

(No Model.)

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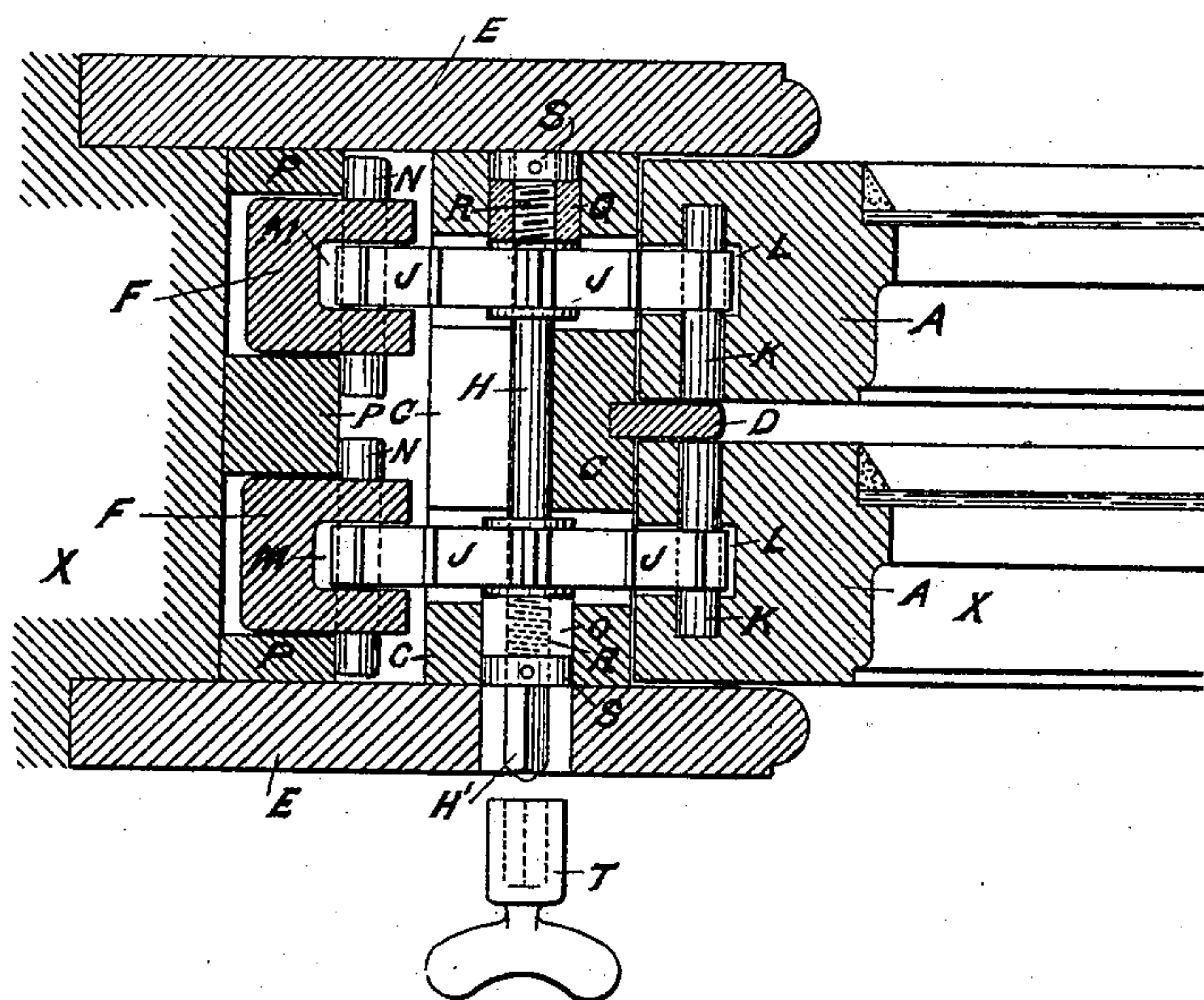
H. JONES.

SASH BALANCING DEVICE.

No. 321,035.

Patented June 30, 1885.

FIG. 1.



WITNESSES
Frederick John Cheesbrough
Ernest R. Pyott

INVENTOR
H. Jones

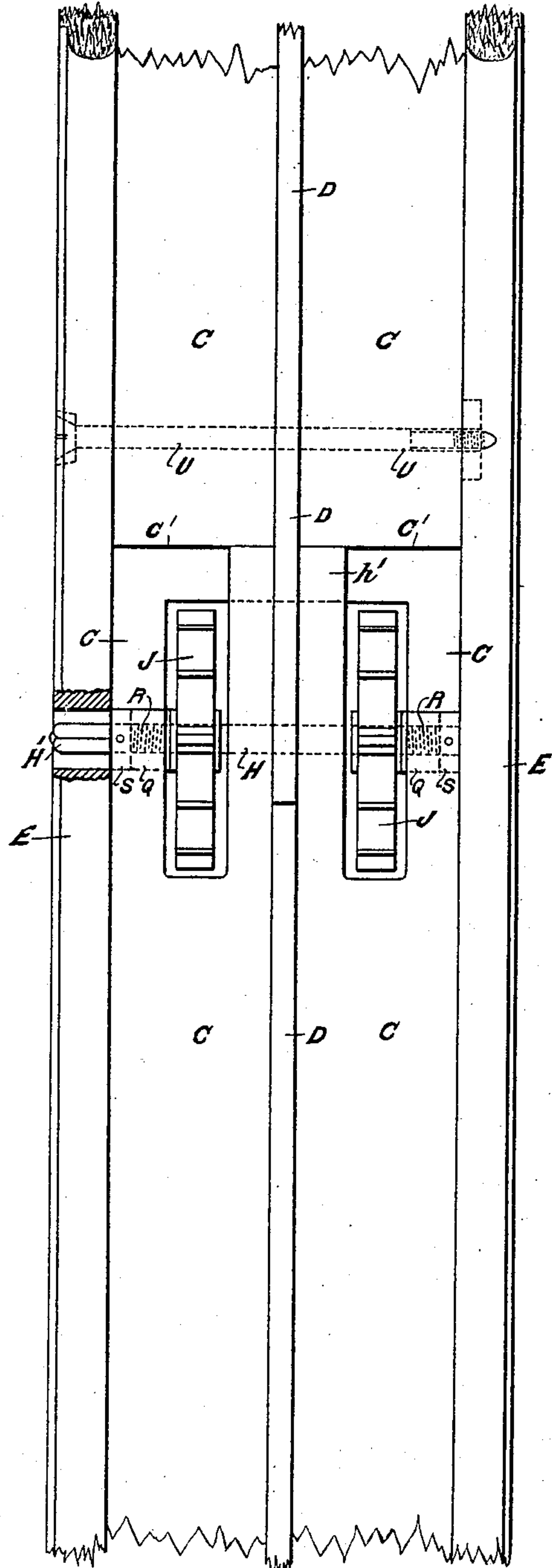
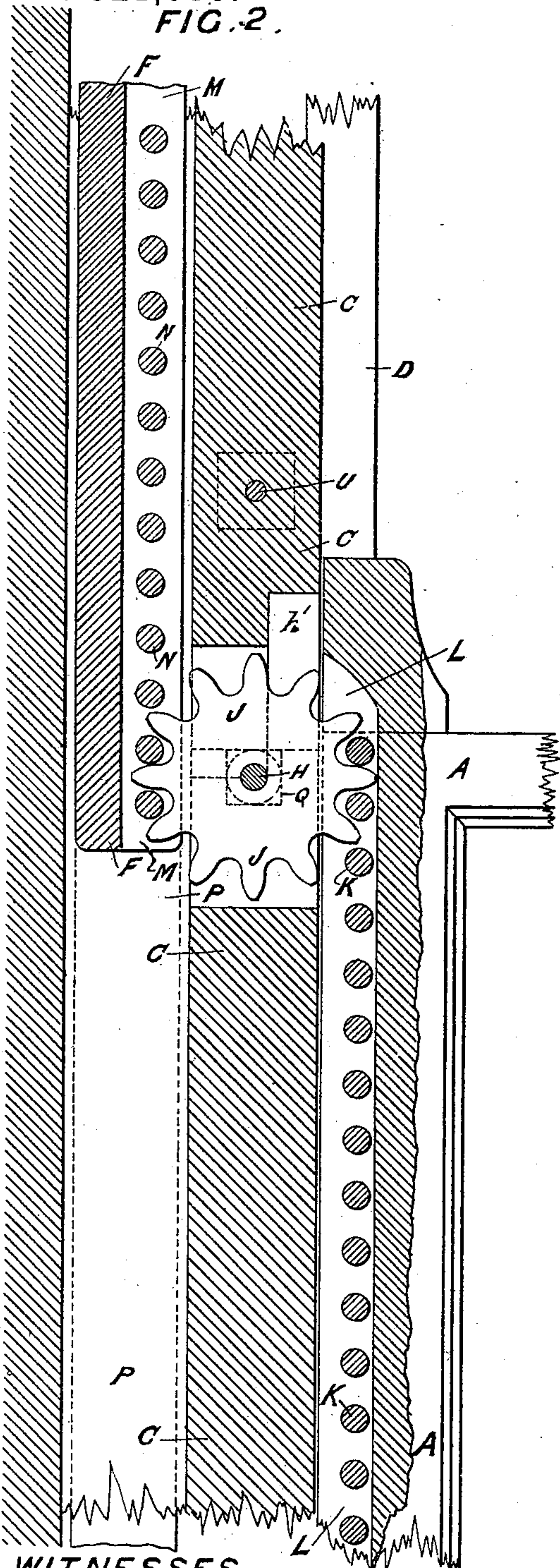
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FIG. 2.

FIG. 3.



WITNESSES
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(No Model.)

3 Sheets—Sheet 3.

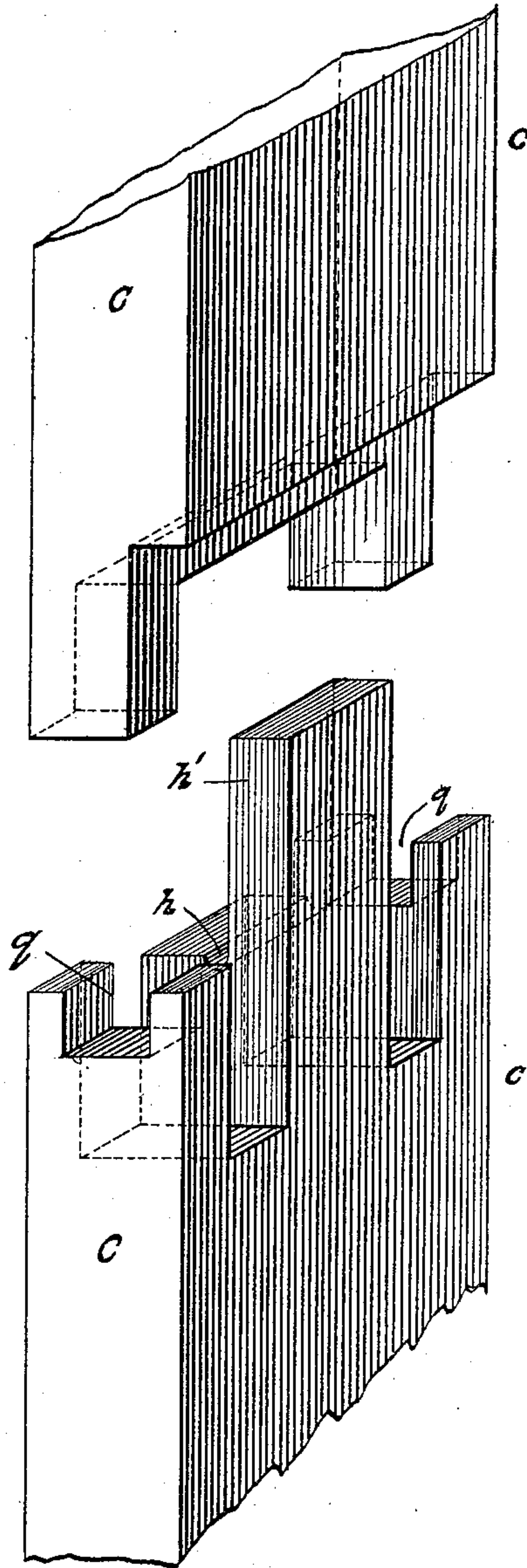
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FIG. 4.



WITNESSES

Frederick John Chesbrough
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INVENTOR

Hugh Jones

UNITED STATES PATENT OFFICE.

HUGH JONES, OF LIVERPOOL, COUNTY OF LANCASTER, ENGLAND, ASSIGNOR
TO THE PATENT WINDOW FITTINGS COMPANY, OF SAME PLACE.

SASH-BALANCING DEVICE.

SPECIFICATION forming part of Letters Patent No. 321,035, dated June 30, 1885.

Application filed October 22, 1884. (No model.) Patented in England May 29, 1884, No. 8,373.

To all whom it may concern:

Be it known that I, HUGH JONES, manager of the Patent Window Fittings Company, (limited,) a subject of the Queen of Great Britain, and a resident of the city of Liverpool, in the county of Lancaster, in that part of the United Kingdom of Great Britain and Ireland called England, have invented certain new and useful Improvements in Apparatus for Balancing and Securing Sliding Window-Sashes, (for which I have applied for Letters Patent for Great Britain, No. 8,373, bearing date May 29, 1884; and I do hereby declare that the following is a description of my invention in such full, clear, concise, and exact terms as to enable any one skilled in the arts to which it appertains or is most nearly connected to put into practice and use the same, reference being had to the accompanying sheets of drawings, and to the letters and figures of reference marked thereon, like letters and figures being used to denote the same or corresponding parts throughout the various views in the drawings.

This invention relates to that class of sliding window-sashes which are balanced by weighted racks and pinions, and provides means of securing sashes in any open or in a closed position, means for guiding the sash-weights and keeping them up to the pinions, and means for gaining access to the weights and pinions.

This invention, therefore, consists in the novel construction and combination of parts, as will be hereinafter more fully described, and specifically pointed out in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan showing the improvements according to this invention applied to a window-sash. Fig. 2 is an elevation in section through the line X X, Fig. 1. Fig. 3 is a front view of Fig. 2. Fig. 4 is a perspective view of divided stile-board.

Referring to the drawings, A are the sashes of the window. C is the stile-board of the window. D is the separating-bar of the window-sashes A. E is the window-sash frame. F are the weights. H is a spindle, which carries the pinions J.

The racks in the window sash are formed as follows: A longitudinal groove, L, is cut in the edge of the sash, and wooden pins K are driven into the window sash and through the groove L, and so form the rack.

The racks in the weights are made as follows: The weights F are formed with a longitudinal groove, M, and wooden pins N are driven through the weights and through the groove M, so forming the rack. The pins N are made to project at each side of the weight F, so as to bear against bars P, provided for the purpose, and which are made to guide the weight F. The pinions J take into the teeth K and N of the window-sash A and weight F, respectively. The pinions J run loose on the spindle H, and on the spindle H and outside each of the wheels J there are provided rectangular nuts Q, which work on right and left hand screw-threads R, cut on the spindle H. The nuts Q bear and work in a rectangular seat, q, cut out of the top of the lower portion of the stile-board C. The spindle H is borne at its center portion—namely, between the pinions J; also by the stile-board C, at h, which is cut away at the back, but carried up in front at h' to meet the upper portion of the stile-board C. On the spindle H, and outside the nuts Q, are the washers S, fixed on the spindle H. The inside end of the spindle H is square at H' to receive a key, T, which is used for fastening and unfastening the sashes.

To fasten the sashes, the key T is placed on the square portion H' of the spindle H, and the spindle H is turned by the key T, so as to bring the nuts Q toward each other, and so press the pinions J against the sides of the racks of the sashes and the weights, thereby causing the sashes A to bind on the separating-bar D and the weights F to bind on the center bar, P.

To free the sashes, the spindle H is turned back until sashes and weights become released.

To enable the weights F, pinions J, and the spindle H to be placed in position and to be accessible for repairs or other purposes without removing the sashes and disturbing the window-frame, I divide the stile-boards C at

C', so that when both sashes are at the bottom of the window-frame the upper portion of the stile-board C, with the upper portion of the separating-bar D, can be removed without
5 disturbing the lower portions. To secure the upper portion in position, I use bolts U, one of which is placed as shown in the drawings, and others being interspaced above, according to the size of the window. By withdrawing
10 the bolts U the upper portion of the stile-board C can be removed, and after removal access is had to the weights and mechanism.

The advantages attendant upon constructing window-sashes balanced by weighted racks
15 and pinions provided with my improvements are, that the teeth of the racks being constructed of wood and in the manner described, the action of raising and lowering is noiseless, whereas racks and pinions as previously
20 used were provided with metal teeth and their operation created objectionable noise. My construction of weight-rack also provides a guide for the weight and a means of keeping the weight up to the pinion. My
25 improved means for securing the sashes in any open or in a closed position provides a simple and effective method of fastening the sashes and of preventing the rattling of the sashes caused by wind or other causes. By dividing
30 and constructing the stile-boards as herein described, the weights and pinions and fast-

ening mechanism can be readily placed in position or removed while the window-sashes are in their places.

I am aware that weighted racks and pinions
35 have been used prior to my invention as a means for balancing window-sashes, and that keys have been inserted in various ways to lock the racks and pinions, and so the sashes, and I do not lay any claim to the use of these
40 mechanisms; but

What I claim as my invention is—

1. A window-sash having a rack on its edge formed by a groove, L, and wooden teeth K, in combination with a metal pinion, J, and a
45 weighted rack, F, provided with a groove, M, and wooden teeth N, which project and form a guide with the bars P for the weight, substantially as and for the purposes set forth.

2. The combination of the spindle H, having
50 a right-and-left-hand screw, R, and nuts Q, whereby through the pinions J the sashes A, and also the weights M, are caused to bind against the separating-bar D and center guide, P, substantially as set forth, and as shown in
55 the drawings hereto annexed.

HUGH JONES.

Witnesses:

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