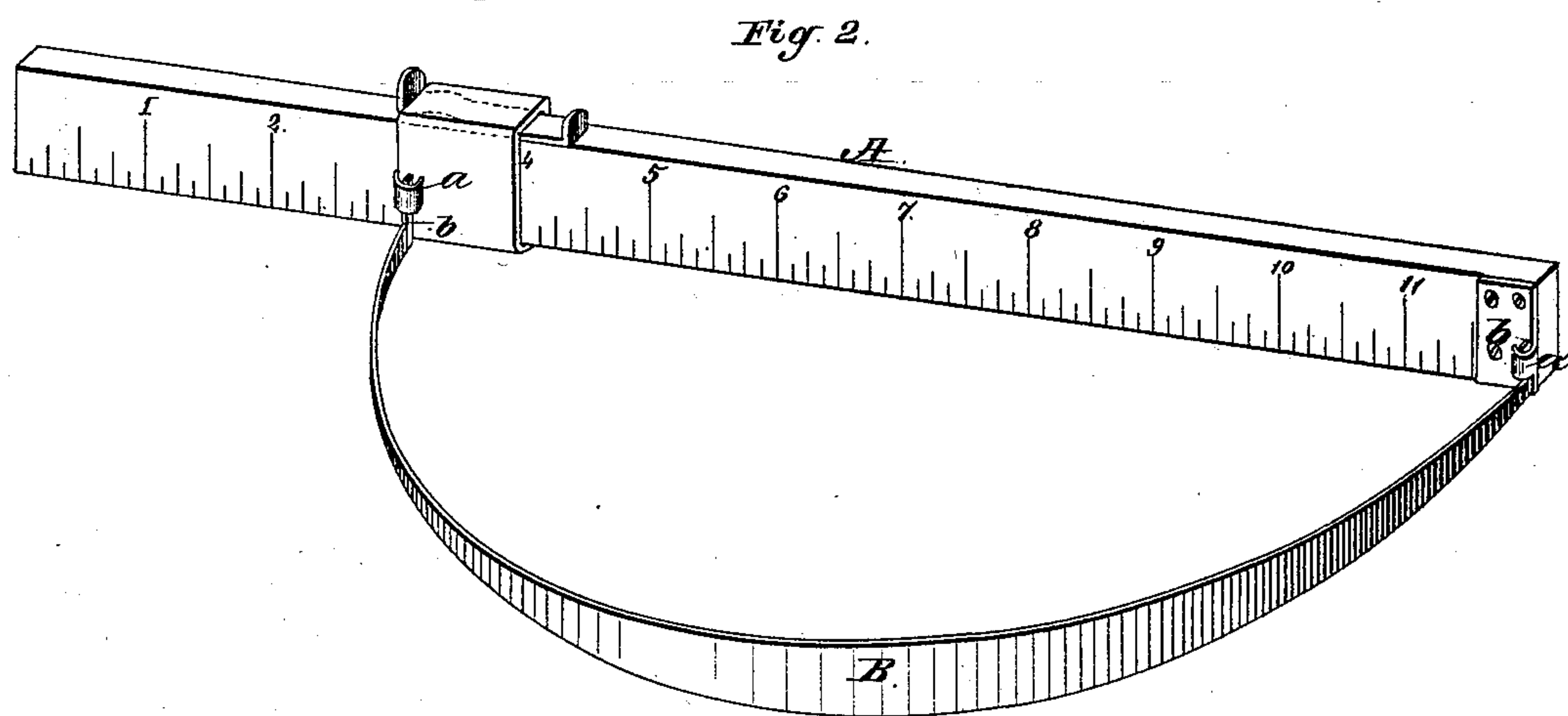
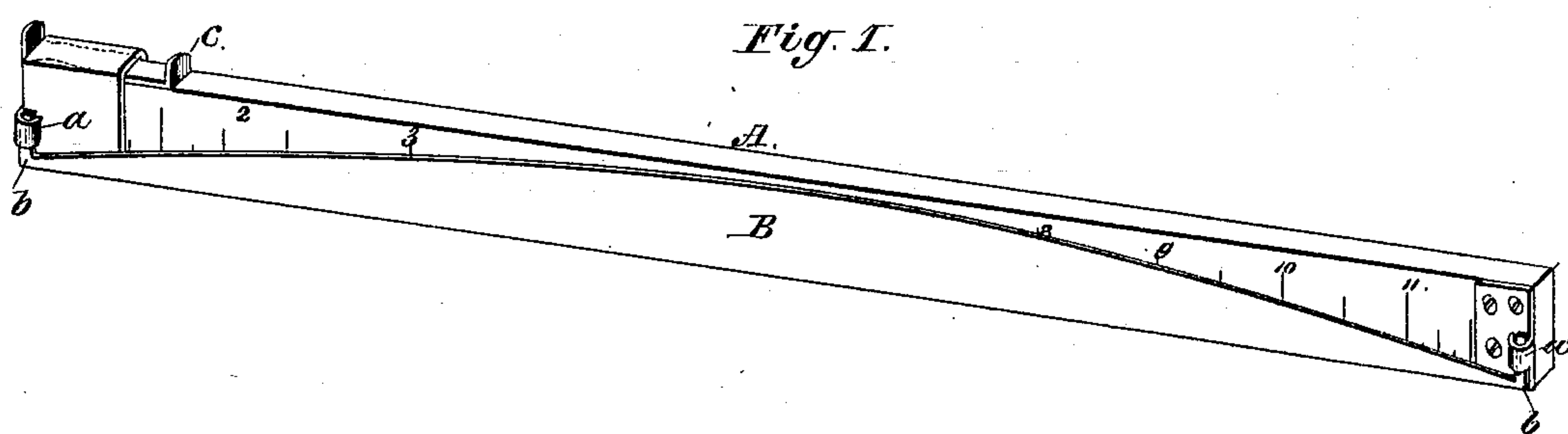


W. V. MARSHALL.
Rules for Making Straight and Circular Lines.

No. 199,917.

Patented Feb. 5, 1878.



Attest.

Ed F Carpenter
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Inventor.

William V. Marshall

UNITED STATES PATENT OFFICE.

WILLIAM V. MARSHALL, OF JANESVILLE, WISCONSIN.

IMPROVEMENT IN RULES FOR MAKING STRAIGHT AND CIRCULAR LINES.

Specification forming part of Letters Patent No. **199,917**, dated February 5, 1878; application filed July 1, 1876.

To all whom it may concern:

Be it known that I, WILLIAM V. MARSHALL, of Janesville, in the county of Rock and State of Wisconsin, have invented a new and useful Improvement in Rules for Making Straight and Circular Lines, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing.

The object of my invention is to combine with a straight rule an elastic steel strap, pivoted at each end, for the purpose of forming the arc of a circle to be used in drafting in all mechanical work.

This I accomplish by the use of an ordinary straight rule, A, marked off in inches and fractions of inches, on each end of which is a metallic plate-carrying loop, *a*, at the other a clasp-carrying loop, *a'*, similar in construction except that it is adjustable and made to slide upon the rule toward the center and back, and to be set at any desired point by means of key or wedge *c*, an elastic metallic strap, B, of uniform thickness, being cut upon a circle on one edge and straight upon the other, being the widest in the middle and tapering to each end, on which are spurs *b b*, projecting laterally from the circular edge, and entering the loops *a a'*, located at each end of the rule, forming a hinge, said strap being the same

length as the rule when lying parallel with it; and when the movable loop is slid toward the center of the rule the elastic metallic strap B is sprung outwardly, and made to form the arc of a circle of such a diameter as may be desired.

It will be observed that the loops *a a'* may both be made adjustable, if found more convenient, and may be detached, and the rule used without them. The elastic strap being widest in the middle, and tapering to each end upon a circle laterally, will form a true circle vertically when the ends are made to approach each other until a semicircle is produced.

I claim as my invention—

1. In combination with the rule A, elastic strap or bow B, plate and loop *a*, clasp and loop *a'*, provided with the key or wedge *c*, substantially as hereinbefore described, and for the purposes set forth.

2. The elastic strap or bow B, provided with spurs *b b*, metallic plate and loop *a*, clasp and loop *a'*, provided with key or wedge *c*, in combination, substantially as herein shown and described.

WILLIAM V. MARSHALL.

Witnesses:

ED. F. CARPENTER,
S. HENRY HUDSON.