J. KNITLE.

LEVEL.

APPLICATION FILED JAN. 6, 1915.

1,155,824.

Patented Oct. 5, 1915.

Fig. 3

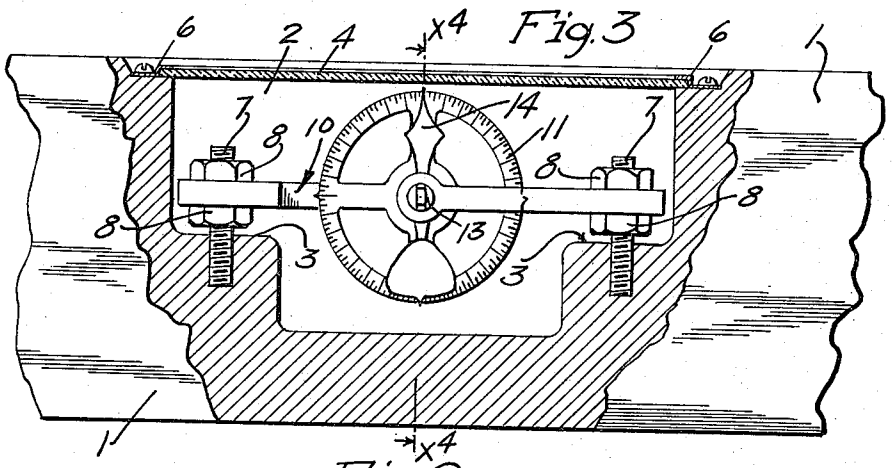


Fig. 2

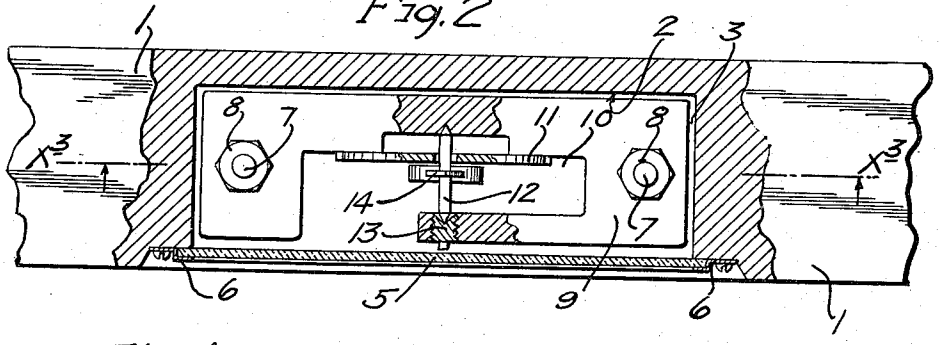


Fig. 4

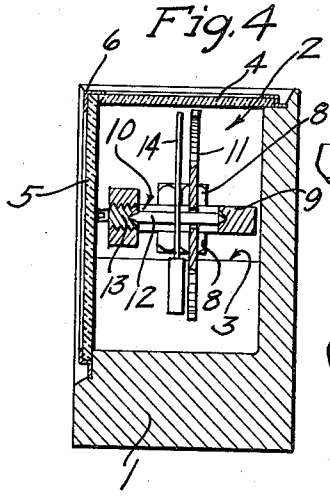
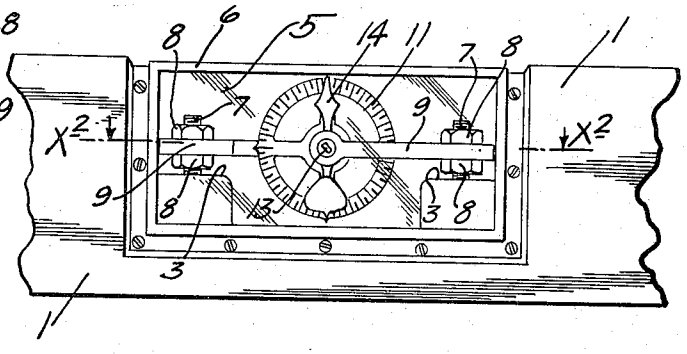


Fig. 1



WITNESSES

E. C. Skinkle

A. H. Opsahl

INVENTOR

Joseph Knitle

BY HIS ATTORNEYS

Williamson & Merchant

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH KNITLE, OF MINNEAPOLIS, MINNESOTA.

LEVEL.

1,155,824. Specification of Letters Patent. Patented Oct. 5, 1915.

Application filed January 6, 1915. Serial No. 714.

To all whom it may concern:

Be it known that I, JOSEPH KNITLE, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Levels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in levels; and, to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings: Figure 1 is a side elevation of the improved level with the end portions thereof broken away; Fig. 2 is a view partly in plan and partly in horizontal section taken on the line x^2 x^2 of Fig. 1, on an enlarged scale; Fig. 3 is a view partly in side elevation and partly in section taken on the line x^3 x^3 of Fig. 2; and Fig. 4 is a view principally in transverse section taken on the line x^4 x^4 of Fig. 3.

The numeral 1 indicates a rectangular wooden body member having at its intermediate portion, a rectangular recess or chamber 2. This chamber 2 is open at its top and one side, and, as shown, the lower portion thereof is contracted to afford a pair of shoulders 3, spaced longitudinally of the body 1. The open top and side of the chamber 3 are normally closed by transparent panels 4 and 5 respectively. These panels 4 and 5 are mounted in a metallic skeleton frame 6, secured by screws to the body 1. Obviously, by removing the frame 6, access may be had to the chamber 3.

Projecting vertically from each shoulder 3, is a screw stud 7, that is rigidly anchored to the body 1 and provided with a pair of opposing, adjusting nuts 8. Adjustably supported on the studs 7 between the coöperating pairs of nuts 8, is a bed-plate 9. Formed in the bed-plate 9, is an L-shaped slot 10, the short leg of which extends completely through one of the longitudinally edges, of said bed-plate. A dial 11, graduated to indicate degrees, is extended vertically through the long leg of the slot 10 and is rigidly secured to the bed-plate 9. Extending axially and loosely through the dial 11, is a relatively short shaft 12 having conical ends that are mounted in conical seats, formed, one in the main body of the bed-plate 9, and the other in a screw plug 13. This screw plug 13 has screw threaded engagement with the prong of the bed-plate 9, extends transversely therethrough and is provided for the well known purpose of taking up wear. Rigidly secured to the shaft 12, is a gravity arighted indicator, as shown, in the form of a weighted pointer 14, arranged for coöperation with the dial 11.

To adjust the improved level, the body 1 may be placed in a true horizontal position, and then by adjusting the nuts 8 on one of the studs 7, the bed-plate 9 may be raised or lowered at one end, to bring the zero point on the dial 11 into registration with the pointer 14. The purpose of making the slot 10 L-shaped, is to permit the dial to be read when the level is turned into vertical position.

By means of the improved level, the body 1 may be set in either true horizontal or vertical positions or in different degrees of obliquity with respect to the horizontal.

What I claim is:

1. In a level, the combination with a body member having a recess, of a bed-plate mounted in said recess and having an L-shaped slot extending through one edge thereof, a dial mounted in said slot on the bed-plate at the axis of the screw plug, and a gravity arighted indicator journaled at the axis of said dial for coöperation therewith.

2. In a level, the combination with a body member having a recess, of a bed-plate mounted in said recess and having an L-shaped slot extending through one edge thereof, an adjustable screw plug mounted in the prong of said bed-plate, a dial mounted in the long leg of said slot on the bed-

plate at the axis of the screw plug, and a gravity arighted indicator, arranged for co-operation with said dial and having a shaft extending axially therethrough, said shaft having conical ends mounted in conical seats formed, one in the main body of said bed-plate and the other in said screw plug.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH KNITLE.

Witnesses:
BERNICE G. WHEELER,
HARRY D. KILGORE.

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