No. 761,033. PATENTED MAY 24, 1904.

A. K. CROSS.

ARTIST'S LEVEL.

APPLICATION FILED OCT. 16, 1902. RENEWED APR. 25, 1904.

NO MODEL.

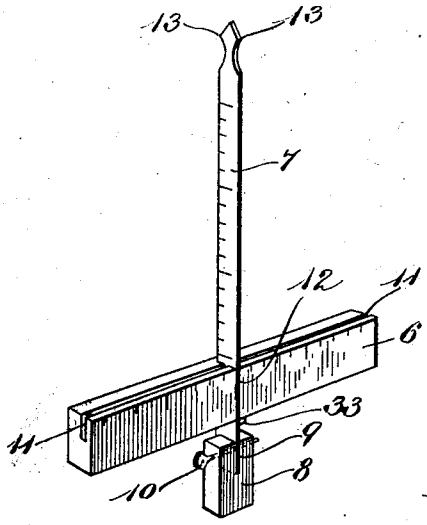


Fig. 1.

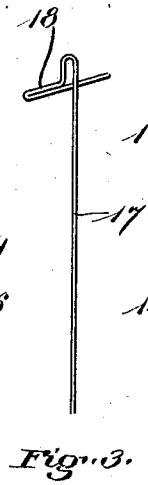


Fig. 3.

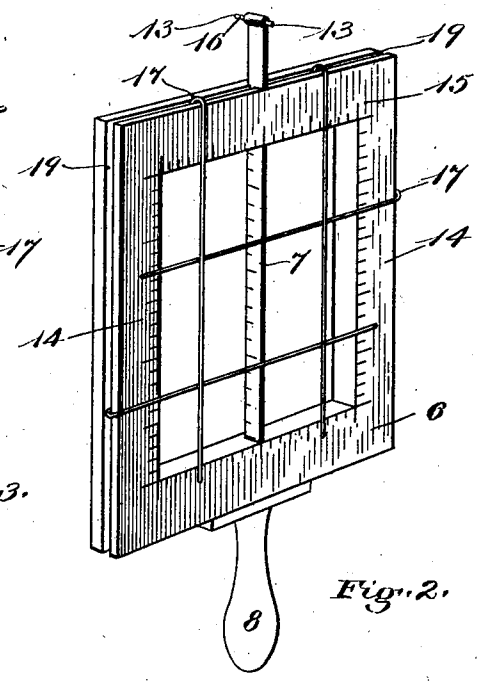


Fig. 2.

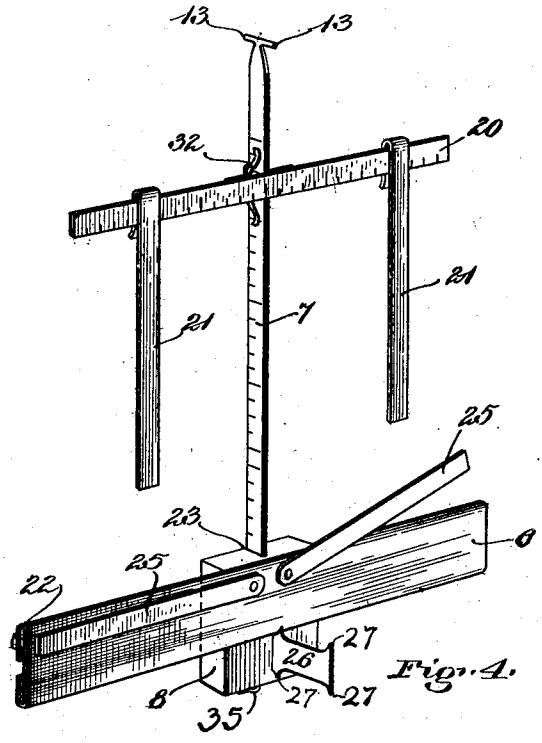


Fig. 4.

Witnesses.

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No. 761,033. Patented May 24, 1904.

UNITED STATES PATENT OFFICE.

ANSON K. CROSS, OF ASHLAND, MASSACHUSETTS.

ARTIST'S LEVEL.

SPECIFICATION forming part of Letters Patent No. 761,033, dated May 24, 1904.

Application filed October 16, 1902. Renewed April 25, 1904. Serial No. 204,908. (No model.)

To all whom it may concern:

Be it known that I, ANSON K. CROSS, a citizen of the United States, residing at Ashland, in the county of Middlesex and Commonwealth of Massachusetts, have invented a new and useful Artist's Level, of which the following is a specification.

My invention relates to instruments used for exactly ascertaining the relative proportions of an object at a distance; and its purpose is to provide means whereby the art student or draftsman may obtain a horizontal line, together with one perpendicular thereto, with which to compare the outline, contour, or proportions of the object he desires to draw and to provide a substitute for the awkward and inaccurate method of art students and others which consists in using a common pencil or ruler for ascertaining the proportions and angles of the object. I attain these objects by the instrument and the modifications thereof illustrated in the accompanying drawings, in which—

Figure 1 is a view in perspective of the instrument in its simplest form. Fig. 2 is a perspective view of a modification of the instrument with auxiliary features. Fig. 3 is a wire square designed to be used in connection with the form shown in Fig. 2. Fig. 4 is a view in perspective of another modification of the instrument shown in Fig. 1.

Similar numerals refer to similar parts throughout the several views.

In Fig. 1, 6 is a beam or bar rectangular in cross-section of convenient length and marked off on one side with the divisions of some linear measure and may be of wood, metal, or any other suitable material.

7 is a blade of thin metal or wood marked on one side similar to the beam 6 and having a weight 8 attached to its lower end by inserting it into a slot 9 in the weight and securing it by means of the pin 10, extending through corresponding holes in the weight 8 and blade 7. It is obvious that any one of several modes of attachment may be employed for this purpose. In the upper edge of the beam 6 is a longitudinal slot 11.

12 is a vertical slot in the center of the beam 6, in which the blade 7 snugly fits and in which it is held at right angles to the upper surface of the beam 6 when the instrument is in use.

At the upper end of the blade 7 are two projections or points 13 13, which are designed to be held between the thumb and index-finger of the operator, so as to freely suspend the blade 7 and permit it by gravity to assume an exactly perpendicular position. While not essential to the use of my invention in this form, I prefer to have one edge of the blade 7 painted black and the sides thereof some light color or shade, the eye being thereby aided in keeping the sides of the blade 7 exactly in the line of vision, when it is obvious the beam 6 will be perpendicular to the line of vision.

The object being selected and preparation having been made by the student to draw the same, the method of using the instrument is as follows: The instrument is suspended upon the thumb and finger by the points 13 13 between the eye and the object to be drawn, and when the blade 7 has assumed an exact perpendicular line the apparent height of the object above the line formed by the level of the beam 6 is noted by means of the scale on the blade 7. At the same time the instrument is in such a position that one edge of the object appears to touch the graduated side of the blade 7, and the apparent width of the object is then noted by means of the scale on the beam 6. Thus the relation of the object to the horizontal and the perpendicular can be accurately measured, observed, and transferred to the drawing-paper and serve as a basis of construction for the drawing.

In Fig. 2 the blade 7 is shown affixed to the beam 6, to which are permanently secured the side pieces or uprights 14 and the top or the cross-piece 15. The uprights 14 and cross-piece 15 are graduated, like the beam 6, and with it form a rectangular frame. The weight 8 in the form of a handle is firmly secured to the beam 6. 16 is a small horizontal wire which is secured to the upper end of the blade 7 and whose ends serve as supports in the same manner as in Fig. 1. The frame may be used to measure the apparent proportions of objects at a distance by means of the wire squares 17, which are constructed so that the head 18 forms a spring and may be compressed

to fit into the slots 19, cut in the outer edge of the frame, and slide therein. The wire squares 17 may be moved by the fingers until they appear to inclose the object to be drawn, and through the aid of the horizontal and vertical scales the proportion of the height to the width is readily determined.

Fig. 4 shows other modifications of the instrument. The chief modification consists in a vertically-sliding scale-bar 20, having a bracket on the rear side, with a slot therein through which the blade 7 extends and in which it snugly fits and slides. Any well-known frictional means, such as the spring 32, for supporting the scale-bar 20 on the blade when the opening becomes worn may be employed. Two vertical strips 21, having hooks formed in their upper ends, are hung upon the horizontal scale-bar 20 and are adapted to slide horizontally thereon. The beam 6 is made of thin metal folded so as to inclose the space 22, in which the strips 21 21 and blade 7 may be inserted for convenient transportation. The blade 7 is secured to the weight 8. The blade 7 extends through a slot 23 in the weight 8 and is bent at the lower end to form a head 35 to support the weight. 25 25 are two thin strips which are pivoted to the beam 6, so that they can be set at any angle with the upper edge of the beam 6 and fix the apparent inclination of any lines on the object to be drawn. The blade 7 may be used for the sight, as in Figs. 1 and 2, or there may be substituted therefor the piece 26, lying in the same plane as the blade 7 and having two points 27 27 to serve as sights.

It is always desirable to be able to put drawing appliances into a compact form for shipment or otherwise, and the forms of my invention shown in Figs. 1 and 4 are constructed with reference to that object, and the several parts can be detached and packed into small compass.

It has been customary for the draftsman to hold between his eye and the object to be drawn a pencil or ruler and by inclining the same in various directions ascertain as nearly as possible the dimensions of the object and the inclination of various of its parts; but this method is very inaccurate, as the inclined outlines and lines of the object divert his eye and cause him to believe the pencil or ruler is level when it is not. Furthermore, one end of the same is likely to be nearer the eye than the other and to deceive the eye as to the shape and dimensions of the object. The constructions shown in Figs. 2 and 4 are desirable for draftsmen or for those who are without much training in drawing from nature and who are obliged to work in a mechanical way. The form shown in Fig. 1 is best for elementary art students and has proved to be of great assistance in training the eye so that finally the use of the instrument may be dispensed with.

The principal feature of the invention consists of means for determining in respect to a distant object an exact horizontal line which is at right angles to the line of vision and in connection therewith means for determining the perpendicular line and other angles with respect to such distant object and also their proportions.

It is obvious that the instrument invented by me is equally adapted to detect the inaccuracies of a free-hand drawing, thereby enabling students to improve their work, and this is the highest use which it has, considered from an educational standard.

What I claim, and desire to secure by Letters Patent, is—

1. An artist's level consisting of a rod or beam combined with means above the same for suspending it so that by gravity it will assume a horizontal line, and means for determining when said rod or beam is located at right angles to the line of vision, consisting of two or more points arranged in one plane perpendicular to said beam.

2. An artist's level consisting of a rod or beam combined with a plate or strip secured at right angles thereto, means provided at the free end of said plate for suspending it so that it will freely swing and assume an exact perpendicular line, and means for determining when said rod or beam is located at right angles to the line of vision, consisting of two or more points arranged in one plane perpendicular to said beam.

3. An artist's level consisting of a rod or beam combined with a blade or strip secured at right angles thereto, and means provided at the upper end of said blade for suspending it so that it will freely swing and assume an exact perpendicular line, and means for determining when the horizontal beam is at right angles to the line of vision.

4. An artist's level consisting of a rod or beam combined with a thin blade or strip secured at right angles thereto, and in a position to serve as a sight when seen edgewise, to place the beam at right angles to the line of vision, and provided with means for suspending it so that it will hang freely in a vertical position.

5. An artist's level consisting of a rod or beam combined with a thin blade or strip placed at right angles thereto, and so as to be seen edgewise when the beam is at right angles to the line of vision and having the edge contrasting in appearance with the sides.

6. An artist's level consisting of a rod or beam, having graduated signs described thereon, combined with a thin blade or strip of material secured at right angles to said beam and midway of its length, said blade or strip having graduation-marks thereon and having one edge contrasting in appearance with its side to form a sight thereby.

7. The combination of the rod or beam 6, graduated blade 7, detachably secured thereto, the graduated bar 20 adapted to slide vertically upon the said blade and to be frictionally sustained thereon, the bars 21 depending from the bar 20 and adapted to slide horizontally thereon, pivoted to the said beam, the beam 6 provided with a receptacle therein to inclose the said blade 7, the bars 20, 21 and the strips 25.

Dated at Boston this 11th day of October, A. D. 1902.

ANSON K. CROSS.

Witnesses:
CHAS. F. PERKINS,
A. G. SULLIVAN.