

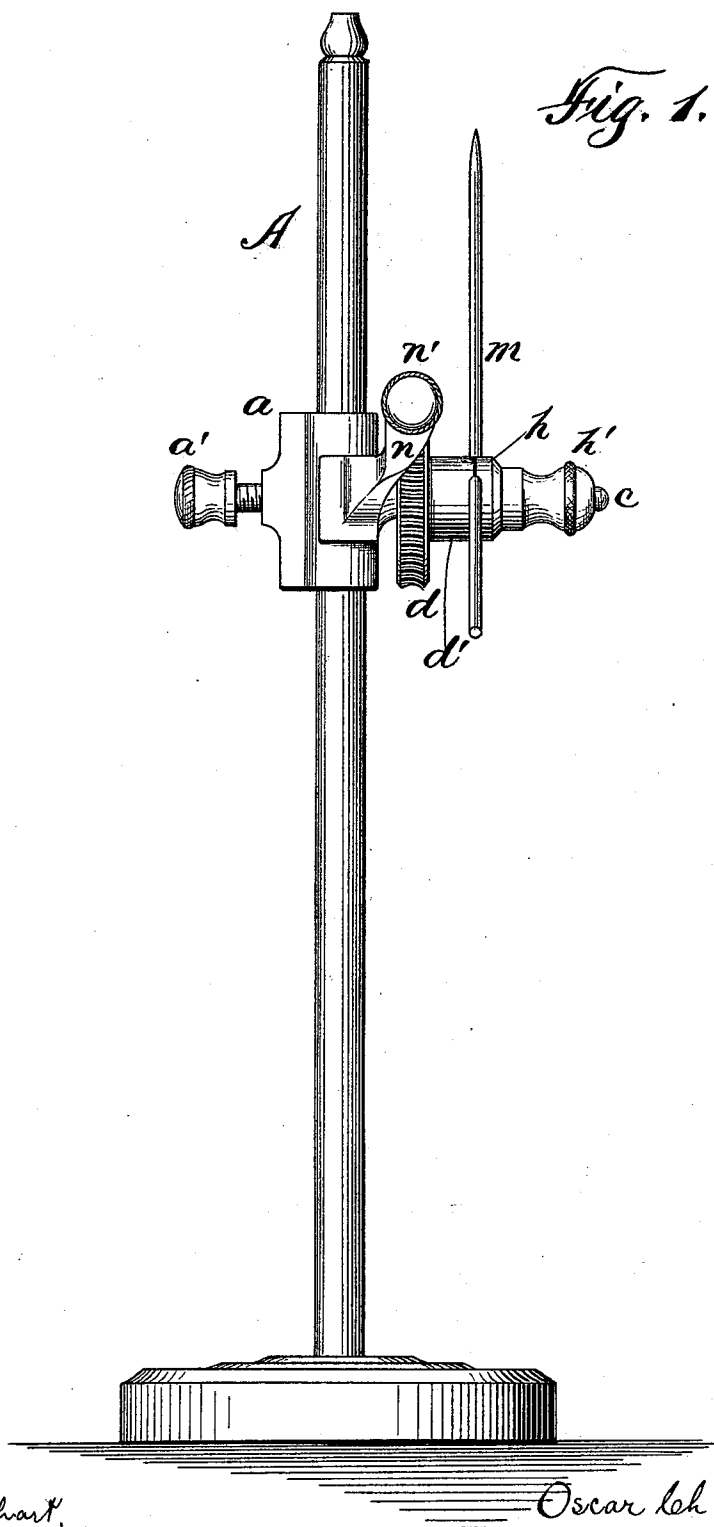
(No. Model.)

2 Sheets—Sheet 1.

O. C. L. EKMAN.
SURFACE GAGE.

No. 519,703.

Patented May 15, 1894.



WITNESSES:

H. A. Carhart,
S. May Goodrich.

INVENTOR

Oscar C. L. Ekman
By Smith & Driscoll
ATTORNEYS.

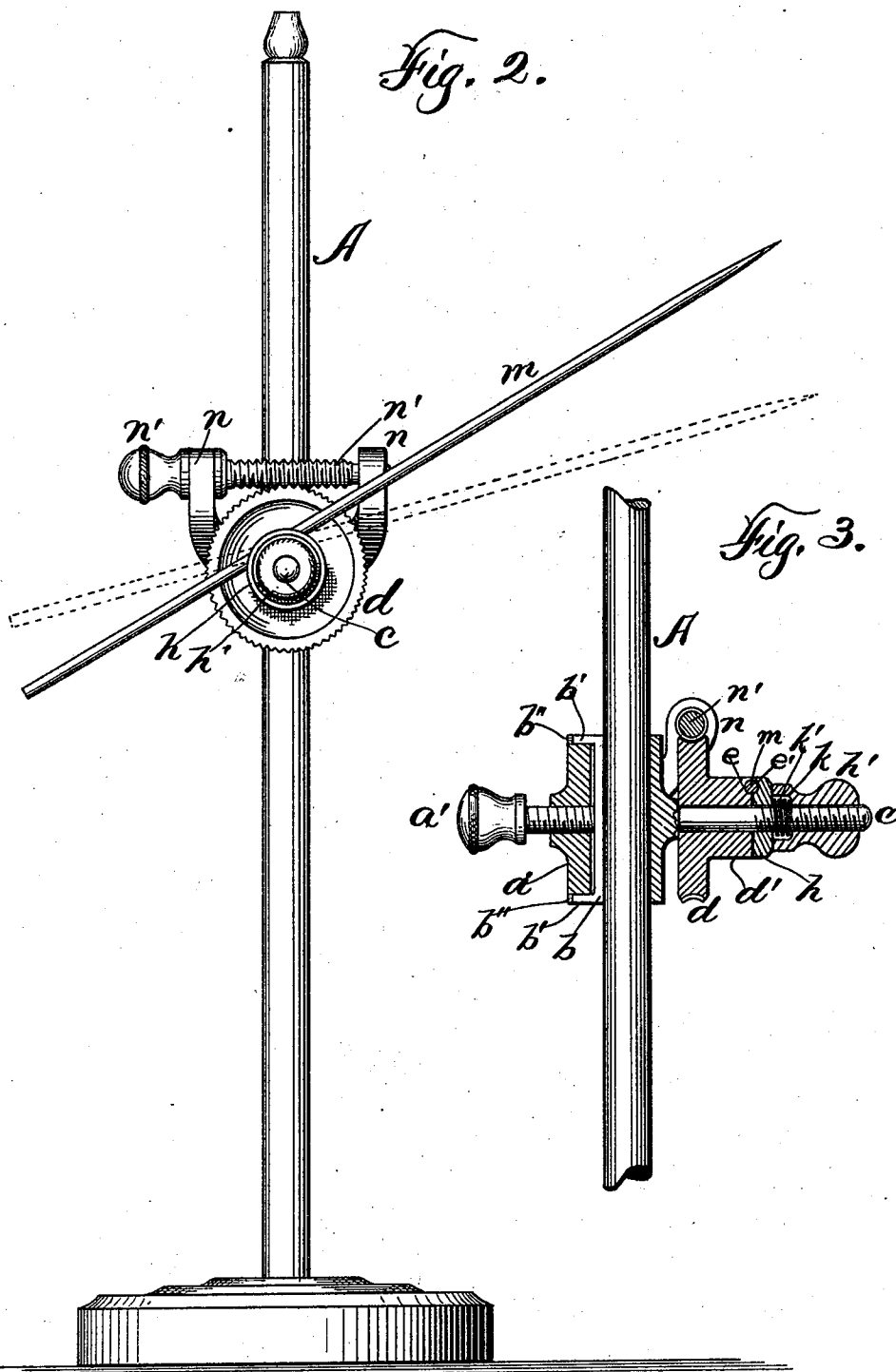
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WITNESSES:

H. A. Carhart,
S. May Goodrich.

INVENTOR

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By Smith & Johnson

ATTORNEYS.

UNITED STATES PATENT OFFICE.

OSCAR CH. L. EKMAN, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-HALF TO HARVEY S. BARTLETT, OF SAME PLACE.

SURFACE-GAGE.

SPECIFICATION forming part of Letters Patent No. 519,703, dated May 15, 1894.

Application filed May 15, 1893. Serial No. 474,204. (No model.)

To all whom it may concern:

Be it known that I, OSCAR CHARLES L. EKMAN, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Surface-Gages, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to surface gages and my object is to provide a gage with means for mechanically adjusting and setting the needle point, as distinguished from adjustment by hand; such adjusting mechanism comprising a needle grip upon the hub of a gear, a shaft carrying said gear and upon which it rotates, and means to carry said shaft and adjust it vertically, and means, as a worm-screw, to rotate the gear as may be desired, and swing the needle point and adjust it vertically by the rotation of said gear.

My invention consists in the several novel features of construction and operation hereinafter described and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1, is a side elevation of the gage, complete. Fig. 2, is a front elevation of the same. Fig. 3, is a vertical sectional elevation of the same.

A, is the standard erected upon a suitable base, and —a— is a sleeve adjustable vertically thereon by means of the set-screw —a'— either with or without the use of the concave grip-plate —b— bearing against the standard and forced against it by said set-screw; said grip-plate being, when desired, provided with end flanges —b'— which fit in and are adapted to reciprocate in grooves —b''— in the ends of said sleeve. A shaft or arbor —c— is secured in said sleeve, and upon it the gear —d— is loosely mounted having a hub —d'— provided in its outer end with a concavity —e—, and —h— is a grip-disk also loose upon said shaft and provided with a concavity —e'— coinciding with the concavity —e—;

and —h'— is a set-screw upon the threaded end of said sleeve, and provided, when desired, with a concavity —k— into which a coiled spring —k'— is inserted, fitting around the shaft and creating a spring friction grip upon the needle —m— to hold it in the concavities —e—e'— and prevent its longitudinal movement therein, except when desired. Arms —n— branch out from said sleeve and —n'— is a worm-screw or gear mounted therein in engagement with the gear —d— so that the rotation of the worm rotates the gear and swings the point of the needle vertically and adjusts and sets it at the point desired, as shown by the dotted lines in Fig. 2.

The rotation of the gear is regulated by the set-screw —h'—

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with the standard and a sleeve adjustably mounted thereon, an arbor secured to said sleeve, and arms branching outward from said sleeve, of a worm journaled in said arms, a worm gear journaled upon said arbor and driven by said worm, and a needle gripped upon the hub of said gear and at one side of the center thereof, and adjustable longitudinally.

2. The combination with the standard and a sleeve adjustably mounted thereon, an arbor secured to said sleeve, and arms branching outward from said sleeve, of a worm journaled in said arms, a worm gear journaled upon said arbor and driven by said worm, a grip-disk loose upon said arbor, a tension spring engaging with said disk, a tension nut upon said arbor, and a needle gripped between said disk and the hub of said gear and at one side of the center thereof and adjustable longitudinally.

In witness whereof I have hereunto set my hand this 10th day of April, 1893.

OSCAR CH. L. EKMAN.

In presence of—

C. W. SMITH,
HOWARD P. DENISON.