

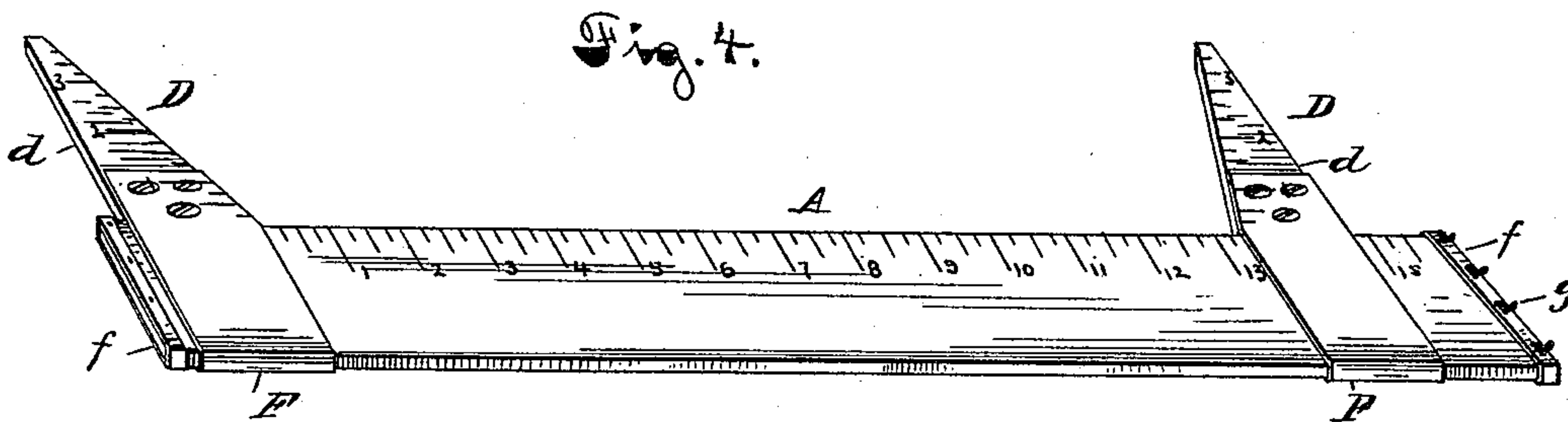
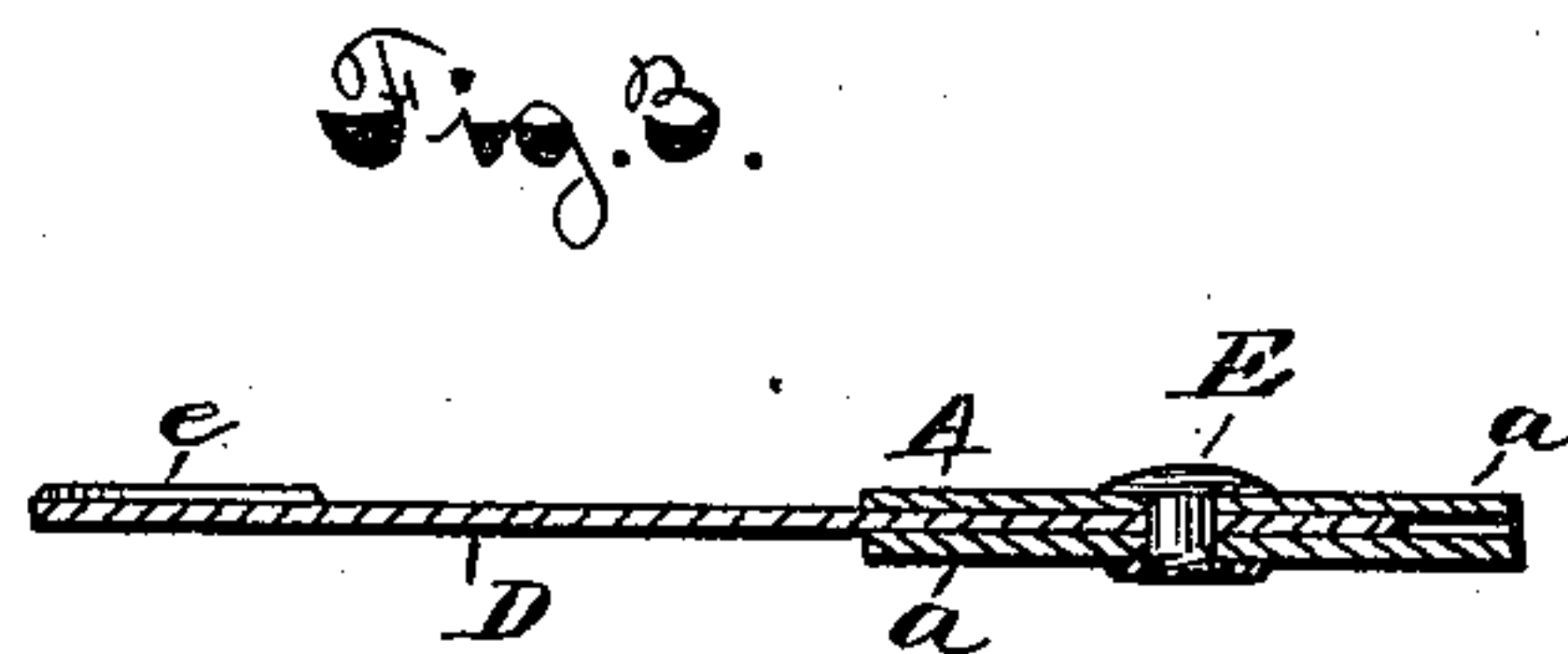
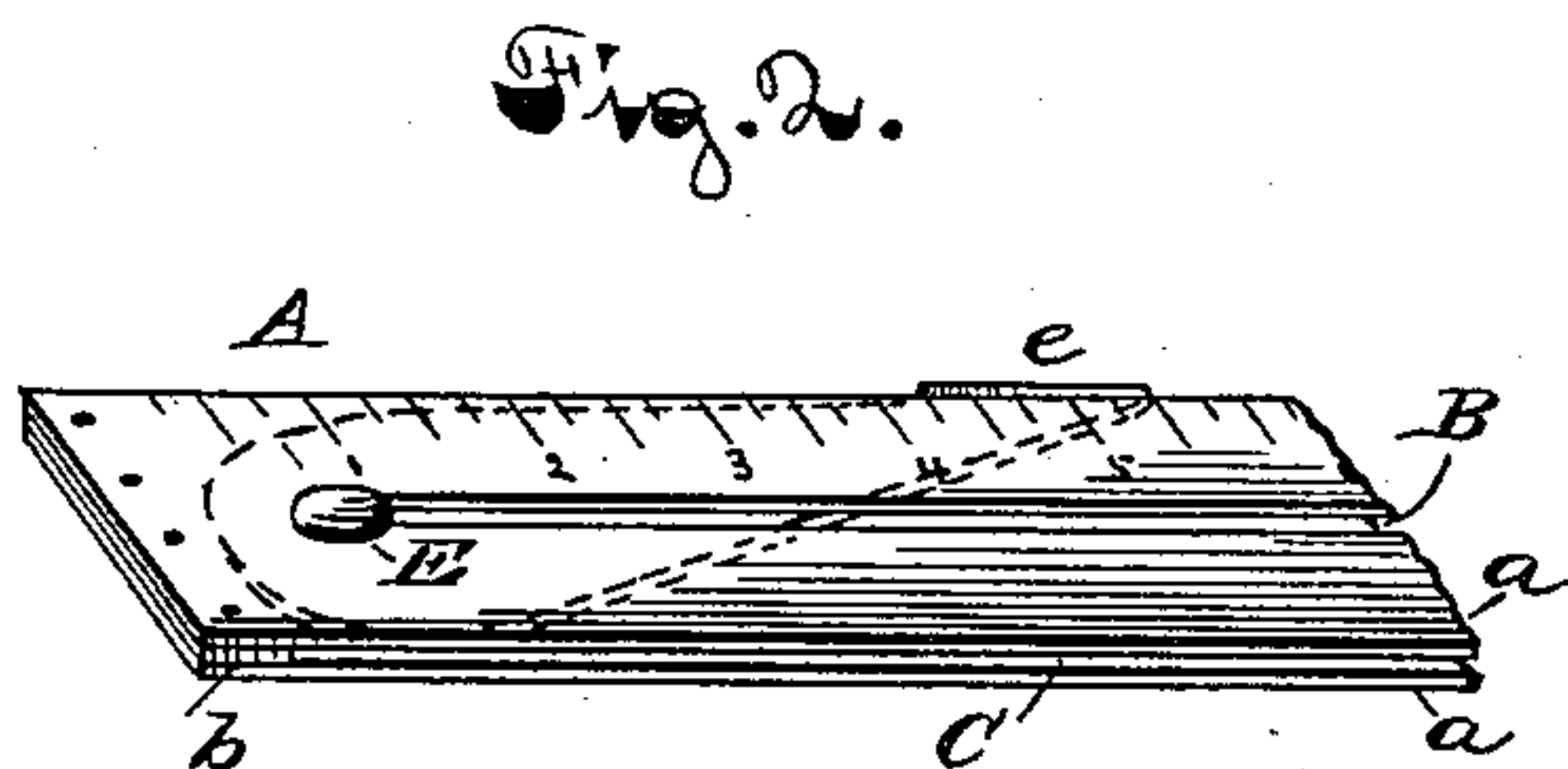
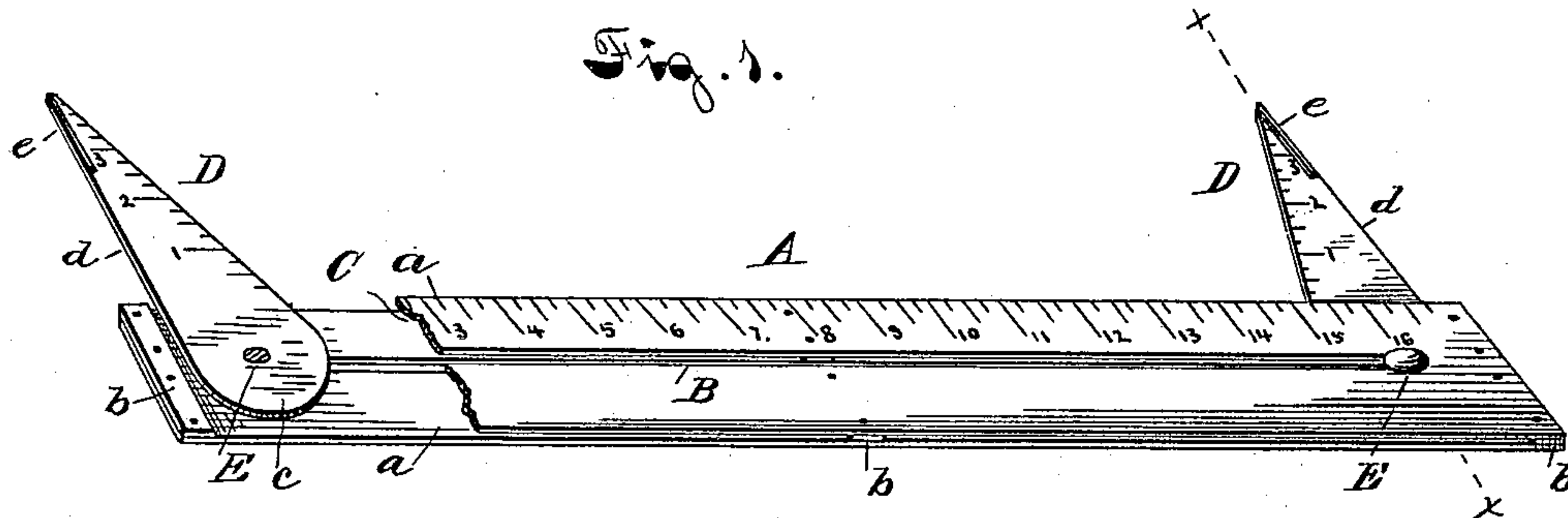
(No Model.)

W. F. HELLEN.

DRAFTING RULER.

No. 396,568.

Patented Jan. 22, 1889.



Witnesses

H. W. Kealy,
C. F. Drew

Inventor
William F. Hellen

By his Attorney

M. D. Peck

UNITED STATES PATENT OFFICE.

WILLIAM F. HELLEN, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
OF ONE-HALF TO THOMAS A. MITCHELL, OF SAME PLACE.

DRAFTING-RULER.

SPECIFICATION forming part of Letters Patent No. 396,568, dated January 22, 1889.

Application filed September 4, 1888. Serial No. 284,553. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. HELLEN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Drafting-Rulers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to that class of instruments known as "scale-rulers" for drafting, which are used in laying off plats of ground and by builders in getting certain accurate angles in the construction of buildings, and also as an instrument for use in teaching children drawing in public or other schools to enable them to form correct and parallel lines; and it has for its object to provide a straight-scaled ruler with linear-scaled arms extending outward from both of its ends at an angle thereto to enable the operator in quickly adjusting the instrument, in making plats of squares of ground, in forming rectangular or square figures, and in then subdividing the squares by parallel measured lines at each end of the ruler of the same or varied lengths with but a single movement of the instrument upon the proposed plat; and it consists in the construction hereinafter described, and more particularly set forth in the claims.

Referring to the drawings, Figure 1 is a perspective view of my improved device, showing the angle-arms extended, with one end broken away to show its interior construction. Fig. 2 is a perspective view of a part of the ruler, showing the angle-arms in dotted lines closed down therein. Fig. 3 is a cross-sectional view through one end of the ruler and the angle-arm on the line *xx* of Fig. 1. Fig. 4 is a perspective view of a slightly-modified form of adjustment.

Like letters of reference refer to corresponding parts in each figure of the drawings.

A represents a bar having the usual linear scale on each of its two sides. This bar is formed by two longitudinal sections, *a*, of wood, papier-maché, vulcanized rubber, metal, or any other suitable material, which have

longitudinal slots B therein at about the center of their width, extending from near one end of the sections to the other. The two sections *a* have spacing-strips *b* placed between them and across their inner faces in the center and at each end, and are firmly united together over these strips to form a simple bar, having pockets C therein extending from near each end to the strip in the center of the bar.

If desired, the bar A may be formed of a single piece of material and the pocket C made by sawing or otherwise cutting out its center, leaving the spacing-strips *b* integral with the bar.

Within the pockets C there are pivoted linear scaled arms D made substantially triangular in form, the plane of the base or end *c* of the arm inserted into the pocket, forming a right angle with the outer edge, *d*, of the arms, while the inner edges are tapered or inclined from the broad inner base to their outer ends. These arms are pivoted in the slot B by means of headed rivets or screws E passing through them and the slots and secured by their nuts, so that they can be removed for changing their inner angle to the bar, or folded or turned down into the pockets when not required for use or while being shipped from the manufacturer.

On the outer edge of the outer ends of the arms D there are lips *e*, somewhat broader than the thickness of the arms or width of the pocket, which rest upon the edges of the sections *a* and form a convenient hold for the fingers in opening out the arm when it is folded into the pocket. Thus arranged the outer edges of the open arms D in the ends of the pockets C are parallel with the ends of the bar A, to enable right-angle lines to be drawn from the edge of the bar without changing the position of the arms, while their inner edges project in reverse directions or incline outward from the bar to give the ruling-pen greater freedom in ordinary drawing. The arms D are adjustable to and from each other in the pockets C as the rivets E slide in the slots B to conform to the length of any line to be drawn, and at the same time the arms can be set to form any desired angle with the face of the bar A. These adjustable outwardly-inclined scaled arms may be used in con-

nection with a bar formed solid in one piece, as shown in Fig. 4. In this construction clips F are substituted for the rivets E. These clips pass around the bar A and are secured to short arms D, having their ends resting against the edge of the bar and sliding thereon as the clips are moved back and forth upon the bar. Around each end of the bar metal bands *f* of the same thickness as the clips F are secured to prevent the arms being accidentally slid off the bar. One of these bands *f* is secured by easily-removable pins *g*, to enable it to be taken off, so as to reverse the inner edge of the arms D to form a right angle, instead of an obtuse angle, with the face of the bar, as might be preferable when the ruler is used by small children in school to bring the scale on the arm in direct contact with the ends of the ruled lines when the bar is moved to draw an additional line.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a drafting-ruler having a scaled bar, of reversible and adjustable graduated arms thereon having their inner edges straight and at an obtuse angle extending outward from the bar and their outer edges at a right angle to the edge of the bar, as set forth.

2. The combination, with a scaled bar having pockets in its edge and slots in its sides, of

scaled arms pivoted in said slots and adapted to be folded into the pockets or opened to form an obtuse angle at their inner edges and a right angle at their outer edges with the edge of the bar, as set forth.

3. The combination, with a scaled bar composed of two sections having slots in their sides united together with spacing-strips between their ends and center, forming pockets therein, of scaled arms pivoted in said slots and adapted to be folded into the pockets or opened so their inner edges will form obtuse angles and their outer edges right angles with the edge of the bar, as set forth.

4. The combination, with a scaled bar composed of two sections having slots in their sides extending from near one end to the other, said sections being united with spacing-strips between them at their ends and center, forming pockets therein, of triangular-shaped scaled arms having holding-lips on their outer edges near their ends pivoted and adjustable in said slots and adapted to be folded into the pockets or to be opened, so their inner edges will form obtuse angles with the edges of the bar, as set forth.

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

WILLIAM F. HELLEN.

Witnesses:

H. D. NEALY,
E. F. DREW.