No. 688,061. Patented Dec. 3, 1901.

A. BUSTANOBY.

PARALLEL RULER.

(Application filed Apr. 19, 1901.)

(No Model.)

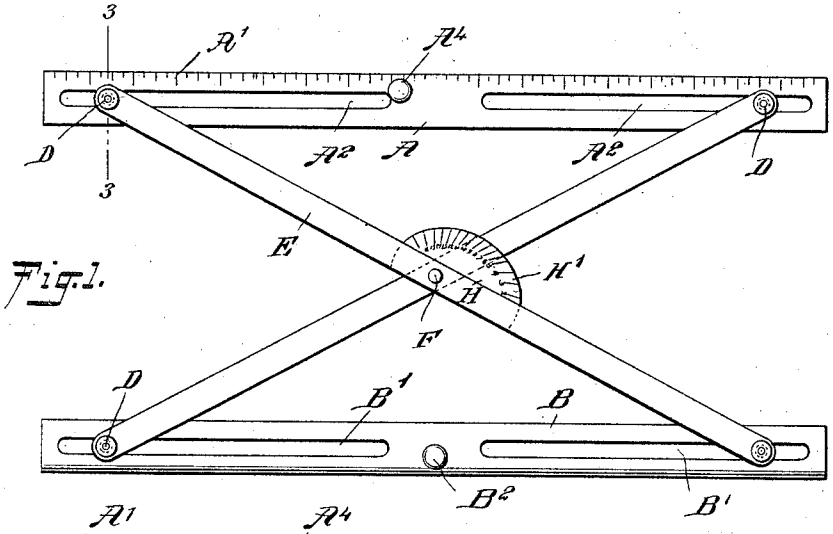

Fig. 1.

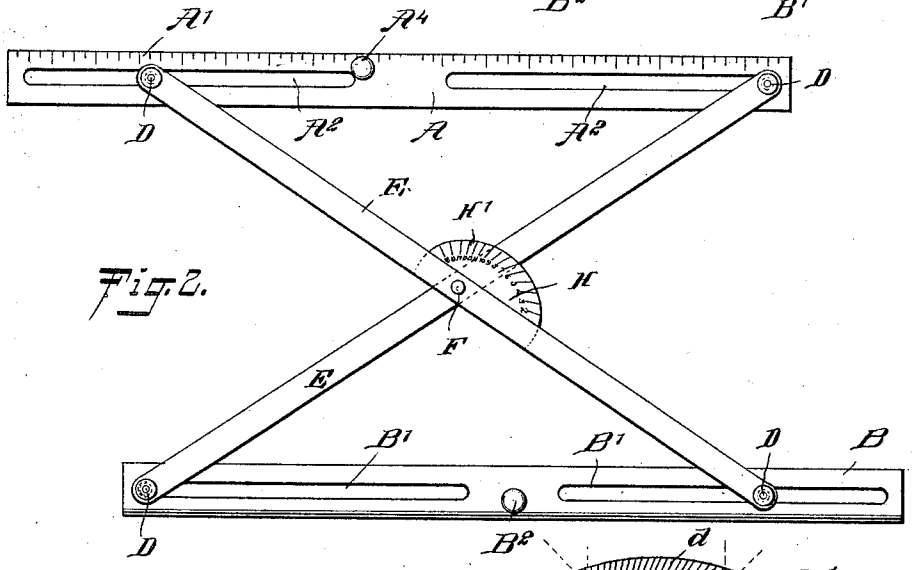

Fig. 2.

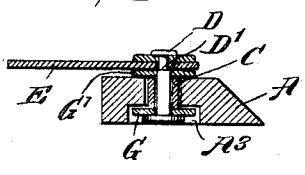

Fig. 3.

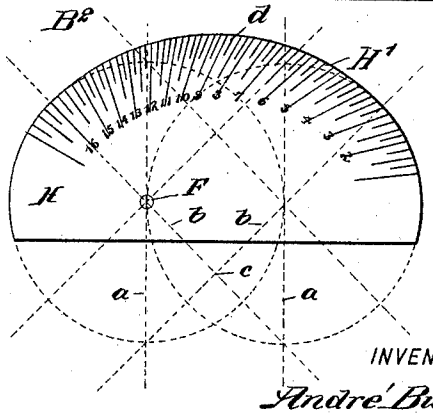

Fig. 4.

WITNESSES:

William P. Goebel

John Lotka

INVENTOR

André Bustanoby

BY

ATTORNEYS

UNITED STATES PATENT OFFICE.

ANDRÉ BUSTANOBY, OF NEW YORK, N. Y.

PARALLEL-RULER.

SPECIFICATION forming part of Letters Patent No. 688,061, dated December 3, 1901.

Application filed April 19, 1901. Serial No. 56,569. (No model.)

To all whom it may concern:

Be it known that I, ANDRÉ BUSTANOBY, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Parallel-Ruler, of which the following is a full, clear, and exact description.

My invention relates to parallel-rulers, and has for its object to provide a construction for conveniently indicating the distance separating the rulers, for permitting either of the rulers to be shifted lengthwise in any of its positions, and for effectively bracing the rulers, so as to hold them against bending.

The invention will be fully described hereinafter and the features of novelty pointed out in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan of my improved ruler. Fig. 2 is a view of the same, showing a different adjustment of the parts. Fig. 3 is a cross-section on the line 3 3 of Fig. 1, and Fig. 4 is a diagram showing the construction of the indicating device.

The improved ruler comprises two members A and B, which may be substantially alike in construction, one of said members being provided with a graduation or scale A′ along its upper edge, and the members have two slots A^2 B′ extending lengthwise from one end to a point adjacent to the center. On the under side the rulers A B are recessed, as at A^3. In the slots A^2 B′ are adapted to move rollers C, loosely mounted upon pins or rivets D, secured at the ends of crossed arms E, which are of equal length and pivotally connected at their center, as indicated at F.

On the pins D are also loosely mounted washers G G′, the former being adapted to roll in the grooves or recesses of the members A B, thus allowing each member to be moved individually lengthwise without otherwise disturbing the adjustment of the parts, as well as permitting the members to be moved readily toward and from each other. The washer G′ is located adjacent to a shoulder D′ on the pin D, the arm E resting on said shoulder, so as to leave the washer G′ free to turn. At the connection of the two arms E, I locate a device for indicating the distance between the two upper edges of the members A B. This device preferably has the form of an eccentric arc H, similar to a protractor, and I give this arc or plate a peculiar shape for the purpose of securing a practically uniform size of the divisions from one end to the other. For this purpose I construct the oval outline of the plate H as follows: I draw two intersecting circles of the same radius, the center of each circle being upon the periphery of the other. The radius of each circle is equal to the distance from the pivot F to the nearest adjacent point of the outline of the indicating-plate H. I draw through the centers of the two circles lines *a*, perpendicular to the connecting-line of said centers. The intersection of the lower end of each perpendicular with the circumference of the circle I connect with the center of the other circle, as by a line *b*. The point of the intersection *c* of the said lines *b* is the center of the arc *d*, which serves to complete the oval. The pivot F is placed at the center of one of the circles.

In using my ruler the crossed arms E will be spread more or less, according to the smaller or greater distance separating the two members A B; but even when the said members are as far apart as the crossed arms E will allow the members will be centrally supported, and the free or unsupported portions will therefore be comparatively short, so that a rigid construction is afforded and straight lines of satisfactory parallelism may be drawn. Should it be desired to draw a longer line than either the member A or B will permit in its stationary position, the ruler—for instance, the member A—can be shifted lengthwise on the rollers C without disturbing the adjustment of the other parts, and thus a line may be prolonged either to the left or to the right. (See Fig. 2.) This feature is an important advantage of my invention and is not, I believe, found in any other parallel-ruler. The rollers C and the washers G and G′ permit of an easy motion of the parts, so that the adjustment of the upper member A requires no exertion. A^4 B^2 are handles to facilitate holding the members A B stationary and for moving them.

It will be understood that the graduation

or scale H′ of the protractor or indicating device H, which is secured to one of the arms E rigidly, in connection with the edge of the other arm E, indicates the distance separating the upper edges of the arms A B—for instance, in inches.

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

1. A parallel-ruler comprising two parallel members and arms connecting them, one of said members having a sliding engagement with the corresponding ends of both arms, so that said member may be moved lengthwise without changing the position of the arms.

2. A parallel-ruler comprising two parallel members and crossed arms connecting them and pivoted to each other at their point of intersection, one of said members having a sliding engagement with the corresponding ends of both arms, so that said member may be moved lengthwise without changing the position of the arms.

3. A parallel-ruler comprising two parallel members each having a longitudinal runway, crossed arms pivotally connected at their point of intersection and each having at each of its ends, a sliding engagement with the said members at the longitudinal runway thereof, so that each member may be moved lengthwise independently without changing the position of the arms.

4. A parallel-ruler comprising two parallel members each having a longitudinal runway, crossed arms pivotally connected at their point of intersection, pins projected from the ends of said arms, and rollers mounted on said pins and arranged to travel in the runways of said members.

5. A parallel-ruler comprising two parallel members, crossed arms connecting them adjustably, and an indicator secured to one of said arms eccentrically to the point of intersection of the arms.

6. A parallel-ruler comprising two parallel members, crossed arms connecting them adjustably, and an indicator secured to one of said arms eccentrically to the point of intersection of the arms, said indicator having its outline formed partly by the peripheries of two intersecting circles of equal diameter, each of which has its center on the periphery of the other, and partly by the arc of a circle the center of which is defined as the point of intersection of two lines drawn from the center of each of said circles to the intersection-point of the other circle with a perpendicular through the center to a line connecting the centers; the intersection-point of the two arms coinciding with the center of one of said circles, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANDRÉ BUSTANOBY.

Witnesses:
JOHN LOTKA,
EVERARD B. MARSHALL.