

A. J. Vandegrift.
Parallel Movement.

Nº 71342

Patented Nov. 26, 1867.

Fig. 1.

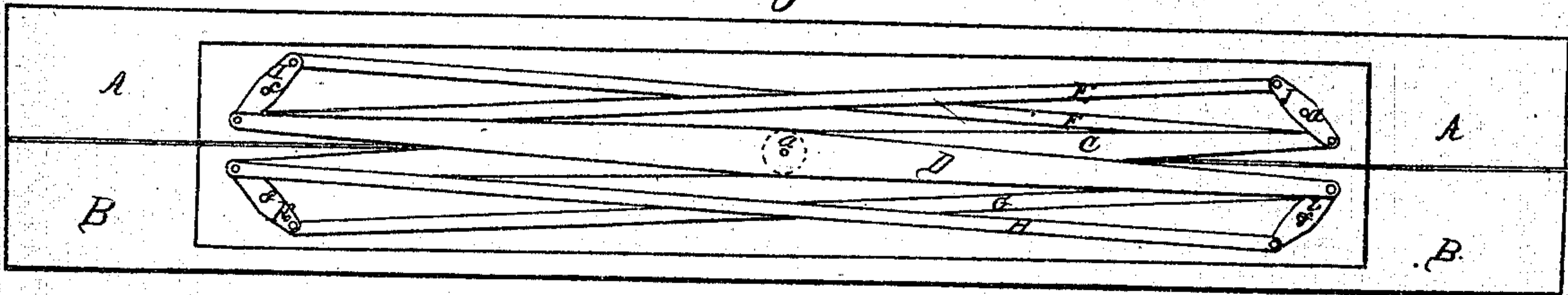


Fig. 2.

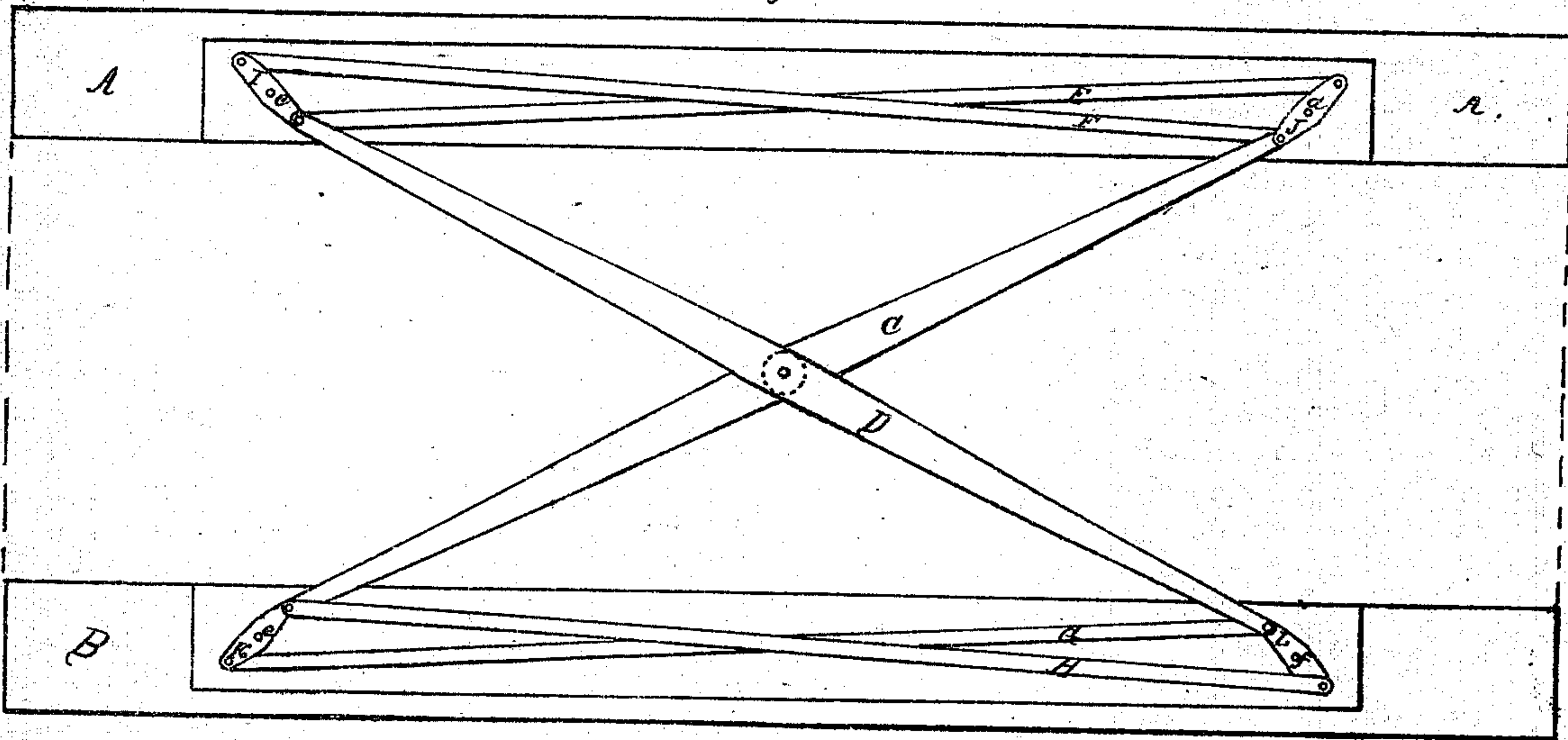
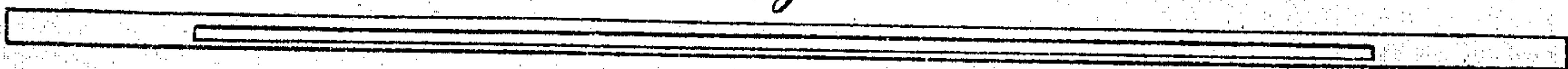


Fig. 3.



Witnesses

John H. Bagart
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Inventor

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United States Patent Office.

ANDREW J. VANDEGRIFT, OF CINCINNATI, OHIO.

Letters Patent No. 71,342, dated November 26, 1867.

IMPROVEMENT IN PARALLEL MOVEMENTS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ANDREW J. VANDEGRIFT, of the city of Cincinnati, county of Hamilton, and State of Ohio, have invented a new and useful Mechanical Movement for the purpose of moving a plane perpendicular, and at the same time preserving a parallel with its original position, the same being applicable to parallel rules and an indefinite number of other mechanical uses; and I do hereby declare the following is a full, clear, and exact description of the construction and operation of the same, as applied to parallel rules suitable for the use of draughtsmen and others, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an elevation of the apparatus, representing it contracted or closed.

Figure 2 is an elevation, representing the apparatus as extended or expanded.

Figure 3 is an inverted side elevation of one of the stocks, or one of the movable halves of the rule.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to that class of movements for the purpose of moving a parallel plane from its base or from another line or plane, and at the same time preserve a true parallel with the same, it being desirable, if not essentially necessary, in most cases, where such movement is applicable in mechanics, to preserve a perpendicular, as well as a parallel, with rigidity; and the same having not been heretofore done, this invention is designed for that purpose.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it as applied and used in parallel rules.

A and B, figs. 1 and 2, are the two wooden stocks or movable planes, represented as having their sides cut away, for the purpose of exhibiting the peculiar construction and arrangement of the moving system of levers, by which the desired object is accomplished. C and D are two levers which cross each other, having a common fulcrum or centre, *a*, formed by a rivet. I, J, K, and L, figs. 1 and 2, are short levers, hinged in such a manner as to oscillate on centre-pins or rivets *c*, *d*, *e*, and *f*, said rivets being fastened permanently in the stocks A and B, and forming the fulcra of the aforesaid levers. E, F, G, and H are tension-rods, each being attached, at one end, to the inside arm of one of levers I, J, K, and L, and at the other end in like manner to the outside arm, by riveting, in such a manner as to form a hinge, so that each lever may be allowed to revolve or oscillate on its centre, thus: levers I and J, figs. 1 and 2, being secured to wooden stock A, respectively, by rivets *c* and *e* passing through their respective centres, are held in corresponding relation to the main centre *a*, figs. 1 and 2, by means of tension-rods E and F being so attached as to connect the inside arm of one of said levers to the outside arm of the other, so that when the apparatus is closed or contracted, the inside arms of said levers are thrown outward, as shown in fig. 1, and when the apparatus is expanded or extended, the inside arms of said levers are thrown in towards the centre, as shown in fig. 2. Levers K and L, and tension-rods G and H operating in like manner, and the inside arms of levers I, J, K, and L being attached to the four arms of levers C and D, as shown plainly in figs. 1 and 2, it will be readily seen and understood that the apparatus so arranged and constructed is capable of being contracted and expanded, as shown in figs. 1 and 2. The object of the arrangement of tension-rods E and F with levers I and J, connecting the inside arm of one of said levers with the outside arm of the other, and *vice versa*, and tension-rods G and H with levers K and L, in like manner, is to furnish a compensating movement, in order to give the arms of levers C and D freedom of motion, while describing, as they do, an arc of a circle, by the apparatus being opened or closed, without changing the points of attachment to the stocks; that is, the centres of lever I and J with each other, and the centres of K and L with each other in such a manner as at the same time to prevent said stocks from rocking longitudinally on said levers, which would be the case were they not thus attached to each other by said rods.

I have thus described the arrangement and operation of this movement as applied to parallel rules; but it is equally capable of various applications in the mechanical arts; and so long as the system of levers substantially as herein described is used for the purpose of preserving a perpendicular as well as a parallel line in the movement, I shall consider it an infringement upon my invention.

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

1. The system of levers described, when arranged and operated substantially in the manner and for the purpose set forth.
2. The tension-rods described, or their equivalents, when arranged and operated in connection with the levers described, substantially in the manner and for the purpose set forth.
3. The system of levers and tension-rods, combined with and attached to stocks or planes A and B, or their equivalents, by the means, in the manner, and for the purpose substantially as set forth and described.

A. J. VANDEGRIFT.

Witnesses:

JOHN H. BOGART,
SAMUEL R. RUSSELL.