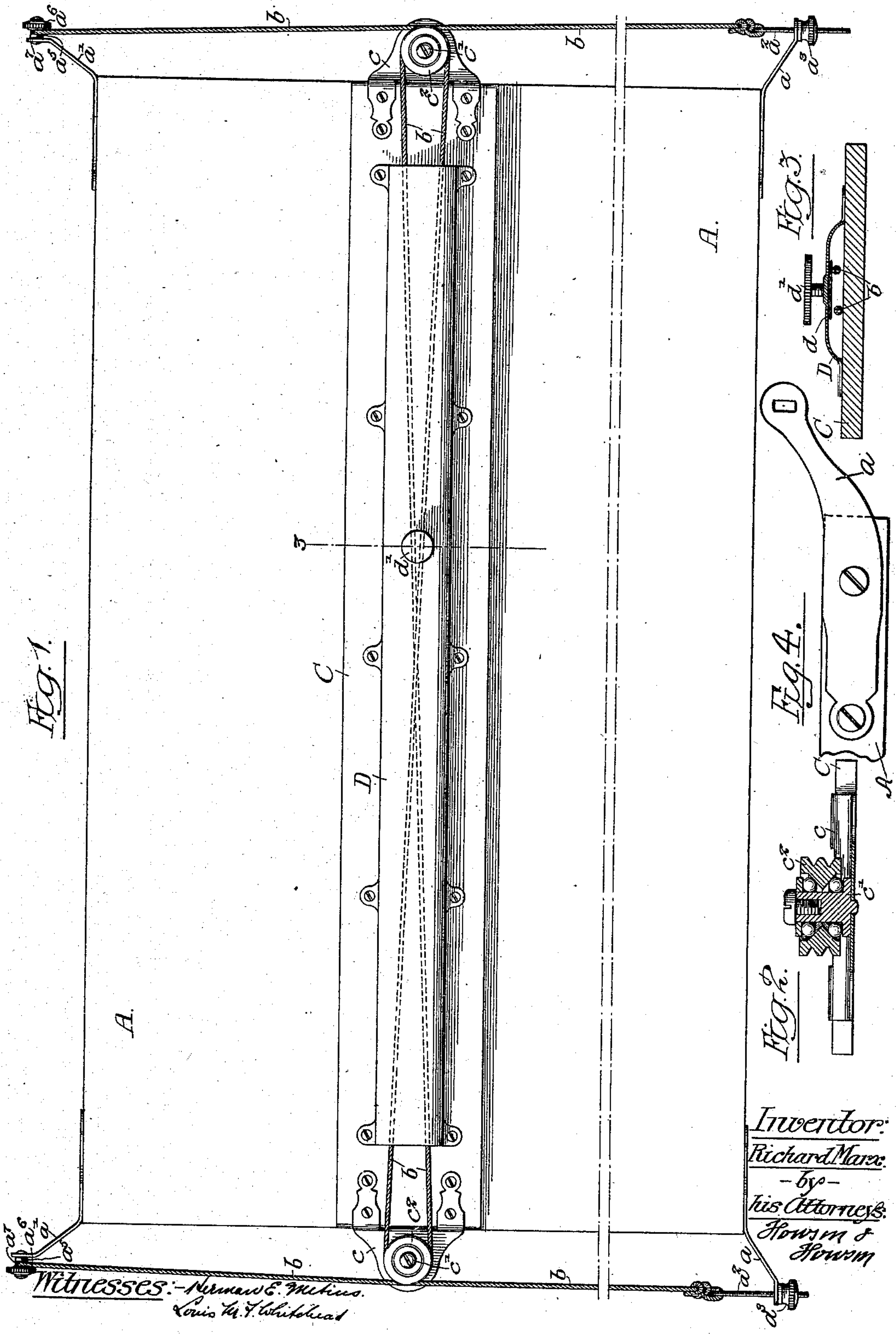
No. 714,594. Patented Nov. 25, 1902.

R. MARX.

PARALLEL MOTION FOR RULING EDGES.

(Application filed July 5, 1901.)

(No Model.)



Witnesses: Herman E. Metius. Louis M. F. Whitehead

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

RICHARD MARX, OF WILMINGTON, DELAWARE.

PARALLEL-MOTION FOR RULING-EDGES.

SPECIFICATION forming part of Letters Patent No. 714,594, dated November 25, 1902.

Application filed July 5, 1901. Serial No. 67,183. (No model.)

To all whom it may concern:

Be it known that I, RICHARD MARX, a citizen of the United States, and a resident of Wilmington, Delaware, have invented certain Improvements in Parallel-Motions for Ruling-Edges, of which the following is a specification.

My invention relates to certain improvements in instruments for use in connection with drafting or drawing boards, and more particularly to an improved combination of parts for making a parallel-motion for a ruling-edge of any desired outline or construction.

The object of my invention is to provide a device which when applied to any ruling-edge shall maintain it accurately parallel to itself as it is moved over a surface upon which it is wished to make a drawing, and which shall, moreover, be easily and quickly adjustable when it is desired to change the angle of said ruling-edge relatively to any fixed line. This object I attain as hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a drawing-board, showing my improved parallel-motion attached to a straight-edge. Fig. 2 is an enlarged vertical sectional view of one end of the straight-edge shown in Fig. 1, illustrating the detail construction of the roller. Fig. 3 is a vertical sectional view on the line 3 3, Fig. 1, showing a form of clamp by means of which a ruling-edge is maintained in any desired position on a drawing-board or other support; and Fig. 4 is a side view of one of the cord-brackets.

In the above figures, A represents the drawing-board, of any desired construction, at the corners of which are suitably attached two sets of pieces or brackets a and a' for holding cords b. These bracket-pieces are offset at one end from the plane of their body portion, as illustrated in Fig. 1, being provided at the opposite end with countersunk holes for screws and having the opposite ends offset upwardly, as shown in Fig. 4.

The brackets a have a rectangular hole through the offset end, in which is a threaded adjusting-screw a^2, similar in section to the outline of said hole, provided with a correspondingly-threaded thumb-nut a^3 and having a hole or eye through one end. The brackets a' are preferably made with a stud a^5 fixed in their offset end. This stud is also provided with a threaded thumb-nut a^6, and there is through it a hole a^7 for the reception of the ends of a cord b.

C is a straight-edge of ordinary construction, to the ends of which are attached metallic pieces c, each carrying a vertical spindle c', on which is a double-grooved roller c^2, preferably operating on ball-bearings, as shown. The grooves of the rollers are made V-shaped in section, and it is to be noted that the metallic piece c and the roller c^2 are so designed and placed as to bring the lower groove of each roller just above the plane of the upper surface of the ruling-edge.

b b are cords each extending from a bracket a at one corner of the board, down on one side of the same and around a roller c^2, across the ruling-edge C, around the second roller c^2, and to the adjusting-brackets a' at the corner diagonally opposed to that at which it started.

A guard or protecting piece D of U-shaped section is fastened on the ruling-edge, as illustrated, and through this the two cords pass, the same serving to keep said cords out of contact with the hands and arms of the person using the board.

A clamp consisting of a plate d, carried by a headed screw d', is placed in the guard D, as plainly shown in Fig. 3, thus making it possible to hold the cord from moving through the said guard, and thereby preventing motion of the ruling-edge.

In assembling the parts of my improved parallel-motion the ruling-edge is placed in approximately the position desired upon the drawing-board, and one end of each of the cords is passed through its respective hole a^7 in the bracket a', after which the thumb-nuts a^6 are tightened to retain the said end of the cord. The thumb-nuts a^3 are then run out to the end of the adjusting-screws a^2, and the cords b after being passed around the roller c^2, as described above and shown in the drawings, are made fast to their appropriate screws a^2, being passed through the holes in the ends thereof and tied. It will be understood that at this point of the operation the cords are not under any great tension, as they are comparatively loose. The sheet of drawing upon

which it is desired to work is now fastened upon the board by thumb-tacks or otherwise, and the ruling-edge set parallel to one of a set of lines of the drawing, this being accomplished by tightening up one of the adjusting-screws *a* by means of the thumb-nut a^3. The effect of the tightening of one cord independently of the other is to alter the angle of the section of the cords, which crosses the drawing-board relatively to the section extending along the sides of the same, thereby bringing the end of the ruling-edge toward the adjusting-screw which was moved. It is to be noted that when thus placed in position upon a drawing-board my device requires no further adjustment for an indefinite period, it having been found that on account of the V shape of the roller-grooves there is no slip of the cords therein, and any change of length of either of the cords from stretching or shrinkage is compensated for by the other.

Any slight change in the position or angle of the ruling-edge relatively to a given line in the drawing upon the board may be made by manipulation of the adjusting-screws, as above explained, and if it is desired to materially change the said angle the cords are loosened from the adjusting-screws and the ruling-edge placed in position, as when originally assembling the parts.

It will be understood that while I have shown rollers turning on spindles carried by my ruling-edge I do not confine myself to this construction, as any equivalent device may be used without departing from my invention, and the cords may be made of any desired material, such as vegetable, animal, or mineral fiber or a metallic chain. While in the drawings I have shown my device as applied to a straight-edge, it may with equal advantage be used in connection with a ruling-edge of any description which is employed as a guide for drawing lines.

It is to be noted that by my improved device the line-ruling edge is rendered absolutely independent of the conditions of the edges of the board or other support for the drawing, and therefore its usefulness and accuracy remain unaffected by any change of shape or warping of the said drawing-support. It will be seen, further, that by the use of this improved device much time may be saved, as a draftsman is not required to continually hold one end of the ruling-edge, as is at present necessary in using the ordinary T-square, but may have both hands free to manipulate pencil or other instruments.

I claim as my invention—

1. The combination of a drawing board or table having two sets of cord-brackets fastened thereto, a ruling-edge having pieces projecting from its ends, a vertical spindle rigidly held to each of said pieces, grooved rollers carried on said spindles provided with ball-bearings, cords extending around the rollers and between diagonally-opposed cord-brackets, substantially as described.

2. The combination of a drawing board or table having two sets of cord-brackets fastened thereto, a ruling-edge having pieces projecting from its ends, a vertical spindle rigidly held to each of said pieces, grooved rollers carried on said spindles provided with ball-bearings, cords extending around the rollers and between diagonally-opposed cord-brackets, one bracket of each set carrying means whereby the position of the ruling-edge may be varied at will, substantially as described.

3. The combination of a drawing board or table, a ruling-edge thereon, rollers on the ruling-edge, cord-brackets attached to the drawing-board, and cords fastened to said brackets, said cords extending from one bracket down one side of the board, around a roller, along the ruling-edge to the second roller, and downwardly along the other side of the board to a cord-bracket diagonally opposed to the one holding the other end of the cord, with an adjusting-screw attached to each cord and nuts for the screws engaging the cord-brackets whereby the tension of said cords may be varied, substantially as described.

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

RICHARD MARX.

Witnesses:

WILLIAM E. BRADLEY,

JOS. H. KLEIN.