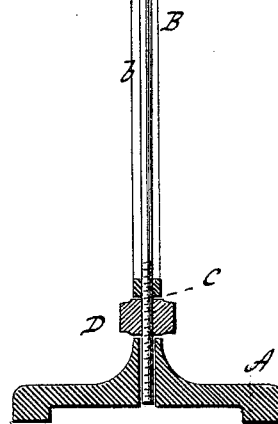
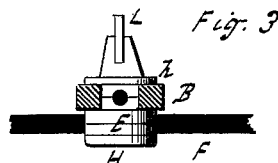
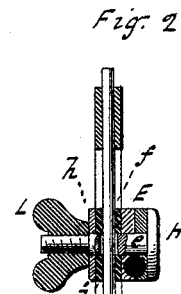
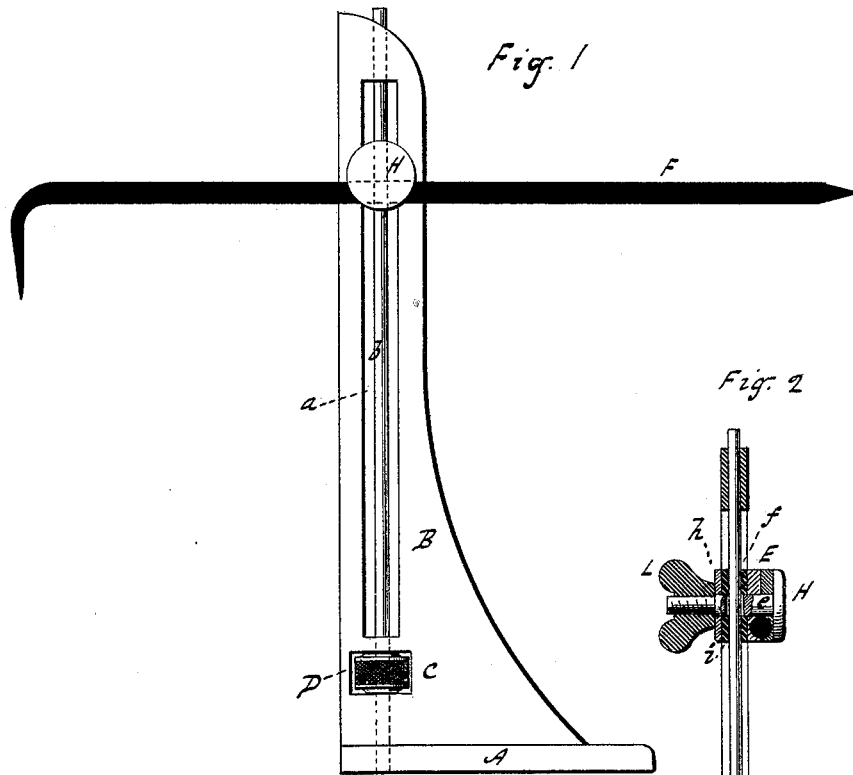


D. B. WOOLSON.
Surface-Gage.

No. 220,323.

Patented Oct. 7, 1879.



Witnesses.
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Jos. C. Earle

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UNITED STATES PATENT OFFICE.

DAVID B. WOOLSON, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN SURFACE-GAGES.

Specification forming part of Letters Patent No. **220,323**, dated October 7, 1879; application filed August 26, 1879.

To all whom it may concern:

Be it known that I, DAVID B. WOOLSON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Surface-Gages; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view; Fig. 2, vertical section; Fig. 3, transverse section.

This invention relates to an improvement in the instrument used by machinists and others commonly called "surface-gage."

In the usual construction the pointed spindle is arranged in a swivel-joint adjustable on a vertical rod by simply moving it thereon to as near the required point as possible, then binding the swivel to that point with a set-screw, and for the finer adjustment the workman strikes the spindle to turn it on the swivel as its axis, and it is difficult to readily attain that nice adjustment which is necessary in the use of the instrument.

To overcome this difficulty is the object of this invention; and it consists in the construction as hereinafter described, and particularly recited in the claim.

A is the base, the bottom of which is dressed so as to attain a perfectly flat bearing. B is an upright plate or post extending from the base, and in which is a vertical slot, *a*. In this vertical slot is a rod, *b*, taking a bearing at top and bottom, but so as to be freely rotated, the lower end threaded, as seen in Fig. 2.

In a slot, C, below the vertical slot *a*, a nut, D, is arranged, threaded correspondingly to the thread on the rod *b*. The diameter of the nut is so much larger than the thickness of the upright that the nut will project on the two sides, as seen in Fig. 2, so as to afford a convenient hold for the thumb and finger to turn the nut. The nut fits the slot at top and bottom, so as to have no vertical movement. Hence, by turning the nut, the rod *b* is raised or lowered, accordingly as the nut is turned.

E is the swivel, through which the spindle

F is arranged. The swivel is in two parts, and through its center a bolt, *e*, passes, the head H bearing on the outside of the outer part of the swivel. The inner part of the swivel rests against the side of the upright, as seen in Fig. 3.

The rod *b* passes through the bolt *e*, as also seen in Fig. 2, and in the slot *a* is a block composed of two parts, *f* and *i*, one each side of the rod *b*, and fitting in the slot *a*, and so as to slide up and down in the slot and upon the rod.

On the opposite side of the upright is a collar, *h*, extending onto the surface of the upright, and onto that end of the bolt a thumb-screw, L, is applied, and so that by turning it hard upon the collar the two parts *f* and *i* are firmly clamped to the rod *b* and the two parts of the swivel E firmly gripe the spindle, and so that the spindle is firmly secured to the rod; but the thickness of the two parts *i* and *f* of the block is slightly greater than the thickness of the upright, so that the swivel and the spindle it carries may be moved in the slot.

In the use of the instrument the thumb-screw L is loosened and the swivel and spindle moved to near its required position and there set. Then, for the finer adjustment, the nut D is turned to raise or lower the rod *b*, as the case may be, which correspondingly raises or lowers the spindle, and the nicest adjustment may be thus attained, and such adjustment may be through an extended range, because of the distance which the rod may be moved through the nut.

I claim—

The herein-described surface-gage, consisting of the base with the vertically-slotted upright thereon, a screw-threaded rod arranged in said slot, a nut to move the said rod vertically up or down, combined with a swivel on said rod carrying the pointer-spindle, and means for clamping said swivel and spindle to the rod, substantially as described.

DAVID B. WOOLSON.

Witnesses:

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