

(No Model.)

H. N. STEVENSON.

PARALLEL RULER.

No. 344,014.

Patented June 22, 1886.

FIG. 1.

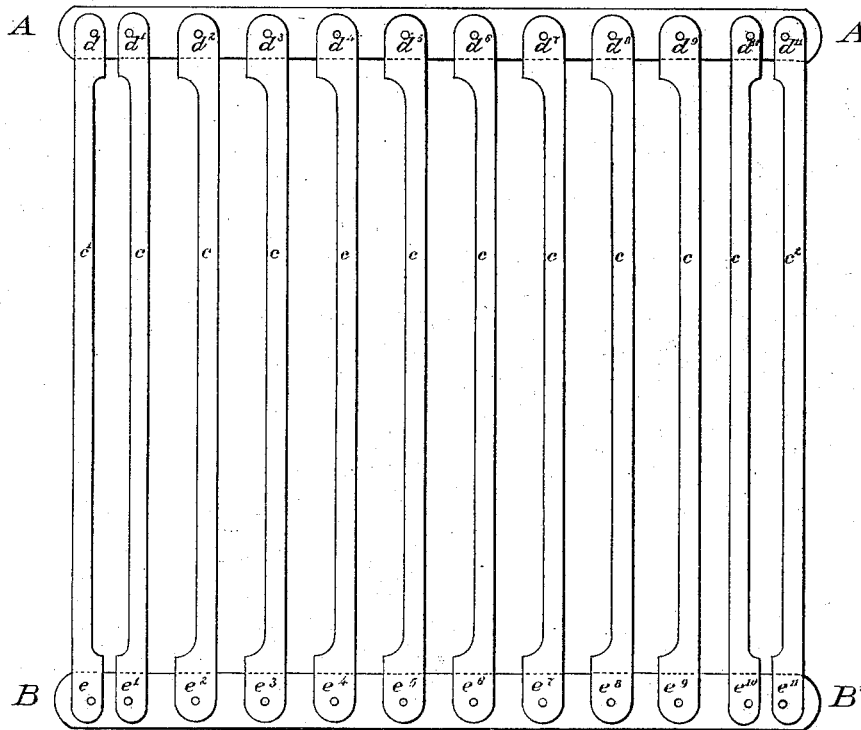


FIG. 2.

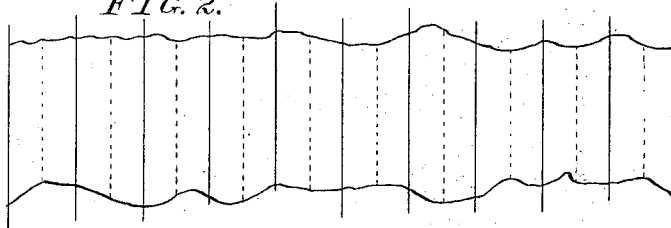
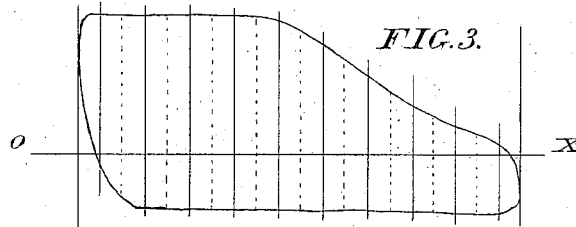


FIG. 3.



Witnesses:

John McHenry
C. Marsh

Inventor.

Holland N. Stevenson.

UNITED STATES PATENT OFFICE.

HOLLAND N. STEVENSON, OF PITTSFIELD, MASSACHUSETTS.

PARALLEL RULER.

SPECIFICATION forming part of Letters Patent No. 344,014, dated June 22, 1886.

Application filed November 6, 1885. Serial No. 181,992. (No model.)

To all whom it may concern:

Be it known that I, HOLLAND N. STEVENSON, a citizen of the United States, residing at Pittsfield, in the county of Berkshire and State of Massachusetts, have invented new and useful Improvements in Parallel Rulers, of which the following is a specification.

The object of my invention is to facilitate the use of parallel rulers by indicating at one placing of the ruler the position of the ordinates to be marked and measured when obtaining the areas of figures, consisting to that end of the improvements hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan of a parallel ruler with my improvements; Figs. 2 and 3, irregular-shaped figures to illustrate the use of these improvements.

In Fig. 1, $A A' B B'$ are duplicate bars, of any suitable material. $C C' C^2$ are also bars, of any convenient number and suitable material, pivoted to the bars $A A' B B'$ at the points $d d', e e', e^2$, &c., so as to turn freely when required. The distance between the pivots at the ends from d to d' , e to e' , d^{10} to d^{11} , e^{10} to e^{11} , I make equal to each other, and one-half that between the others, as d^5 to d^6 , e^8 to e^9 , &c., which are equal to each other, thus in an obvious manner marking the middle ordinates of the spaces, which are the ones that should be measured in obtaining the area of a space. I also make all the bars $C C' C^2$ with the marking edges coincident with a line joining the centers of the pivots at the ends of any bar—for instance, as those joining $d e d^4 e^4$, &c.—in placing the parallel ruler on the figure to be marked. This allows it to come into plainer view.

Parallel rulers as heretofore made, with all the spaces equal between the pivots, when used to mark the ordinates of figures to obtain their areas divide them into equal spaces, as shown by the full lines in Fig. 2, while the dotted lines midway between them are the ones to be measured, whose positions must be obtained by subsequent operations.

My invention enables the lines for measure-

ment to be quickly and correctly marked at one operation by reason of the half-distances at the ends of the bars $A A' B B'$, and the marking edges being cut away coincident with the lines joining the pivots at the ends, as heretofore described. For instance, to mark the lines used in obtaining the mean pressure and horse-power of an indicator-diagram, (shown in Fig. 3,) the marking edge of the bar C' is held perpendicular to the atmospheric line Q^2 and tangent to the left-hand end of the diagram, the other end bar, C^2 , is turned about its pivots until its marking-edge is tangent to the right-hand end of the diagram. All the other bars, C , will turn about their respective pivots. Then lines drawn along the marking edges will be the desired lines for measurement, as shown by the full lines in Fig. 3, midway between the equal spaces shown by the dotted lines in the same figure, also by the full lines in Fig. 2.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A parallel ruler having the marking edges of the bars $C C' C^2$ coincident with the lines joining the pivots at their respective ends, substantially as described.

2. A parallel ruler having the distances between the pivots $d d', e e', d^{10} d^{11}, e^{10} e^{11}$ at the ends of the bars $A A' B B'$ equal to each other, and one-half that between the other equal spaces, as $d^5 d^6, e^7 e^8$, &c., substantially as described.

3. In a parallel ruler, the combination of the bars $C C' C^2$, having the marking edges coincident with the lines joining their respective pivots, with the bars $A A' B B'$, having the spaces $d d', e e', d^{10} d^{11}, e^{10} e^{11}$ at the ends one-half that between the other equal spaces, substantially as described.

In testimony that I claim the foregoing as my own invention I herewith affix my signature in the presence of two witnesses.

HOLLAND N. STEVENSON.

Witnesses:

ALBERT P. NIBLACK,
D. P. MENEFEY.