

J. B. PRICE.
PARALLEL RULER.

No. 173,812.

Patented Feb. 22, 1876.

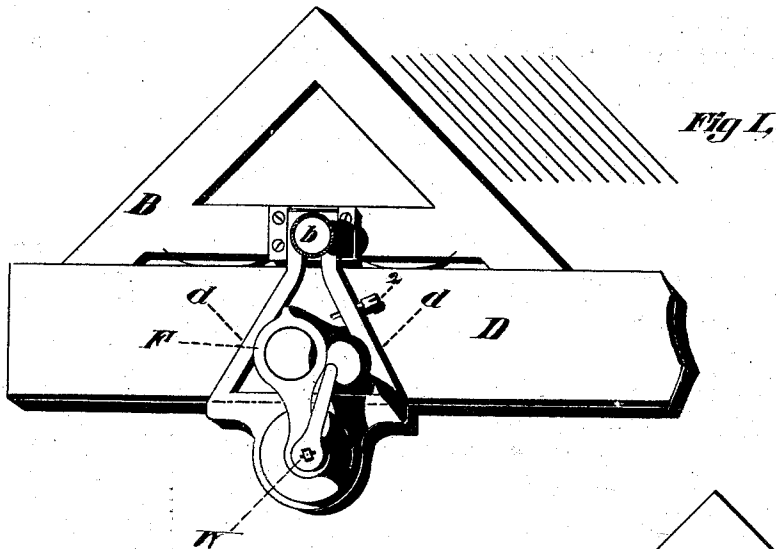


Fig II,

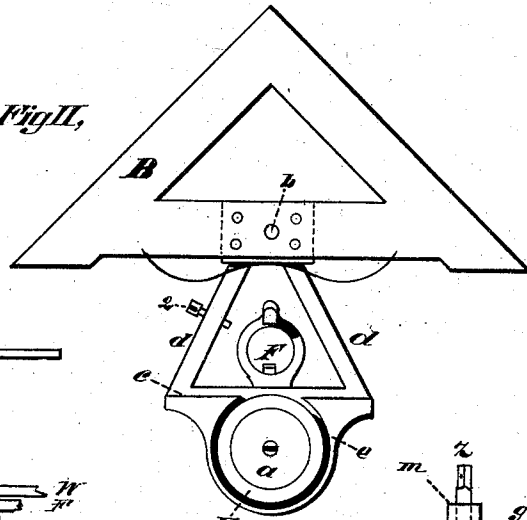


Fig III,

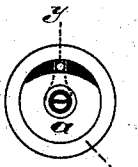
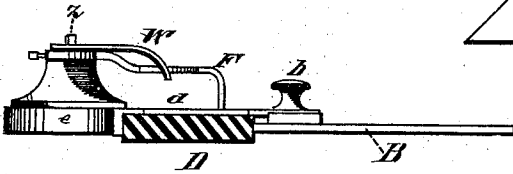


Fig V,



Fig VI,

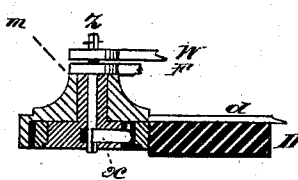


Fig IV,

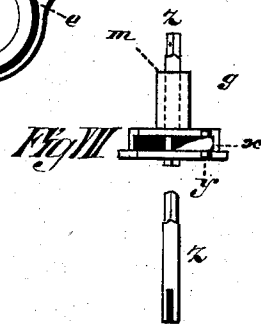


Fig VII,

Witnesses,
B. P. Meade
R. J. Hawkins

Inventor,
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"Atty"

UNITED STATES PATENT OFFICE.

JOHN B. PRICE, OF THOMPSONVILLE, CONNECTICUT.

IMPROVEMENT IN PARALLEL RULERS.

Specification forming part of Letters Patent No. **173,812**, dated February 22, 1876; application filed January 26, 1876.

To all whom it may concern:

Be it known that I, JOHN B. PRICE, of Thompsonville, State of Connecticut, have invented a Hatching-Ruler, of which the following is a specification:

My invention consists, in brief, of a ruler clamped between a triangle and friction-wheel upon opposite parallel edges, so that the rotary movement of the wheel on one edge of the ruler shall carry the triangle upon the other, and so that the movement of the wheel is intermittently governed and limited by the swing of a convenient finger-piece to slide the triangle the required distance to form the spaces between the hatch-lines; and my improvements further relate to the peculiar construction and arrangement of the parts for giving the proper motion to the triangle, and for providing for its reversal of direction.

In the drawings, Figure I is a plan view of the complete apparatus. Fig. II is a reverse view with the ruler removed. Fig. III is a side view with the ruler in section. Fig. IV is a vertical section, and Figs. V, VI, and VII are detail views.

The triangle B has one of its sides brought against the edge of the ruler D by the frame sides *d d*, which, passing over the ruler, are clamped to the side of the triangle at its center by the set-screw *b*, which permits the ruler to be hugged between the triangle and opposite side of the frame with an adjustable pressure. The arms *d d*, passing above the ruler, form sides of a frame having the side *c*, the surface of which is coincident with one edge of the ruler, and it is between this surface *c* and one edge of the triangle that the ruler is inclosed. Arranged in a protecting barrel, *e*, from the frame, is the friction-wheel E in the same plane as the ruler and triangle, and having its rim, as shown in Fig. II, to slightly project beyond the surface *c* to engage with the edge of the ruler to, by its rotation, move the frame with the triangle over the ruler held upon the paper. The rotation of wheel E is effected by means of the lever F in convenient reach of the finger when operating the device, and which piece F has its shank secured to a stem, *g*, from the wheel E, while its further end is bent down to swing between and be stopped by the sides *d d*.

It is evident that were the wheel E rigidly connected to the lever finger-piece F, the course the triangle was moved over the ruler by the swing of the piece F from side *d* to *d* would be retraced upon the return of piece F to its former position. To avoid which, I construct the wheel E in sections, so that when the piece F is swung in one direction its friction-surface moves against the ruler, while, in the other, the inner section of the wheel moves independently, to be again clutched with the friction part, to enable the swing of the lever F to move the triangle in one direction only.

This I accomplish as follows: The friction-wheel is made in the form of an annular section, as shown in Fig. IV, inclosing a piece, *a*, provided with the stem *g*, to which the lever F is attached, the part *a* is pared away on its perimeter, as seen in Fig. V, to a cam-shape to leave a crescent-shaped space between the part *a* and inner wall of section E for the reception of a vertical pin, *y*, which, being held from the part *a*, forms a clutch to unite the part *a* and annular section E at one part of the rotation of part *a'*, but releases them at the reverse. The part *a* is horizontally slotted past its axis to provide space for its pin-holder *z*, which I prefer to make as a small fork between the ends of which the pin is held; the fork, for convenience of construction, is made of thin metal, which is recessed in the slotted end of rod *z*, which extends above the stem *g* to be secured by a hand, W. When the pin *y* is in contact with the walls of sections *a* and E, the swinging of lever F can move the friction part E, and consequently the triangle B, in only one direction, but in order that the same movement of lever F may be made to propel the triangle for ruling purposes in either direction, I form the cam-surface upon part *a* of such length and shape that, when the rod *z* is turned to (by means of the fork secured thereto) move the pin to one end of the cam-surface, it will cause the wheel E to be clutched at a different end of the traverse of handle F, and so enable the movement of the triangle to be reversed. The position of the pin *y*, relatively, is indicated by the position of the hand W, which can be moved to be locked on either side of piece F to deter-

mine the direction to be moved by the triangle, or can be in the position shown in Fig. II, to render the movement of piece F in either direction inoperative. The distance to which the triangle is moved at each swing of lever F being determined by the distance between sides $d d$, by means of an adjusting-screw, 2, I am able to regulate the spaces between the hatch-lines. The friction-section E is held by a small flange upon the base of part a , the stem g from which, passing through the cover of the barrel e , is clamped as aforesaid by the finger-piece F, which, resting and turning on the shoulder m , holds the wheel E with all of its parts in proper position.

Without a departure from the principle of my invention, the ruler may be provided with rubber on one edge to come in contact with a corrugated wheel to secure the desired friction, or a spur-wheel may be used in connection with a rack upon the ruler; but I prefer a slightly compressible hard-rubber wheel for that purpose.

Now, having described my invention, what I claim is—

1. In combination with a ruler, D, triangle B, and clamp-frame, the wheel E, having its friction-surface to move upon the edge of the ruler upon each alternate swing of the finger-piece F, to carry the triangle upon the ruler a limited distance.

2. The combination of annular friction-section E, inner section a , with stem g , rod z , pin-holder x , and pin y , with operating-lever F, for the purpose set forth.

3. In combination with the sections E and a , and with the clutch-pin y , pin-holder x , and rod z , the hand W, for the purpose set forth.

4. In combination with finger-lever F, the sides $d d$ of frame and set-screw 2, for the purpose shown and described.

JOHN B. PRICE.

Witnesses:

T. M. BROWN,
R. F. HYDE.