

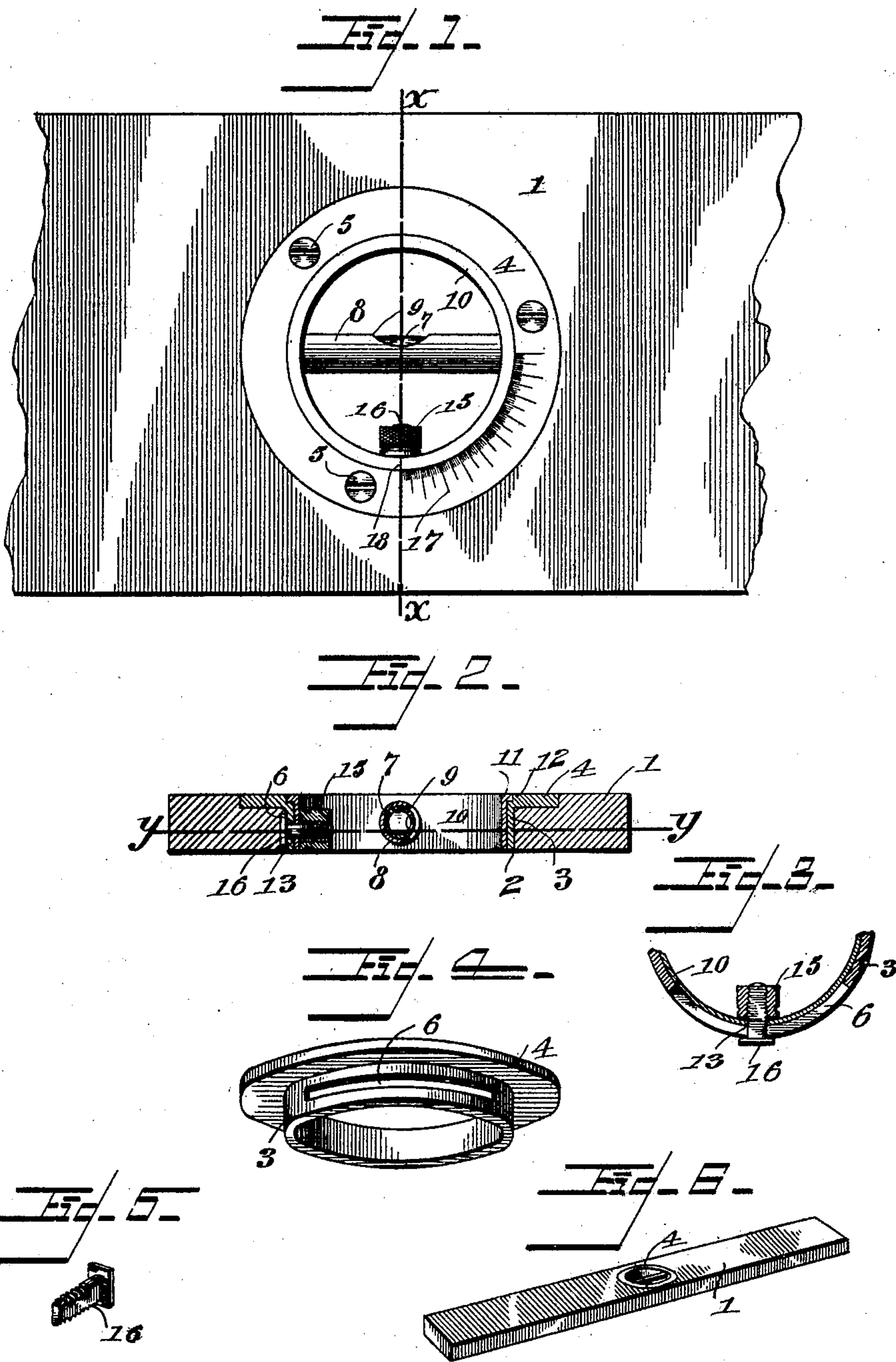
No. 683,033.

Patented Sept. 24, 1901.

E. E. FREDERICK.
SPIRIT LEVEL.

(Application filed July 8, 1899.)

(No Model.)



Witnesses

J. D. Ammer By his Attorneys,

A. B. Dupard

E. E. Frederick Invention

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

EDWIN ELMER FREDERICK, OF AVALON, PENNSYLVANIA, ASSIGNOR OF
NINE-SIXTEENTHS TO WILLIAM S. GUNN, OF SAME PLACE.

SPIRIT-LEVEL.

SPECIFICATION forming part of Letters Patent No. 683,033, dated September 24, 1901.

Application filed July 8, 1899. Serial No. 723,164. (No model.)

To all whom it may concern:

Be it known that I, EDWIN ELMER FREDERICK, a citizen of the United States, residing at Avalon, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Spirit-Level, of which the following is a specification.

This invention relates to spirit-levels of that class embodying a circular spirit-level carrier which is capable of a circular adjustment within a holder, and has for its object to provide improved means for adjusting the carrier with respect to the holder.

To this end the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that changes in the form, proportion, size, and the minor details of construction may be made within the scope of the appended claim without departing from the spirit or sacrificing any of the advantages of the present invention.

In the drawings, Figure 1 is an elevation of the improved spirit-level. Fig. 2 is a transverse sectional view taken on the line $x x$ of Fig. 1. Fig. 3 is a detail longitudinal sectional view taken on the line $y y$ of Fig. 2, parts of the device being omitted. Fig. 4 is a detail perspective view of the circular support for the spirit-level carrier. Fig. 5 is a detail perspective view of the adjusting-screw. Fig. 6 is a perspective view of a common or ordinary stock having the present invention applied thereto.

Corresponding parts in the several figures of the drawings are designated by like characters of reference.

Referring to the accompanying drawings, 1 designates an ordinary stock having a transverse opening 2 formed therethrough and located intermediate of the opposite ends thereof. Fitted in this opening is the circular holder 3, having an outer annular flange 4, which is fitted flush with one of the outer faces of the stock and secured thereto by means of suitable fastenings 5 passing through said flange and into the stock 1. The ring or body portion 3 of the holder is provided with a segmental slot 6, which is preferably located at

the lower side of the holder, and the interior of the latter is free from obstructions.

The spirit-level proper comprises a glass tube 7, containing the liquid which forms the usual bubble, and is inclosed within a metallic tubular casing 8, which is provided with a lateral notch or opening 9, through which the bubble is exposed to view. This spirit-level is mounted diametrically within a carrier-ring 10, which latter is loosely fitted within the circular holder 3 and is provided at one side with an outer annular flange 11, fitting in an inner annular groove 12, provided in the holder and at the flange side thereof. At the lower side of this carrier-ring there is provided an opening 13, alined with the slot 6 formed in the holder 3.

From the foregoing description it will be evident that the carrier-ring 10 may be turned within the holder 3 so as to adjust the spirit-level to any required inclination. To hold the carrier at any adjusted position and secure the same within the holder, there is provided an adjusting-screw 16, which projects laterally through the slot 6 in the holder and the opening 13 in the carrier and being provided with a suitable detachable thumb-nut 15, provided upon the inner end of the screw and engaging against the inner face of the carrier. The wall of the opening 2 is recessed or cut away for the reception of the head of the nut, which projects beyond the outer surface of the holder 3. As best illustrated in Fig. 5, it will be seen that the screw is provided with opposite flattened and smooth faces, which engage against the opposite sides of the slot 6, so as to prevent accidental turning of the screw. When it is desired to adjust the spirit-level, the thumb-nut 15 is loosened, whereby the carrier may be turned within the holder to any desired position, after which said thumb-screw is tightened against the inner face of the carrier, thereby locking the latter upon the holder. By having a bolt project through the slot of the holder and the perforation of the carrier the slot is covered to exclude foreign substances, and the inner end of the bolt acts as a handle for rotating the carrier and means for holding it in its adjusted position after it has been rotated.

To provide for an accurate adjustment of

the carrier, the outer face of the flange of the latter is provided with a diametric mark 18, forming a pointer which is adapted to register with a graduated scale or index 17, provided
5 upon the outer face of the flange of the holder.

What I claim is—

The combination with the holder 3 fitted and secured in a suitable opening in the stock and provided with the annular groove 12, the
10 segmental slot 6 below the accompanying level-tube, and the graduated scale 17, of the carrier-ring 10 turning in the holder 3, and having the mark 18 on the outer side provided with the annular flange 11 lying in the groove

12, and with the opening 13 alined with the 15 slot 6 in the holder, the adjusting-screw 16 having the thumb-nut 15 the glass tube 7 and its casing 8 mounted diametrically in the opening in the stock all constructed and arranged substantially as described for the pur- 20 poses specified.

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

EDWIN ELMER FREDERICK.

Witnesses:

JAS. C. WILSON,

A. D. WILSON.