

No. 709,487.

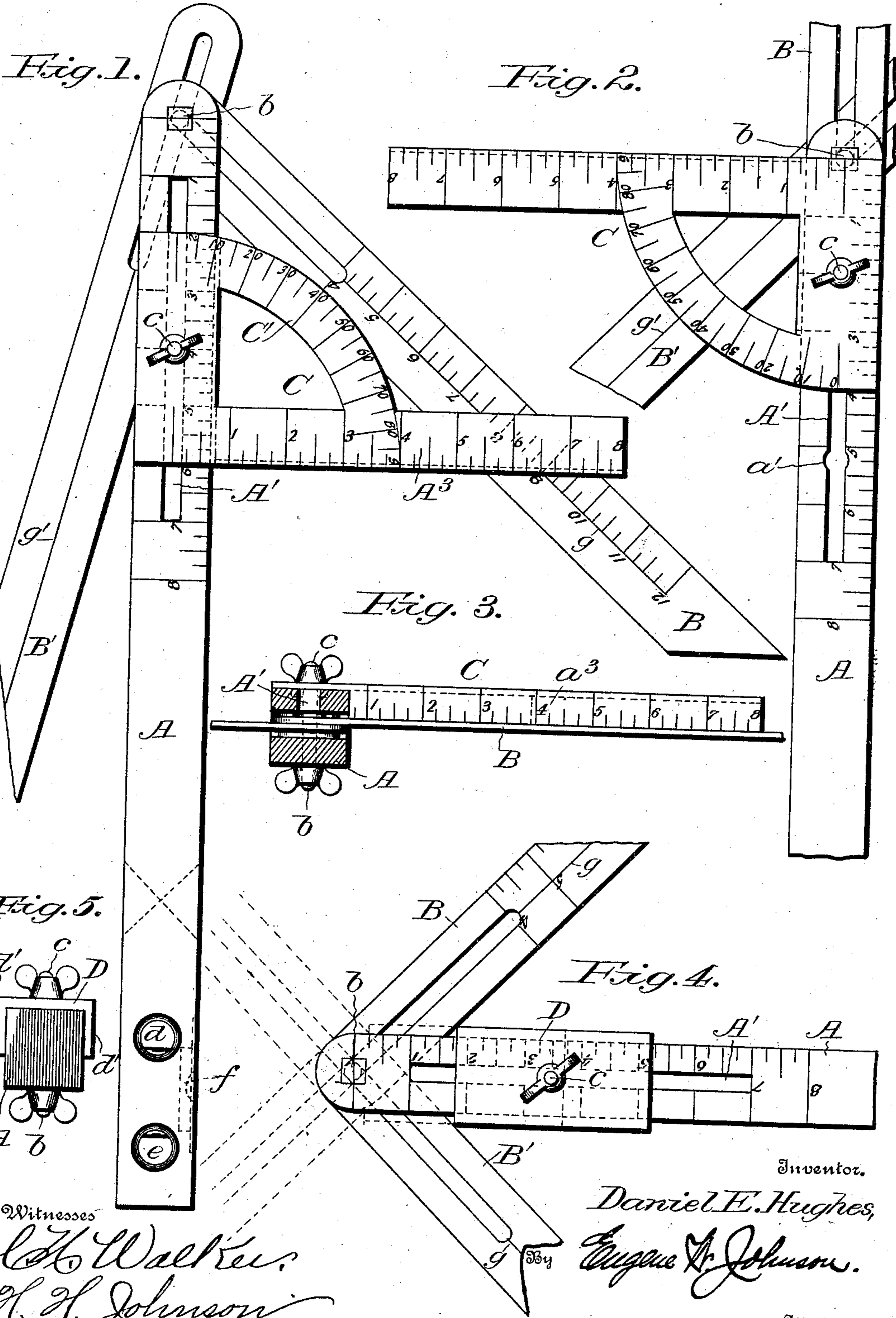
D. E. HUGHES.

Patented Sept. 23, 1902.

BEVEL.

(Application filed Apr. 24, 1902.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

DANIEL E. HUGHES, OF ESPY, PENNSYLVANIA.

BEVEL.

SPECIFICATION forming part of Letters Patent No. 709,487, dated September 23, 1902.

Application filed April 24, 1902. Serial No. 104,505. (No model.)

To all whom it may concern:

Be it known that I, DANIEL E. HUGHES, a citizen of the United States, residing at Espy, in the county of Columbia and State of Pennsylvania, have invented new and useful Improvements in Bevels, of which the following is a specification.

This invention relates to certain new and useful improvements in bevels; and it consists in the construction and combination of the parts, as will be hereinafter set forth, which construction includes a bifurcated stock which is provided on one side with a longitudinal slot and at one end with a set-bolt, which pivotally connects to the stock slotted blades, the blades being adapted for use with a combined protractor and square which is adjustably and removably attached to the stock, the construction also embodying a slide which coacts with the blades for simultaneously adjusting the blades at equal angles to the stock. The stock is also provided at one end with a level-glass and with plumb-glasses, the whole providing an implement for several characters of work and for use in determining angles, pitches, and levels and in drafting the same.

In the accompanying drawings, Figure 1 is a side elevation of a bevel, showing the protractor and square applied in one manner thereto. Fig. 2 is a plan view showing another application of the protractor and square. Fig. 3 is a sectional view through the bifurcated portion of the stock, showing the protractor and square attached. Fig. 4 is a plan view showing one application of the slide to the stock, and Fig. 5 is an end view of the stock and slide.

The stock A is bifurcated to receive the slotted blades B B', which are pivoted to the end of the stock, the slots through the blades being intersected by the set-bolt b. Through one of the side portions of the stock there is formed a longitudinal slot A', which provides an opening, through which passes the stem or body of a bolt c, the bolt having a head of a size adapted to be passed through the opening a', so that the head of the bolt may overlie the side walls of the slot A', the body portion of the bolt abutting against the side walls to prevent the bolt turning, and such bolt is used to attach to the stock either a

combined protractor and square C or a slide D, so that such parts may be adjustable upon the stock. The stock is provided at its solid end, which is farthest from the set-screw b, with spirit-levels d e, and with one arranged at right angles thereto for the purpose of a level. The glasses or spirit-levels d and e may be used as plumb-levels and the other glass f as a horizontal level.

The slide D has depending sides d', which overlie the open-ended slot or bifurcated portion of the stock which receives the blades B and B', and it may be adjustably held upon the stock by means of a bolt c, having a thumb-nut, the bolt passing through an aperture in the slide. The depending side pieces of the slide may be used to retain the blades within the bifurcated portion of the stock, or said slide may be used to provide means whereby each blade can be adjusted to the same angle with respect to the stock or at right angles or to hold the blades in line with the stock when extended. The slide may also be attached to the stock when the protractor and square is carried thereby, especially when the protractor and square is used as shown in Fig. 1.

The face of the stock, through which is formed the slot A', has a scale of inches, the first gage-mark being on a line with the center of the bolt b, and each of the blades B and B' is provided with center lines g g', and one of the blades, as B, has a scale of inches, which is laid off with the bolt as the commencing-point, the length of the slot being about four inches when the length of the blade is slightly over twelve inches.

The protractor and square C is adjustably connected to the stock in the same manner as the slide D, and the arc member C' is laid off in degrees, the first degree being on a line with the center of the slot A'. The right-angled member of the protractor, which extends beyond the arc and provides with the stock a square, is laid off with a scale of inches, which commences with a line above the center of the slot A' and extends at right angles therefrom preferably for a distance of eight inches.

The arc C' has on its outer edge a portion which is at right angles with the face having the gage-marks, and such part is lined and

marked to correspond with the marks on the face of said arc, the depending portion extending from the stock to the depending portion on the part A^3 , which forms the square.

5 The square has a depending portion a^3 , Fig. 3, which extends from the side of the stock to the outer end of the straight member A^3 , and said depending portion is provided with gage-marks corresponding with those on the
10 face of the right-angled extending part, and it will be noted that the part A^3 extends considerably beyond the arc and that the ends of the depending portions provide shoulders which will abut against the side of the stock
15 to assist in holding the protractor and square in true alinement upon the stock. In making certain measurements or laying off certain characters of work when the parts are used as shown in Fig. 1 the scale a^3 is used
20 with the line g on the blade B, and the degrees can be read from the depending edge of the arc to the scale of inches.

When the protractor and square is attached as shown in Fig. 2, the center line of the
25 blade will denote the angle which is read off from the protractor.

In Fig. 4 the blades are shown as held at equal angles with the stock by the slide and in dotted lines at equal opposite angles.

30 A tool of the character shown is useful for innumerable purposes. In taking measurements where it is desired that the stock should be horizontal the level-glass f is used, and when vertical the glasses or levels d or e are
35 employed, in accord with the vertical or inverted position of the stock.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

40 1. In combination with the bifurcated stock, blades pivoted to one end thereof, of a protractor and square connected to the stock to be adjustable longitudinally thereon, substantially as shown.

45 2. In combination with a bifurcated and slotted stock, slotted blades pivoted to one end thereof so as to be slidable on the pivot, a

protractor and square adjustably connected to the stock, said protractor and square having flanges at right angles to the faces thereof, substantially as set forth. 50

3. In combination with a bifurcated and slotted stock, of slotted blades pivotally attached to the stock, the blades having central gage-lines, one of the blades having in
55 addition to the center gage-line a scale of inches, a scale of inches on the stock, and a combined protractor and square, the protractor having degree-marks and the square an inch-scale, the marks commencing on a
60 line with the center of the slot through the stock, substantially as shown.

4. In a bevel, the combination with a bifurcated stock having a longitudinal slot, a pivot and clamping means at the end beyond
65 the slot, a pair of slotted blades which are adjustable upon the pivot, a slide mounted on the stock and provided with depending sides which extend beyond the blades, substantially as shown. 70

5. In combination with a bevel having
75 blades as shown, of a combined protractor and square which is adjustably attached to the stock of the bevel, the protractor having a scale indicative of degrees, the first degree being marked to register with the center of the stock and on a line with the center of the pivot which connects the blades to the stock, a flange depending from the outer edge of the protractor and marked to correspond with the
80 mark indicative of degrees on said protractor, a member projecting at right angles and provided with a scale of inches and a depending portion with a corresponding scale, the depending portions of the protractor and square
85 being adapted to abut against the side of the stock, substantially as shown.

Signed at Espy, Pennsylvania, this 22d day of April, 1902.

DANIEL E. HUGHES.

Witnesses:

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