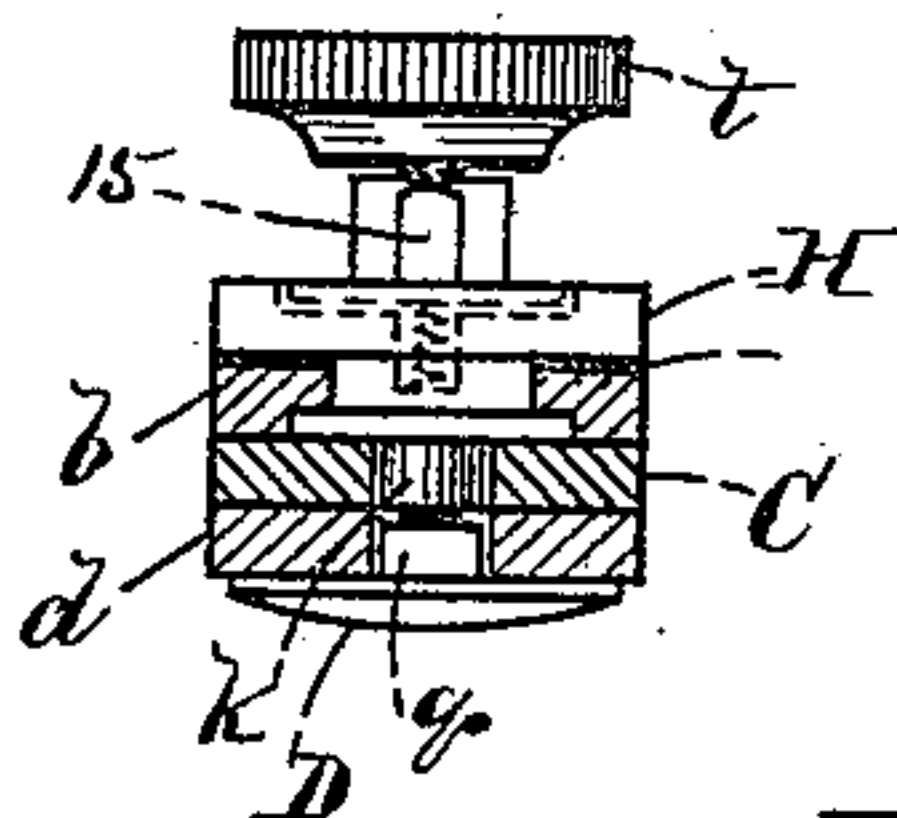


Patented Oct. 21, 1890.

Fig-2.



F'g. 1.

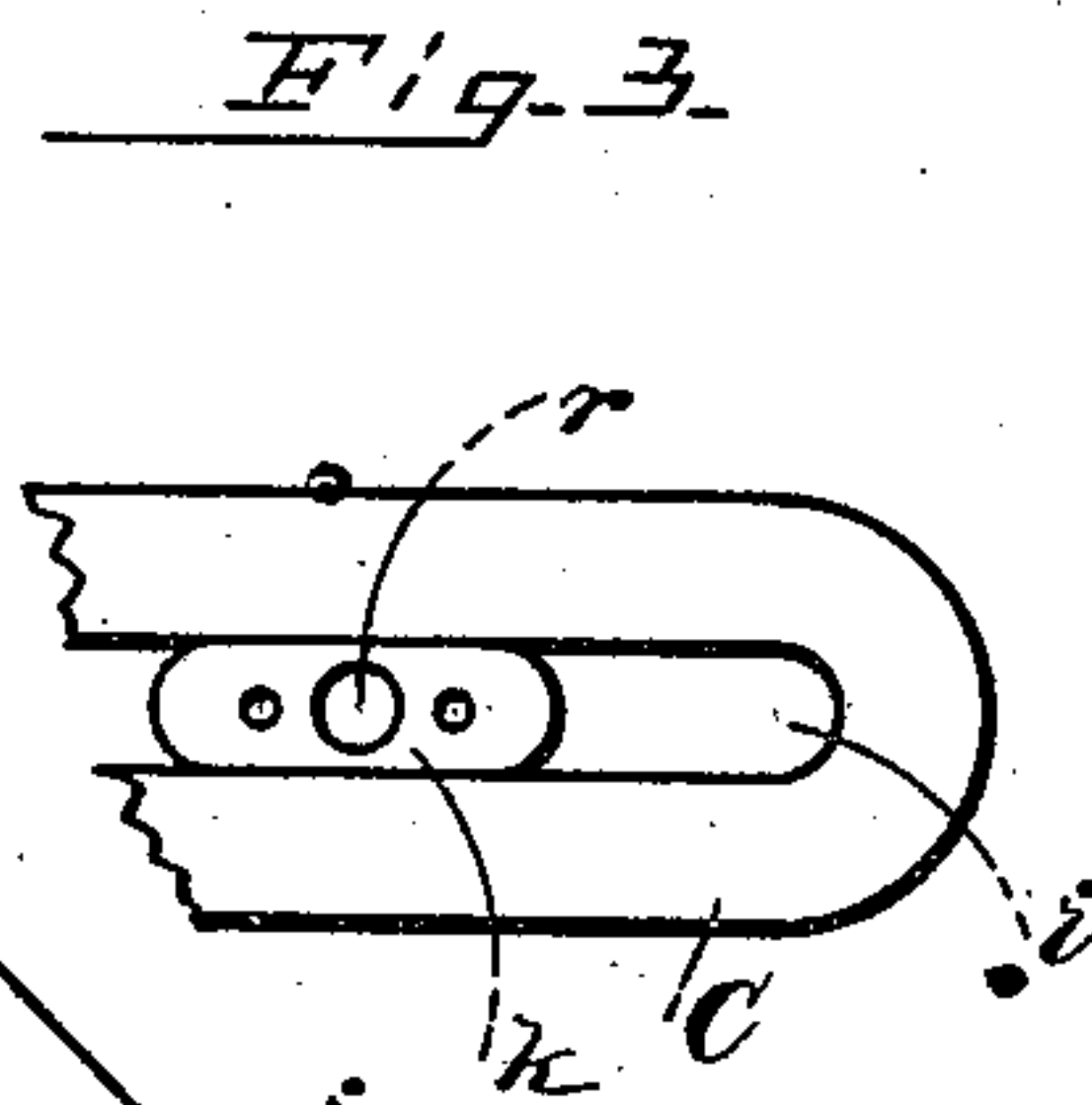


Fig. 3.

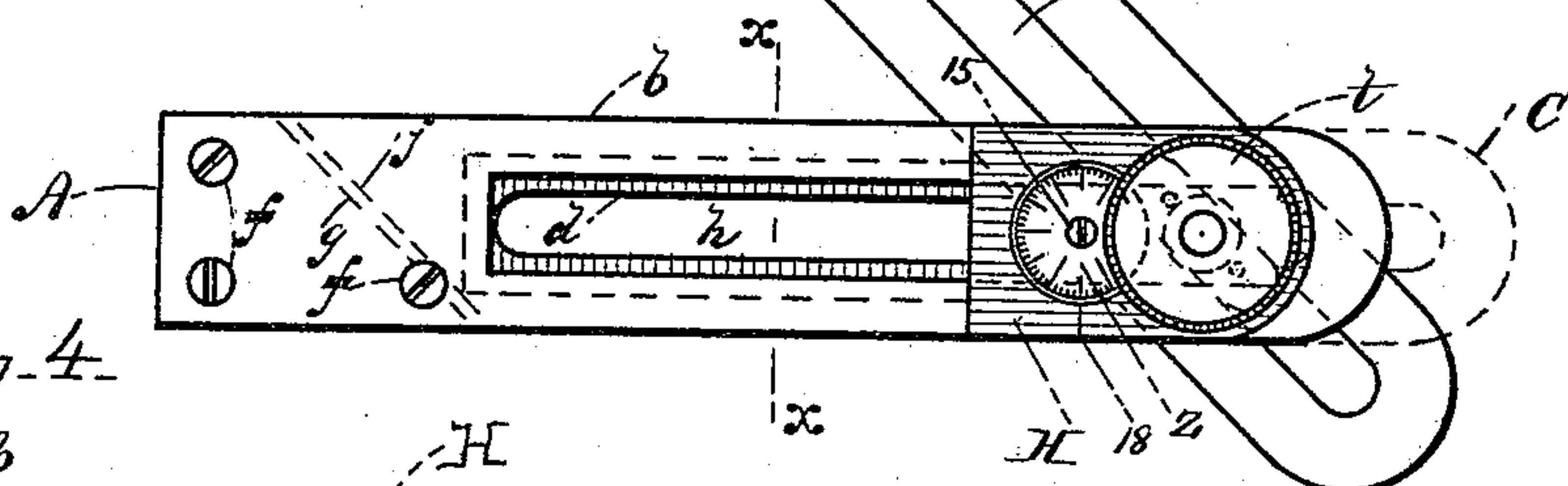


Fig. 4.

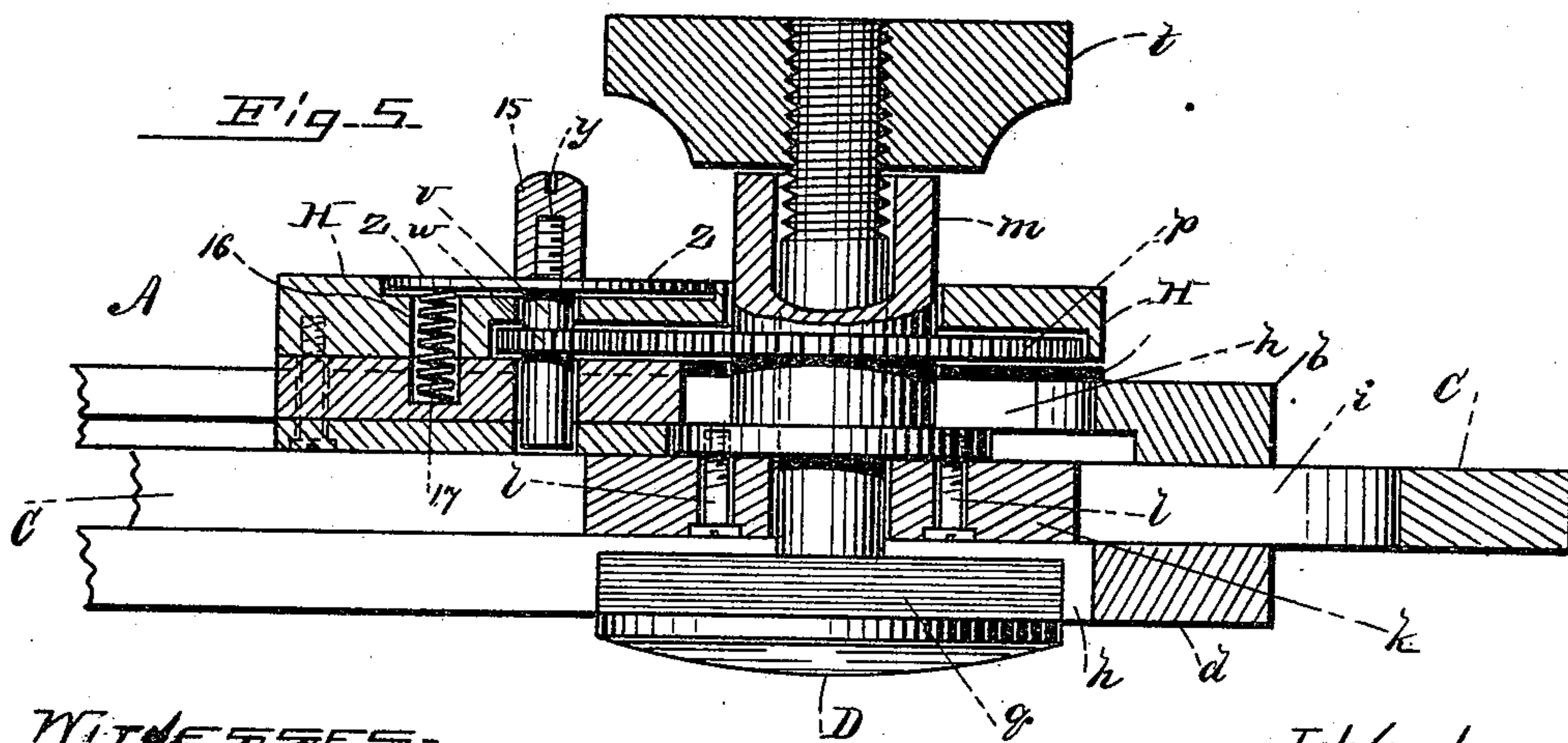
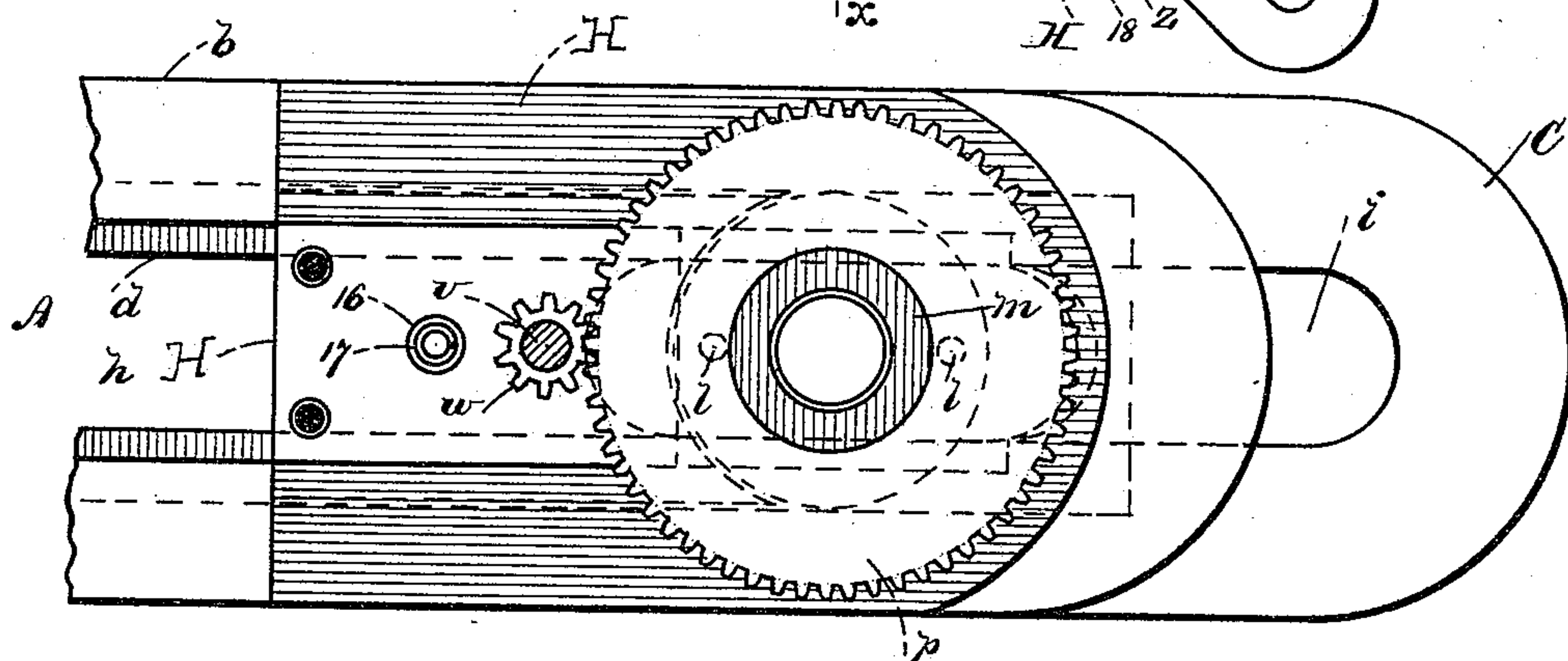


Fig. 5.

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EDWARD E. HARRINGTON, OF EVERETT, MASSACHUSETTS.

PROTRACTOR-BEVEL.

SPECIFICATION forming part of Letters Patent No. 438,750, dated October 21, 1890.

Application filed June 11, 1890. Serial No. 355,040. (No model.)

To all whom it may concern:

Be it known that I, EDWARD E. HARRINGTON, of Everett, in the county of Middlesex, State of Massachusetts, have invented certain
5 new and useful Improvements in Protracting-Bevels, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which
10 said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved protracting-bevel; Fig. 2, a vertical transverse
15 section taken on line *xx* in Fig. 1; Fig. 3, a sectional bottom plan view with the clamping-screw removed; Fig. 4, an enlarged top plan view, partly in section, the clamping-disk and the screw being removed; and Fig.
20 5, an enlarged vertical transverse section of the device, a portion of the bevel-stock being removed.

Like letters and figures of reference indicate corresponding parts in the different fig-
25 ures of the drawings.

My invention relates to a metallic protracting-bevel which is especially designed for use by mechanics; and it consists in certain novel features hereinafter fully set forth and
30 claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all con-
35 versant with such matters from the following explanation.

In the drawings, A designates the bevel-stock, which consists of two metallic plates *b*
40 *d*, arranged in parallelism and secured together at one end by screws *f*, passing through an interposed block having a beveled inner edge *g*, as shown by dotted lines in Fig. 1. The plates *b d* are slotted centrally and longi-
45 tudinally at *h*, the slot of the plate *d* being narrower than that of the companion plate *b*, as shown in the plan view. A beveled blade
C is disposed between the plates *b d* and is slotted longitudinally at *i*. One end of said
50 blade is beveled at *j* to conform to the bevel *g* of the stock-block. A block *k* (see Fig. 3) is fitted to slide in the slot *i* of the

blade C, and is secured by screws *l* to a vertical sleeve *m*, which forms the hub of a horizontal gear *p*. (Shown in Fig. 5.) A binding-screw D has its head flattened at
55 *q* to fit it to slide in the slot *h* of the stock-plate *d*, the shank of said screw passing through the opening *r* of the block *k* and through the hollow hub *m*. A check-nut *t* is turned onto the threaded end of said screw-
60 bolt. A carriage H is fitted to slide in the slot *h* of the stock-plate *b*. The hollow hub *m* passes vertically through the carriage H and is fitted to rotate therein. Said carriage is chambered horizontally to receive the gear
65 *p* on said hub. The flange of said hub overlaps the walls of the blade-slot *i* and projects into a horizontally-undercut recess formed in the walls of the slot *h* in the stock. Vertical movement of the hub is thus prevented, while
70 it is permitted to rotate freely when the blade is moved, the block *k* being secured to the hub-flange by screws *l*, as described. A vertical stub-shaft *v* is journaled in the carriage and bears a pinion *w*, which meshes with the
75 gear *p*. The upper end of the shaft *v* is reduced and threaded at *y*, and a protractor-disk *z* is mounted thereon, a screw-cap 15 being turned onto the shaft to hold said disk in position. The carriage H is chambered at
80 16, and a coiled tension-spring 17 is disposed within said chamber, said spring bearing against the under face of the disk *z*. The face of the disk *z* is divided radially into de-
85 grees, as shown in Fig. 1, and the face of the carriage is provided with an index-line 18. The number of teeth in the gears are in proportion to the divisions on the dial, or as six to ten.

In the use of my improvement, when it is
90 desired to adjust the blade C at any desired angle, said blade is turned outward from the stock, moving on the screw D as a pivot. The block *k* in the slot of said blade, being se-
95 cured to the hub of the gear *p*, causes said gear to rotate as the blade is moved, rotating the protractor-disk *z* a proportionate distance. When the numbered line on the dial indicating the degree desired is opposite the
100 index-line 18, the blade C is adjusted at the required angle to the stock A. By turning on the nut *t* the parts may be readily clamped

in this position by the screw-bolt. The blade C, being fitted to slide on the block, can be moved longitudinally, as desired, and when not in use is turned inward until inclosed between the stock-plates *b d*, with its beveled edge in engagement with the beveled edge *g* in said stock.

Having thus explained my invention, what I claim is—

10 1. In a protracting-bevel, the combination of a slotted stock with a carriage fitted to slide therein, a rotary protractor-disk mounted in said carriage, a pinion on the shaft of said disk, a gear journaled in the carriage and
15 meshing with said pinion, and a blade fitted to slide on the hub of said gear, substantially as described.

2. In a protracting-bevel, a slotted stock and blade, in combination with a carriage fitted to slide in said stock, a rotary protractor-disk mounted in said carriage, a gear journaled in said carriage, a pinion on the journal of said disk meshing with said gear, and
20 a block fitted to slide in the slot of said blade and secured to the hub of said gear, substantially as described.

3. In a protracting-bevel, the slotted stock and blade, in combination with a carriage fitted to slide in said stock, a rotary protractor-disk mounted on said carriage, a gear journaled in said carriage, a pinion on the journal of said disk, a block fitted to slide in the slot of said blade and secured to the hub of said disk, and the binding-screw passing
30 through said stock, block, and hub, substantially as described.

4. In a protracting-bevel, the slotted stock and blade, in combination with a carriage fitted to slide in said stock, a rotary protractor-disk thereon, the gear mounted in said carriage for driving said disk and provided with
40 a hollow hub, a block fitted to slide in the

stock of said blade and secured to said hub, a binding-screw passing through said block and hub and provided with a flattened head
45 for entering a slot in said stock, and a nut on said screw, substantially as and for the purpose set forth.

5. A protracting-bevel comprising a slotted stock, a blade and carriage fitted to slide in
50 said stock, and a rotary protractor-disk actuated by the movement of said blade, substantially as described.

6. The combination of the slotted stock and blade with the sliding carriage, a rotary protractor-disk thereon, gears for actuating said
55 disk, a block fitted to slide in the blade and secured to one of said gears, a binding-screw for said carriage, and a tension-spring for said disk, substantially as described.

7. The combination of the slotted stock and blade with the sliding carriage, the rotary protractor-disk, a pinion on its journal, a gear mounted in said carriage meshing with
60 said pinion, a block fitted to slide in the slot of said blade and secured to the hub of said gear, a binding-screw having a flattened head to enter the slot of said stock and passing through said block and the hub of said gear, a nut on said screw, and a tension-spring for
70 said disk, all being arranged to operate substantially as and for the purpose specified.

8. The combination of the slotted stock A and blade C, having the beveled edge *j*, with the carriage H, provided with the protractor-disk *z*, the pinion *w*, the gear mounted in said
75 carriage and provided with the hollow hub *m*, the block *k*, fitted to slide in said blade and secured to said hub, the binding-screw D, and nut *t*, arranged substantially as set forth.

EDWARD E. HARRINGTON.

Witnesses:

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