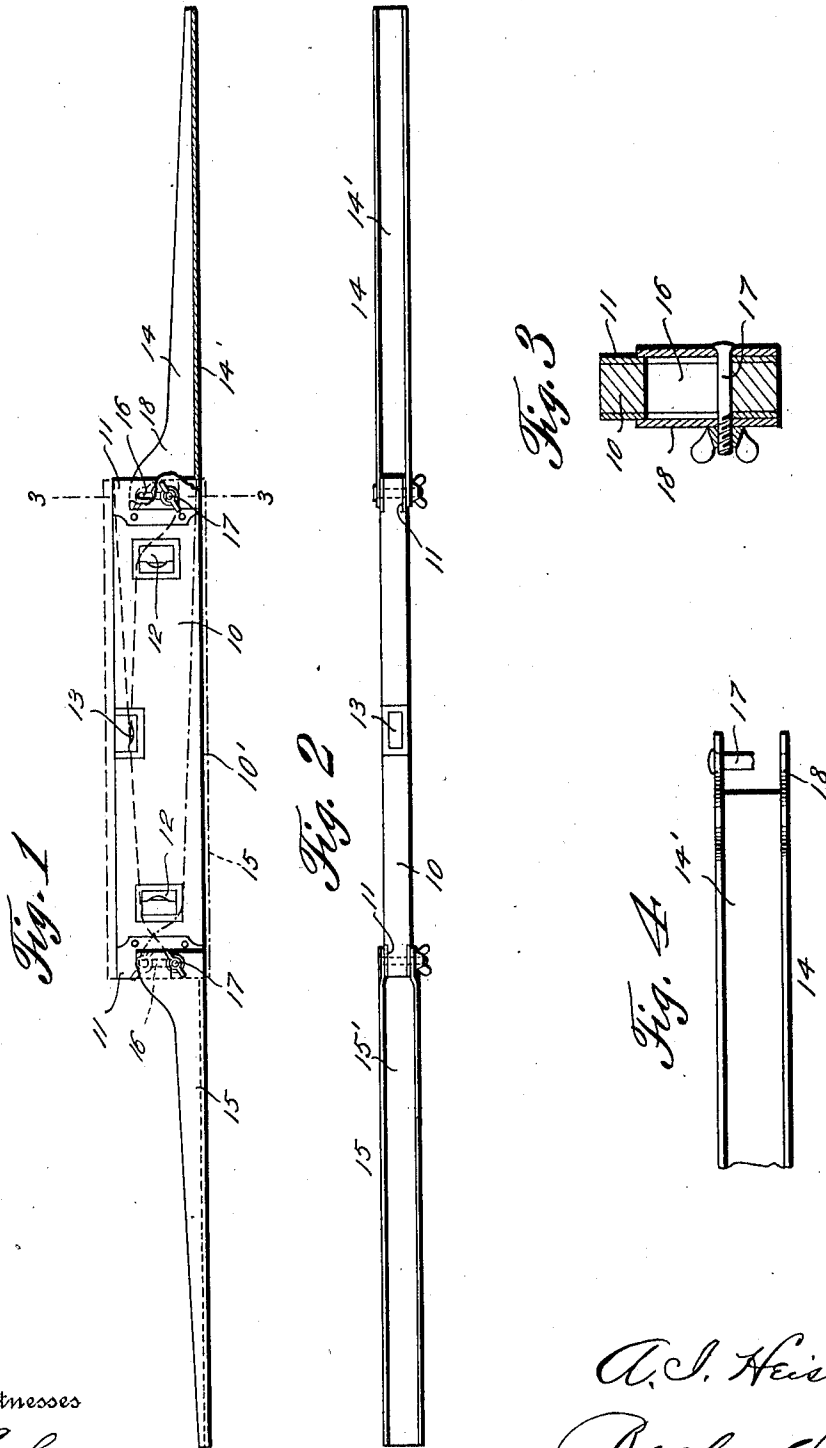


A. I. HEISTAD.
FOLDING LEVEL.
APPLICATION FILED SEPT. 15, 1909.

945,275.

Patented Jan. 4, 1910



Witnesses

E. Larson
S. E. Dodge

Inventor

A. I. Heistad

By

Dele Robb

Attorney

UNITED STATES PATENT OFFICE.

AMUND I. HEISTAD, OF FLUSHING, NEW YORK.

FOLDING LEVEL.

945,275.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed September 15, 1909. Serial No. 517,954.

To all whom it may concern:

Be it known that I, AMUND I. HEISTAD, a subject of the King of Norway, residing at Flushing, in the county of Queens and State of New York, have invented certain new and useful Improvements in Folding Levels, of which the following is a specification.

This invention relates to instruments of precision, and especially to a leveling device possessing certain novel features of construction adapting it to be folded into a small compass and to be safely inclosed or protected from outside damaging influences when folded.

The invention consists of certain novel features hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the device showing in full lines the position when extended ready for use and in dotted lines different folded positions; Fig. 2 is a top plan view of the device shown in Fig. 1; Fig. 3 is a transverse detail on the line 3—3 of Fig. 1, and Fig. 4 is a fragmentary plan view of one of the end members.

Throughout the following detail description and on the several figures of the drawings similar parts are referred to by like reference characters.

The invention comprises a body 10, of any suitable construction or material, usually made of wood and trimmed with metal plates. Such plates are indicated at 11 at the ends of the body. The body also is provided as usual with one or more spirit glasses 12 at its ends and a spirit glass 13 along one edge. The plates 11, as indicated in Fig. 2, are arranged flush with the sides of the body 10, providing a plane face throughout the entire extent of each side of said body. In order to provide that the body may not be of excessive length and yet to insure precise operation thereof in use and to this end provide for a long instrument, one or both ends of the body are fitted with folding extensions 14 and 15. Each end of the body, preferably in the region of the plates 11, is provided with a slot 16 extending transversely to the rear or back edge 10' of the body. Each of the extensions is secured in place by means of a locking bolt 17 passed through the side wings 18 of the extension and through said slot the bottom or rear edge 14' or 15' of the respective extensions ter-

minates short of the ends of the wings and abuts against the end of the said body edge 10' when the device is in extended position. The wings 18 being slightly flexible provide for a proper positive clamping thereof against the plates 11 through the locking bolt and thumb nut 17.

As indicated in dash lines in Fig. 1 the end members 14 and 15 are adapted to be folded upon the outer or upper edge of the body, the latter mentioned member being foldable upon the outside of the former. In order to provide for such folding the member 15 may be sufficiently wider than the member 14. One purpose of the slots 16 is to enable the locking bolts 17 to be set closely adjacent to the rear or bottom edge 10' of the device when in use and yet to permit the folding of the end members as above indicated by loosening said bolts and sliding them along the slots.

In some instances it may be desirable to fold one of the members upon one edge of the body and the other upon the opposite edge, as indicated in dot and dash lines in Fig. 1, whereby both edges of the body will be effectively protected when in folded position, and may thus be subjected to rough usage in a tool box or the like without serious danger of damage to the instrument. In order to cause the extension 15 to assume this latter position it is necessary merely that the locking bolt 17 be removed, permitting the extension 15 to be moved around bodily instead of swinging upon the bolt as a pivot. The bolt may then be replaced to secure the device in folded position.

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

1. In a spirit level, the combination of a body having spirit glasses, a pair of foldable end extensions for the body, each of said extensions having side wings embracing the adjacent end of the body, a slot being formed in each end of the body and extending substantially at right angles to the rear edges thereof, and a locking bolt passed through each pair of extension wings and the adjacent slot, substantially as set forth.

2. In a spirit level, the combination of a body having one or more spirit glasses secured therein, a pair of end extensions, each having a rear or bottom portion adapted to abut against the adjacent end of the body and also having a pair of wings embracing

said end, each of said ends being provided with a slot extending transversely thereof, said end extensions being foldable upon one edge of the body, one on the outside of the
5 other, and locking bolts passed through the respective pairs of wings and slots, substantially as set forth.

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

AMUND I. HEISTAD.

Witnesses:

ELIHU F. HARRIS,
HARRY B. PEARE.