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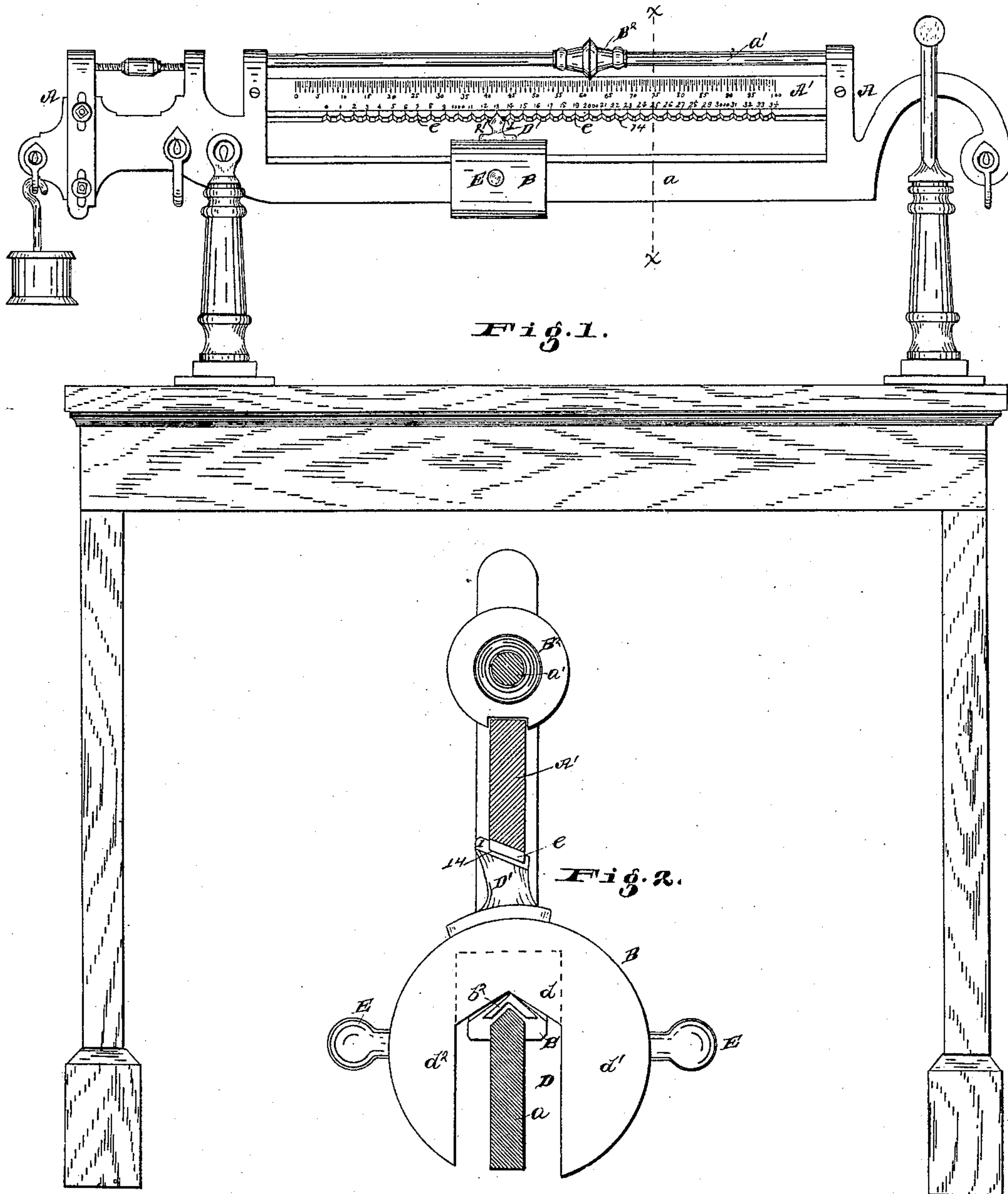
3 Sheets—Sheet 1.

I. RIGDON.

SCALE BEAM AND WEIGHT.

No. 302,590.

Patented July 29, 1884.



ATTEST.
Edw. Hill,
J. W. Freble.

INVENTOR.
Isaac Rigdon
per Wm. Hubbell Fisher
Atty.

(No Model.)

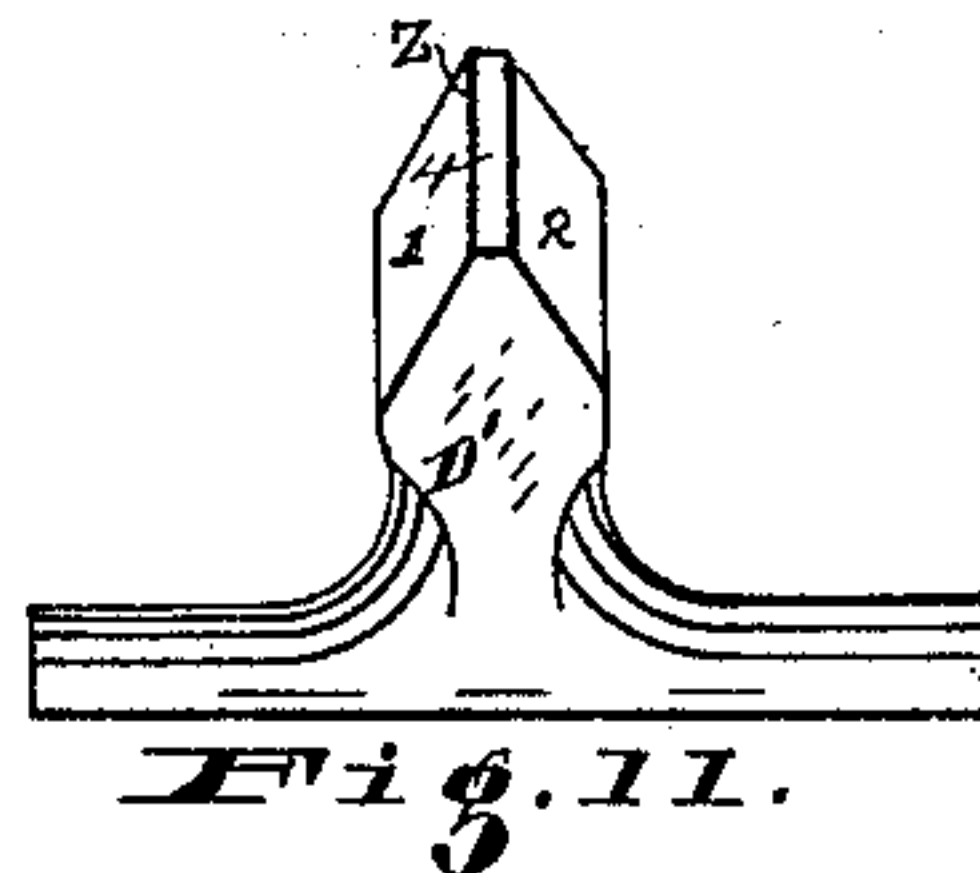
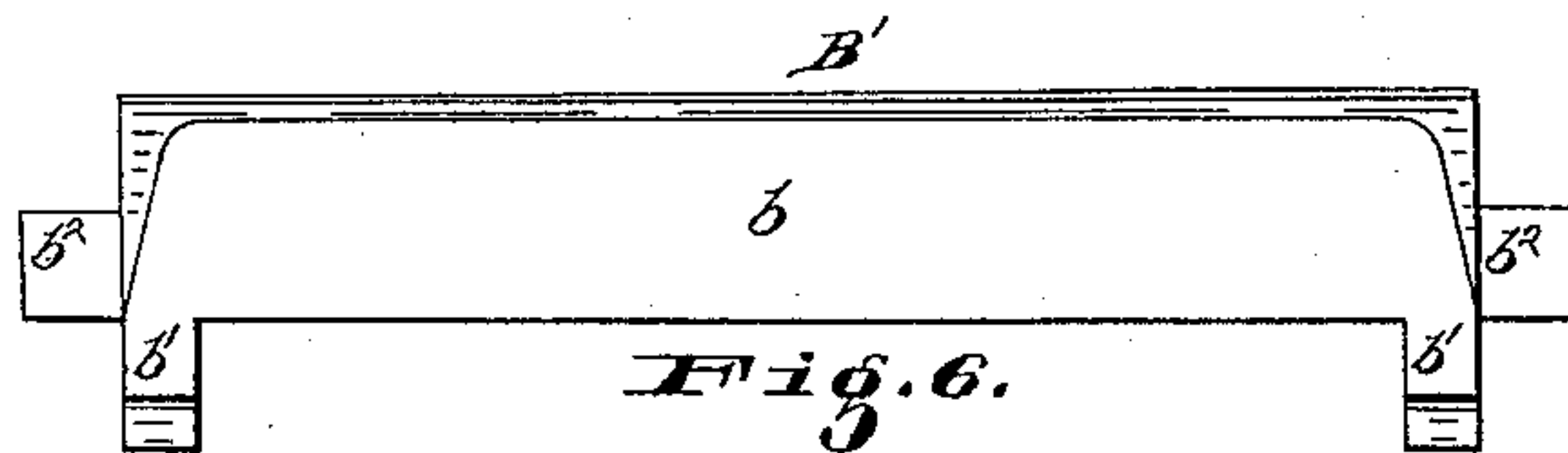
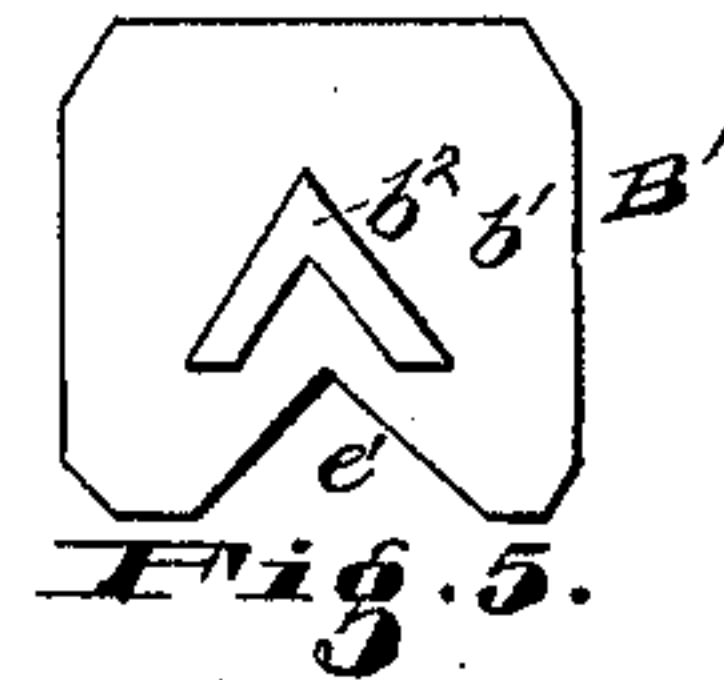
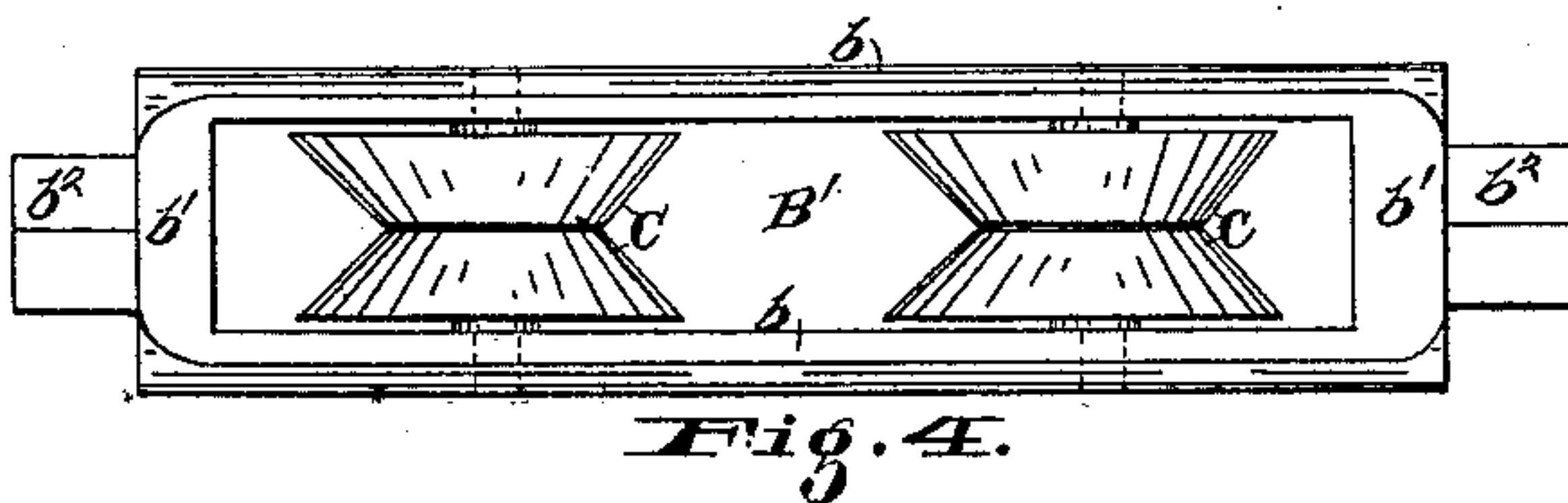
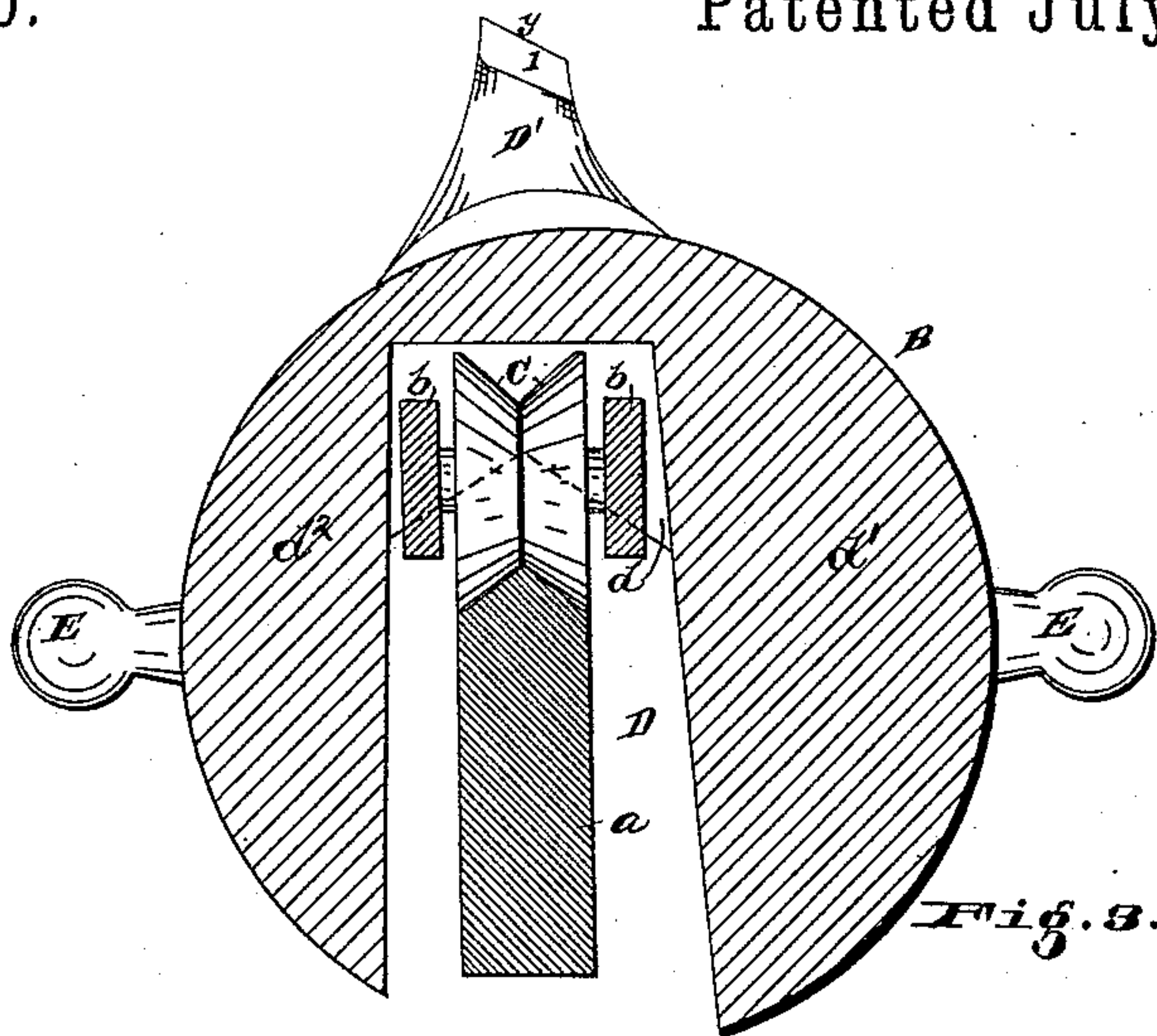
3 Sheets—Sheet 2.

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ATTEST.

Edw. Hill
Walter Chamberlain

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per Wm. Hubbell Fisher
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(No Model.)

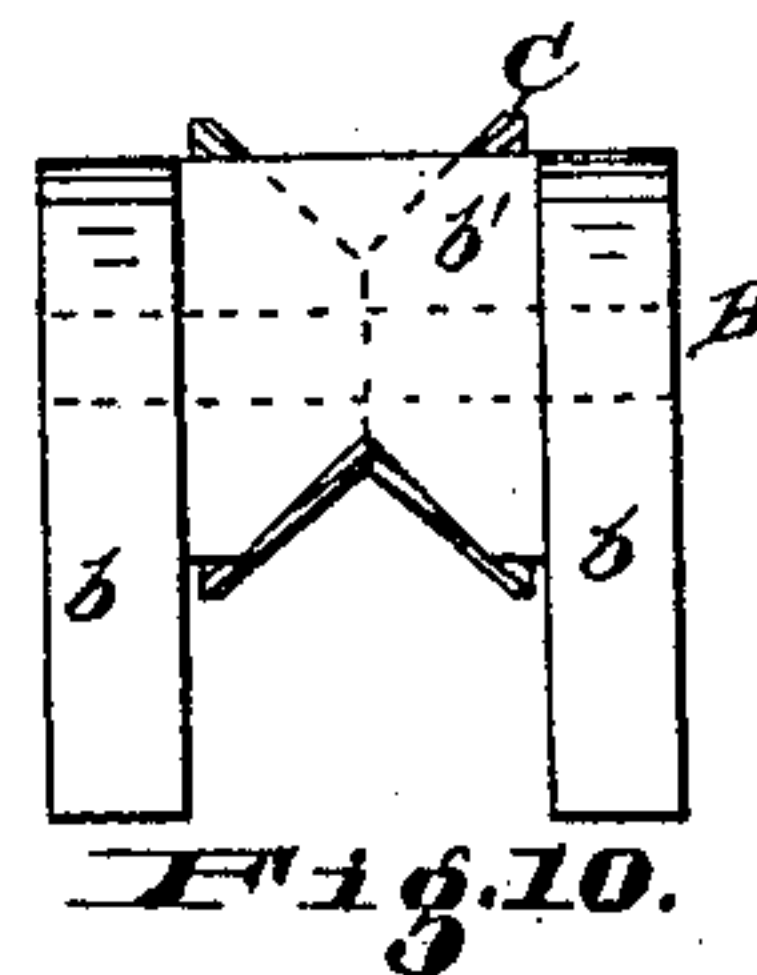
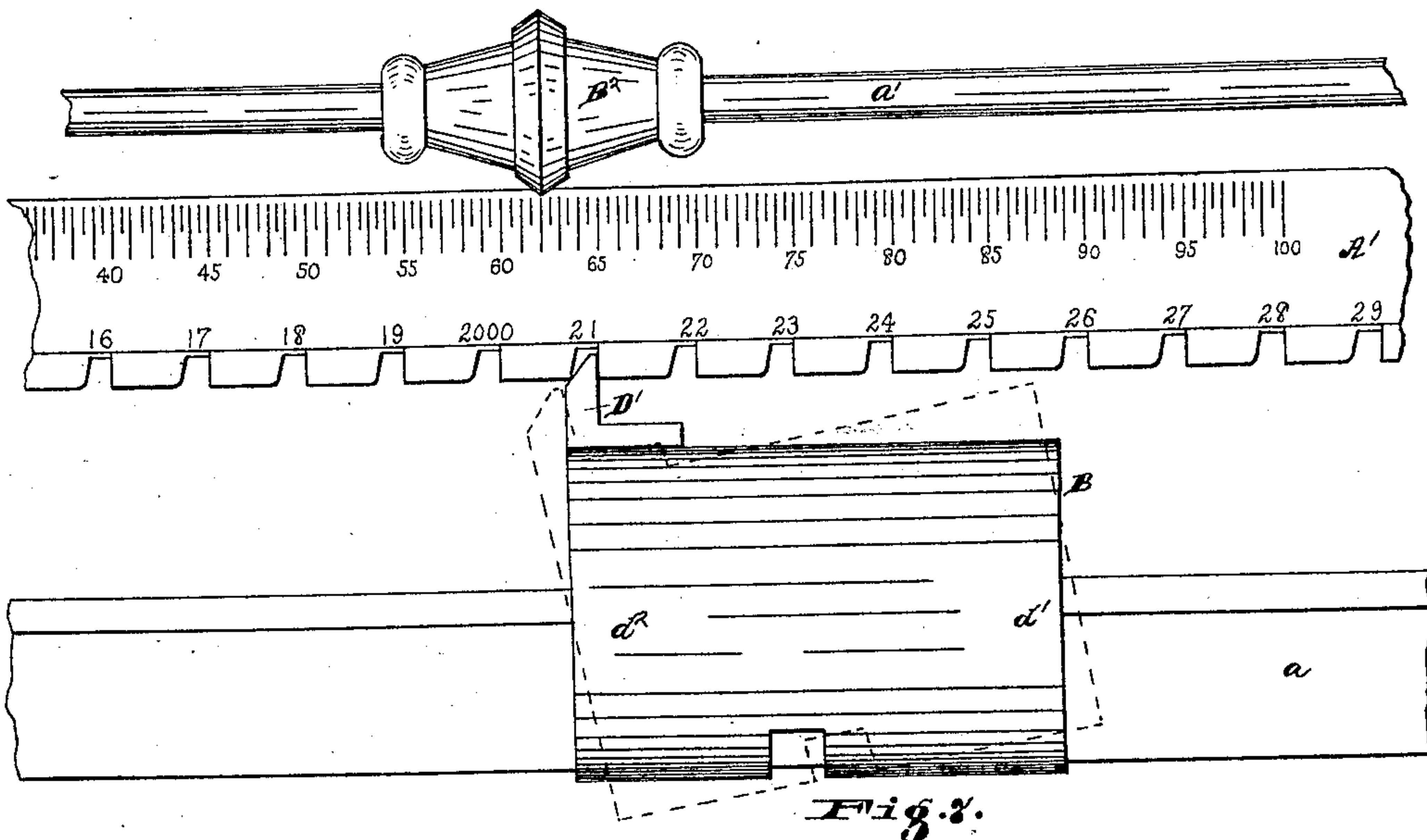
3 Sheets—Sheet 3.

I. RIGDON.

SCALE BEAM AND WEIGHT.

No. 302,590.

Patented July 29, 1884.



ATTEST.
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UNITED STATES PATENT OFFICE.

ISAAC RIGDON, OF CINCINNATI, OHIO.

SCALE-BEAM AND WEIGHT.

SPECIFICATION forming part of Letters Patent No. 302,590, dated July 29, 1884.

Application filed August 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, ISAAC RIGDON, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Scale-Beams and Weights, of which the following is a specification.

My invention relates to scale-beams having a weight sliding thereon; and its principal objects are to provide a sliding weight that will be durable and accurate, easy of movement, and self-locking in action.

Referring to the drawings forming part of this specification, Figure 1 is an elevation of a scale-beam and weights illustrating my invention, and supported on an appropriate standard. Fig. 2 is an enlarged transverse sectional elevation, the section being taken at the line $x x$ of Fig. 1, and looking toward the left in said figure, showing the preferred form of weight. Fig. 3 represents a transverse section through the weight and the beam upon which it is supported and upon which it slides. Fig. 4 is a top view of the carriage, which is the direct support of the weight. Fig. 5 is an end view, and Fig. 6 is a side view, of the preferred form of carriage, the rollers shown in Fig. 4 being omitted. Figs. 7, 8, 9, and 10 represent a modification of my invention. Fig. 11 is a front view of the index-finger of the weight.

A is the scale-beam, which is fulcrumed by knife-edge bearings in an appropriate support in the usual manner. The long arm of this scale-beam consists of the index-beam A' and the heavy-weight beam a , the lower edge of the index-beam A' being provided with an index for the heavy weight, and the upper edge of said beam being provided with an index for the fractional weight. The upper edge of the beam a is V-shaped, as shown in the drawings, and on this beam is the weight B. This weight B, however, does not rest directly on the beam a , but rests upon a carriage, B' , which latter rests on the upper edge of the beam a . This carriage B' consists of the sides b and ends b' , and is open at the top and bottom, and is preferably provided at each end with rollers C, turning loosely on shafts or axles passing from one side b to the

other. The roller at each end of the carriage may consist of a solid roller having a V-shaped peripheral groove, as shown in Fig. 9; or each roller may consist of two halves, each half formed in the shape of the frustum of a cone, and placed side by side, as shown in Fig. 4. In either event the peripheral groove in the rollers coincides in shape with the V-shaped edge of the weight-beam a . The weight B is hollowed out interiorly, as shown, forming a chamber, D, in which the carriage B' is located. At each end of the carriage B' is a V-shaped lug or trunnion, b^2 , projecting from the ends of the carriage, the edges of these lugs being uppermost. The ends of the chamber D in the weight B are partly closed by downwardly-extending ends d , which ends rest on the lugs b^2 of the carriage, as shown in Fig. 2, and these lugs b^2 thus form the support for the weight. The chamber D in the weight is somewhat wider than the carriage B' , and the lower faces of the ends d represent in transverse section the form of an angle, and the angle is somewhat more obtuse than the angle made by the top of the knife-edge lugs b^2 . Consequently the weight may be slightly rotated laterally on said lugs, so that the index-point of the weight may be made to come away from and clear of the index-beam, and the weight be readily moved along the said index-beam. The chamber D is located a little to one side of the longitudinal center of the weight, and the bearing-points of the weight on the lugs b^2 are thus at one side of the center, and the side d' of the weight is heavier than the side d , as clearly shown in Fig. 3.

On the top of the weight B is a pointer or index-finger, D' , the upper free end of which is provided with the oppositely-beveled bearing-surfaces 1 and 2, each bearing-surface looking toward an end of the weight, and the top end, Z, of the finger is inclined toward the heavy side d' of the weight, and is preferably provided with a narrow flat face, 4—that is, the beveled faces 1 and 2 are preferably not extended upward to a sharp point. The object of having this flat face 4 is that there is no sharp edge to touch the bottom of the notches in the index-beam, and therefore the

true bearings 1 and 2 of the index-finger will, when in the beam-notch, always lie accurately against the true bearing-surfaces of said notches, and therefore the pointer will always accurately indicate. The lower edge of the index-beam A is provided with the V-shaped notches *e*, the sides of the latter corresponding to the bevel of the bearing-surfaces 1 and 2 of the index-finger and the bottom of the notches, and the inclination 14 preferably corresponding to the inclination of the index-finger. Outside of and between the notches the lower portion of the side of the index-beam, which faces the preferred direction in which the pointer enters the notches, is preferably inclined—that is, is provided with a bevel, 14. This inclination 14 of the scale-beam facilitates the admission of the index-finger D' to the notches, and also the removal of said finger from said notches, and also facilitates the moving of the index-finger with weight along the scale-beam. When the weight is in position on the beam *a*, the side *d'* being heavier than the side *d''*, the pointer D' is constantly held in contact with the beam A' until it is rotated or tilted by the operator, and this excess of weight on one side, in connection with the beveled faces of the notches and of the pointer, causes the weight to be accurately adjusted longitudinally on the beam. Both sides of the beam A' are preferably provided with an index, to enable the operator to read the weight from either side of the beam, and preferably at each side of the weight B is a handle, E, by which the weight may be tilted and moved longitudinally on the beam. As the weight B is moved longitudinally on the beam *a*, there is no wear on the weight, as it does not come in direct contact with the beam, resting as it does on the lugs *b'* of the carriage, which latter moves along the beam, the rollers C permitting a free and easy movement of the carriage, and at all times keeping it in accurate position on the beam.

As before stated, I prefer to employ the roller C; but for light scales these rollers may be dispensed with and the ends *b'* of the carriage be provided with V-shaped notches *e'*, (see Fig. 5,) which notches are shaped to accurately fit the V-shaped upper edge of the beam *a*, along which the carriage will slide. In the present instance I have shown a light-weight beam, *a'*, provided with a sliding weight, B², which engages with the upper edge of the index-beam A', said upper edge being provided with a fractional index representing one hundred pounds, and the notches *e*, with which the weight B engages, each represent one hundred pounds. It will be obvious, however, that in smaller and lighter scales the notches *e* may represent any desired quantity—as, for instance, pounds—and the index for the weight B² may represent ounces, or the light weight B² and its beam may be entirely omitted, the lower edge being divided, as desired. The notches *e* and the upper end of the pointer

being shaped as aforescribed, the pointer will accurately seat itself in the notches, and the weight B will thus be moved to the exact position required.

I have hereinbefore described the weight B as being so supported as to tilt on an axis parallel to the beam *a*; but, if preferred, it may be supported, as shown in Figs. 7 and 8, so that it will tilt on an axis at right angles to said beam.

The V-shaped lugs *b'*, instead of projecting from the ends of the carriage B', as shown in Figs. 4, 5, and 6, project from its sides, as in Figs. 8, 9, and 10. In this instance the chamber C is located directly in the longitudinal center of the weight B, and in the weight at either side of the chamber is formed a recess, F, the bottoms of these recesses F, when the weight is in position, resting on the V-shaped lugs *b'*, as shown in Fig. 8. These recesses are preferably not placed in the transverse center of the weight, but are located nearer to that end of the weight which carries the index-finger than to the other end, thus making, when the weight is resting on the lugs *b'*, a heavy portion, *d'*, and a lighter portion, *d''*, as in the weight shown in Fig. 3. In the weight shown in Fig. 7 the pointer D' is connected to the upper side of the lighter end, *d''*, of the weight, and is adapted to engage with the notches in the bottom of the index-beam A', as shown in Fig. 7, the heavy end, *d'*, of the weight at all times tending to keep the pointer in contact with said index-beam. When the weight is formed as just described, the end of the pointer D' and the notches in the lower edge of the index-beam, with which said pointer engages, are preferably formed as shown in Fig. 7, one side only of the end of the pointer being beveled, the other side being straight, and adapted to rest against the straight side of the notches, the opposite sides of said notches being adapted to engage the beveled portion of the end of the pointer, and thus hold the straight face of said pointer against the straight face of the notch. When this weight is to be moved on the beam, the lighter end, *d''*, is depressed, and this movement disengages the pointer D' from the notches in the index-beam, as shown by dotted lines in Fig. 7, and the weight can then be moved to the desired point on the beam.

While the various features of my invention are preferably employed together, one or more of them may be employed without the remainder; and, when desired, one or more of said features may, so far as applicable, be employed in connection with other descriptions of scale-beams than those herein specifically mentioned.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. A weight for scale-beams, consisting of a main body supported on a carriage adapted to move on the beam, the weight being supported on V-shaped lugs projecting horizon-

tally from the opposite ends of the carriage, and adapted to tilt on said lugs, substantially as and for the purposes specified.

2. The weight B, having an interior chamber, D, for the reception of the carriage B', the latter adapted to rest on the scale-beam and provided with V-shaped lugs b^2 , projecting horizontally from the opposite ends of the carriage, upon which the weight B rests and may be tilted, substantially as and for the purposes specified.

3. The weight B, having an interior chamber, D, in combination with the carriage B', having V-shaped lugs b^2 projecting horizontally from the opposite ends of the carriage, and upon which the weight B is adapted to rest, the carriage B' being provided with rollers C, provided with peripheral V-shaped grooves, shaped to fit the upper edge of the scale-beam, substantially as and for the purposes specified.

4. The weight B, having an interior chamber, D, located at one side of the longitudinal center of the weight, in combination with the carriage B', having V-shaped lugs b^2 projecting from the ends thereof, the weight resting on said lugs, and adapted to tilt thereon without any contact with the beam a , substantially as and for the purposes specified.

5. A weight for scale-beams, supported at one side of its longitudinal center and capable of tilting on such supports, said weight being provided with a pointer adapted to engage with an index-beam, the end of said pointer being V-shaped and beveled toward the heavy side of the weight, and the edge of the index-beam being beveled on the side toward said pointer, and provided with V-shaped notches for receiving the end of the pointer, substantially as and for the purposes specified.

6. The combination of the weight B, provided with index-finger having the oppositely-beveled bearing-surfaces 1 and 2 and the inclined top Z, said surfaces and top being inclined downward toward the index-beam, and said beam provided with notches, substantially as and for the purposes specified.

7. A weight for scale-beams, having an index-finger, as D', having the oppositely-beveled bearing-surfaces 1 and 2 and the inclined top Z, in combination with the index-beam, provided with notches, substantially as described, for reception of the index-finger, substantially as and for the purposes specified.

8. The weight B, provided with an index-finger, D', having the bearing-surfaces 1 and 2 and inclined top Z, said surfaces and top being inclined downward toward the index-beam, and the index-beam A', having inclined lower edge, 14, provided with notches e , the side of the beam being provided with bevel 14, and the notches e , corresponding in inclination to the inclination of the top of the index-finger, substantially as and for the purposes specified.

9. The weight B, provided with index-finger D', having oppositely-beveled bearing-surfaces 1 and 2, and the flat inclined top 4, in combination with the index-beam A', having notches e , substantially as and for the purposes specified.

10. The weight B, provided with index-finger D', having oppositely-beveled bearing-surfaces 1 and 2 and the flat inclined top 4, in combination with the index-beam A', having notches e and inclined lower side, 14, substantially as and for the purposes specified.

11. The weight B, provided with an index-finger, D', having the bearing-surfaces 1 and 2 and flat inclined top 4, said surfaces and top being inclined downward toward the index-beam, and the index-beam A', having inclined lower edge, 14, provided with notches e , the side of the beam being provided with bevel 14 and the notches e , corresponding in inclination to the inclination of the top of the index-finger, substantially as and for the purposes specified.

12. A scale-beam provided with notches, each narrowing toward its bottom, and an index-finger having a flat end, the edges of the said flat end, when the finger is in a notch of the beam, being in contact with the sides of the notch and out of contact with the bottom of the said notch, substantially as and for the purposes specified.

13. The weight B for scale-beams, consisting of a main body supported on a carriage adapted to move on the beam, the weight being supported by and adapted to tilt on horizontal V-shaped lugs projecting horizontally beyond the vertical plane of the surface of the carriage, substantially as and for the purposes specified.

ISAAC RIGDON.

Witnesses:

J. WM. STREHLI,

WALTER CHAMBERLIN.