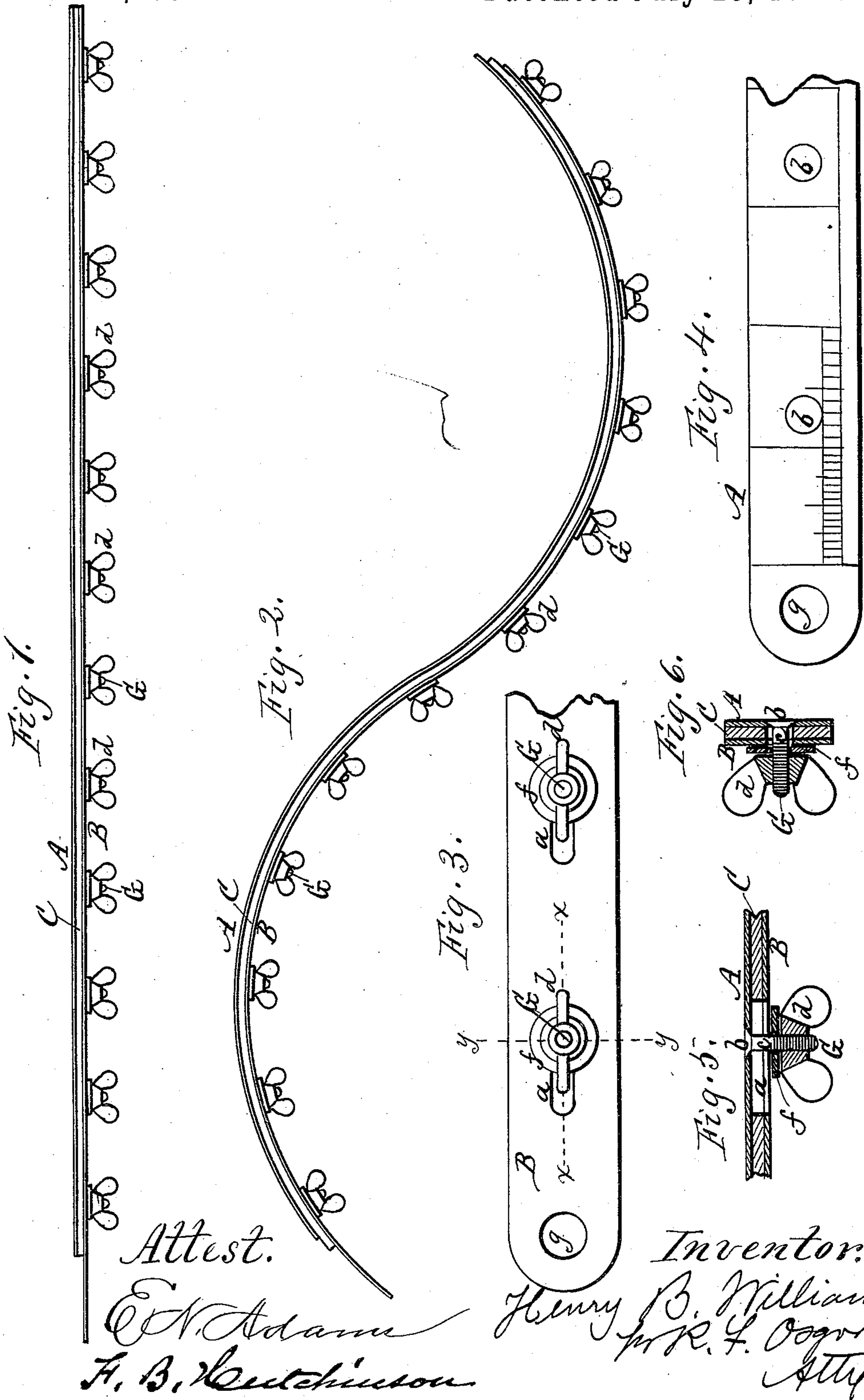


(No Model.)

H. B. WILLIAMS.
FLEXIBLE RULE.

No. 407,756.

Patented July 23, 1889.



Attest.

E. V. Adams
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Inventor.

Henry B. Williams,
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Atty.

UNITED STATES PATENT OFFICE.

HENRY B. WILLIAMS, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF
TO LEMUEL A. JEFFREYS, OF SAME PLACE.

FLEXIBLE RULE.

SPECIFICATION forming part of Letters Patent No. 407,756, dated July 23, 1889.

Application filed May 27, 1889. Serial No. 312,328. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. WILLIAMS, of Rochester, in the county of Monroe and State of New York, have invented a certain
5 new and useful Improvement in Flexible Rules; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this specification.

10 My improvement relates to flexible rules for draftsmen, and is of that kind which can be bent to any desired curve and stiffened in that position, so as to serve as the guiding-edge to pencil or pen.

15 The invention consists in the combination of two elastic strips, a flexible packing between them, and clamp-screws passing through slots of the rear strip and packing, as hereinafter described.

20 In the drawings, Figure 1 is a plan view looking at one edge, the device being extended in a straight length. Fig. 2 is a similar view showing the rule in curved form. Figs. 3 and 4 are enlarged elevations of one end of the
25 rule, looking on opposite sides. Figs. 5 and 6 are longitudinal and cross sections of same, respectively, in lines $x x$ and $y y$ of Fig. 3.

The rule is composed of three principal parts—two spring strips A B of steel or other
30 suitable material, and an intermediate strip C of leather, rubber, or other suitable flexible packing. The outer strip A, which forms the ruling-surface, is unbroken, but the inner strip B and packing C are provided with elongated slots $a a$ for the passage of the screws.
35 G G are the screws. They are provided with beveled heads $b b$, that rest flush in the outer strip A, so as to leave no projection, and screw-shanks $c c$, which pass through the
40 slots $a a$, and are provided on their outer ends with clamp-nuts $d d$, that rest on washers $f f$.

To produce a curve the rule is simply bent into the desired form by the hands, and the clamp-nuts, or a portion of them, are then
45 turned up tightly, which stiffens the rule in

the desired position. Any desired form within the bending range can be produced, either in reverse curves, as shown in Fig. 2, or in a single curve in only one direction. The slots in the inner strip and the packing
50 compensate for the unequal end motion of the two strips in making the bend. The packing gives the necessary thickness, and also provides the necessary yieldingness in tightening the clamping-screws.

55 Flexible rules are known, consisting of a spring strip and a backing composed of lead or other yielding metal, which, when bent, will retain its form; but such devices are cumbersome and inconvenient, and in long
60 wear lose their power of retaining form when bent. This device is light, thin, and always retains its elastic power, and is very enduring in use.

If desired, one end of the inner strip may
65 be extended beyond the end of the other strip and packing, and be provided with a hole g , as shown in Fig. 3, to enable the instrument to be hung up when not in use. If desired, also, the working-face of the rule
70 may be provided with a scale of inches and subdivisions, as shown in Fig. 4.

Having described my invention, what I claim as new, and desire to secure by Letters
75 Patent, is—

In a flexible rule, the combination of two elastic strips, an intermediate flexible packing, the inner strip and the packing being provided with slots, screws attached to the outer strip and passing through the slots, and
80 nuts turning on the screws, as shown and described, and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HENRY B. WILLIAMS.

Witnesses:

R. F. OSGOOD,
L. A. JEFFREYS.