

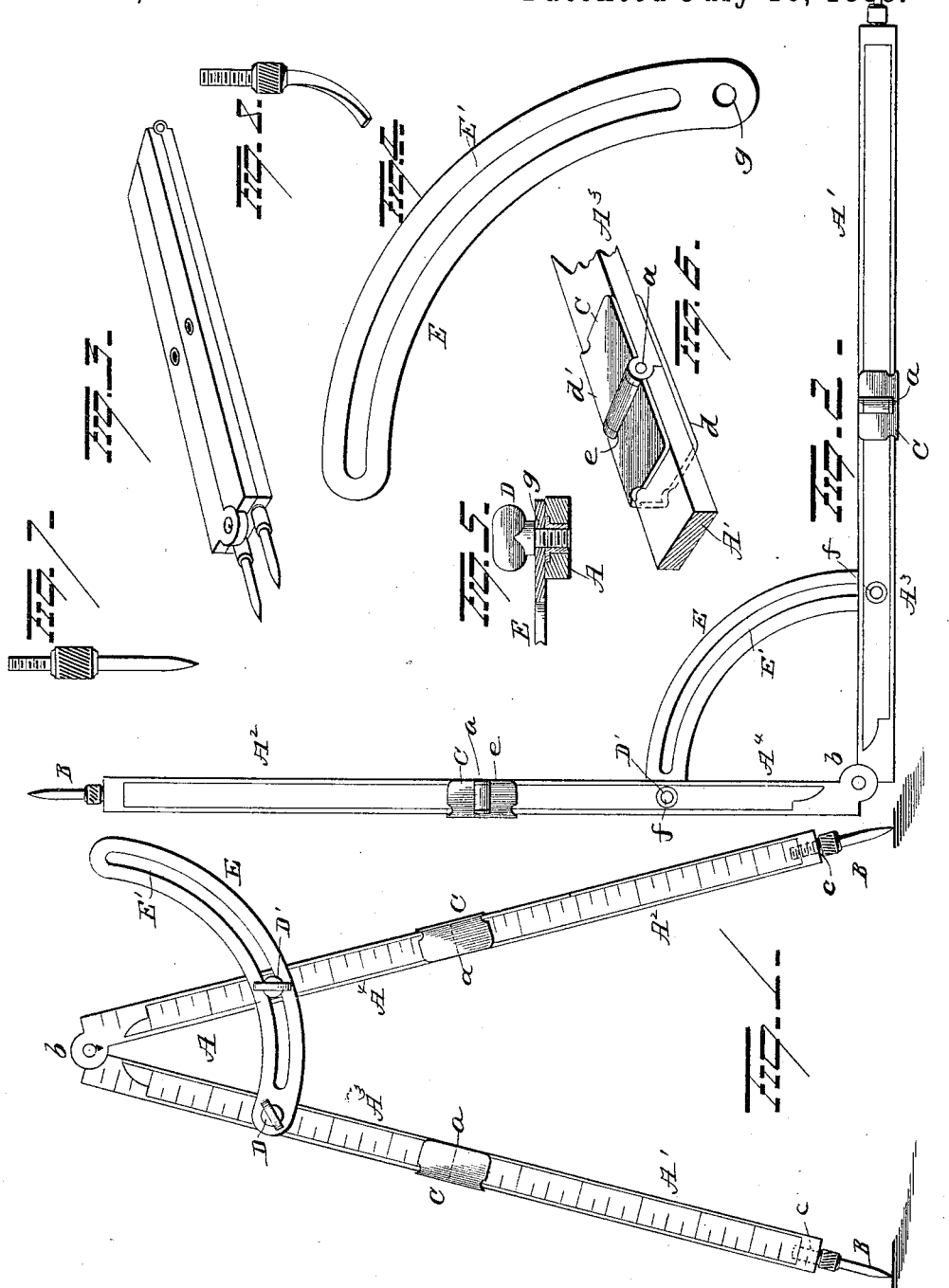
(No Model.)

F. E. NUTTING.

COMBINED SQUARE, RULE, CALIPERS, AND DIVIDERS.

No. 385,822.

Patented July 10, 1888.



Witnesses.

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UNITED STATES PATENT OFFICE.

FREEMAN E. NUTTING, OF FLORENCE, MASSACHUSETTS.

COMBINED SQUARE, RULE, CALIPERS, AND DIVIDERS.

SPECIFICATION forming part of Letters Patent No. 385,822, dated July 10, 1888.

Application filed March 9, 1888. Serial No. 266,609. (No model.)

To all whom it may concern:

Be it known that I, FREEMAN E. NUTTING, of Florence, in the county of Hampshire and State of Massachusetts, have invented certain
5 new and useful Improvements in a Combined Square, Rule, Dividers, and Calipers; 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
10 which it appertains to make and use the same.

My invention relates to an improved combined rule, square, dividers, and calipers, the object being to so construct a folding rule and attachments thereto that it may readily be converted into a square, bevel-gage, dividers, and
15 calipers, and when the adjunctive pieces are removed the rule may be folded and carried as an ordinary rule.

With these objects in view my invention consists in certain features of construction and combinations of parts that will be hereinafter described and claimed.

In the accompanying drawings, making a part of this specification, Figure 1 represents the device connected to form a pair of dividers. Fig. 2 shows the rule arranged for use
25 as a square or bevel-gage. Fig. 3 shows the rule folded without attachments, except the divider-points. Fig. 4 is a detached view of quadrant E. Figs. 5, 6, 7, and 8 are views of the quadrant, set-screws, joint-clips, divider-points, and caliper-legs.

The rule A is similar to the ordinary box-wood implement of that type generally used
35 by mechanics, and if a two-foot rule is employed the same is provided with the joints *a a*, of common form. In the extremities *c* of the jointed rule A perforations are made to receive and hold the divider-points B, which are preferably threaded on the ends which en-
40 gage the tapped holes, and are thus held securely in engagement therewith to afford metal points for the separate pieces *A' A'* of the rule, and equip these to operate as di-
45 viders.

At the joints *a a*, where the pieces *A' A'* fold to have contact with their continuations *A³ A⁴*, the joint-clips C C are movably secured. These clips are made of sheet metal, rectangular pieces being cut into form of proper size,

and bent to produce two parallel sides, *d d'*, on each clip, the side *d'* on each having a slot, *e*, formed near the center of length of the same, which will permit the clips to be adjusted in place on the rule at the joints mentioned, and
55 by closely embracing the same render the joints rigid in an obvious manner.

At a point, *f*, on each piece *A³ A⁴*, a proper distance from the center joint, *b*, of the rule A, a tapped hole is formed through the body of
60 each limb or piece *A³ A⁴*, and in case these limbs of the rule are made of wood the holes just mentioned should be provided with metal bushings that are also threaded to receive the set-screws D D'. A quadrant, E, made of metal
65 and provided with a central slot, *E'*, is also perforated at *g* to receive one of the set-screws D. The other set-screw, D', passing through the curved slot *E'*, is adapted to bear with its
70 shouldered edge upon the quadrant and secure it at any point in its length that may be desired, and thus afford a means for adjusting the hinged pieces of the rule at any angle of divergence from each other.

It is apparent that the rule, by adjustment
75 of the attachments just described, may be converted into a square, as shown in Fig. 2, and also into a bevel-gage to indicate or lay off any angle less than a right angle, and, further, that it is adapted to serve efficiently as a pair of
80 dividers. It is also contemplated to furnish bent legs or points with threaded ends, and thus afford means for conversion of the rule into calipers, the ends of these legs being inserted in the tapped holes provided when the
85 divider-points are removed.

If desired, a socket end may be used in place of one of the divider-points, which socket may be utilized to carry a lead-pencil or bow-pen, and thus furnish a complete drafting-tool that
90 will prove convenient and reliable, and may be preferred in some cases to more costly instruments specially designed for drafting purposes, as it is light, stiff in the limbs and joints, and has the capacity to sweep large as
95 well as small circles.

The rule may also be made of metal, either solid or hollow in its sections, and one joint may be employed where it is not specially important to fold the rule, as hereinbefore described. 100

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

1. A folding rule having removable divider-
5 points in its ends and removable joint-clips, substantially as set forth.
2. A clip for a jointed rule, said clip consisting of a piece of metal having two parallel
10 sides, one of which is transversely slotted, substantially as set forth.
3. The combination, with a folding rule, of adjustable points, joint-clips, and quadrant,
15 substantially as set forth.
4. The combination, with a rule that is made
15 of four pieces and jointed to fold at three points, of a quadrant, two set-screws, two joint-clips, and divider-points that are adapted to engage holes in the ends of the rule, substantially as set forth.
- 20 5. The combination, with a folding rule that

is provided with metal clips that render two of its joints rigid, and two joint-clips, of a slotted quadrant, two set-screws, and divider-points which are adapted to engage tapped holes in the ends of the rule-pieces, substantially as set forth.

6. The combination, with a folding rule, a slotted quadrant, two set-screws, and two joint-clips that when in place render the rule-pieces rigid at two points, of two caliper-legs
30 which are adapted to engage holes in the ends of the rule-limbs to convert a folding rule into a pair of calipers, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscrib-
35 ing witnesses.

FREEMAN E. NUTTING.

Witnesses:

ROYAL A. PARSONS,
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