No. 616,943. Patented Jan. 3, 1899.

S. C. LA DUE.

RULER AND SPACER.

(Application filed Oct. 23, 1897.)

(No Model.)

Fig. 1.

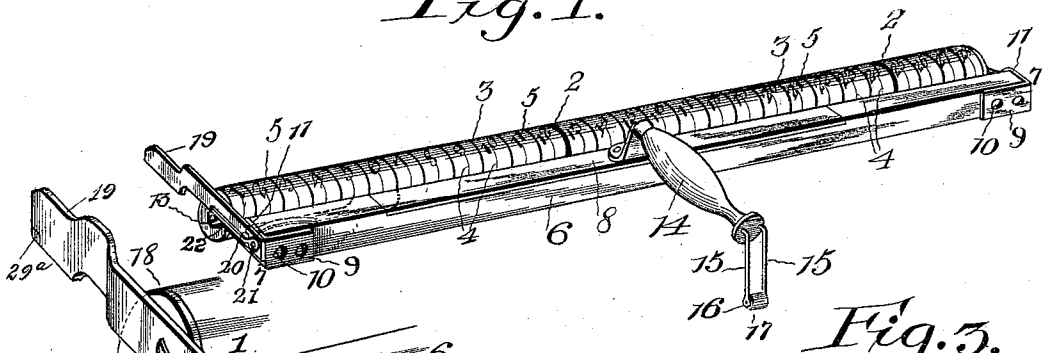


Fig. 5.

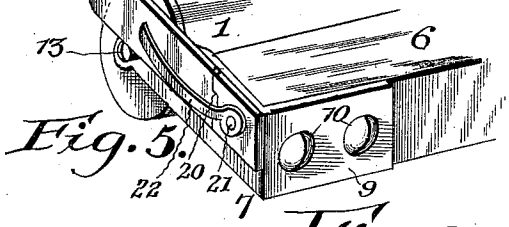


Fig. 3.

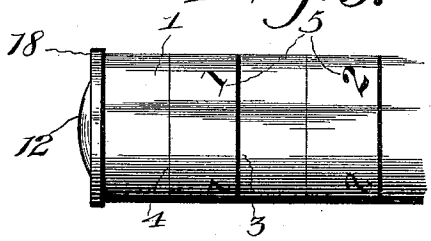


Fig. 2.

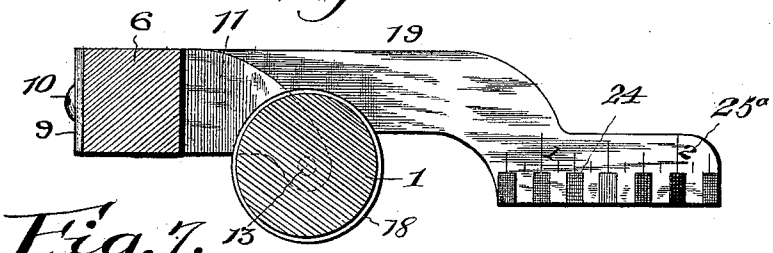


Fig. 4.

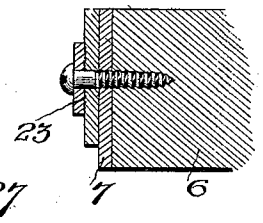


Fig. 7.

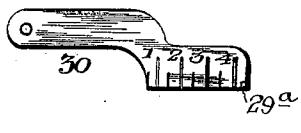
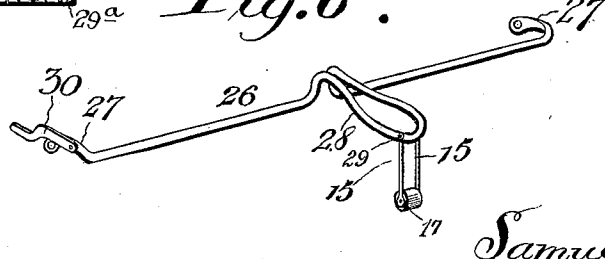


Fig. 6.



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UNITED STATES PATENT OFFICE.

SAMUEL C. LA DUE, OF FERTILE, MINNESOTA.

RULER AND SPACER.

SPECIFICATION forming part of Letters Patent No. 616,943, dated January 3, 1899.

Application filed October 23, 1897. Serial No. 656,202. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL C. LA DUE, a citizen of the United States, residing at Fertile, in the county of Polk and State of Minnesota, have invented a new and useful Ruler and Spacer, of which the following is a specification.

This invention relates to rulers, its objects being to provide a cylindrical ruler journaled in a suitable frame and to provide a spacing attachment whereby parallel lines may be drawn at predetermined distances apart with great accuracy.

With these and other objects in view the invention consists of the details of construction, combination, and arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a ruler made in accordance with my invention. Fig. 2 is a transverse section of the same, showing the spacer in side elevation. Fig. 3 is an enlarged view of the end portion of the cylindrical ruler. Fig. 4 is a sectional detail. Fig. 5 is an enlarged perspective view of the end of the frame and the spacer. Fig. 6 is a perspective view of a modified form of supporting-frame. Fig. 7 is a side elevation of a modified form of spacer.

Similar reference-numerals indicate similar parts in the several figures.

1 indicates a cylindrical ruler, which may be of any desired length and is provided with a series of circumferential lines to form a scale extending from end to end of the ruler. These lines will preferably be distinguished from each other to indicate feet, inches, and divisions of inches by making them of different color, the strength of color decreasing with the shorter divisions. For instance, as illustrated, the heavy lines 2 indicate feet, the medium lines indicate inches, and the lightest lines 4 half-inches. While this is preferable, especially where the divisions are minute, it is not essential with long rulers designed for use on blackboards, nor, for that matter, with any of them.

5 represents indicating-numerals arranged in parallel rows longitudinally of the ruler, and at least three rows of these numerals will be on the ruler in order that one row will be always in sight. In Fig. 3 two rows are shown, and the third row will be midway between them. The several numerals will be obliquely disposed, as clearly shown in Fig. 3, in order that they may be easily read whether the ruler is in horizontal or vertical position.

The frame consists of a bar 6 and angle-brackets 7, secured to the ends of the bar. The bar will preferably be of light stiff wood, and in order to prevent it from springing it will preferably be reinforced in its middle portion by means of a metal strip 8, secured on its upper face, or in any other suitable manner. The short arms 9 of the respective brackets are secured to the front face of the bar at its respective ends by means of screws 10 or similar fastening devices. The long arms 11 of the brackets project in front of the bar and are turned down slightly at their forward ends, as best shown in Fig. 2, and bear against the ends of the ruler 1, which ends are preferably rounded, as indicated at 12 in Fig. 3, in order to minimize the friction between the ruler and the brackets.

13 indicates pivot screws or pins which pass through the arms 11 into the ends of the ruler, and the heads of these screws or pins project beyond the surface of the arms for a purpose to be hereinafter referred to.

14 indicates a handle secured to the bar 6 in any suitable manner about midway its length, but preferably to the left thereof. Two rods 15 are firmly secured in the end of the handle and bent downwardly at a right angle and have their lower ends flattened and perforated to receive the ends of an axle 16, on which a rubber roller 17 is journaled.

A ring 18, preferably of rubber, is secured on each end of the ruler 1, and these rings may be set on the surface of the ruler or in grooves, as preferred. The rings will be of somewhat greater diameter than the ruler and will serve to support the ruler out of frictional contact with the blackboard or other surface. While I prefer to use the rings 18, because they not only hold the ruler out of contact with the blackboard or other surface, but also tend to prevent the ruler from slipping, they are not absolutely essential to my invention, as will be readily understood.

19 indicates the spacer, which is secured on

the left-hand end of the frame and is preferably made in two sections (one being longer than the other) hinged together, as indicated at 20. The short section is pivoted on the screw or pin 21, secured in the end of the bar 6, and the same screw or pin serves to secure one end of a normally-curved spring 22 to the short section, while the free end of the spring engages the long section and holds it in close contact with the arm 11. The lower edge of the long section when the spacer is in operative position will rest upon the projecting head of the pivot screw or pin 13, and be thus supported out of contact with the blackboard or other surface. When not in use, the spacer may be turned to a vertical position, and the curved spring will force the long section down into engagement with the upper face of the bar 6, as indicated in dotted lines in Fig. 1. It is also obvious that the spacer may be turned on its pivot a half-circle and that the spring will then force the long section into engagement with the front edge of the bar 6. This position has not been indicated on the drawings, because it would tend to confuse the drawings. In order that the spring 22 may move uniformly with the spacer when it is turned on its pivot 21, the opposing faces of the spring and the short section of the spacer will be serrated or roughened, as indicated at 23 in Fig. 4. A scale 24 is formed on the inner face of the spacer, as clearly shown in Fig. 2, to indicate inches, half-inches, quarters, and eighths. The lines indicating the quarter and half inches are widened to an eighth of an inch and will preferably be of a different color from the others, as is indicated by the difference in shading in Fig. 2. The colored portions will be about the width of a chalk-line as it is ordinarily made upon a blackboard, and after the first line has been drawn it will only be necessary to move the ruler over the blackboard in the direction of the handle until the colored portion indicating the desired space is opposite the line, and the ruler will then be in position to draw the second line, and so on successively until the desired number of lines have been ruled. The scale on the spacer will also be provided with indicating-numerals, (designated by 25^a,) which will be preferably arranged obliquely, as shown in Fig. 2, in order that they may be easily read whether the spacer is in a vertical or horizontal position.

In Fig. 6 is illustrated a modified form of frame to support smaller rulers, and, as shown, this frame is formed from a single piece of wire bent to form the bar 26, end supporting-arms 27 for the ruler, and the handle 28, which latter is in the form of a loop and in a plane above the bar 26. In this construction the upper ends of the rods 15 will preferably be riveted to the handle, as indicated at 29. In this form of frame the spacer 30 will preferably be in a single piece and be riveted to the arm 27, and no spring will be used. The scale on the inner face of this spacer may be similar to that before described with reference to the spacer shown in Fig. 2, or it may be an ordinary scale with indicating-numerals, as shown in Fig. 7. If preferred, the corner 29^a of either spacer may be tipped with rubber. In small rulers the roller 17 may be dispensed with, as they will be specially designed for ruling on paper or the ordinary school-slate, and when used in such manner the roller 17 will not be essential.

When the device is used for ruling lines on a blackboard, it will preferably be constructed as illustrated in Fig. 1, and when used the device will be supported upon the surface of the blackboard by the roller 17 and the rings 18 at the ends of the ruler 1, and it is obvious that the handle 14 will be entirely clear of the blackboard, and when pressure is applied to the handle the rings 18 and the roller 17, being of rubber will be flattened to a certain extent and will prevent the ruler 1 from slipping out of position at either end. The handle 14 will also serve as a support for the arm of the user instead of being a weight on it.

A ruler constructed in accordance with my invention may be used to draw either vertical or horizontal lines or lines extending at any desired angle, and such lines can be made of any desired length with great accuracy and also be spaced apart with great accuracy. By having the indicating-numerals for the respective scales obliquely arranged it is obvious that they can be easily read regardless of the position the ruler will occupy and also that by having three or more rows of designating-numerals on the ruler one of such rows will always be in sight.

A ruler made in accordance with my invention will be an excellent aid for making all of the straight lines of the musical staff, even to the bars and note-stems. By its use the height of letters may be quickly illustrated, squares and cubes rapidly and accurately drawn, and diagrams made. It will also be an aid in illustrating geometry and will make an excellent ruler for draftsmen.

Preferably the cylindrical ruler will be arranged sufficiently in advance of the main bar of the supporting-frame in order that a line may be drawn on either side of the ruler. This will be especially advantageous when the device is used for ruling on slates or paper. It is also obvious that when pen and ink are used to make the ruled lines the rings 18 at the ends of the ruler will hold the latter sufficiently above the paper to prevent ink that may accidentally get on it from smearing the paper.

It will be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described the invention, what I claim is—

1. In a ruler and spacer, the combination of

a frame, a cylindrical ruler journaled in the frame, and a spacer supported on one end of the frame extending in advance of the ruler at right angles thereto and having a scale, substantially as described.

2. In a ruler and spacer, the combination of a frame, a cylindrical ruler journaled in the frame and provided with a scale and indicating-numerals, and a spacer supported on one end of the frame extending in advance of the ruler at right angles thereto and having a scale, substantially as described.

3. In a ruler and spacer, the combination of a frame, a cylindrical ruler journaled in the frame and provided with a series of circumferential parallel lines forming a scale, and a series of longitudinal rows of indicating-numerals, and a spacer supported on one end of the frame extending in advance of the ruler at right angles thereto and having a scale, substantially as described.

4. In a ruler and spacer, the combination of a frame, a cylindrical ruler journaled in the frame, a spacer supported on one end of the frame to extend in advance of the ruler and having a scale, said spacer being formed in two sections hinged together, and a spring secured to one section and loosely engaging the other section, substantially as described.

5. In a ruler, the combination of a frame having a handle extending rearwardly therefrom at right angles thereto, a rod secured to the end of the handle and extending at substantially a right angle thereto, an elastic roller journaled on the lower end of the rod, and a cylindrical ruler journaled in said frame, substantially as described.

6. In a ruler, the combination with a frame having a handle extending rearwardly therefrom at right angles thereto, rods secured to the end of the handle and extending at substantially a right angle thereto, an elastic roller journaled in the lower ends of the rods, a cylindrical ruler journaled in said frame, and an elastic ring at each end of the ruler, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL C. LA DUE.

Witnesses:
HENRY L. GAYLORD,
LEVI P. GAYLORD.