April 17, 1945. P. L. ACKERSON 2,373,641

LEVEL

Filed March 6, 1943 2 Sheets-Sheet 1

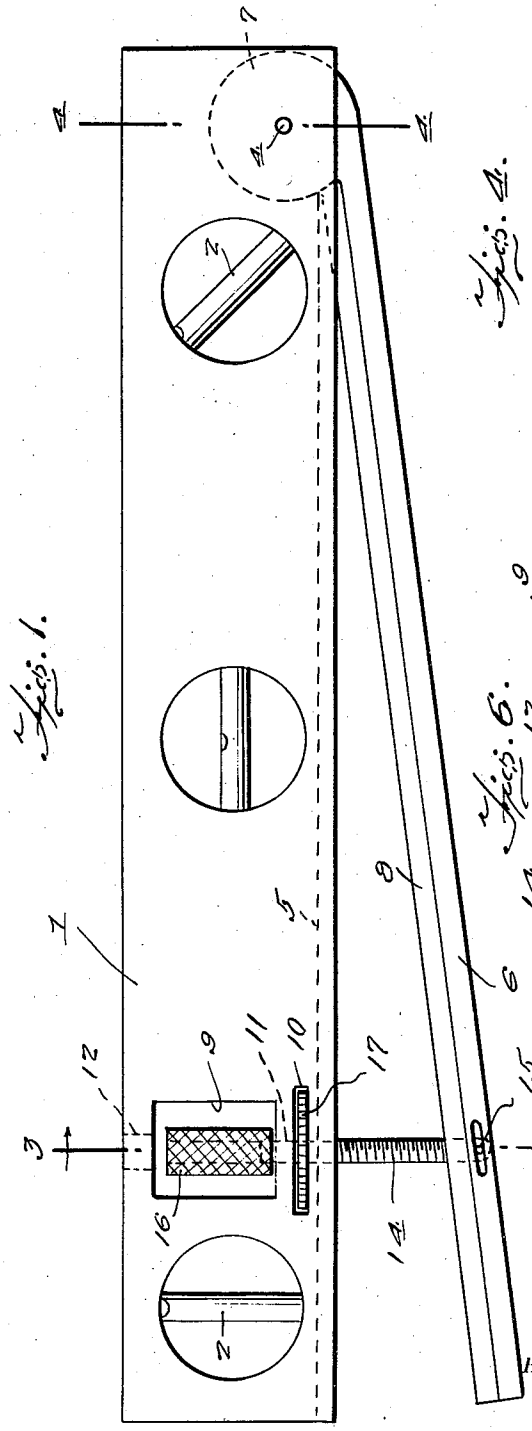


Fig. 1.

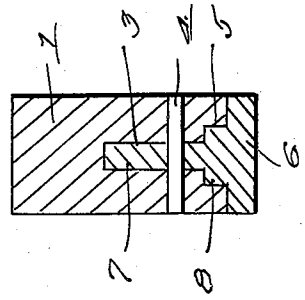


Fig. 4.

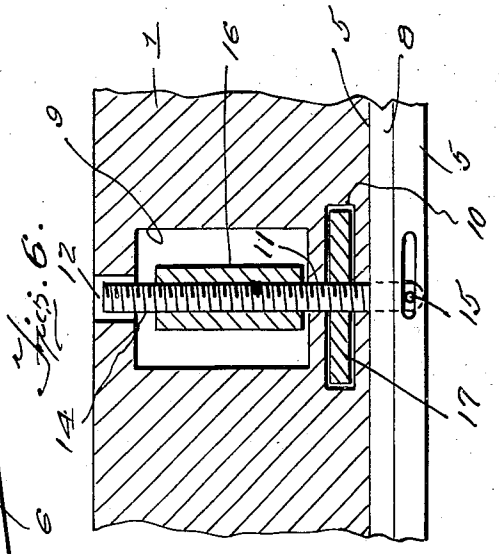


Fig. 6.

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LEVEL

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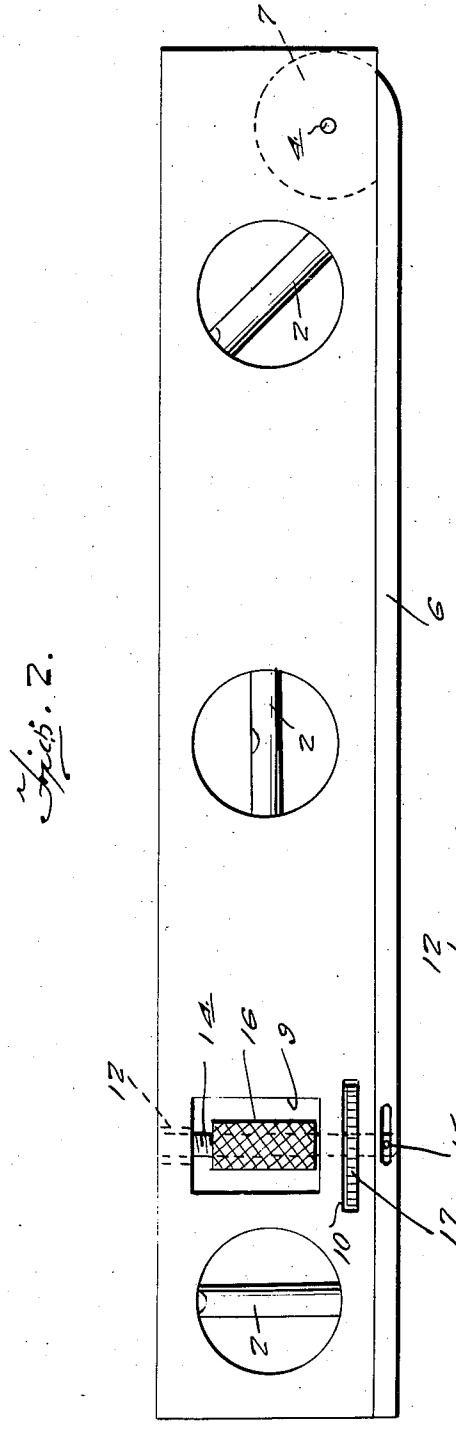


Fig. 2.

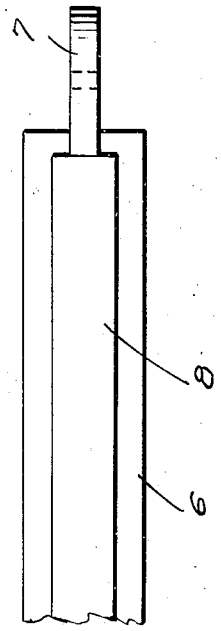


Fig. 5.

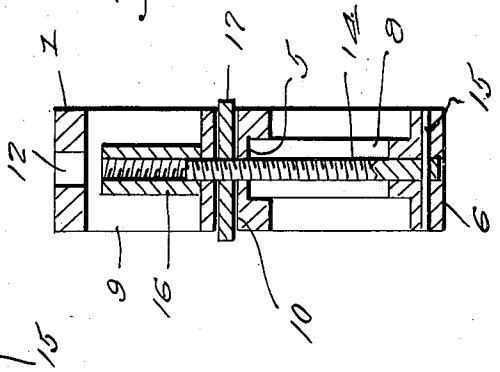


Fig. 3.

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Patented Apr. 17, 1945 2,373,641

UNITED STATES PATENT OFFICE

2,373,641

LEVEL

Percy L. Ackerson, Cohasset, Mass.

Application March 6, 1943, Serial No. 478,288

2 Claims. (Cl. 33—214)

My invention relates to improvements in levels, such as those used by ship builders, ship fitters, pipe fitters, machinists, and all other trades that build any object of declivity, and the object is to provide a tool so constructed that it may be used for locating unknown points in a strict horizontal or vertical alinement with certain known points.

With this general object in view, the invention resides in certain novel features of construction to be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings which constitute a part of the application and in which, the declivity shoe is attached to a spirit level with a special hinge and a micrometer screw adjustment and lock nut, to be used in the building of ships or boats or any object that is built on declivity.

Figure 1 is a view in side elevation of a level constructed in accordance with the present invention, showing the adjustable base or shoe in lowered position.

Figure 2 is a side elevational view, showing the base or shoe in closed position.

Figure 3 is a cross sectional view, taken substantially on the line 3—3 of Figure 1.

Figure 4 is a cross sectional view, taken substantially on the line 4—4 of Figure 1.

Figure 5 is a top plan view of the pivoted end portion of the base.

Figure 6 is a fragmentary view in vertical longitudinal section through the portion of the instrument which includes the adjusting means.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a beam 1 of suitable material and dimensions. The beam 1 has mounted therein a plurality of bubble tubes 2. In its lower edge the beam 1 has formed, in one end portion, a recess 3. A metallic pin 4 traverses the recess 3. The lower edge of the beam 1 is further provided with a longitudinal groove 5 which communicates, at one end, with the recess 3.

Mounted beneath the beam 1 is an adjustable supporting base 6. The base 6 is provided, on one end, with an integral, upstanding apertured ear 7 which is journaled on the pin 4 in the recess 3. The base 6 further includes a longitudinal rib 8 which seats in the groove 5 when said base is in closed position beneath the beam 1.

The beam 1 has formed in the end portion thereof which is remote from the recess 3 an opening 9. Below the opening 9, the beam 1 also has formed therein a slot 10. A vertical bore 11 in the lower portion of the beam 1 communicates with the opening 9, the slot 10 and the groove 5. An opening 12 in the upper portion of the beam 1 communicates with the opening 9, said opening 12 being vertically aligned with the bore 11.

A threaded rod 14 is operable in the bore 11. The rod 14 is connected, at its lower end, to the base 6 by a pin and slot connection 15. A tubular adjusting nut 16 is threadedly mounted on the rod 14 in the opening 9. A lock nut 17 is mounted on the rod 14 in the slot 10.

It is thought that the operation of the device will be readily apparent from a consideration of the foregoing. Briefly, with the base 7 in closed position beneath the beam 1, the instrument may readily be used in the usual manner. Engagement of the rib 8 in the groove 5 positively secures the base 6 against lateral movement beneath the beam 1 in addition to strengthening or reinforcing said base longitudinally. To open the base 6, as seen in Figure 1 of the drawings, the nuts 16 and 17 are rotated in a direction to feed the rod 14 downwardly thereby swinging said base away from the beam 1. When the desired adjustment of the base 6 has been made the lock nut 17 is tightened against either the upper or the lower wall of the slot 10. The opening 12 accommodates the upper end portion of the rod 14 when the base 6 is in closed position, as shown to advantage in Figure 6 of the drawings.

This tool is designed so that it can be used as any ordinary level when declivity shoe is back in recess of level. Being made, thus, so any tradesman will not have to have but one level at his work. Figure 1 will show that if it is turned to opposite side of level that has declivity shoe set, he will be able to use level in ordinary way.

It is believed that the many advantages of a level constructed in accordance with the present invention will be readily understood, and although a preferred embodiment of the device is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

1. A spirit level comprising a beam, bubble tubes mounted on said beam, a supporting base mounted longitudinally beneath the beam and having one end portion pivotally secured thereto, said beam having an opening therein and further having a slot therein beneath the opening, a threaded rod pivotally connected to the free end

portion of the base and operable in the opening and slot, a tubular adjusting nut on the base threadedly mounted on said rod and operable in the opening, and a disk-like lock nut threadedly mounted on the rod in the slot and engageable with certain of the walls thereof for securing the base in adjusted position.

2. A spirit level comprising a beam having a recess in its lower edge in one end portion and further having a longitudinal groove in said lower edge communicating with said recess, a pin traversing the recess, a longitudinal supporting base beneath the beam, said base comprising an elongated flat plate of a width similar to that of the beam and including an upstanding apertured ear on one end journaled on the pin in the recess, said base further including an upstanding central longitudinal rib snugly engageable in the groove, means carried by the other end portion of the beam and including an adjusting screw pivotally and slidably connected to the base for pivotally adjusting the base toward or away from the beam, and bubble tubes mounted on said beam.

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