

C.R.RAND.

Attachm.<sup>t</sup> for Balanced Sash.

PATENTED JUL 18 1871

117205

Fig 1

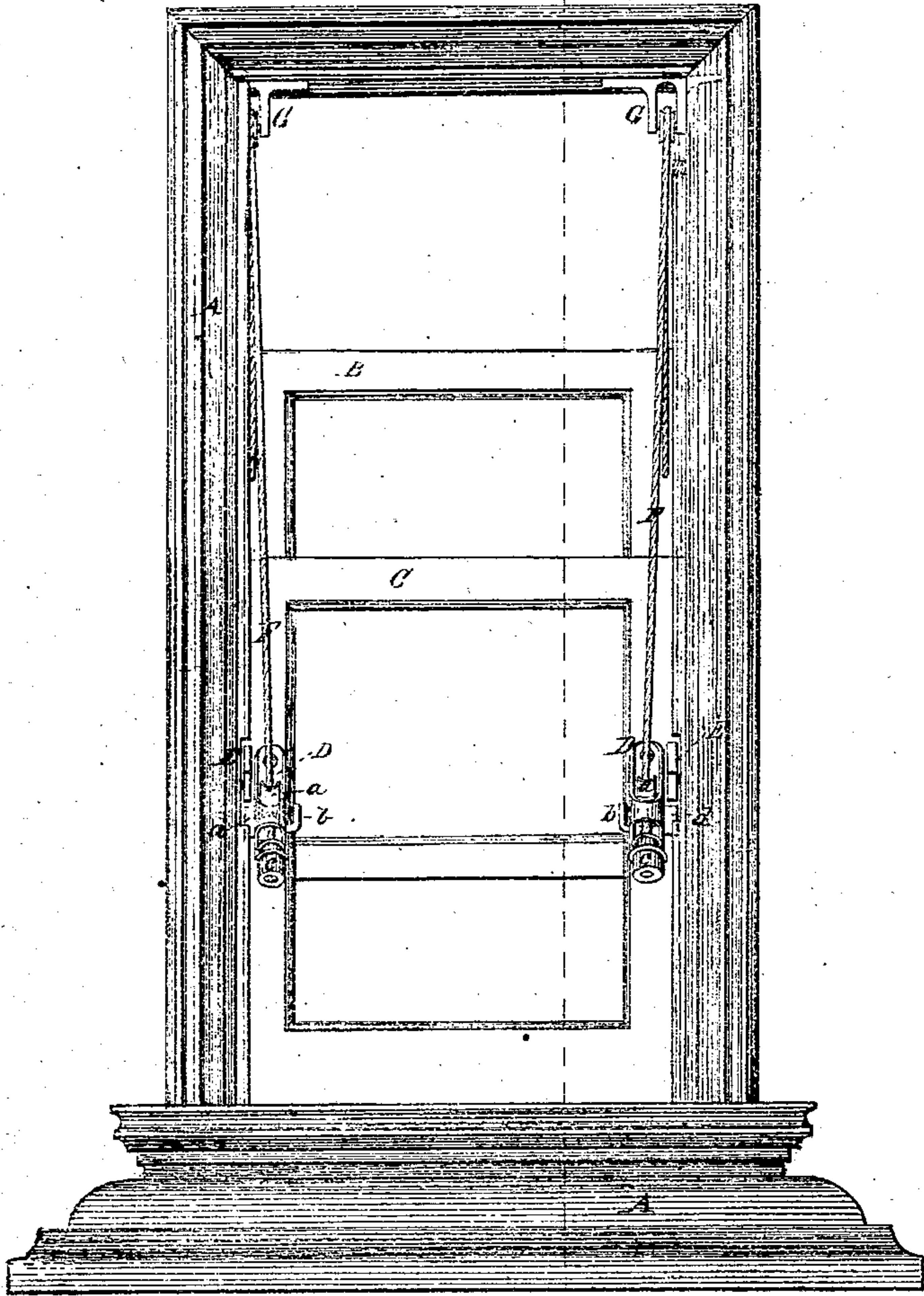


Fig 2

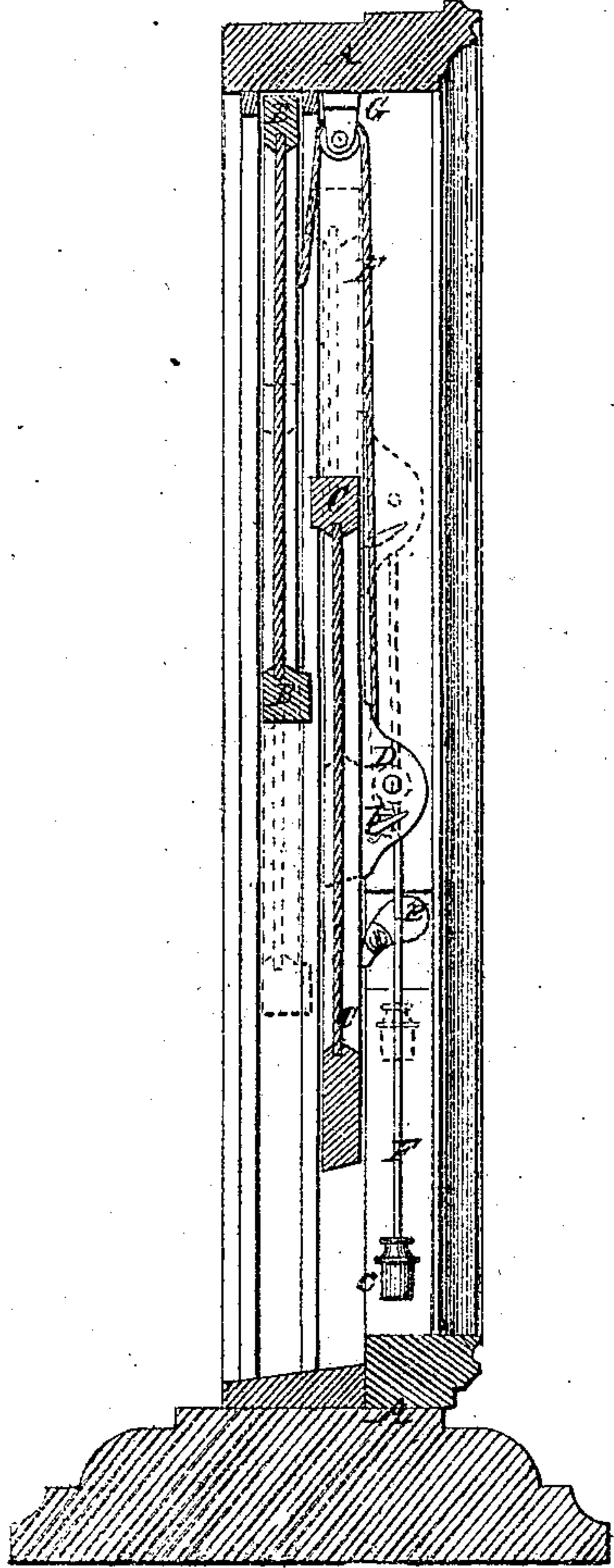


Fig 3

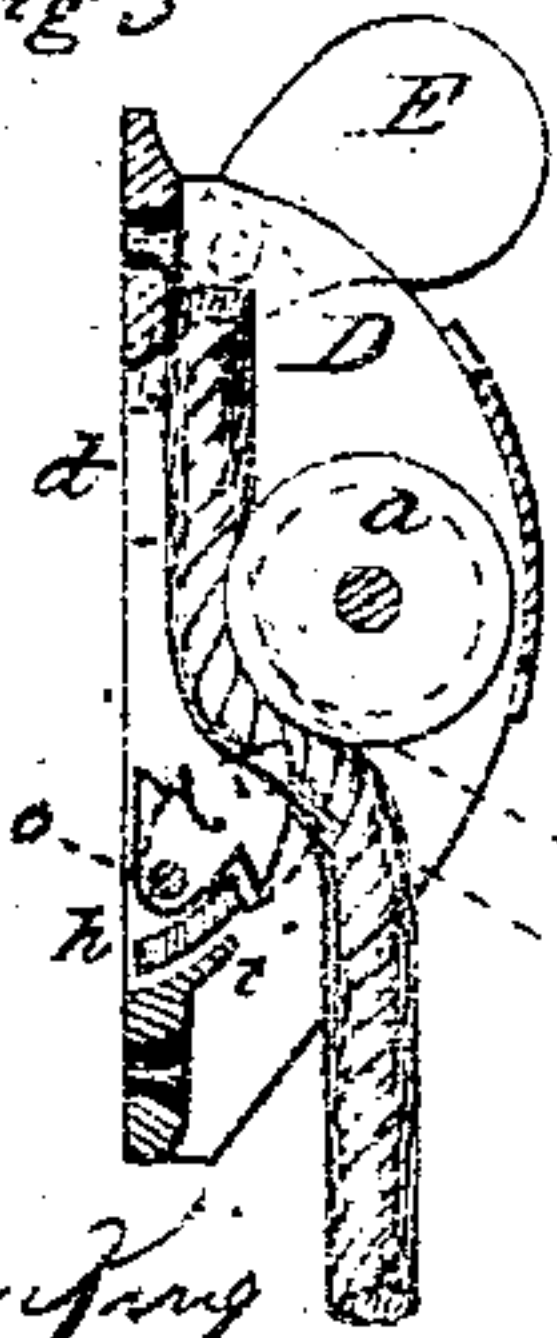


Fig 4

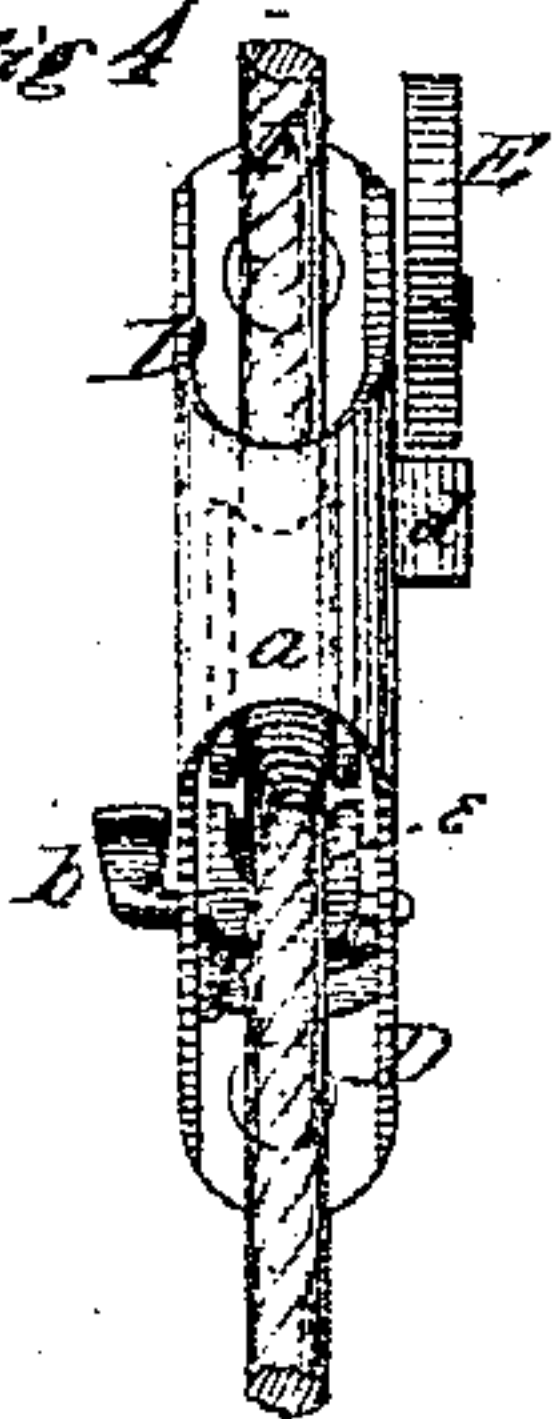
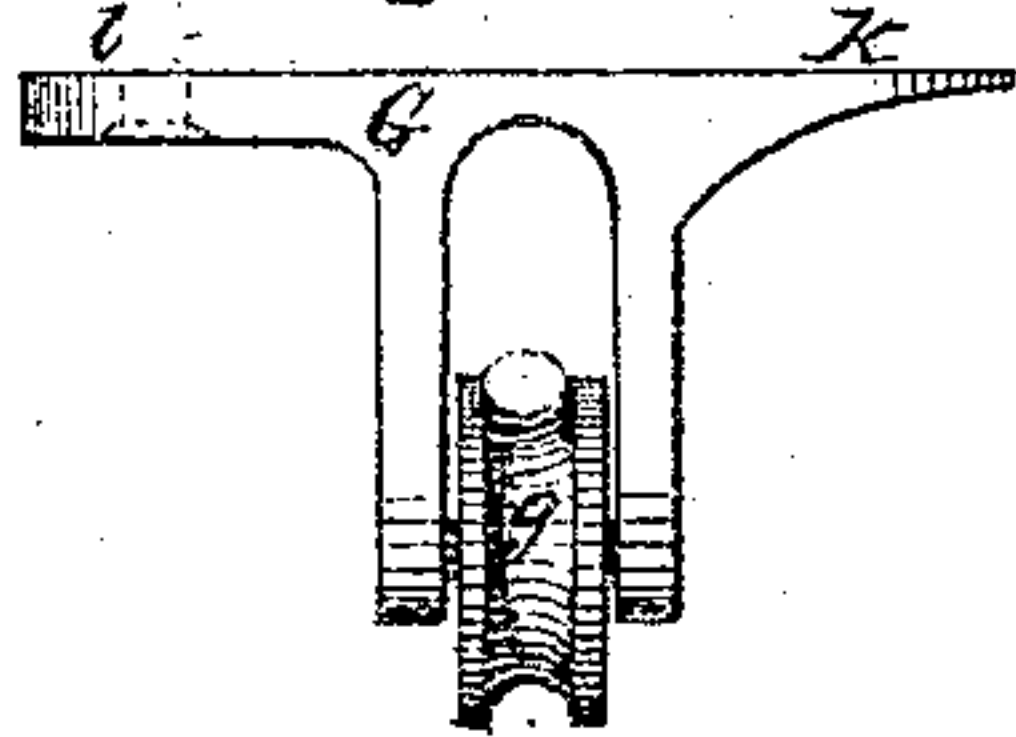


Fig 5



Inventor.

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Witnesses

Harry J. King  
Phil. F. Dodge



# UNITED STATES PATENT OFFICE.

CHARLES R. RAND, OF DUBUQUE, IOWA.

## IMPROVEMENT IN CLAMPING DEVICES FOR SASH-CORDS.

Specification forming part of Letters Patent No. 117,205, dated July 18, 1871.

*To all whom it may concern:*

Be it known that I, CHARLES R. RAND, of Dubuque, in the county of Dubuque and State of Iowa, have invented certain Improvements in Devices for Balanced Sash, of which the following is a specification, reference being had to the accompanying drawing.

My invention consists in an improved clamping device for holding and adjusting cords of window-sash, as hereinafter explained.

Figure 1 is a front elevation of a window having my improvements applied thereto. Fig. 2 is a vertical section of the same on the line *x x* of Fig. 1; and Figs. 3, 4, and 5 are views of the devices detached and shown more in detail.

Various plans have been devised for dispensing with the weights ordinarily used for balancing the sash of windows, and among others is that of balancing one sash by the weight of the other, the two being connected by a cord passing over a pulley at the top. As usually arranged, neither sash can be raised or lowered independent of the other, and the cords and fixtures are generally so applied as to require more or less of the frame or sash to be cut away or altered in order to have the sash operate.

My invention has for its special object the remedying of these difficulties by the construction of devices that can be applied to any ordinary window without alteration of the frame or sash, and which, at the same time, are so simple that they can be readily applied by any ordinary person, and will also permit of the lower sash being raised without lowering the upper, or the upper one lowered without raising the lower one.

The sash are suspended by cords which pass over pulleys secured in the upper corners of the frame and have one end attached to the upper sash, while the other end of the cord is attached to the lower sash by means of the clamp, as represented in the drawing, each sash being thus balanced by the other, thereby dispensing with the weights ordinarily used. The clamp, which is shown in front elevation in Fig. 4 and in longitudinal section in Fig. 3, consists of a metal frame, *D*, cast with a projection, *d*, on one side, as shown in Fig. 4, to form a stop, over which a catch, *E*, engages to fasten the sash down, the catch *E* being pivoted to the side of the window-frame in an inclined position, as shown in Fig. 2, with its heavier end uppermost and outward,

whereby it is caused to lock over the stop *d* automatically as the latter is brought down past its lower point. Within this frame *D* I mount a pulley, *a*, as represented in Fig. 3, and below this pulley I pivot a cam, *e*, which has its face grooved and so set as to clasp the cord *F*, when inserted, firmly between it and the lower edge of the pulley *a*, as shown in Figs. 3 and 4. A small transverse shoulder or ledge, *i*, is made across the inner lower portion of the frame *D*, between which and the under side of the cam *e*, a rubber spring, *h*, is inserted, to press the cam up and keep it in contact with the cord. The journal *o* of this cam extends out through one side of the frame *D*, where it is bent at right angles to form a handle, *b*, by which to operate or release the cam from its hold on the cord. This clamp I attach to the front of the lower sash at any desired height, one on each side, as shown in Fig. 1. I then attach one end of a cord permanently to the inner face of the upper sash, and pass it over the pulley in the corner above, and pass its free end through the clamp on the lower sash, the cord being passed between the pulley *a* and the cam *e*, as represented in Figs. 1, 3, and 4, there being a similar cord applied at each side of the window, as shown in Fig. 1. The cords *F* are permitted to extend some distance below the clamps, and have tassels or knobs *c* attached to their lower ends to prevent their being drawn through the clamp and becoming accidentally released.

When thus arranged it will be seen that the sash balance each other, and that by raising the lower one the upper one is lowered. It will also be seen that, by releasing the cams *e* from the cords, the upper sash may be lowered to any desired extent without raising the lower one, and that, by thus adjusting the cords, the lower sash can be raised a short distance and the upper one lowered to a much greater extent at the same time. When the lower sash is down it is held securely in place by the catches *E* engaging over the stops *d*, which prevent the upper sash also from being pulled down. When thus locked, if it be desired to close the upper sash entirely it is only necessary to take hold of the lower end of the cords and pull them down until the upper sash is raised to its position, when the cams *e* lock the cords fast and thus secure both upper and lower sash in their proper relative position.

The entire apparatus is extremely simple, cheap, and efficient, and, while enabling the sash to be balanced each by the other, also permits any desired adjustment of one to the other.

Having thus fully described my invention, what I claim is—

The clamp, consisting of the frame D having the pulley *a* arranged in its upper part, with the

cam E having the spring and thumb-piece or lever *b* arranged to operate the same, substantially as set forth.

CHARLES R. RAND.

Witnesses:

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