

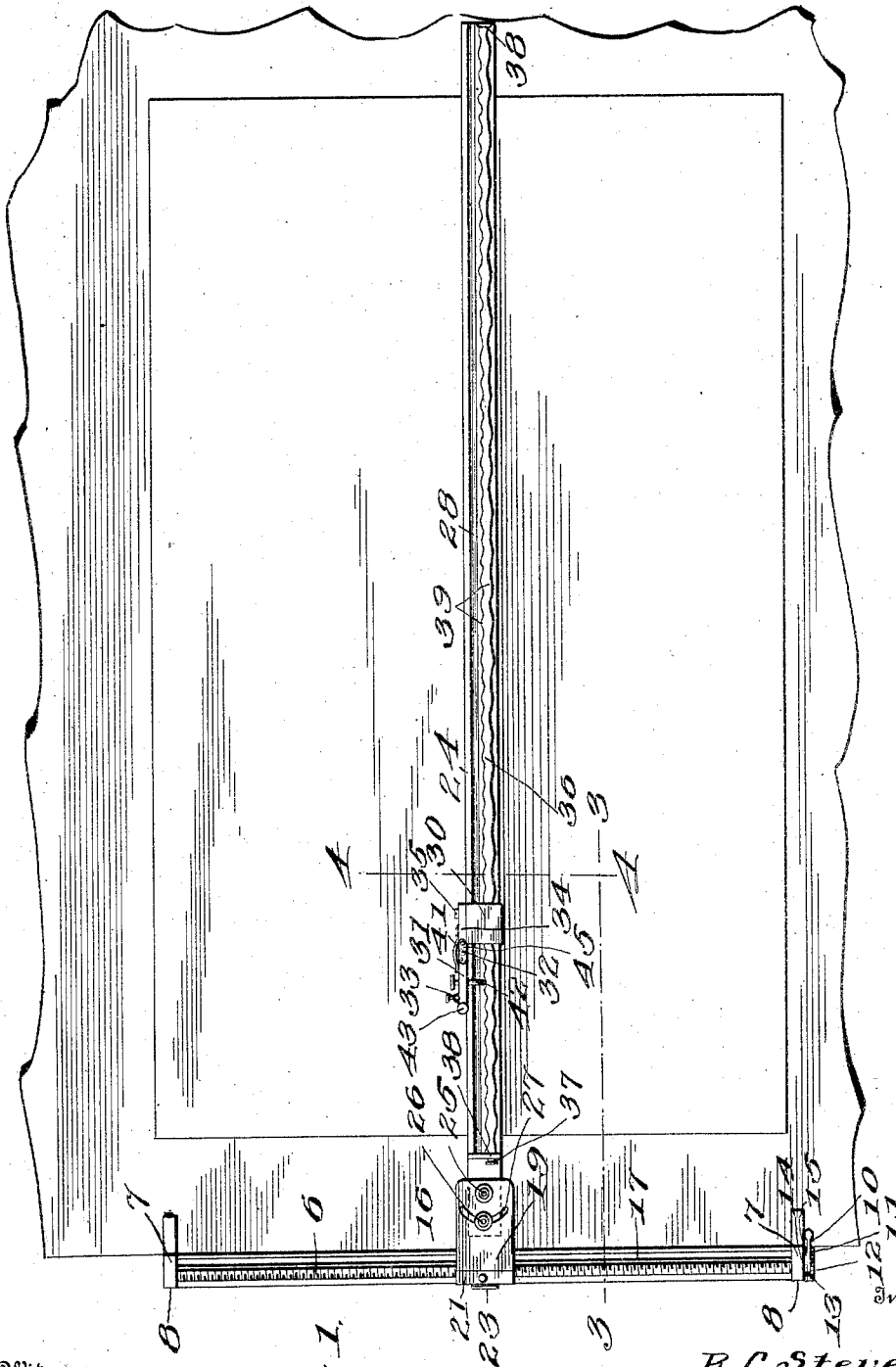
R. C. STEVENS.
RULING MACHINE.

APPLICATION FILED JULY 22, 1908.

927,468.

Patented July 6, 1909.

2 SHEETS—SHEET 1.



Witnesses
J. E. Thom
Arthur Marley

Fig. 1.

34

Geo. E. Tew

Attorney

R. C. Stevens.

Inventor

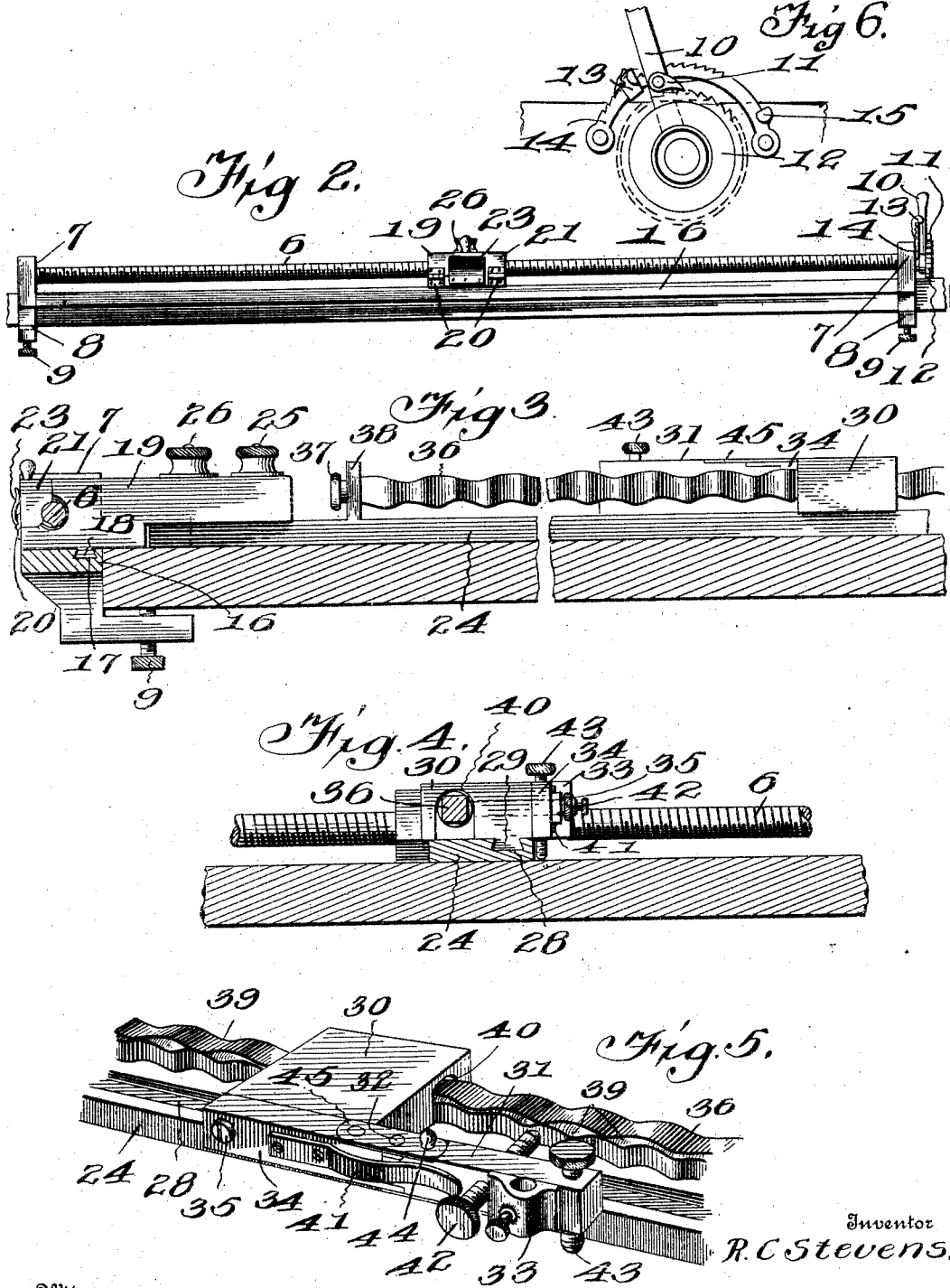
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Witnesses
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Arthur Mesley

Inventor
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UNITED STATES PATENT OFFICE.

RAYMOND C. STEVENS, OF ST. PAUL, MINNESOTA.

RULING-MACHINE.

No. 927,468.

Specification of Letters Patent.

Patented July 6, 1909.

Application filed July 22, 1908. Serial No. 444,860.

To all whom it may concern:

Be it known that I, RAYMOND C. STEVENS, citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Ruling-Machines, of which the following is a specification.

This invention relates to ruling machines, and has for its object to provide an improved machine for ruling a series of parallel lines, said lines being either straight or waved. The device may also be used for cutting strips of paper or other material, by the substitution of a cutting blade for the pen or pencil. Provision is also made for ruling lines either perpendicular or at an angle to the edge of the board or sheet. By means of a screw device the ruler is or may be moved an equal distance at each operation, in order to make the parallel lines the same distance apart.

The construction and arrangement of the implement and its parts will be more fully apparent from the following description and the accompanying drawings in which—

Figure 1 is a top plan view of the device; Fig. 2 is an end view thereof, showing the screw in side elevation; Fig. 3 is a section on the line 3—3 of Fig. 1; Fig. 4 is a section on the line 4—4 of Fig. 1; Fig. 5 is a detail in perspective. Fig. 6 is a detail of the turning device for the spacing screw.

Referring specifically to the drawings, 6 indicates a non-traveling screw which is supported at its ends in bearings in brackets 7 which are provided with jaws 8 to fit over the edge of a drawing board and with thumb screws 9 whereby the brackets may be clamped to the edge of the board. The screw is turned by means of a lever 10 which is loose on one end thereof and which carries a pawl 11 engaging a ratchet 12 fast on the spindle of the screw. The extent to which the ratchet wheel and screw are turned at each operation is controlled by a stop 13 adjustable along a segment 14 fastened to one of the brackets. When the lever is drawn back it strikes the adjustable stop, and when the lever is advanced it strikes a fixed stop 15, whereby equal movement of the ruler is obtained.

A bar 16 extends between the brackets and is rigidly fixed thereto, and this bar has a dove-tailed groove 17 in which slides a tongue 18 on the under side of a block 19. Hinged to this block at 20 is a half nut 21,

with threads arranged to engage the threads of the screw, and this nut is pressed by a spring 23 so that it is normally in engagement with the screw, but by pulling back on the knob the nut may be swung out from the screw and disengaged, and the block thereby moved to any desired position.

The ruler is indicated at 24, and it is connected by a pivotal joint 25 to the inner end of the block 19 and is held at adjustment by a screw 26 which works in a segment-slot 27 in the block, the end of the ruler being set in a rabbet on the under side of the block.

The ruler 24 has a dove-tailed groove 28 extending lengthwise along the top thereof, and this groove receives a tongue 29 on the under side of a block 30 which is slidable lengthwise along the ruler. This block has a piece or arm 31 hinged thereto by a vertical pin 32, so that the arm may be swung in or out, and this arm carries a pencil holder 33. The arm is hinged to a piece 34 which is fastened to the block by a cap screw 35.

Extending lengthwise along the ruler above the top thereof is a rod 36 which may be turned by a knob 37 at one end thereof, the knob being supported in bearings 38 at the opposite ends of the ruler. The rod has symmetrical projections as indicated at 39 extending along the same, and forming a wavy outline. The projections of each line are symmetrical, and there are four lines of projection, the projections of each line being different so as to form a different outline. By turning the knob 37 any line of projections may be brought in position for action. The rod extends freely through an enlarged recess 4 in the block 30.

The hinged arm 31 is pressed by a spring 41 which is fastened to the side of the piece 34, and said arm has a transverse follower screw 42 the point of which bears against the rod 36, or the projections 39 thereon, and as the block is slid along the ruler will follow said projections and vibrate the arm 31 accordingly, the spring 41 holding the point of the screw against the rod. The arm 31 also has at its free end a vertical gage screw 43, with a round point, which may be adjusted to vary the pressure on the paper of the pencil or other implement held in the holder 33, the arm swinging up and down to the necessary extent on the screw 35 as a pivot.

The hinged joint at 32 may be locked

against movement by a screw 44 extending through a plate 45 across the hinge joint. This makes the arm rigid with the block 30, and is useful in ruling or cutting a straight line.

In operation, the instrument is clamped to the drawing board having thereon the sheet to be ruled or cut. The half nut 21 is disengaged and the ruler is slid along to proper position for the commencement of the operation, and then the nut is allowed to engage the screw. The pencil, pen or cutter is inserted in the holder 33 and the gage screw 43 is adjusted to produce the proper contact with the paper. For a wavy line the screw 44 is released, allowing the point of the follower 42 to bear against the row of projections, the rod 36 being turned to bring the desired row of projections into position for action. Then by sliding the block 30 along the ruler a wavy line is produced corresponding to the projections on the rod. After each line, the lever 10 is operated to turn the screw and shift the ruler the desired distance, and another line ruled, and so on. To rule straight lines, the screw 42 is backed out until it does not touch the rod, and the hinged arm 31 is locked by the screw 44. Then by inserting a pen or other device in the holder and moving the block 30 along, a straight line is produced, and the operation may be repeated indefinitely as indicated.

The machine will be found very useful for draftsmen in ruling section and other parallel lines. By using a cutter instead of a pencil, it is also adapted for use in cutting strips of any sheet material. Oblique lines are produced by swinging the ruler on its pivot 25 and fastening the same by the set screw 26, at the desired angle.

I claim:

1. In a ruling machine, in combination, a non-traveling rotatable screw, a guide bar parallel thereto, a block movable along the bar, a nut mounted on the block and movable to engage or disengage the screw, and a ruler connected to the block.

2. In a ruling machine, in combination, brackets attachable to a board or the like, a non-traveling rotatable screw mounted thereon and provided with a ratchet, a lever having a pawl engageable with the ratchet to turn the screw, stops for the lever, mounted on one of the brackets, one of the stops being adjustable, and a ruler operatively connected to the screw, whereby the ruler is shifted when the screw is turned.

3. In a ruling machine, in combination, a ruler, a block slidable along the same and having an arm hinged thereto and provided with a holder for a pencil or the like, a pattern rod extending along the ruler, and a follower carried by the arm and movable

along the pattern rod and constructed to cause the arm to move according to the pattern.

4. In a ruling machine, in combination, a ruler, a block slidable along the same, an arm pivotally connected to the block and provided with a holder for a pencil or like tool, and a gage carried by the arm in position to bear upon the work and adjustable to vary the position of the tool with respect to the work.

5. In a ruling machine, in combination, a ruler, a block slidable along the same, an arm pivotally connected thereto for vertical variation of position, a piece hinged to the arm for horizontal variation of position and provided with a holder for a pencil or other tool, and means to adjust and control such variation of position.

6. In a ruling machine, in combination, a ruler, a block slidable along the same and having a movable member provided with a holder for a tool, a rod extending parallel to the ruler and having various patterns thereon, the rod being rotatable to present any one of said patterns toward the arm, and means to cause the said member to follow the selected pattern as the block is slid along the ruler.

7. In a ruling machine, in combination, a ruler, a block slidable along the same, an arm provided with a holder for a pencil or other tool, and pivoted to the block for lateral movement, a pattern rod extending along the ruler, a follower screw carried by the arm and bearing against the pattern, and means to hold the screw in yielding contact with the pattern.

8. In a ruling machine, the combination of a ruler, a pattern extending along the same, a block slidable along the ruler beside the pattern, a member pivotally connected to the block to swing up and down, an arm having a tool holder and hinged to said member to swing laterally, means to lock the hinge, a follower carried by the arm, means to press the follower yieldingly against the pattern when desired, and a gage carried by the arm, to vary its distance from the work.

9. In a ruling machine, in combination, a non-traveling rotatable screw, a guide bar parallel thereto, a block movable along the guide, a ruler connected to the block, a half nut hinged to the block and adapted to engage or disengage the screw, and a spring pressing the nut to engagement with the screw.

In testimony whereof, I affix my signature in presence of two witnesses.

RAYMOND C. STEVENS.

Witnesses:

GEORGE STEVENS,
B. W. DISNEY.