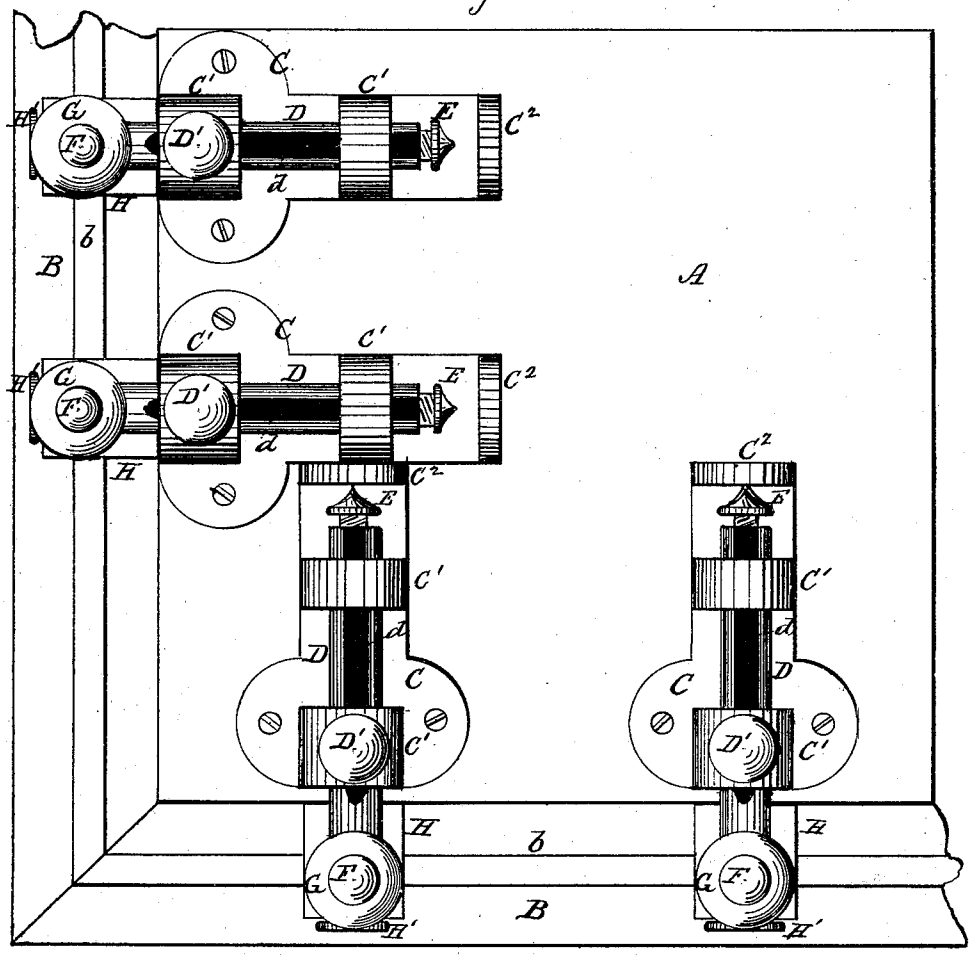
2 Sheets—Sheet 1.

J. C. HINTZ.

DRAWING-BOARD ATTACHMENT.

No. 169,543. Patented Nov. 2, 1875.

Fig. 1.



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2 Sheets—Sheet 2.

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DRAWING-BOARD ATTACHMENT.

No. 169,543. Patented Nov. 2, 1875.

Fig. 2.

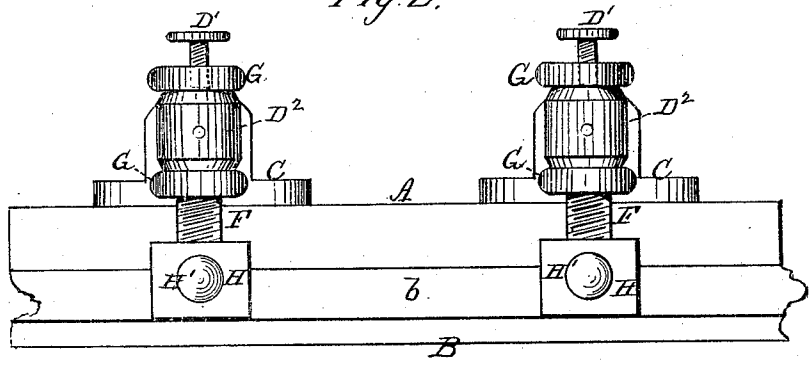
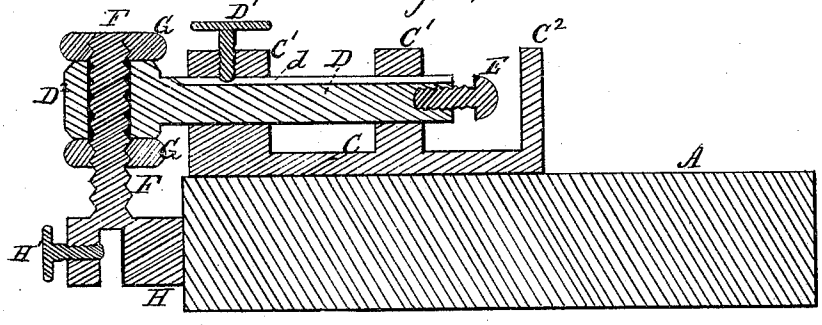


Fig. 3.



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UNITED STATES PATENT OFFICE.

JULIUS C. HINTZ, OF CANTON, OHIO.

IMPROVEMENT IN DRAWING-BOARD ATTACHMENTS.

Specification forming part of Letters Patent No. **169,543**, dated November 2, 1875; application filed August 13, 1875.

To all whom it may concern:

Be it known that I, JULIUS C. HINTZ, of Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Device for Squaring Drawing-Table; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvement in devices for squaring drawing-tables; and consists in border-rails of metal or other suitable material, which rails are made adjustable, both vertically and horizontally, so that those upon adjacent sides can be readily brought to an exact right angle, the said border-rails and their attachments being so constructed that they may be applied to any ordinary table.

In the drawing, Figure 1 is an inverted plan view of a table having the adjustable border-rails. Fig. 2 is a side view of same. Fig. 3 is a longitudinal vertical section through the center of one of the adjustable supports.

A may be any ordinary table the edges of which have never been squared mathematically. The object of this invention is to form an attachment which may be readily secured to this table, whereby it can be made perfectly square, and the edges rendered perfectly straight, so as to be in proper condition for use as a drawing-table. This is effected as follows: B are metallic or other strips, the outer edges of which are made perfectly straight and true. Each of these edges B is supported by two adjustable supports, to be applied underneath, as shown in the drawings. One of these supports is represented in section in Fig. 3. C is a bed-plate, which is securely screwed or otherwise fastened to the under side of the table at its edge. D is a shaft, passing through the supports C^1 of the bed-plate C, in which supports it slides freely, but may be checked and fastened at any point by means of the thumb-screw D^1. E is a male screw, setting into a corresponding female screw in the shaft D. The head of this screw is suitably milled, and has a point bearing against the shoulder C^2, so that, by turning the mill-head so as to run out the screw E, the point will bear against the shoulder C^2, and consequently drive the shaft D slowly outward in the opposite direction. F is a screw-cut shaft, which slides freely up and down through a collar, D^2, in the end of the shaft D. This screw-cut shaft F has two milled nuts, G, upon it, one above and one below the collar D^2. At the upper end of the screw-cut shaft F is a clutch or jaw, H, and a set-screw, H′. This jaw receives the projecting rib or lug *b*, which projects downward from the metallic edge B, and may there be rigidly secured by the set-screw H′. There are two of these supports for each of the metallic edges B.

The operation of the device is as follows: The supports having been attached to the under side of the table A, the edges B are properly adjusted in the clutches H. Now, if either end of the strip B is not exactly on the level of the table it can be raised or lowered, so as to be brought into that level, by the following operation: If, for instance, it is necessary to raise one of its ends, the operator loosens the milled nut G that is beneath the collar D^2; then, by turning in the same direction the nut G that is above the collar, the metallic edge B is gradually lifted up until it is in the plane of the table; the lower nut G is then tightened up. If it is necessary, in order to make the table square, that either end of one of the edges B shall be carried from the table, it is effected as follows: The operator loosens the set-screw D^1; he then turns the milled headed screw E in a direction to run out the screw; its point, impinging against the shoulder C^2, will drive the shaft D gradually in the opposite direction, which, in turn, will carry its end of the metallic edge B with it. In this way the metallic edges B can both be brought into the plane of the table, and be adjusted so as to be at exact right angles with each other.

In order that the shaft D may not roll upon its axis the set screw D^1 is made to enter a groove, *d*, in the under side of the shaft D.

The edges B may be formed of any suitable material. It may be in the shape of an angle-

iron, or in the shape of T-iron in cross-section, or of any suitable shape, whereby there are projections beneath to enter the jaws H.

The drawings represent the edges as arranged only upon two adjacent sides of the table; but it is evident that they may, if desired, be arranged upon all sides.

It will be observed that the metallic edges B, as well as the shafts D, are readily removable from the bed-plates C. Thus, where a draftsman is working upon several tables, if the bed-plates C are placed upon each of the tables he can readily shift the edges B and the shafts D from one table to another.

It is also evident that the invention is not limited to the particular means employed for giving either the horizontal or vertical adjustment. Those adjustments may be effected in various manners; but the methods shown in the drawing are very simple and effective.

In order that the edges B may not be accidentally disarranged or lifted from the clutches H, I provide a set-screw, H′, which, by bearing upon the projection *b*, will prevent any such accident, which would otherwise readily occur while either working around the table, or by a person brushing against it in passing.

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

1. A squaring attachment for drawing-tables, consisting of the border-rails B, in combination with horizontal and vertical adjusting mechanism, substantially as and for the purpose described.

2. The combination, with a table, of bed-plate C, having shoulders C^2 and support C^1, substantially as and for the purpose described.

3. The border-rails B and jaws H, provided with shaft F and milled nuts G, whereby the clutch can be adjusted up or down, in combination with a shaft or support, D, and screw E, and the shaft can be adjusted horizontally, substantially as and for the purpose described.

4. The combination, with the table A, of bed-plate C, shaft D, screw E, shaft F, nuts G, and jaws H, substantially as and for the purpose described.

5. The combination, with the border-rails B and rib *b*, of jaw H and set-screw H′, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JULIUS C. HINTZ.

Witnesses:
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LOUIS SCHAEFER.