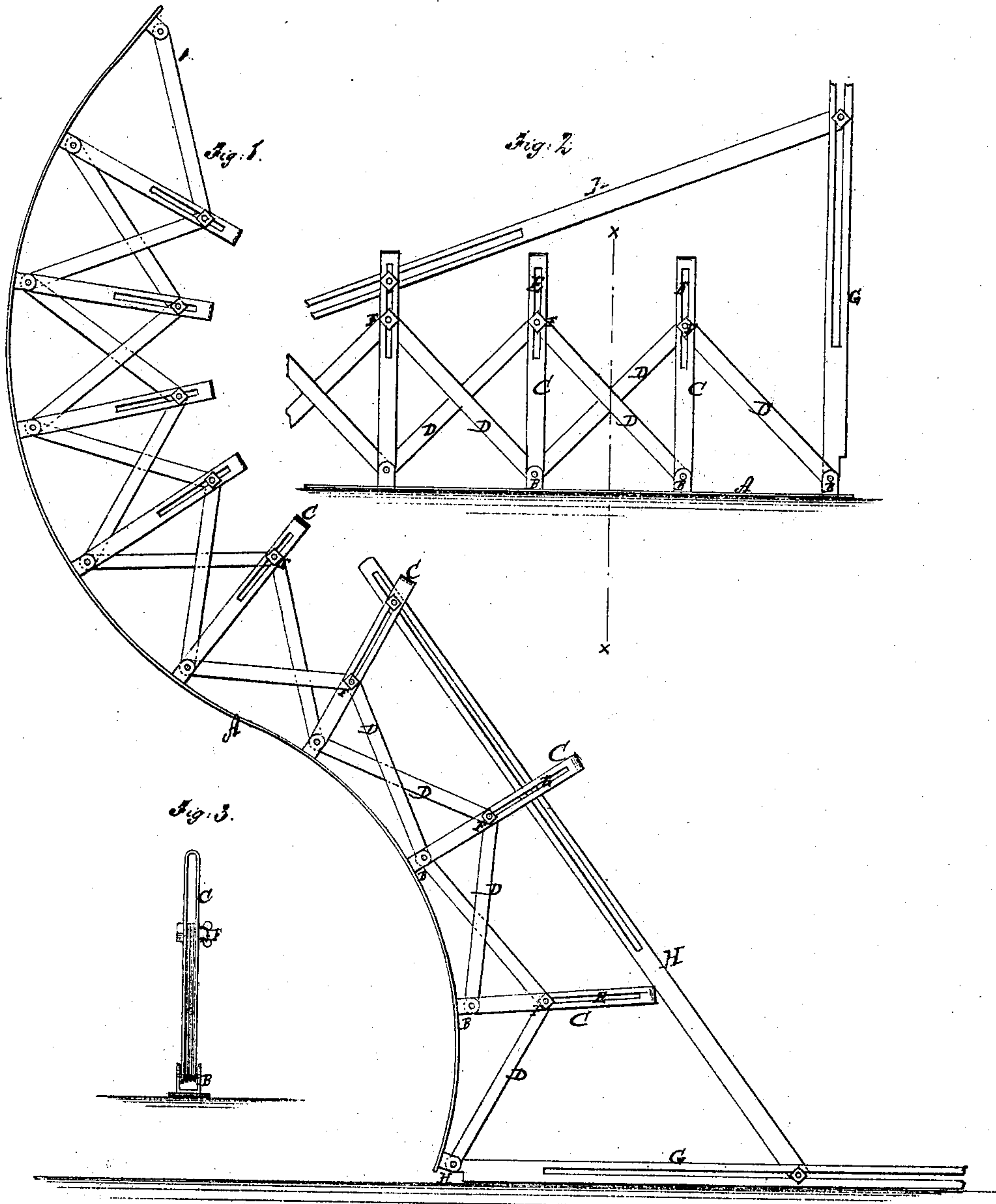


*S. R. Kirby,*

*Scriber.*

*No. 103,896.*

*Patented June 7, 1870.*



**Witnesses:**

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# United States Patent Office.

STEPHEN R. KIRBY, OF EAST SAGINAW, MICHIGAN.

Letters Patent No. 103,896, dated June 7, 1870.

## IMPROVEMENT IN ADJUSTABLE CURVE FOR USE OF DRAUGHTSMEN.

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, STEPHEN R. KIRBY, of East Saginaw, in the county of Saginaw and State of Michigan, have invented a new and useful Improvement in Circumflexor; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to a new and useful improvement in an instrument for describing regular and irregular curves, for obtaining the profile or face of irregularly-curved or undulating surfaces, or curves and straight lines combined, and consists in the combination of adjustable trestle-work with a flexible rod or ribbon, and in connection therewith, an adjustable straight edge and connecting-rod, by means of which a series of parallel, irregular, or regular curves, either with or without straight lines, may be described, as will be hereinafter more fully described.

In the accompanying drawing—

Figure 1 represents the instrument complete.

Figure 2 is a longitudinal section, showing a portion of the trestle-work and the straight edge and brace, the flexible rod being fixed or fastened so as to represent a straight line.

Figure 3 is a vertical section of fig. 2 on the line  $xz$ .

Similar letters of reference indicate corresponding parts.

A is a rod or ribbon, of metal or other suitable material, to which are permanently attached, at regular distances apart, the short stands B, to which are pivoted the posts C and the braces D of the trestle-work.

The posts C are formed double, as seen in fig. 3, so that the braces work between the parts.

E represents slots in these posts.

The ends of the braces are connected together by the bolts F, so that the bolts, with the ends of the braces, will slip up and down in the slots for the adjustment of the rod or ribbon A. When it is adjusted to the right or desired curve or shape, the nuts F are tightened on the posts, which fixes it in the desired position. In this manner the "sheer of a ship," or the curve or shape of its side or bow, may be exactly taken and transferred to either ship-timber or paper.

These instruments may be made of any size, so as to adapt them to all the various purposes to which they may be applied.

G is a slotted straight edge, jointed to the edge of A, as seen at H.

I is a slotted connecting-rod, by which the straight-edge is attached to the posts, as seen in fig. 1.

As represented in the figure, the instrument may be moved along on the straight-edge, and a succession of parallel lines, corresponding with the curve of A, may be described.

In this example of my invention, A is a flat ribbon, which can be curved only in one direction or sideways. By employing a wire or similar rod instead of the flat ribbon, and attaching to it another set of trestle-work at right angles with that seen in the drawing, the form or curve of two surfaces may be obtained at a single application, as the rod A will then be equally flexible in all directions.

This circumflexor is applicable to a great variety of purposes, but in ship building, and for describing curved lines in draughting, it will be found invaluable.

The posts C may, if considered more convenient, be made single instead of double, as seen, and the slots E may be graduated, so that an index of any kind, any particular curve, or curves of different or any particular radius may be described, without the use of any other instrument for that purpose.

The rod or ribbon A may also be graduated, so as to indicate the longitudinal surface measurement of irregular curves or surfaces.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The ribbon or rod A, posts C, with the slots E, and braces D, combined with screw-bolts, arranged to operate substantially as and for the purposes herein shown and described.

2. The combination of the slotted straight-edge G and slotted connecting-rod I with the ribbon or rod A, substantially as and for the purposes described.

STEPHEN R. KIRBY.

Witnesses:

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