No. 624,876. Patented May 9, 1899.

B. E. SAWYER.

SURFACE GAGE.

(Application filed Dec. 22, 1898.)

(No Model.)

Fig. 1.

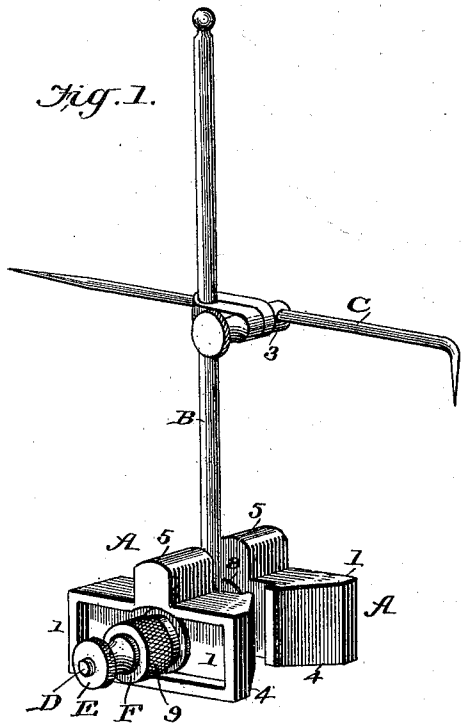


Fig. 3.

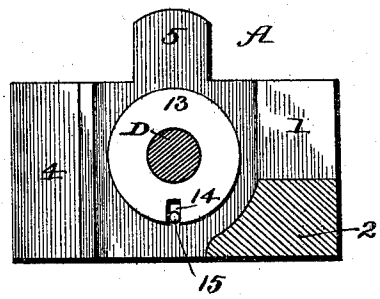


Fig. 4.

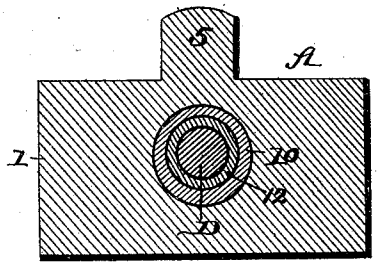


Fig. 2.

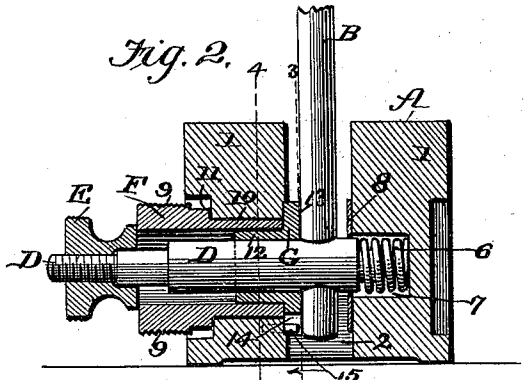


Fig. 5.

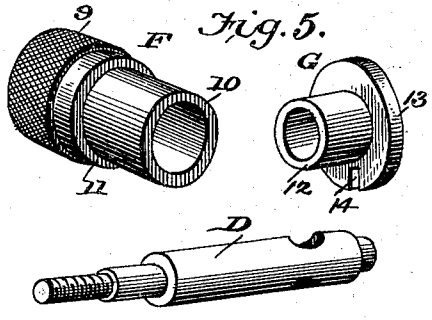


Fig. 7.

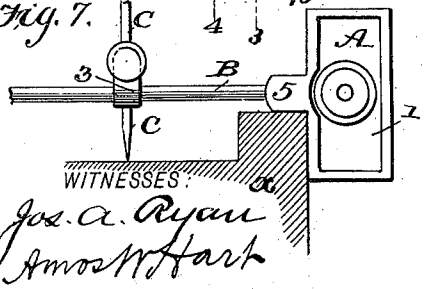
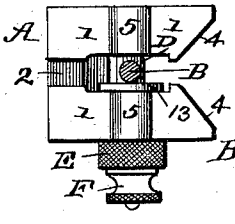


Fig. 6.



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BURNSIDE E. SAWYER, OF FITCHBURG, MASSACHUSETTS.

SURFACE-GAGE.

SPECIFICATION forming part of Letters Patent No. 624,876, dated May 9, 1899.

Application filed December 22, 1898. Serial No. 700,031. (No model.)

To all whom it may concern:

Be it known that I, BURNSIDE E. SAWYER, a citizen of the United States, residing at Fitchburg, in the county of Worcester and State of Massachusetts, have made certain new and useful Improvements in Surface-Gages, of which the following is a specification.

It is the object of my invention to provide an improved surface-gage of that class in which a quick primary adjustment and a second and finer adjustment of the scriber may be effected. To this end I employ a base having a slot that permits the gage-bar, with its attached scriber, to swing through a wide arc, and I provide an improved means—to wit, a rotatable eccentric—for effecting the fine adjustment of such gage-bar and scriber.

The details of construction and operation are as hereinafter described, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved instrument. Fig. 2 is an enlarged vertical section of the same. Fig. 3 is an enlarged vertical section on the line 3 3 of Fig. 2. Fig. 4 is a vertical section on the line 4 4 of Fig. 2. Fig. 5 includes perspective views of the parts composing the eccentric adjustment for the gage-bar and scriber. Fig. 6 is a horizontal section showing the base of the instrument in plan. Fig. 7 is a view illustrating the use of the instrument as a depth-gage, &c.

The base A of the instrument is formed of two like side portions 1, which are joined by a web 2, and separated by a lengthwise slot in which the gage-bar B, with its attached and adjustable scriber C, is held and adapted to swing through an arc of about two hundred and twenty-five degrees. The said gage-bar and scriber are constructed in the usual manner, and the scriber is adjustably held on said bar by means of a well-known form of screw-clamp 3.

The side portions 1 of the base A are beveled at one end on the inner side, as shown at 4, Fig. 1, to adapt it for application to cylindrical and other allied forms in a well-known manner. It is further provided with vertical projections 5 on the upper side of each part or jaw 1, the sides of the same being parallel and at right angles to the upper horizontal face of said base. The function of these projections 5 is illustrated in a general way in Fig. 7, it being to permit the instrument to be used as a depth-gage or as a substitute for a carpenter's scriber. Thus in practical use the projections 5 and adjacent horizontal surface of the base abut and slide on the flat or plane surfaces that form the angular edge of the piece or work x to be tested. The gage-bar B extends horizontally over the piece x and the scriber C is clamped thereon at a right angle, so as to reach the lower surface of the piece x, as shown. It is obvious that the scriber C may be adjusted higher to adapt it to work on a surface in the same plane with that on which the projections 5 rest and slide.

The gage-bar B passes diametrically through a rotatable cylinder or shaft D, Fig. 2, which serves as the primary means for holding and clamping the gage-bar in any desired position. For this purpose the cylinder is arranged transversely in the parts 1 of base A. The inner end of said cylinder D is reduced and enters and seats on a coiled-wire spring 6, which is held loosely in a cavity 7 in one of the sides or jaws 1 of the base. A thin washer 8, Fig. 2, is applied to the cylinder D at the outer end of the cavity 7.

The outer end of rotatable cylinder D is reduced and screw-threaded, and a milled clamping-nut E is applied to the same and seats on a rotatable cylinder F. The latter has an exterior milled portion 9, (see Fig. 5,) a reduced portion 10, which is cylindrical exteriorly and eccentric interiorly, and an intermediate shoulder 11. The thimble G comprises a cylindrical body 12 and enlarged disk-like portion or end 13, having a radial open slot 14. The body 12 of said thimble fits in the eccentric bore of cylinder F, and the disk or head 13 abuts the inner end of the latter, as shown in Fig. 2. The notch 14 in disk 13 receives or fits over a fixed stud 15, (see Figs. 2 and 3,) so that the thimble G is prevented from rotating. When the parts are assembled as shown in Fig. 2, the shoulder 11 of cylinder F abuts a shoulder of one of the parts or jaws 1 of base A, and its concentric body 10 fits rotatably in a bore of the same part, which bore is in alinement with the bore 7 in the opposite part or jaw 1. The

spring 6 presses the rotatable cylinder D outward, so that the gage-bar B is held or pressed forcibly against the thimble G.

It will be apparent that in gaging a piece of work the scriber C may be quickly adjusted to approximately the right position by loosening the clamp-nut E and the gage-bar clamp 3. For more accurate adjustment of the scriber the cylinder F is rotated more or less, whereby its interiorly-eccentric portion 10 will obviously move the thimble G up or down correspondingly. In Fig. 2 the thicker portion of part 10 is at the lower side of cylinder G, and consequently the gage-bar B and its scriber C are adjusted as high as the rotation of cylinder F can effect. If now the said cylinder be rotated half-way around, the eccentric will be shifted to move the scriber downward to the extent of the degree of eccentricity of part 10. Within these limits there are several degrees of practicable adjustment. Hence a very fine or accurate final adjustment of the scriber may be effected, following the primary or coarse adjustment of the same.

It will be understood that the size of the cavity 7 permits such shifting of the cylinder D as is incident and necessary to the described adjustment of the gage-bar and scriber through the medium of the eccentric.

What I claim is—

1. The combination with the base having a lengthwise slot and transverse bores, of a rotatable cylinder having an eccentric bore, the rotatable cylinder D passing through said bores and traversing the slot, the gage-bar having a scriber attachment and passing transversely through the last-named cylinder, and a nut applied to the latter for clamping the gage-bar in any adjustment, substantially as shown and described.

2. The combination with the slotted and bored base, of the rotatable cylinder having an eccentric bore and seated in the base, the thimble having an enlarged head and fitted loosely in said bore, means for preventing rotation of said thimble without hindering its vertical movement, another cylinder journaled in the thimble a clamping-nut applied to such cylinder and acting against the outer end of the eccentrically-bored cylinder, and the gage-bar arranged to swing in the slot of the base, as shown and described.

3. The combination with the slotted base having alined transverse bores, a spring seated in the smaller bore, the rotatable cylinder seated on said spring, a concentric thimble, a rotatable cylinder having an eccentric bore in which the thimble is seated, a clamping-nut, and the gage-bar passing through the first-named cylinder and held in contact with the inner end of the thimble, substantially as shown and described.

4. The combination of a gage-bar, having an attachment for holding a scriber, a slotted base in which said gage-bar swings, a thimble with shoulder at outer end, an eccentric cylinder inclosing said thimble, and a threaded rotatable cylinder arranged in a transverse bore of the base with nut-lock for locking said gage-bar to the base, as shown and for the purpose described.

5. The combination of a gage-bar with attachment for holding scriber, a slotted base having a projection at the top the vertical sides of which are squared with the upper horizontal face of said base and also provided with a transverse bore, a thimble with a shoulder at outer end, an eccentric cylinder inclosing said thimble and fitted rotatably in said bore, a threaded rotatable cylinder with nut for locking said gage-bar to base, practically as shown and for the purpose described.

6. The combination of a gage-bar with attachment for holding scriber, a slotted base in which the gage-bar is adapted to swing having a V-shaped opening at one end running vertically to the horizontal plane of the base, a thimble with shoulder at outer end, an eccentric cylinder inclosing said thimble and arranged in a bore of the base, a threaded cylinder D having a nut for locking said gage-bar to gage-base, practically as shown and for the purpose described.

BURNSIDE E. SAWYER.

Witnesses:

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ANDREW J. HAMILTON.