members 15 snugly receiving the lower edge of the stock 1, and a set screw 16 is threaded through one limb or side portion of each socket member 15 to bear against the stock 1 for holding said stock in place. The set screws 16 when loosened permit the stock to be adjusted longitudinally of itself and vertically relative to the turret. The turret 14 is pivoted between its ends upon the head 13, by means of a vertical bolt or pivot 17 having a countersunk head at its upper end fitting flush with the upper surface of the turret 14 below the stock 1. The bolt 17 extends through the head 13, centrally thereof, and has a thumb nut 18 threaded upon its lower end between the tripod legs, whereby said nut can be tightened for clamping the turret at any angularly adjusted position. When the nut 18 is loosened, the turret can be swung in a horizontal plane for changing the angle of the level. Sights 19 can be carried by the upper edge of the stock 1 adjacent the ends thereof, for purpose of grading, leveling or the like.

The present instrument is a comparatively simple and inexpensive one, and will be found useful for various purposes, which will be apparent.

A compass 20 can also be engaged upon the stock 1 above the pivot 17, to indicate the direction in which the stock points.

It is also preferable to provide the upper face of the head 13 with degree graduations

21, and to provide the turret 14 with a pointer 22 coöperating with the graduations to indicate the angular position of the turret.

Having thus described the invention, what is claimed as new is:

A level embodying a tripod having a head and legs pivoted thereto, an elongated turret having U-shaped socket members at its ends, said turret seating between its ends upon said head, a vertical bolt extending through said head and turret between the ends of the turret for mounting it for rotation, the upper end of the bolt having a countersunk head flush with said turret, a nut threaded upon the lower end of the bolt and seating upwardly against said head between the tripod legs, an elongated horizontal stock having its lower edge fitted adjustably in said socket members, set screws carried by said socket members for clamping the stock therein, and means carried by the stock for indicating the position thereof.

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

THOMAS M. WOODELL.

Witnesses:
THOS. C. HOYLE,
CHAS. C. HINES.

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