No. 892,217. PATENTED JUNE 30, 1908.

H. W. BROWN.

LEVEL.

APPLICATION FILED JAN. 6, 1908.

Fig. 1

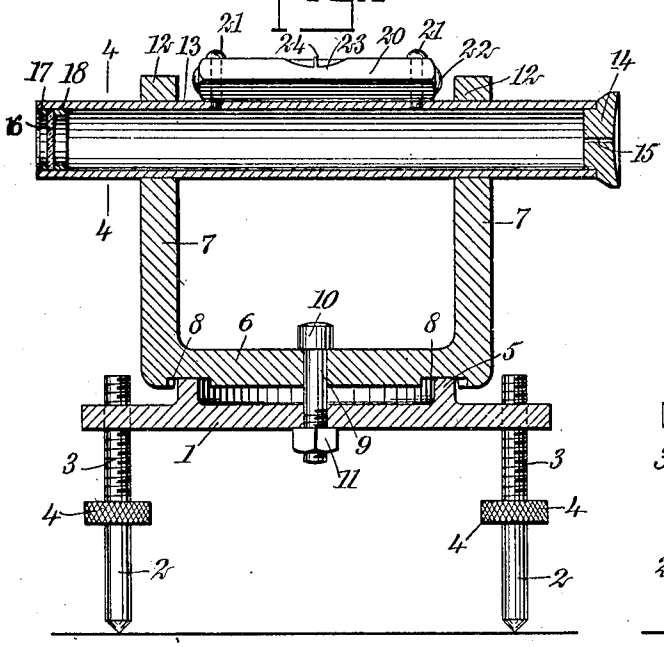


Fig. 2

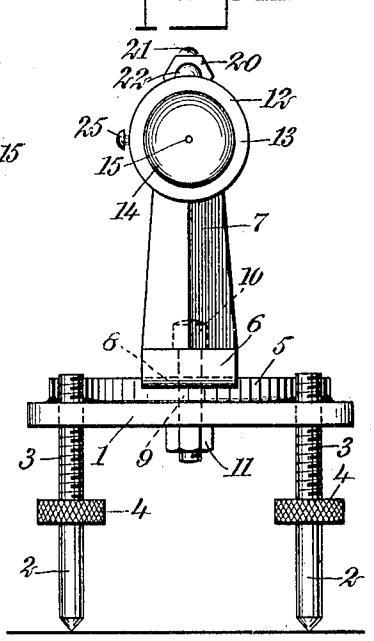


Fig. 3

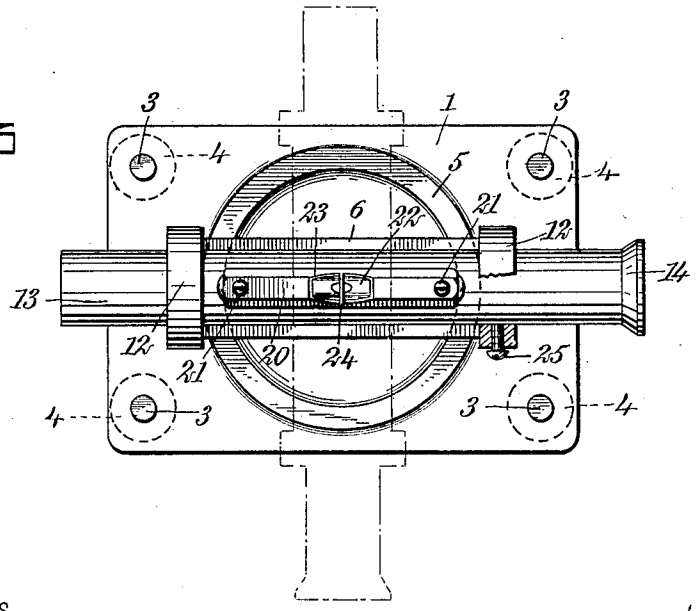
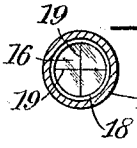


Fig. 4



WITNESSES

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LEVEL.

No. 892,217. Specification of Letters Patent. Patented June 30, 1908.

Application filed January 6, 1908. Serial No. 409,510.

To all whom it may concern:

Be it known that I, HAYDEN W. BROWN, a citizen of the United States, and a resident of Waterbury, in the county of New Haven and State of Connecticut, have invented a new and Improved Level, of which the following is a full, clear, and exact description.

This invention relates to levels, and more particularly to instruments of this kind used by masons, builders and others, in architectural and engineering work.

An object of the invention is to provide a simple, inexpensive and efficient level, by means of which the elevation and alinement of objects at different points and in different directions can be ascertained.

A further object of the invention is to provide a device of the class described, comprising an adjustable base, a sighting tube, and a level pivotally mounted upon said base, and having means for guiding the relative movements of the parts.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which

Figure 1 is a longitudinal section of the level; Fig. 2 is an end elevation of the same; Fig. 3 is a plan view showing certain of the parts in different positions in dotted outlines; and Fig. 4 is a transverse section on the line 4—4 of Fig. 1.

Before proceeding to a more detailed explanation of my invention, it should be understood that the level is particularly useful in connection with masonry work and the like, though it is also adapted to other purposes for which levels are ordinarily employed. In masonry work, if the mason desires to find a level or to ascertain the alinement of certain objects or points, it is necessary to employ a surveyor's level, or to take sights along an ordinary wooden level. The latter method is, of course, inaccurate and a crude one. Furthermore, the expensive surveyor's level is seldom available to the mason. Also, sighting along a wooden level is impracticable if it is necessary to sight to a plurality of points not in the same line.

My invention can be set up upon any suitable support, such, for example as a stone, a barrel, a post or the like, and as it is adjustable, sights can be taken with it in all directions radiating from the point at which the level is arranged.

Among the advantages of my invention are its adaptability to architectural and engineering purposes, the simplicity of its construction, the efficiency of its operation and the cheapness of its manufacture.

Referring more particularly to the drawings I provide a base 1, which may be cast or otherwise formed from suitable material such as iron, brass or the like. The base 1 is preferably rectangular in form, and near the corners has threaded openings in which are arranged the correspondingly threaded shanks 3 of supports 2. The supports 2 have integral collars or nuts 4 which are burred, and by means of which the supports can be easily adjusted. The lower end of each support is preferably tapered to a point, to insure the firm mounting of the instrument. At the upper face, the base 1 has formed thereon an integral track or guideway 5 which is preferably annular in form.

A supporting member or yoke 6 of elongated form, and provided at the ends with parallel, upwardly extending arms 7, is mounted upon the track 5 and has similar guide grooves 8 to receive the track. By means of a pivot bolt 9, having a head 10 and a nut 11, the yoke is pivotally secured in position upon the base 1, and in this way is arranged to swing freely upon the track 5. The base has a threaded opening to receive the bolt and thus the nut 11 acts as a lock-nut as well as a retaining-nut.

At the upper ends, the arms 7 have sockets 12 in which is arranged a sight tube 13. Like the yoke, the sight tube is formed from any suitable material such as cast-iron, brass or the like. At one end, the sight tube has an eye-piece 14 provided with a constricted portion adapted to fit into the end of the tube, and having the outer face concave. A sight opening 15 is formed at the center of the eye-piece and permits the operator to look through the eye-piece, through the sight tube. At the opposite end of the sight tube is arranged a sight glass 16 mounted in position by means of rings or washers 17 and 18, which are cemented or otherwise secured in position. The sight glass has cross lines 19 engraved or otherwise indicated thereon. It will be understood that the sight opening 15 and the intersection of the sight lines are

alined centrally with respect to the sight tube, in the usual manner. The sight tube can be firmly secured in position in the sockets 12 by means of a set screw 25 carried by one of the sockets.

By means of screws 21, a level holder 20 is mounted upon the upper side of the sight tube. Within the level holder is a level tube 22 containing a liquid and a level bubble, in the usual manner. At the center, the holder 20 has a sight opening 23 provided with an indicator 24, by means of which the position of the bubble can be ascertained. This spirit level may be replaced, if so desired, by any other suitable leveling means.

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

1. In a device of the class described, a base having means for adjusting it and an annular upwardly extended portion forming a track, a member pivoted upon said base and arranged to move upon said track, said member having upwardly disposed sides, and sighting and leveling means carried by said member.

2. In a device of the class described, a base having adjustable supports and a guideway, a yoke pivotally mounted upon said base and having a groove engaging said guideway, and sighting and leveling means carried by said yoke.

3. In a device of the class described, a base having adjustable supports and a circular guideway, a yoke pivotally mounted upon said base and having a groove slidably engaging said guideway, said yoke having upwardly disposed arms, a sighting tube carried by said arms, and a level mounted upon said tube.

4. In a device of the class described, a base having threaded openings, supports having threaded portions mounted in said openings and presenting means for their adjustment, said base having an annular track upon its upper face, a yoke, means for pivotally mounting said yoke upon said base, said yoke having grooves slidably engaging said track and arms presenting sockets, a sight tube arranged in said sockets and having an eye-piece and cross-sights, and a level arranged upon said sight tube.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HAYDEN WILLIAM BROWN.

Witnesses:

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