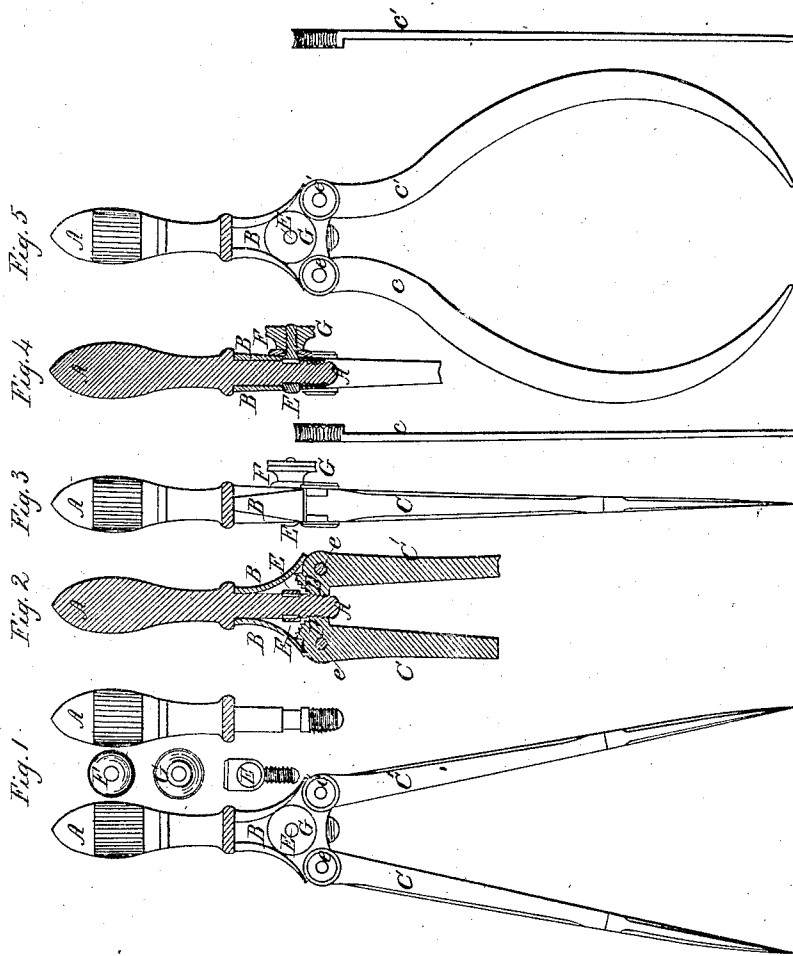


S. Sawyer.

Dividers.

N^o 63,656.

Patented Apr. 9, 1867.



Witnesses
Amasa Nowell
David Abraham

Inventor
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SYLVANUS SAWYER, OF FITCHBURG, MASSACHUSETTS.

Letters Patent No. 63,656, dated April 9, 1867.

IMPROVEMENT IN DIVIDERS AND CALIPERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SYLVANUS SAWYER, of Fitchburg, in the county of Worcester, and in the State of Massachusetts, have invented a new and useful Improvement in Dividers and Calipers, so that they can be adjusted with greater facility and exactness; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and the letters of reference marked thereon; the letters of reference representing the same parts in all the figures, in which—

Figures 1 and 5 represent side views of dividers and calipers respectively, they differing only in form of the legs.

Figure 3 is an edgewise view of the dividers.

Figures 2 and 4 are sectional views, showing the internal construction and arrangement of the same.

The subject-matter of my invention consists in applying to dividers and calipers a screw-gear, in combination with a stirrup, set-screw or tightener, so that when the instrument is properly adjusted, the handle as well as the legs can be rigidly secured in that position, thereby preventing any displacement of the legs of the instrument either by the movement of the handle, or backlash or play in the gear, which is sure to occur from the wear of the gears or imperfect workmanship.

In the drawings, A represents the handle of the instrument carrying the screw portion of the gear, as shown at A A, &c., which has a bearing or journal near the screw into which the stirrup or tightener fits, for purposes hereinafter described. B, the stock which carries the several parts thereof. C C' represent the legs of the dividers or calipers, which are provided with quadrantal spiral gears, D, at their upper or joint ends, so that they can be inserted and secured in the stock B by means of the screw-pins *e e'*, and act in conjunction with the screw and handle A, as shown more particularly at D, fig. 2, so that the points of the legs shall be thrown back and forth simultaneously by rotating the screw-handle A. E represents the stirrup or fastener, and is made of the form shown, and is provided with a hole sufficiently large to admit of the passing of screw A through it after it shall have been inserted in a mortise provided for it in the stock B, as shown in all the figures, and more particularly in fig. 4. The stirrup is also provided with a screw, which passes through the washer F, resting on stock B, and thence through a mill-headed nut, G, so that when the nut G is screwed down upon the washer, the stirrup or binder shall be drawn up against the screw A and into a journal or bearing provided therefor, so as to confine it rigidly in place after the instrument has been adjusted, and also to draw it sidewise between and against the curves of the spiral gears in such a manner as to wedge them, and thereby to prevent all backlash or looseness caused by wear or imperfect workmanship, which would otherwise occur, and thereby render it inaccurate and difficult to adjust. This stirrup also, in connection with the shoulder of the journal and the mill-headed nut, serves to keep the screw A longitudinally in place in the stock B, as shown at E, figs. 2 and 4.

The operation of the dividers and calipers is so simple that it hardly needs a word of explanation. The operator takes the instrument in the left hand, and after loosening the nut G he rotates the handle A so as to cause the points to move to or from each other, as he may desire; or if any distance is required to be taken in the dividers, one of the points may be set upon any given point and the handle turned, so as to bring the other point with facility and exactness to the finest hair line. The calipers may be operated substantially in the same manner.

There are various other mechanical devices that may be employed to render the application of the screw or worm gear to dividers and calipers practical; as, for instance, a set-screw might be used instead of the stirrup and mill-headed nut, or a box or cap placed upon the bearing of the screw and a set-screw forced upon it, so as to produce the same result; or a spring also might be employed and allowed to press upon the shank of the screw when required, so as to answer a similar purpose; but as all these are mere modifications without changing the principle, I deem them immaterial.

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

The combination of the screw or worm gear A D with the stirrup or binder E, or its equivalent, as applied to dividers and calipers, the whole being constructed and operating substantially in the manner herein described and set forth.

SYLVANUS SAWYER.

Witnesses:

A. NOUW,

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