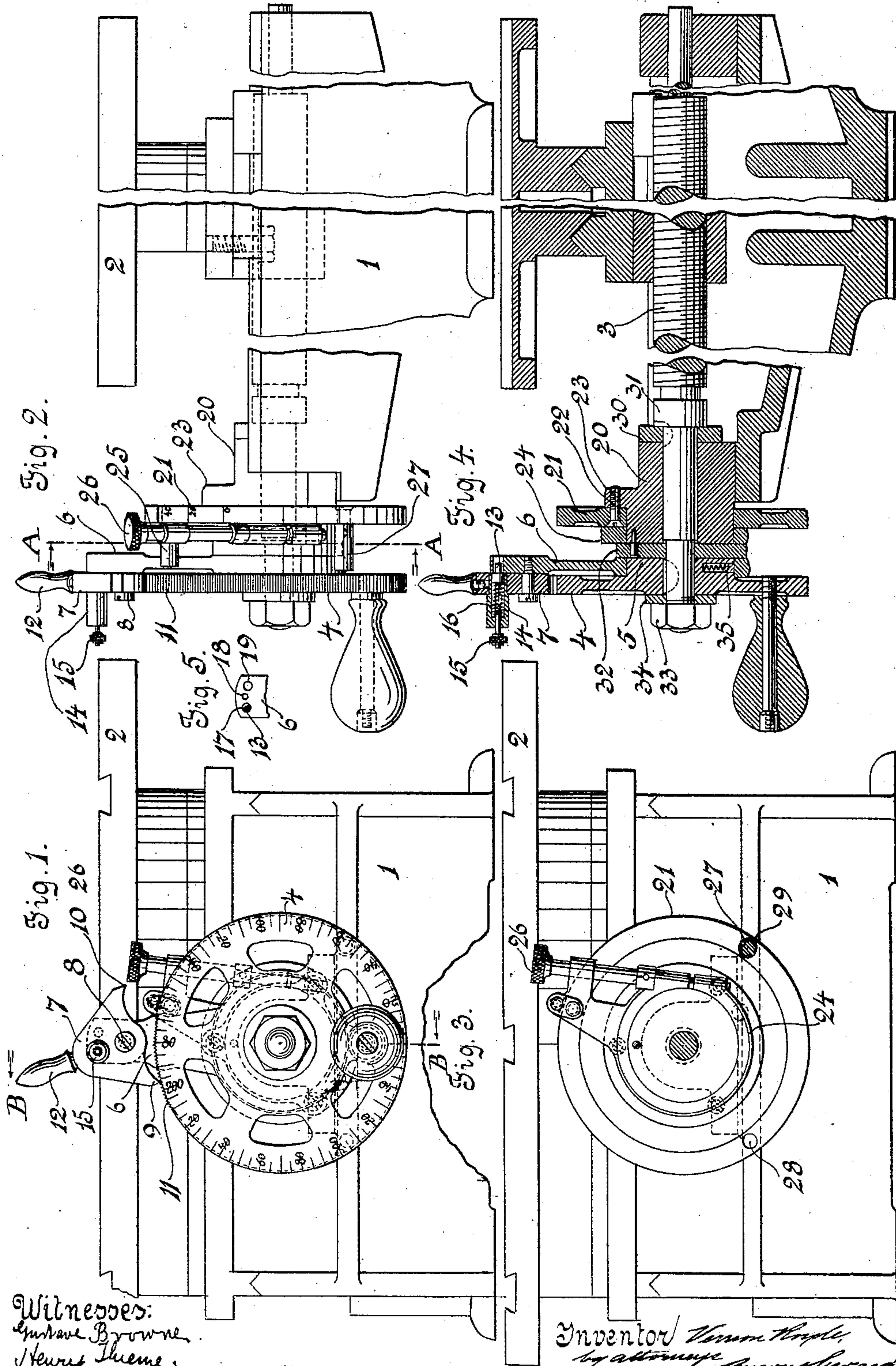


V. ROYLE.
 RULING MACHINE.
 APPLICATION FILED NOV. 27, 1906.

969,496.

Patented Sept. 6, 1910.



Witnesses:
 Eugene Browne,
 Henry Thorne.

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UNITED STATES PATENT OFFICE.

VERNON ROYLE, OF PATERSON, NEW JERSEY.

RULING-MACHINE.

969,496.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, VERNON ROYLE, a citizen of the United States, and resident of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Improvement in Ruling-Machines, of which the following is a specification.

My invention relates to a ruling machine and more particularly to means for spacing the lines on a plate for engraving.

The object is to provide means for accurately and expeditiously spacing the lines the desired distance apart, whether working from the right or left and at the same time providing for the free travel of the plate supporting table continuously from one position to another under the action of its adjusting screw.

In the accompanying drawings, Figure 1 is a view in front elevation of so much of a ruling machine as will suffice to embody my present invention, the base of the frame being partially broken away, Fig. 2 is a view of the same in side elevation, the machine being broken away at intervals, Fig. 3 is a transverse section in the plane of the line A—A of Fig. 2, Fig. 4 is a longitudinal section in the plane of the line B—B of Fig. 1, and Fig. 5 is a view in detail showing a fragment of the arm to which the pivoted pawl is attached.

The frame of the machine is denoted by 1, the plate supporting table by 2, the screw for feeding the table with the plate thereon beneath the cutter by 3, and the wheel for rotating the screw by 4. These parts may be of any well known or approved form so far as their general structure and arrangement is concerned, my present invention being directed to means for rotating the wheel 4 a predetermined distance in either direction for the purpose of advancing or retracting the table 2.

On the hub 5 of the wheel 4 there is mounted in rotary adjustment an arm 6 to the upper end of which is pivoted a rocking pawl 7 by means of a pivot screw 8. The pawl 7 has engaging noses 9 and 10 on opposite sides of its pivot 8, these noses being adapted to engage the serrations 11 on the periphery of the wheel 4.

The pawl 7 has projecting from its upper end a handle for manipulating it and the said pawl is limited in its rocking movement on the pivot 8 by means of a spring actuated dog 13 in the form of a plunger set in a

socket 14 projecting from the face of the dog, the said dog being provided on its forwardly projecting end with a knob 15 for convenience in manipulating it against the tension of its actuating spring 16.

The dog 13 is adapted to enter in one of three holes 17, 18 and 19, in the arm 6, the middle hole 18 being preferably just large enough to receive easily the dog 13 while the holes 17 and 19 are larger than the engaging end of the dog 13 to permit a limited tilting movement of the pawl 7 when the dog 13 is engaged in either the hole 17 or the hole 19. This limited tilting movement of the dog 7 is intended to be just sufficient to lift the nose 9 or the nose 10 from the serrations or teeth 11 on the wheel 4 during the return movement of the arm 6 and to permit the nose 9 or the nose 10 to drop into engagement with the serrations or teeth 11 when pressed by the handle 12 in a direction to turn the wheel for work. Furthermore, the holes 17 and 19 are so placed that when the dog 13 is engaged with the hole 17, the pawl 7 will be tilted in a direction as shown in Fig. 1, to engage the serrations on the periphery of the wheel 4 to rotate the wheel around to the left in the opposite direction from that in which the hands of a clock move and when the dog 13 is engaged with the hole 19, the said pawl 7 will be tilted in a direction to engage the serrations on the wheel 4 to turn the said wheel over to the right in the same direction as that in which the hands of a clock move.

When the dog 13 is engaged in the hole 18, the noses 9 and 10 of the pawl will be both sufficiently far away from the periphery of the wheel 4 to be out of engagement with it, and under these conditions the wheel 4 may be turned by the operator continuously in one direction or the other at pleasure without in any manner disturbing the arm 6 and the parts carried thereby.

For convenience, the face of the wheel 4 is graduated to indicate degrees of a circle. On the bearing 20 through which the shaft of the screw 3 passes, there is fixed a disk 21 having its periphery subdivided into degrees corresponding with the subdivisions on the face of the wheel 4. This disk 21 is conveniently fixed in position by means of a screw 22 which passes through the disk into a lug 23 on the bearing 20. In proximity to the disk 21 and mounted to rotate on the bearing 20 is a split ring 24 carrying

a stop 25 projecting from its face across the path of the arm 6. The ring 24 is clamped in any desired rotative adjustment on the bearing 20 by means of a clamp screw 26.

5 This stop 25, serves to limit the swinging movement of the arm 6 at one extremity of its stroke while a stop 27 projecting from the face of the disk 21 serves to limit the movement of the arm 6 at the opposite limit
10 of its stroke or rocking movement.

The disk 21 is provided with two holes in which the stop 27 may be adjusted. These holes are denoted by 28 and 29. As shown in the drawings, the stop 27 is adjusted in
15 the hole 29 and the arm 6 is permitted to rock from the position shown in Figs. 1, 2 and 4 around to the left through an arc of 220° or thereabout. If the stop 27 were placed in the hole 28 and the stop 25 main-
20 tained its present position, the arm 6 would be allowed to swing through an arc of only 120°. By adjusting the ring 24 with its stop 25 to different positions in advance or back of its present position and maintain-
25 ing the stop 27 in either one of the holes 28, 29, the distance which the arm 6 would be permitted to rock might be varied to the last degree of refinement and in like man-
30 ner, if the stop 25 were, by removing the stop 27, swung into position on the opposite side of the arm 6 and the pawl 7 were tilted in the opposite direction and its dog 13 in-
35 serted in the hole 19, the arm 6, together with the wheel 4, might be limited in its movement to the right between the stops 25 and 27 to any degree of refinement.

To take up wear and to produce the desired friction between the several parts, a
40 washer 30 is keyed to the stem of the screw 3 intermediate of the bearing 20 and a collar 31 on the screw stem and a washer 32 is locked to the bearing 20 intermediate of the bearing and the hub of the wheel 4. The
45 several parts are drawn into the desired frictional contact by means of a nut 33 on the stem of the screw in engagement with a washer 34 interposed between the nut and wheel 4. Light friction is also applied to
50 the arm 6 by means of a spring actuated piece 35 set in a socket in the hub of the wheel 4 and pressing outwardly against the inner face of the hub of the arm 6. The
55 parts are so adjusted that the friction on the wheel 4 shall be somewhat greater than the friction on the arm 6, so that the latter may be swung back to position without disturbing the position of the wheel 4.

In operation, the desired distance between
60 two consecutive lines to be cut on the plate having been determined, the stops 25 and 27 are set to permit the arm 6 to swing the desired distance to move the screw 3 to advance or retract the plate the desired distance between the lines and then all the
65 operator is required to do is simply to grasp

the handle 12 and by pressure thereon in the one direction or the other, as the case may be, turn the wheel for the partial turn re-
quired, the pressure on the handle 12 serving to hold the nose 9 or 10 in engagement with
70 the periphery of the wheel 4 while the pressure on the handle 12 on the return move-
ment of the arm 6 into position to space another line will, because of the play of the
75 dog 13 in the hole 17, or 19, lift the nose 9 or 10 out of engagement with the periphery of the wheel 4, permitting the pawl to travel back out of engagement with the serrations on the wheel.

What I claim is:—

1. The combination with the feed screw of a ruling machine and a wheel for oper-
ating the screw, of an arm mounted to rotate independently of the wheel, a pawl pivot-
85 ally secured to the arm, the said arm being provided with perforations of different sizes and a stop carried by the pawl in position to engage these perforations whereby the
pawl may be locked to the arm in either of
90 two operative positions and out of operative position at pleasure.

2. The combination with the feed screw of a ruling machine and a wheel for operat-
ing the screw, of a pawl under the control of the operator for operating the wheel and
95 a stop mounted in rotative adjustment around the feed screw shaft for limiting the movement of the wheel when rotated by the pawl.

3. The combination with the feed screw
100 of a ruling machine and a wheel for operating it, of the fixed graduated disk surrounding the screw shaft, a pawl mounted to rotate with the wheel and independently there-
of, a stop set in the said graduated disk for
105 arresting the pawl at one extremity of its rotating movement and a stop rotatively adjustable around the said feed screw shaft for arresting the movement of the pawl at
110 the opposite end of its rotative movement.

4. The combination with a feed screw, of a ruling machine and a wheel for operating
it, of a pawl carrying arm mounted on the
hub of the said screw operating wheel and
115 a friction device for engaging the said pawl carrying arm.

5. The combination with a feed screw of a ruling machine and means for operating
it, of an indicator disk fixed relatively to
the screw and a stop mounted in rotative
120 adjustment with respect to the indicator disk whereby the stop may be set to determine the advance of the said screw.

6. The combination with the feed screw of a ruling machine and means for operating
125 the screw, of a stop mounted in rotative adjustment around the feed screw shaft for limiting the movement of the screw operating means.

7. The combination with a feed screw, of
130

a ruling machine and a bearing in which the stem of the screw rotates, of friction washers at the opposite ends of the bearing, screw operating means, an indicator disk and an adjustable stop, the said bearing forming a support for the said disk and stop.

In testimony, that I claim the foregoing

as my invention, I have signed my name in presence of two witnesses, this 13th day of November, 1906.

VERNON ROYLE.

Witnesses:

VERNON E. ROYLE,
LEO C. ROULEE.