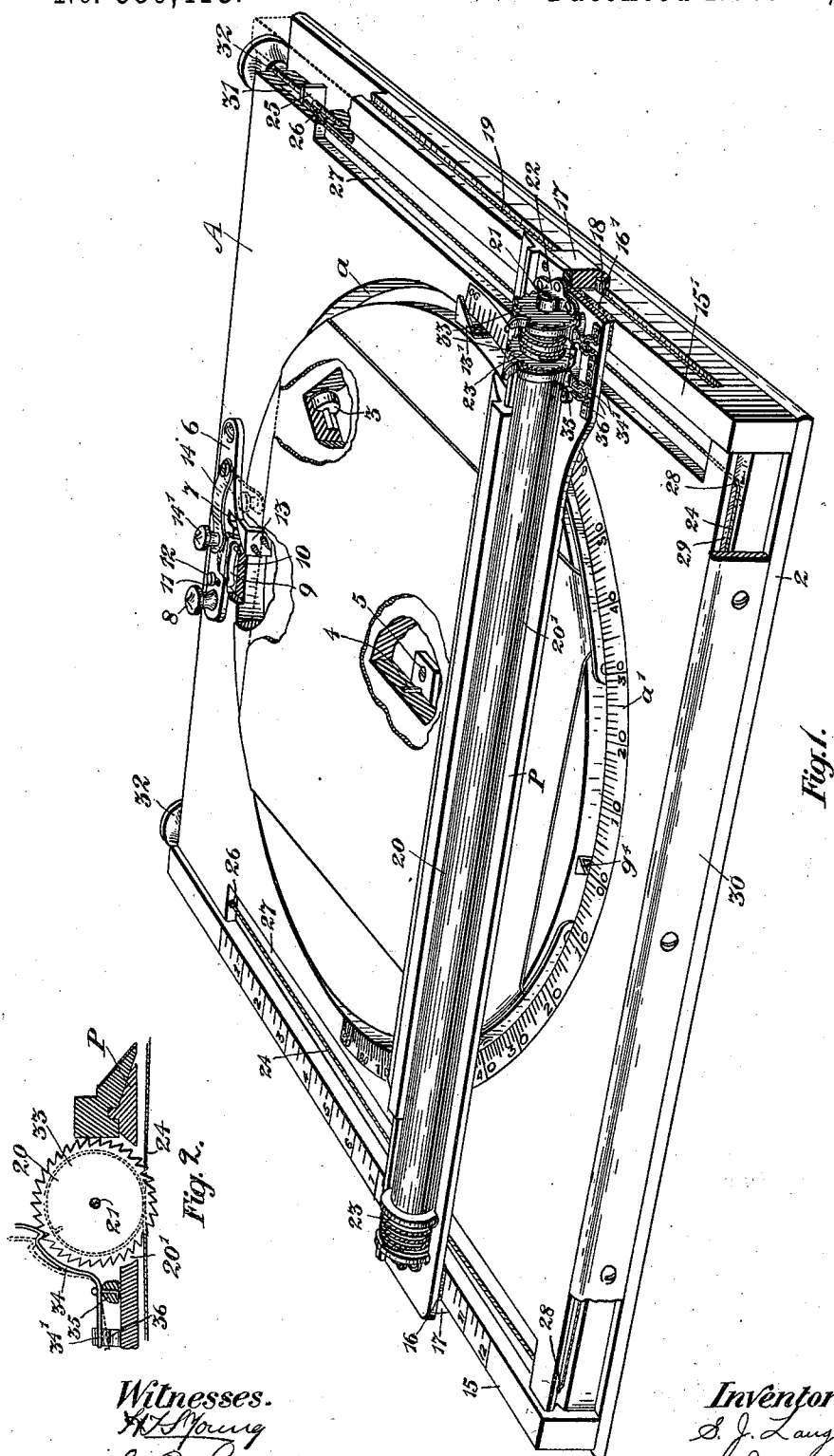


(No Model.)

S. J. LAUGHLIN & J. HOUGH.
DRAWING BOARD.

No. 550,413.

Patented Nov. 26, 1895.



Witnesses.
H. J. Spring
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UNITED STATES PATENT OFFICE.

SAMUEL JOHN LAUGHLIN AND JAMES HOUGH, OF GUELPH, CANADA.

DRAWING-BOARD.

SPECIFICATION forming part of Letters Patent No. 550,413, dated November 26, 1895.

Application filed March 27, 1895. Serial No. 543,356. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL JOHN LAUGHLIN, mechanic, and JAMES HOUGH, printer, of the city of Guelph, in the county of Wellington, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Drawing, Sketching, and Designing Tables, of which the following is a specification.

Our invention relates to improvements in drawing, sketching, and designing tables on a former application of ours filed in the United States Patent Office on the 17th day of July, 1894, Serial No. 517,836; and the object of the present invention is to provide a simple means for the adjustment of the board in relation to the rule and protractor, keeping the rule parallel to the front edge of the table, and for spacing such rule during its movement to draw parallel lines equidistant; and it consists, essentially, of a circular drawing-board journaled in a circular opening in the table, stop-brackets secured to the edge of the board and designed to coact with a pivoted catch, a protractor around half of the circular opening, a pointer on the edge of the board next the protractor, a rule provided with a roller having end spools around which pass a cord or wire extending from front to rear of the board in grooves and around the front of the board, and toothed wheels arranged at one end of the roller, having coacting dogs, all arranged as hereinafter more particularly explained.

Figure 1 is a perspective view of a drawing-table constructed in accordance with our improvements. Fig. 2 is a sectional detail showing the spacing-wheels and coacting dogs.

In the drawings like letters and numerals of reference indicate corresponding parts in each view.

A is the drawing-table, provided with a circular opening *a* and a base-board 2. The drawing-paper is suitably retained in position on the board G, which is circular, as shown. The board G has journaled underneath it a series of rollers 3, arranged concentrically, on which it is supported, the said board being held centrally by a pin 4, forming part of the plate 5, which is attached to the base-board.

a' is the protractor formed around the nearer edge and half of the circular hole *a*. The protractor is divided into a scale of ninety degrees from each side of the zero-point, which is opposite the center of the front of the table. The pointer *g'* is secured to the edge of the board G and extends slightly over the protractor *a'*.

6 is a catch, having a notch 7 at the front side and a knob 8.

9 is a spring fitting within a recess 10 beneath the catch and extending up into a slot 11 in the catch 6, and 12 is a screw, which extends through the slot into the top of the table A. The screw 12 serves to limit the movement of the catch 6, which is always forced by the spring 9 toward the board G.

13 13' are brackets secured to the edge of the board G at exactly ninety degrees apart, one edge of each bracket being diametric and the other beveled, the diametric edges being to the inside. The brackets 13 13' are designed to coact with the notch 7 in the catch 6.

14 is a spring-clamp pivoted on the catch 6, provided with a knob 14' and designed to hold the board in position when oblique lines are being drawn.

15 15 are side bars extending above the surface of the table and forming end supports for the rule P, each end of which is provided with felt strips 16 and 16 to rest upon the side bars 15 and 15. The tops of the side bars are substantially flush with the surface of the board. The rule P has downwardly-extending ends 17, from which extend pins 18 into the side grooves 19 in the bars 15, thus serving to hold the rule down in position.

20 is a roller journaled at each end by pins 21 in bearing-brackets 22 and extending through a longitudinal opening 20' in the rule P. 23 are spools formed at each end of the roller 20.

24 is a cord, preferably of silk, which extends from a nut 25, in which it is fastened, through a hole 26 in the table into a groove 27, up through the opening 20', and a couple of times around the spool to which it is fastened, at two points, the continuation of the cord 24 passing down along the groove 27 through the hole 28 to the front groove 29, made in the table A. The front groove is covered by a bar 30. The cord 24 passes across the front

groove 29 and through a corresponding hole 28 on the opposite side, thence into the groove 27 and around the corresponding spool 23, back through the groove 27, hole 26, to a nut 5 corresponding to the nut 25, in which this end is fastened. The nuts 25 are longitudinally adjustable within recess 31 by the screw-knobs 32. By means of the screw-knobs 32 the edge of the rule can be adjusted to a nicety, so as to be exactly parallel with the front edge of the table, and the degree of tension of the cord regulated so as to permit of the rule working freely.

33 are spacing-wheels secured at one end of the roller 20, one at each side of the spool 23. The wheels 23 preferably have ratchet-shaped teeth.

34 are the coacting dogs, which are pivoted on a bar 35. The tails 34' of the dogs 34 extend within double-notched spring-fingers 36. When the tails are within the upper notch, the dog is in engagement with the teeth of the wheel and the rule may be moved toward the draftsman a space at a time. When the tail 34' of the dog 34 is moved down to the lower notch, the rule may be moved with perfect freedom backward and forward.

Although we show only two, it will of course be understood that any number of wheels may be provided, depending upon the spaces required for sectional or other work.

Each spacing-wheel hereinbefore mentioned is arranged with different width of teeth, this depending upon the spaces desired for sectional or other work in which equal spacing is required.

As the rule is being moved forwardly and rearwardly, it will be seen that the cord on each spool will be winding and unwinding and always serve to maintain such rule in position parallel with the front and rear of the board.

Although in this specification we describe the cords as of silk, it will of course be understood that they may be made of any other suitable material, such as wire, and that in lieu of being in cord form they may be bands.

What we claim as our invention is—

1. The combination with the table, A, having a circular opening and a circular drawing board rotatably supported within the opening and stop brackets secured to the edge at ninety degrees apart, of the pivoted catch, 6, provided with a notch, 7, slot, 11, screw pin, 12, co-acting spring, 9, all arranged as and for the purpose specified.

2. The combination with a circular drawing board rotatably secured within the circular opening in the table and means for holding the same in any desired position, of a

rule provided with a roller extending through a longitudinal opening in the rule and having end spools, and cords passing from front to rear of the table, fastened to the spools partially wound thereon, and co-acting as shown and for the purpose specified.

3. The combination with the table having a circular opening, a circular drawing board rotatably supported within such opening above the level of the table, end guide bars at each side of the table substantially flush with the board, and a rule supported upon the guide bars and having depending blocks from the end thereof with pins extending into side groove in the outer edge of the guide bars, of a roller journaled above and extending through a longitudinal opening in the rule and having end spools with co-acting cords all arranged as and for the purpose specified.

4. In combination with the circular drawing board rotatably supported within a circular opening in the table and a rule provided with a roller and end spools, of a cord passing from the nuts, 25, through a hole, 26, groove, 27, hole, 28, on each side of the table to the front groove, nuts, 25, in which the rear ends of the cord are fastened and screw knobs for adjusting the nuts, 25, within the slots, 31, as and for the purpose specified.

5. The combination with the drawing board of a rule arranged to move parallelly across the board, a roller journaled in the top of the rule and extending through a longitudinal opening in the same, spacing wheels secured in the end of the roller, and dogs arranged to co-act with the spacing wheels as and for the purpose specified.

6. The combination with the drawing board of a rule arranged to move parallelly with the board, a roller journaled in the top of the rule and extending through a longitudinal opening in the same, spacing wheels secured in the end of the roller and dogs suitably pivoted and having forwardly extending tails adjustable within double-notched spring fingers secured to the rule as and for the purpose specified.

7. The combination with the drawing board, of a roller arranged to move parallelly across the board and having end spools, a cord passing from front to rear of the table at each side, intermediately fastened to the spools and partially wound thereon as and for the purpose specified.

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Witnesses:

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