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COMBINATION BEVEL AND LEVEL

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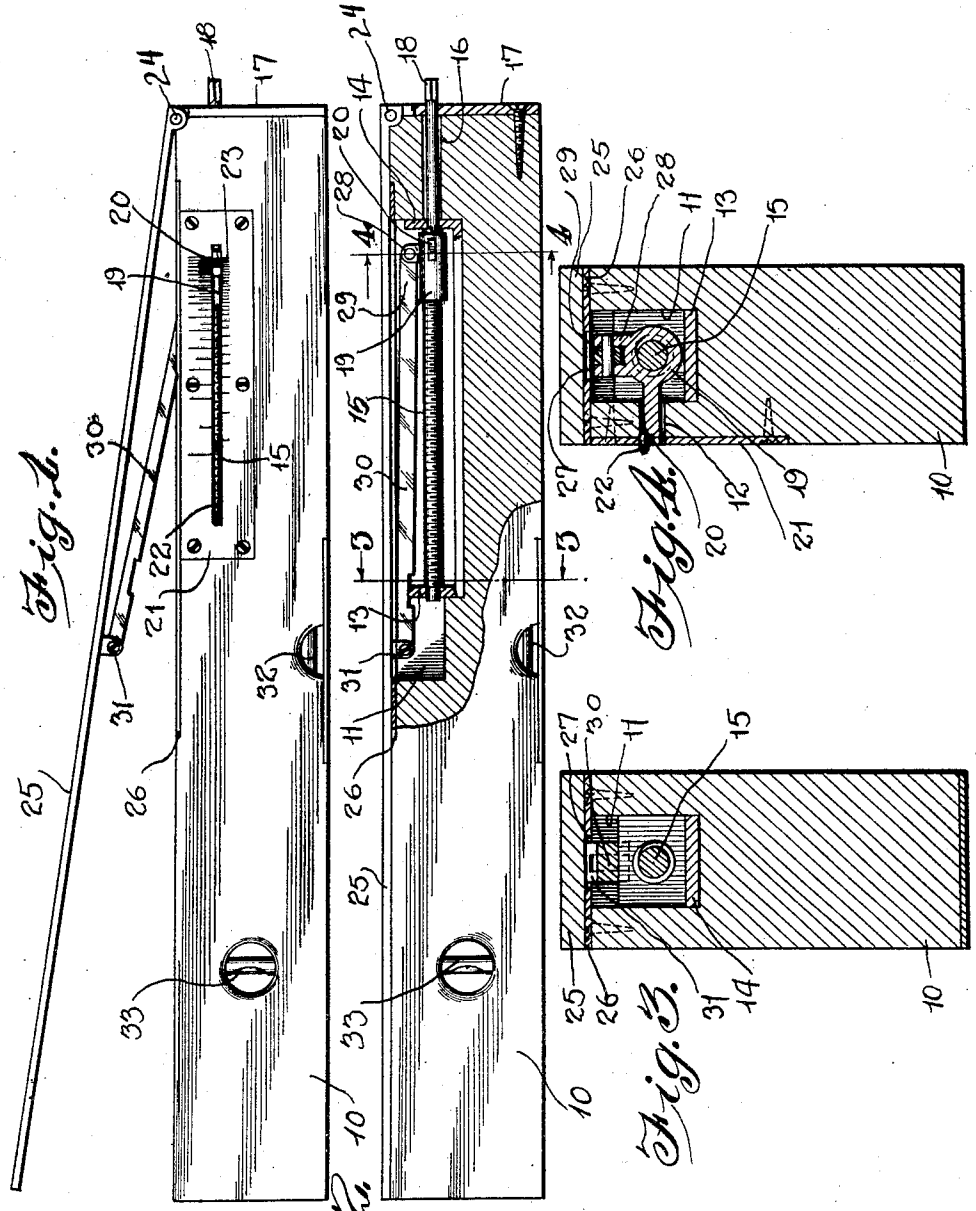


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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COMBINATION BEVEL AND LEVEL.

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This invention relates to a combination bevel and level and more particularly to a device of this character suitable for obtaining pitch angles and laying the same out on beams or rafters already in position.

An important object of the invention is to provide a device of this character which may be very readily and cheaply produced and which will provide an accurate bevel gauge of such structure that it permits laying out of angles at points where there is no convenient gauging surface.

A further and more specific object of the invention is to provide a novel and improved operating mechanism for the bevel gauge.

These and other objects I attain by the construction shown in the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a side elevation of a combined bevel and level constructed in accordance with my invention;

Figure 2 is a similar view, portions of the device being broken away to show the interior mechanism;

Figure 3 is a section on the line 3—3 of Figure 2; and

Figure 4 is a section on the line 4—4 of Figure 2.

Referring now more particularly to the drawings, the numeral 10 indicates a straight edge of the type ordinarily employed in the construction of levels. In accordance with my invention, one edge face of this straight edge is formed with a longitudinally extending channel 11 terminating adjacent one end of the straight edge. The side wall of the channel is slotted, as at 12, with a longitudinally extending slot paralleling one edge of the straight edge and opening through a side face of the straight edge. Arranged within the channel 11 are spaced bearings 13 and 14 in which is rotatably mounted a threaded shaft 15, one end of which projects through its bearing 13 and through an aligned bore 16 formed in the straight edge and connecting the adjacent end wall of the straight edge with the channel. The outer end of the shaft has bearing in a plate 17 rigidly secured to this end wall of the straight edge 10 and projects beyond the plate and is formed with a squared end 18 to which a wrench or key may be applied for rotating the shaft.

Mounted upon the threaded shaft intermediate the bearings 13 and 14 is a sleeve 19 interiorly threaded for engagement with the shaft and having a tongue 20 projecting from one side thereof and into the slot 12. The side face of the straight edge 10 through which the slot 12 opens has secured thereto a facing plate 21 having a slot 22 fitting the tongue 20 and in which the tongue is slidably engaged. This slot prevents rotation of the sleeve 19 upon the shaft and accordingly as the shaft is rotated, the sleeve will shift longitudinally thereon and the end of the tongue 20 will shift longitudinally of the slot 22. The facing plate 21 is provided at the sides of the slot 22 with graduations 23, the purpose of which will presently appear.

Pivotally secured to the plate 17, as at 24, is a gauge bar 25 of the same length as the straight edge and adapted to swing down against that side face of the straight edge in which the channel 11 is formed. This face of the straight edge is provided with a facing plate 26 having a longitudinally extending slot 27 overlying the shaft 15. The sleeve 19 is provided in opposition to the slot with a pair of spaced ears 28 to which is pivoted one end 29 of a link 30, the opposite end of which is pivotally engaged with the gauge bar 25, as at 31. This link is of the same width as the slot 27 and is of such thickness that it may lie between the upper surface of the shaft and the upper surface of the facing plate and be completely withdrawn within the channel, thus permitting the gauge bar to lie flatly against the side face of the straight edge 10.

It will be obvious that as the shaft is rotated, the link connection between the gauge bar and sleeve will cause the free end of the gauge bar to be shifted away from the opposed face of the straight edge so that the angle between the gauge bar and straight edge is varied. The degree of variation of angle may be determined by observing the graduations 23, hereinbefore referred to.

The gauge is provided with level elements 32 and 33, one for indicating horizontal levels and the second for indicating vertical levels. These level elements may be mounted in any suitable manner in the straight edge. The use of the device in ordinary bevel work will, of course, be readily understood. When it is desired to obtain a bevel upon a beam occupying a position neither horizontal or vertical and upon which it is

desired to lay off an angle to the vertical or horizontal, this may be readily accomplished by setting the gauge bar to the desired angle and applying the gauge bar to the work, then shifting the same until the level element which is being read has its telltale properly located.

It will be obvious that the construction hereinbefore set forth is capable of a considerable range of change and modification without materially departing from the spirit of my invention and I accordingly do not limit myself to such specific structure except as hereinafter claimed.

I claim:—

In a device of the type described, a straight edge having means for designating when the straight edges thereof are vertically or horizontally disposed, a gauge bar pivoted to the straight edge at one end thereof and shiftable to vary the angle thereof to said straight edge, means for shifting the gauge bar and maintaining the same in adjusted positions, said straight edge at that side thereof opposed by the gauge bar having a channel, bearings within and at the end of the channel, a threaded shaft mounted in the bearings, one end of the shaft being projected through a bore formed in the body of the straight edge and connecting one end of the straight edge and the adjacent end of the channel, the projecting end of the shaft being provided with a wrench receiving shank, a sleeve threaded upon said shaft and a link pivoted at one end to the sleeve and at its opposite end to said gauge bar, one side wall of the straight edge having a longitudinally extending slot paralleling the shaft and opening into the channel, a face plate for said side of the straight edge having a slot coinciding with the slot of the straight edge, a lug formed on said sleeve and extending into and fitting the slot of the face plate, said face plate having graduations coacting with said lug to designate the angle of the gauge bar of the straight edge.

In testimony whereof I hereunto affix my signature.

ERHARD E. GRANSTROM.