

(No Model.)

2 Sheets—Sheet 1.

O. BEEBE.
SASH BALANCE.

No. 330,371.

Patented Nov. 17, 1885.

Fig. 1.

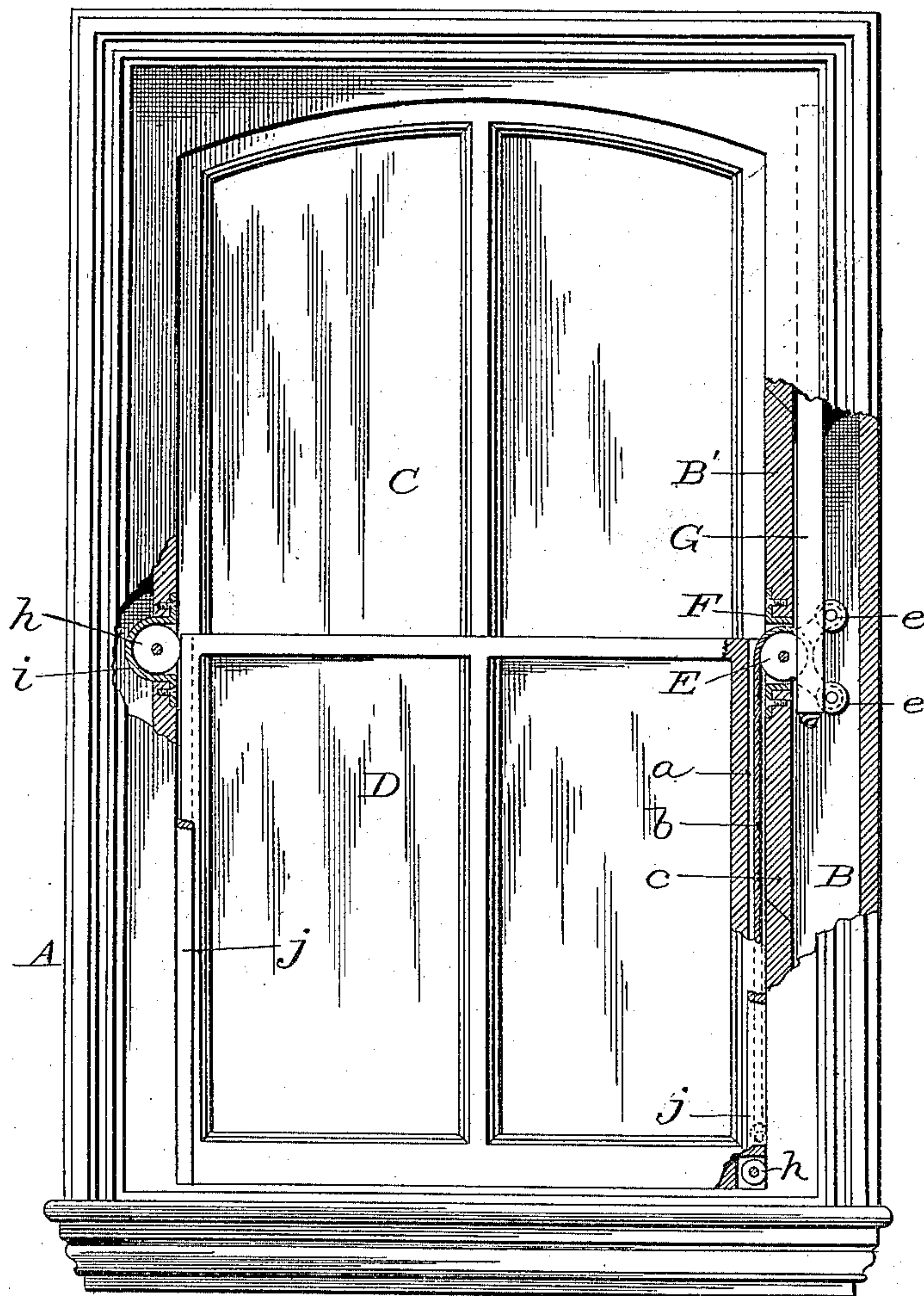
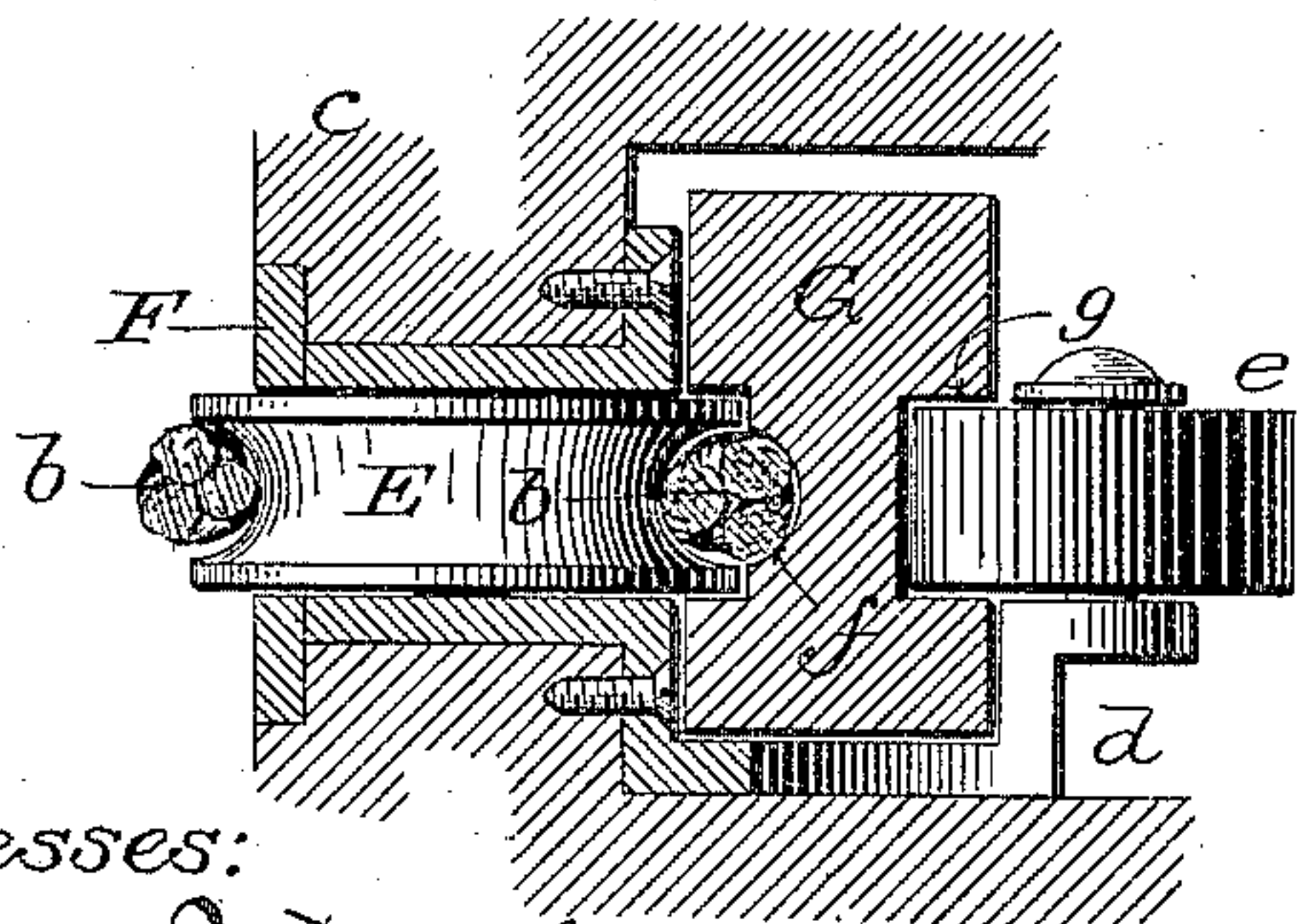


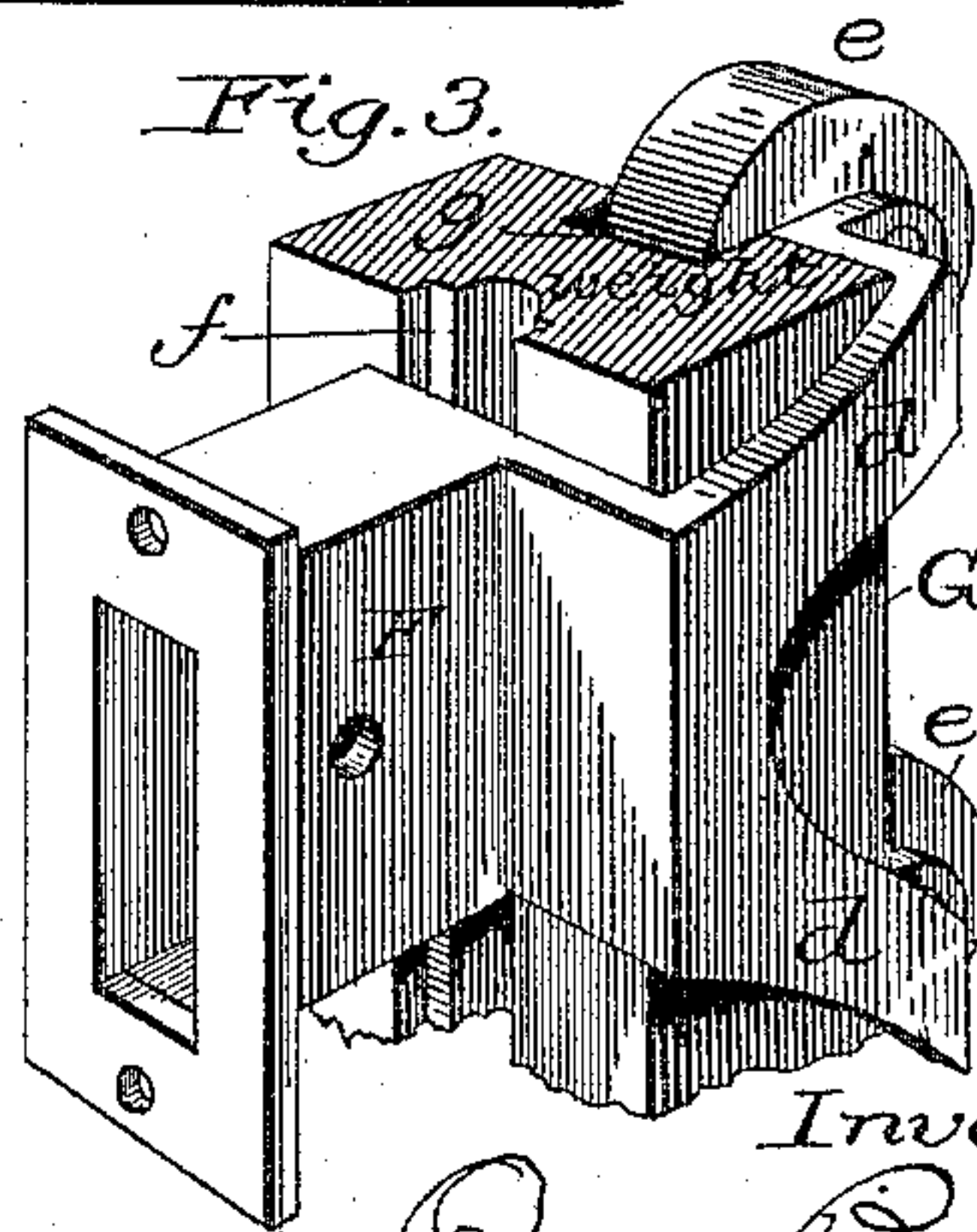
Fig. 2.



Witnesses:

James F. DuRoi
Walter S. Dodge

Fig. 3.



Inventor:

Dear Beebe,
by Rodger L. on
his Attys.

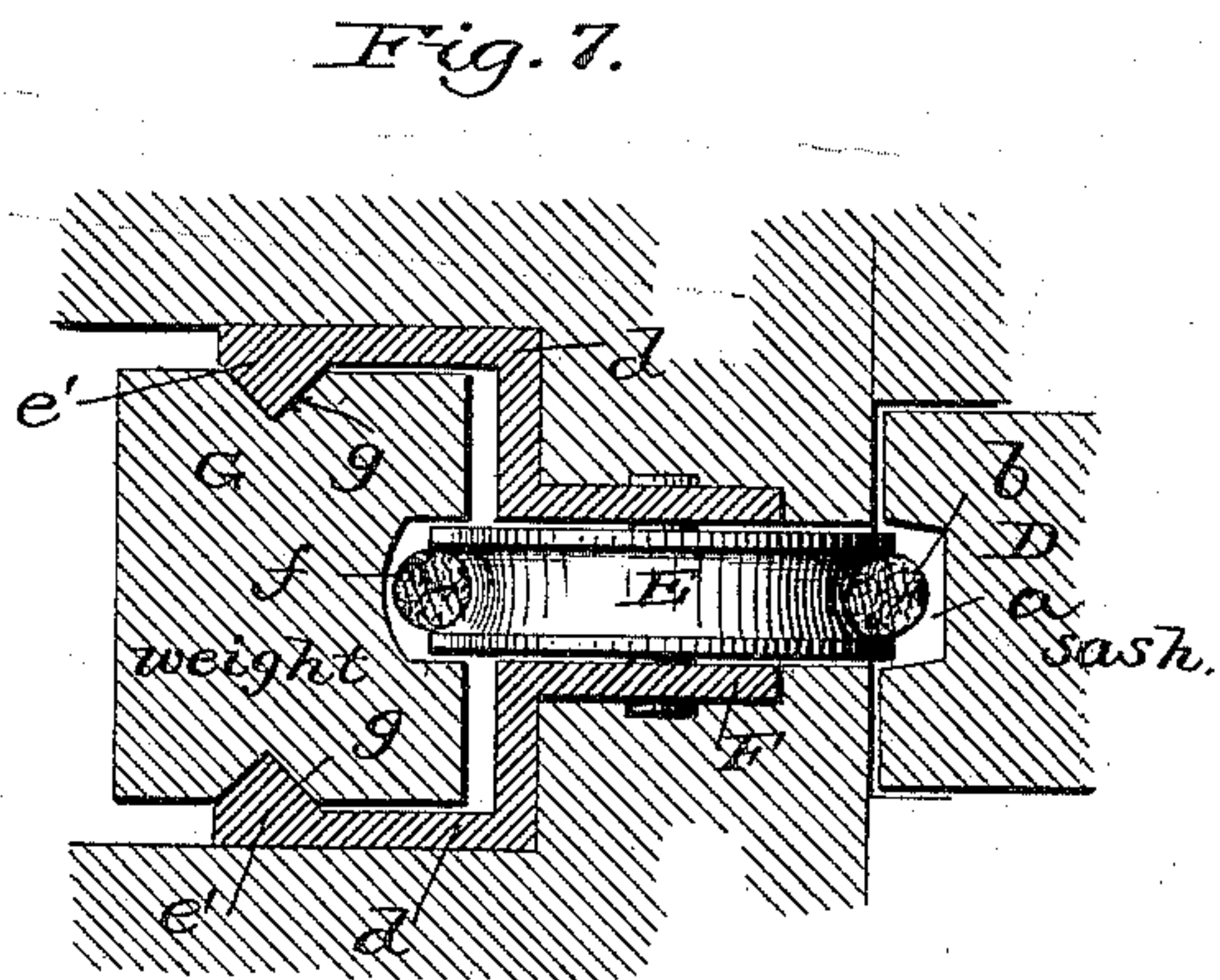
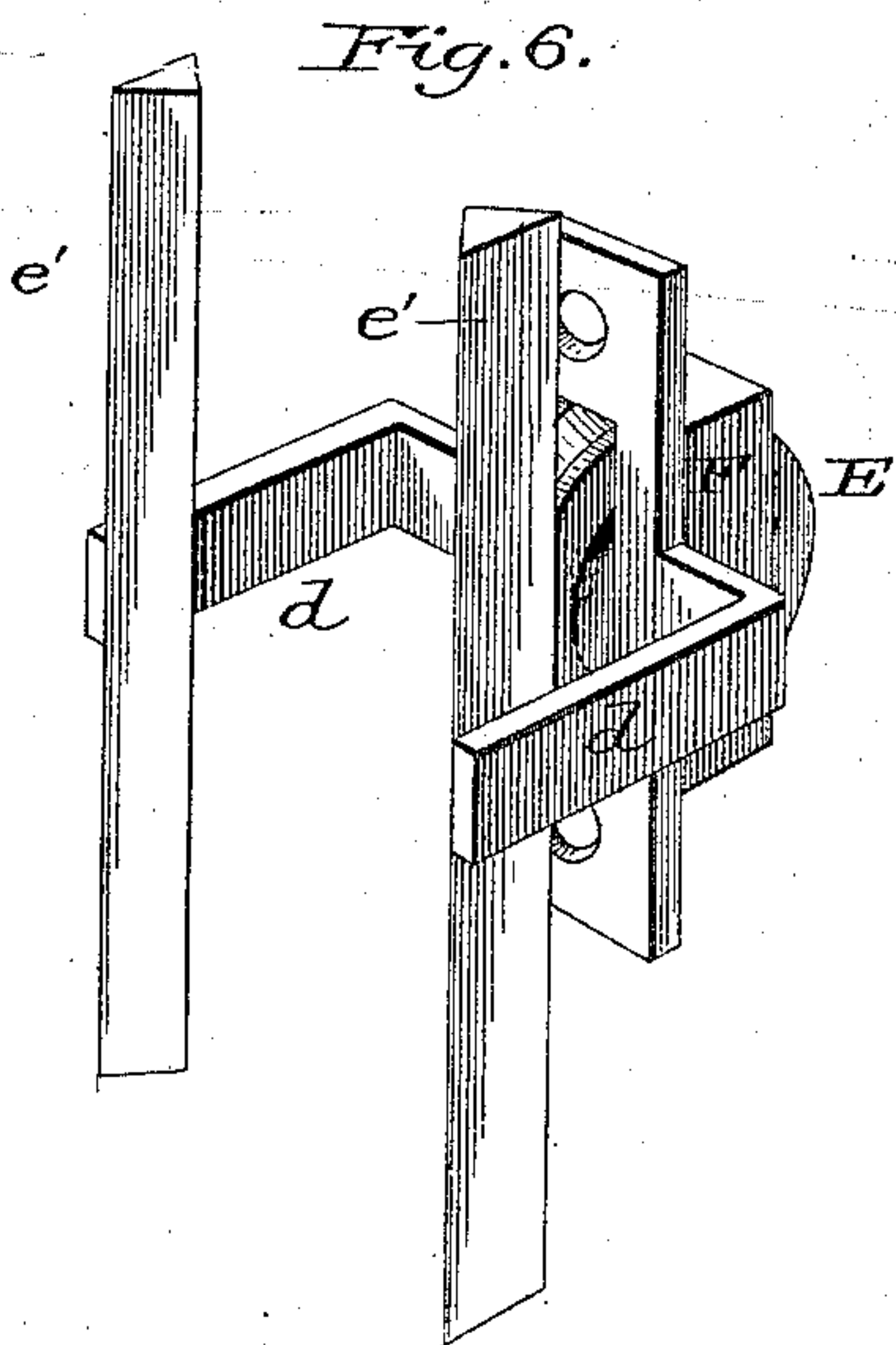
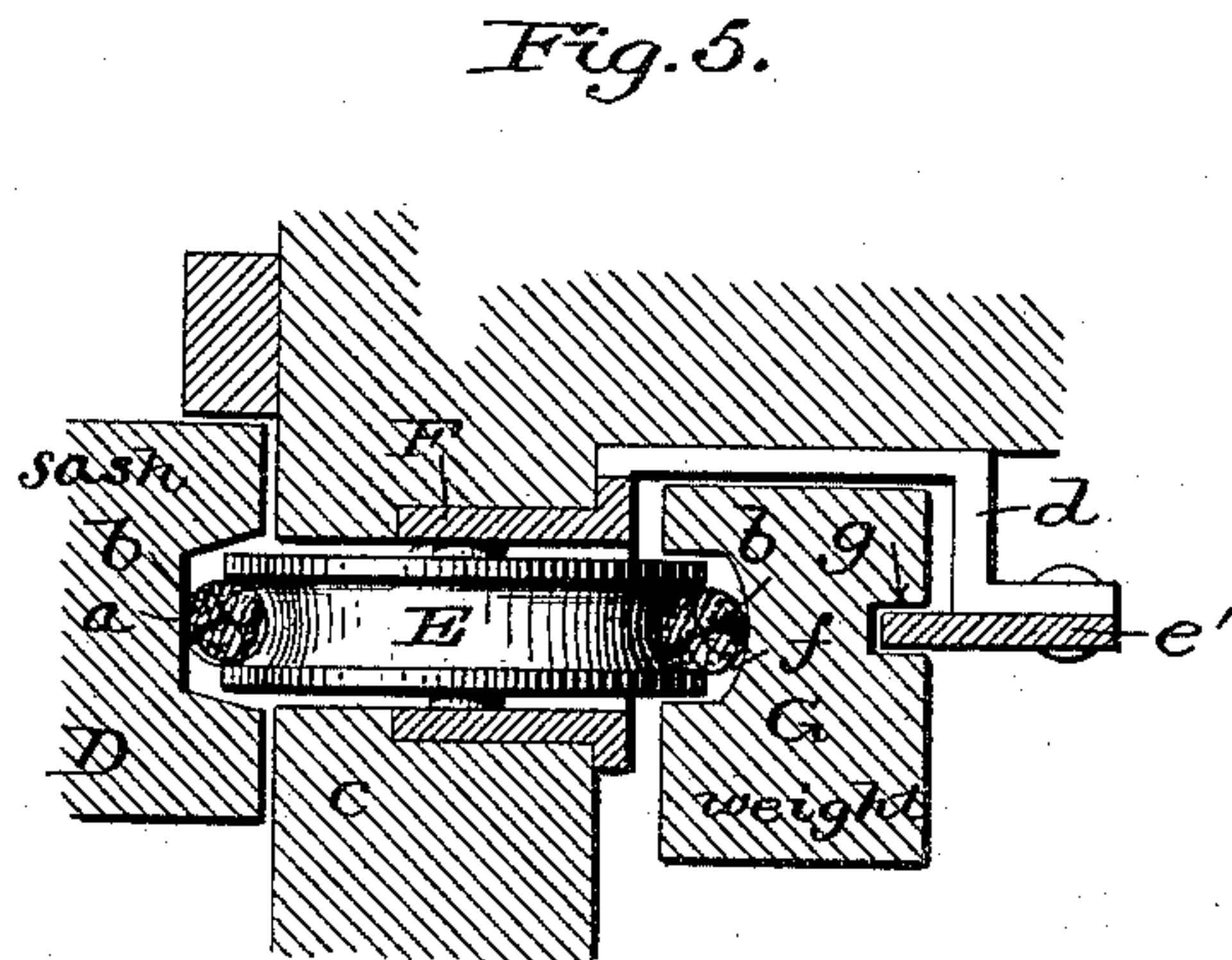
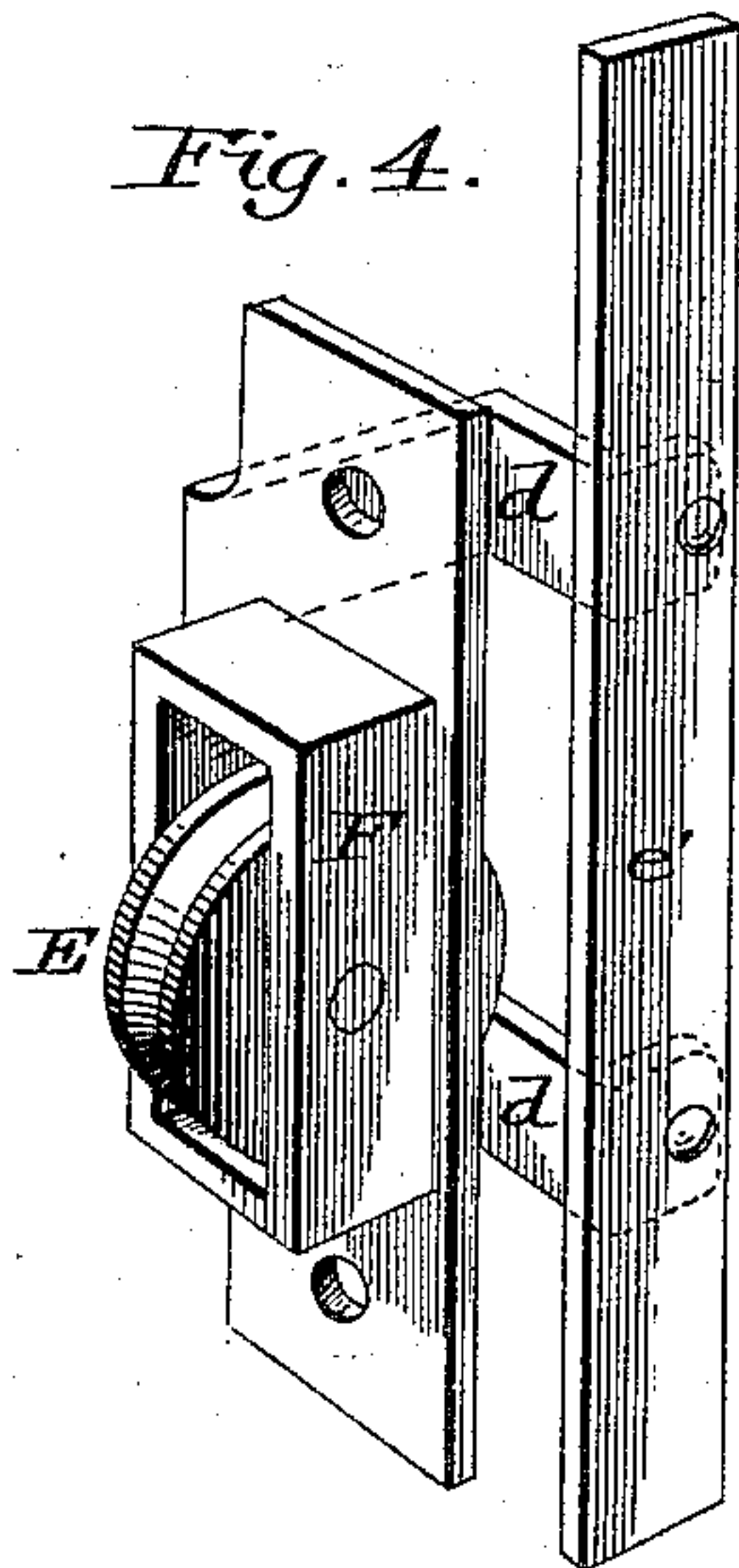
(No Model.)

2 Sheets—Sheet 2.

O. BEEBE.
SASH BALANCE.

No. 330,371.

Patented Nov. 17, 1885.



Witnesses:

James F. O'Connell
Walter S. Dodge

Inventor:

Oscar Beebe,
by K. Dodge & Son,
his Attys.

UNITED STATES PATENT OFFICE.

OSCAR BEEBE, OF HORNELLVILLE, NEW YORK, ASSIGNOR OF ONE-THIRD
TO SAMUEL MITCHELL, OF SAME PLACE.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 330,371, dated November 17, 1885.

Application filed September 23, 1885. Serial No. 177,881. (No model.)

To all whom it may concern:

Be it known that I, OSCAR BEEBE, of Hornellsville, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Sash-Balances, of which the following is a specification.

My invention relates to sash-balances; and has for its object to improve the construction and operation of such device.

In the drawings, Figure 1 is a face view, partly in section, of a window, showing my invention applied; Figs. 2 to 7, views illustrating certain details.

Heretofore window-sash have been suspended in numerous ways—for instance, by weights attached to the sash by cords, and toothed weights operated by a rack on the sash through the intervention of a gear.

My invention consists in suspending the sash from its lower edge by means of a cord passing over a pulley attached to the lower end of a weight, suitable guiding devices being secured to the window-frame to steady the weight in its movements.

I will now proceed to describe the invention in detail, reference being had to the drawings, in which—

A indicates a window-framing containing at each side the vertical boxes or chambers B, in which the weights are placed and hidden from view. A piece of the jamb-casing is cut so as to form a door, B', by which access may be had to the chamber B to remove the weights, &c., as shown in Fig. 1.

C and D represent, respectively, the upper and lower sash, which are provided with a groove or channel, *a*, in the outer edges of the vertical stiles, in which is placed the cord *b*, as shown in Fig. 1, said cord being secured to the sash at or near the lower edge thereof. This plan of hanging sash by a cord at the lower edge running in a grooved stile has long been used, and I do not wish to be understood as claiming such idea, broadly.

E indicates a pulley, such as is ordinarily used to guide window-sash cords; but in this instance it is placed at a point about on a line with the meeting-rails of the two sash, as shown in Fig. 1, said pulley E being incased and journaled in a sheath or casing, F. The sheath or casing F, secured to the window-jamb *c* by

screws or otherwise, is provided with one or more rearwardly-extending arms, *d d*, in each of which is journaled a preferably flat-faced pulley, *e*; or in some cases the rollers may be dispensed with and a strip or strips, *e'*, riveted or formed upon the arms *d*, as clearly shown in Figs. 4 to 7.

G indicates the weight, advisably rectangular in form and provided on opposite faces with grooves *f* and *g*, the former to receive the cord *b* and the edge of pulley E, and the other to receive the guiding devices *e* or *e'*, as clearly indicated in Figs. 2, 4, and 6. On the opposite side of the window-casing, on a line with pulley E, is another wheel or pulley, *h*, carried in a box or casing, *i*, seated in the jamb, so that the periphery of the pulley or wheel just comes in contact with the unbored stile of the sash. I prefer, however, that the pulley *h* should be mounted upon the sash and move with the latter against the jamb, as all moving parts are then carried by and move with the sash. Such an arrangement I have shown in Fig. 1 applied to the lower right-hand corner of the lower sash, D. The pulley *h* is not essential and may be omitted. From this construction it follows that the sash-cords are not in sight, that the sash-cord guides are also out of view, and that the device is positive in its operation. The guiding devices keep the weight in its proper position, and the latter must be of such length as to remain always under at least one of the pulleys *e* or the strip *e'*, as the case may be. The guiding-pulleys need not necessarily be flat-faced, but may be semicircular, V-shaped, or of any other form that will serve to guide the weight properly. The guiding-pulleys may have a grooved face, and the weight a rib or projection to run in said grooved face, this being simply a reversal of the plan shown. It will also be seen that the form of the strips or bars *e'* may be varied, as desired. They may be rectangular, triangular, or rounded in cross-section, the weights being correspondingly grooved. In Figs. 6 and 7 the weight is grooved on its sides instead of its face, in which case the arms *d* pass about either side of the weight, so as to allow the strips *e'* to enter the grooves. The weights may be made of any suitable material; and it is also obvious that instead of the cords, chains

can be employed with equal advantage. In the drawings I have shown the weight applied to one side of the sash only, and while this plan will be found to work well with small, light sash it will in many cases be found desirable to employ two weights—one on each side. The upper sash, C, will be suspended in the same manner as the lower sash, except the pulley E will be near the lower corner of the upper sash, and may have the weights on each side, or on one side only.

One of the advantages arising from my construction is that guiding-strips or parting-bead *j* need not be used on the face of the jambs to guide the sash, the pulley E projecting slightly into and serving to steady and guide the sash in their movement. It may in some cases be advisable to use the strips *j* up to the top of the lower sash on the inside to prevent the sash from being forced out of their place at night, similar strips being used on the outside of the upper sash. When it is desired to remove a sash, it is only necessary to raise the latter up to the top of the casing, when, being above the inside guiding-strips, it can be turned and the cord easily removed from the sash, the cord when thus released remaining in position as the weight is at its lowest limit of movement. Another great advantage is that all the parts are united and attached to the casing F, which is screwed to the inside of the door B' of the weight-chamber B, so that when the door is removed the weight and all its guides come out with it, so that repairs can be made with great ease. The plan shown in Figs. 4, 5, 6, and 7 will be preferred in some cases on account of its cheapness, requiring less metal and work. Instead of having two arms, *d*, as shown in Fig. 4, one arm only need be used, as clearly indicated in Fig. 6.

Having thus described my invention, what I claim is—

1. In a sash-balance, the combination of the following elements: a window-casing having a weight-chamber at its side, a pulley mounted in the window-jamb near the top of the sash, a casing for said pulley provided on its rear with a guide, a vertically-movable weight guided by the latter, and a chain or cord attached to the lower end of the sash and to the weight and passing over the pulley in the jamb.

2. In a sash-balance, the combination of a window-framing, a sash, a cord therefor, and a weight grooved on its front face to receive the sash-cord.

3. In a sash-balance, the combination of a window-framing, a sash, a cord therefor, a grooved weight, and a cord-guide-pulley casing having the cord-pulley and the weight-guide.

4. In combination with a window-sash and its grooved weight, the herein-described sash-cord guide, consisting of sheath F, pulley E, mounted therein, rearwardly-extending arms *d*, and wheels *e*, carried by said arms.

5. In a sash-balance, the combination, with a window-casing, of a sash, a suspending-cord therefor, a weight attached to said cord and grooved longitudinally on its front and rear faces, and a guide secured to the casing and bearing against the rear face of the grooved weight.

6. In a sash-balance, the combination, with a window-casing, of a sash sliding therein, a cord attached to the latter, a cord-pulley casing mounted in the window-casing and carrying at its rear a guide for the weight, and a grooved weight secured at its lower end to the sash-cord and moving in contact with said guide.

OSCAR BEEBE.

Witnesses:

SAMUEL MITCHELL,
ORMUS D. BEEBE.