G. SOLTMANN.

Quadrant Parallel Section Line Ruler.

No. 199,588. Patented Jan. 22, 1878.

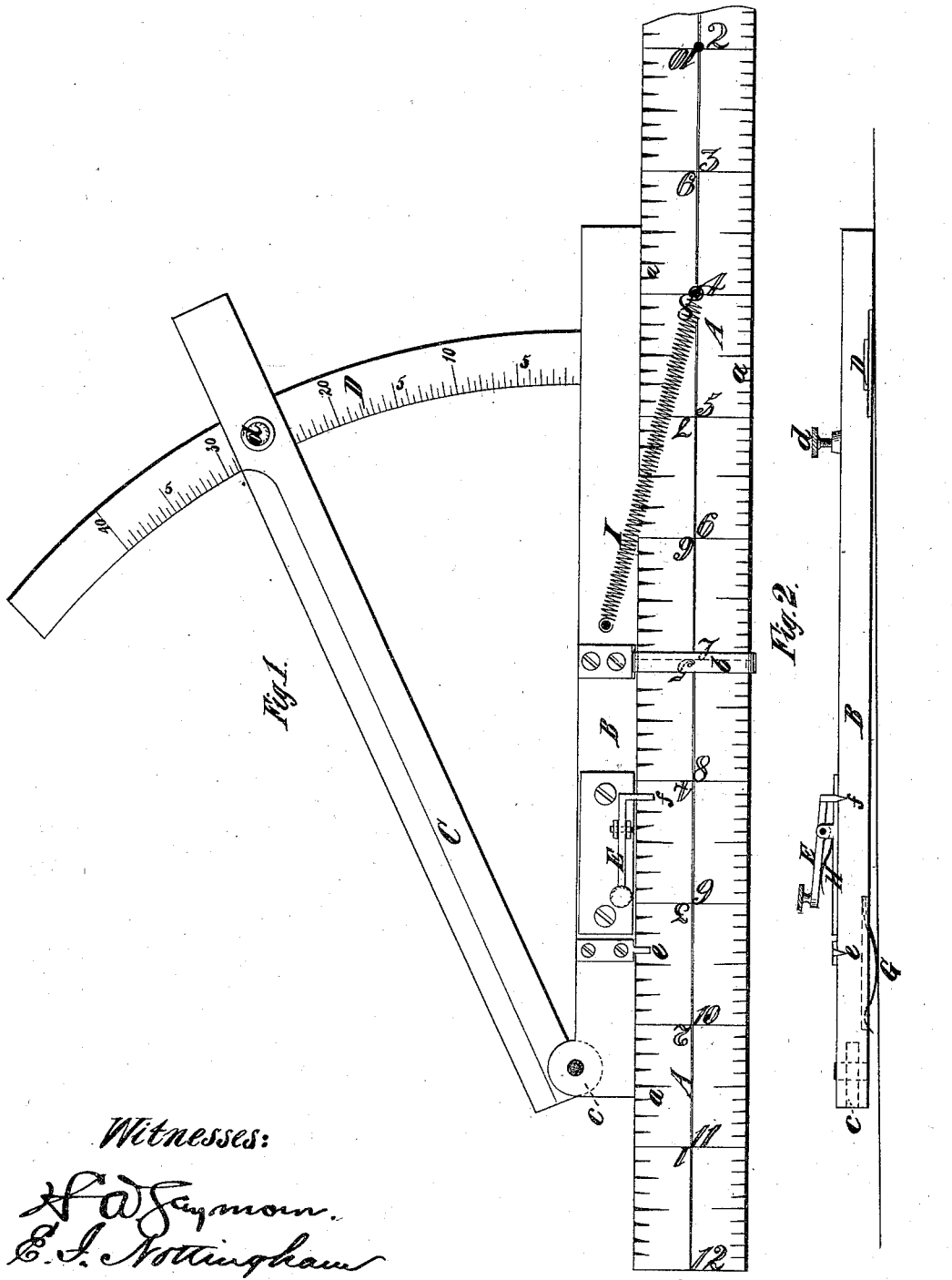

Fig. 1.

Fig. 2.

Witnesses:

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# UNITED STATES PATENT OFFICE.

GUSTAV SOLTMANN, OF NEW YORK, N. Y.

## IMPROVEMENT IN QUADRANT PARALLEL SECTION-LINE RULERS.

Specification forming part of Letters Patent No. **199,588**, dated January 22, 1878; application filed August 21, 1877.

*To all whom it may concern:*

Be it known that I, GUSTAV SOLTMANN, of the city, county, and State of New York, have invented a new and useful Quadrant Parallel Section-Line Ruler, of which the following is a specification:

The object of my invention is to provide a ruler for the use of draftsmen in making section-lines, which, to appear well, must be at very regular distances from one another.

The invention consists in a ruler composed, essentially, of two parts, one of which is intended to be stationary, and whose edge or edges is or are provided at intervals with notches; and another, which is of triangular construction, is provided with an adjustable limb, forming the ruler proper, and capable of being secured in different positions by being clamped to an arc-shaped piece, preferably divided into parts of a circle, and, with the adjustable limb, constituting what may well be termed a "quadrant ruler." This triangular quadrant-like part may be moved from one to another of the notches in the stationary part over the paper to be drawn upon, and by the adjustment of its movable limb it may be made to graduate the distances between the lines made with it.

In the accompanying drawing, Figure 1 is a plan or top view of a ruler embodying my invention, and Fig. 2 is an edge view of the triangular part thereof.

Similar letters of reference designate corresponding parts in both figures.

A designates a straight-edge ruler, having in its edge or edges a series of devices, such as dents or notches *a*, with which may engage a tooth or other device on the triangular device, which I will presently describe. These notches *a*, when my ruler is to be used in drawing section-lines, are arranged at regular distances apart, and those on one edge, to provide for a more extensive gradation of the section-lines, may advantageously be arranged at distances different from those on the opposite edge. When, however, the ruler is to be used for other purposes, the said devices or notches *a* may be differently spaced, as will be hereinafter explained. This part A is intended to remain stationary during the use of my ruler, and to insure it against moving accidentally it may, with advantage, be provided on the under side with friction-surfaces, such as pieces of cloth; or it may be provided with pins or clamps for securing it in place.

B C D designate the triangular or quadrant-like part of my ruler. B is the base-limb, bearing against the edge of the stationary part A, capable of being moved longitudinally along the same, and provided with a device—such, for instance, as a guide, *b*—for keeping it in contact with the said stationary part A. C is an adjustable limb, hinged to the limb B, preferably by a metal plate, *c*, to afford facility for its adjustment, and to preclude it from moving facially—*i. e.*, upwardly—relative to the limb B. D designates an arc-shaped limb, preferably made of metal, along which the adjustable limb C may be moved by sliding it over or on the same. This limb D is divided into parts of a circle, so as to indicate the angle of the limb C relatively to the limb B and stationary part A of my ruler, and hence it forms a protractor. It may be clamped or locked in different positions by means of a set-screw, *d*, or other device. This triangular or quadrant-like part of my ruler is provided with a device or devices for engaging with the notches, dents, or other devices *a* in the stationary part A, and such devices may consist of a fixed tooth, *e*, or of a tooth, *f*, extending from a lever, E, arranged on the base-limb B.

To use my ruler, the triangular part is moved along the stationary part A, so that its tooth or other locking device will engage successively with the notches, or their equivalents, in said stationary part, and the lines are ruled on the edge of the adjustable limb C. Of course, as the triangular part is moved only from one to another of the notches, or their equivalents, in the stationary part A, it will always be moved a distance corresponding to the distance between the said notches, and the lines ruled on the adjustable limb C may always and without any trouble be spaced properly.

Now, so far the operation of the triangular part B C D is similar to that of a triangle commonly used by draftsmen, and it, therefore, is perfectly simple.

To reduce distances between the lines to be ruled, as may be requisite for any particular piece of work, it is only necessary to shift and

secure the adjustable limb C nearer to the base-limb B, and to locate the entire ruler on the paper, so that the lines may be made in the desired direction. A moment's thought will make this feature of my invention clear. If the adjustable limb C were shifted so as to be at right angles to the base-limb B, and the triangular or quadrant-shaped part moved from notch to notch along the stationary part A, the distances between the lines ruled with it would correspond exactly to the distances between the said notches; and, on the other hand, if said adjustable limb C were shifted into a position parallel with the base-limb B, and the triangular part moved from notch to notch, as before, a continuous line only could be ruled with it. Consequently, by shifting the adjustable limb to intermediate points, innumerable variety of spacing in the lines ruled may be attained.

The divisions on the arc-shaped limb C will enable the draftsman to reduce or enlarge the spacing between the lines ruled to suit the work to be done without trouble.

When the fixed tooth *e* is employed, I preferably use a spring, G, (see Fig. 2,) to lift the triangular part B C D, so that upon releasing said tooth the said part may be pushed with the finger along the stationary part A until said tooth arrives opposite the next notch *a* therein, whereupon the said triangular part is pressed down against the force of the spring, to cause the said tooth to engage with said notch, and is held down while the line is being ruled to preclude the said triangular part from accidentally moving over the paper. When the tooth *f* on the lever E is used, this lifting-spring will be unnecessary; but in lieu of it a spring, H, is applied to the lever to hold the tooth in engagement with a notch, but so as to admit of said tooth being raised by pressing down the lever, after which the triangular part of my ruler may be moved along to the next notch by pressure exerted on the lever, and without moving the finger from it to the said part itself.

A spring, I, may be connected to the stationary part A and the triangular part B C D, so as to provide for the automatic movement of the latter upon the release of its tooth from a notch in the former.

This ruler of mine may be used in shading representations of cylindrical bodies, if the notches of the stationary part are properly graduated; and it may be used for other purposes than making drawings.

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

1. The combination, with a stationary ruler having its upper face provided with a series of notches indicative of the divisions of space, and a movable triangular ruler adapted to be moved along the edge of the stationary ruler, and having a tooth for engaging successively with said notches in the stationary ruler, of a spring for lifting the movable ruler, so as to disengage the tooth thereof from a notch in the stationary ruler, and permit the adjustment of the movable ruler, substantially as and for the purpose specified.

2. The combination of the stationary ruler A, having notches *a* in its edges, the movable triangular ruler, composed of base-limb B, hinged ruler-limb C, protractor-limb D, set-screw *d*, and the tooth *e*, lifting-spring G, and the spring I, connected to the stationary ruler A and the base-limb B of the movable ruler, substantially as and for the purpose specified.

GUSTAV SOLTMANN.

Witnesses:
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