

(No Model.)

W. S. PATTIN.

SASH BALANCE.

No. 350,695.

Patented Oct. 12, 1886.

Fig. 1

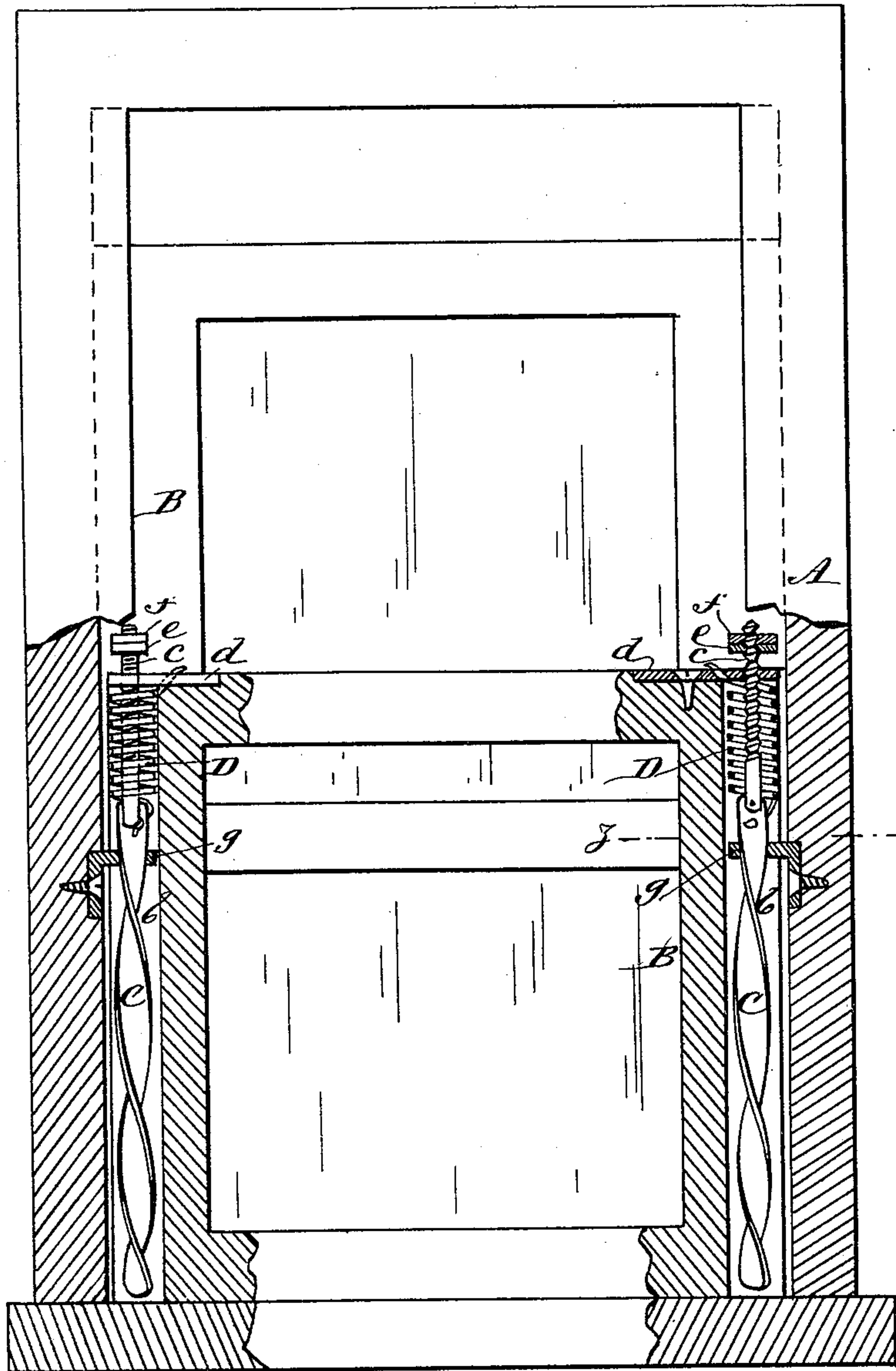


Fig. 2

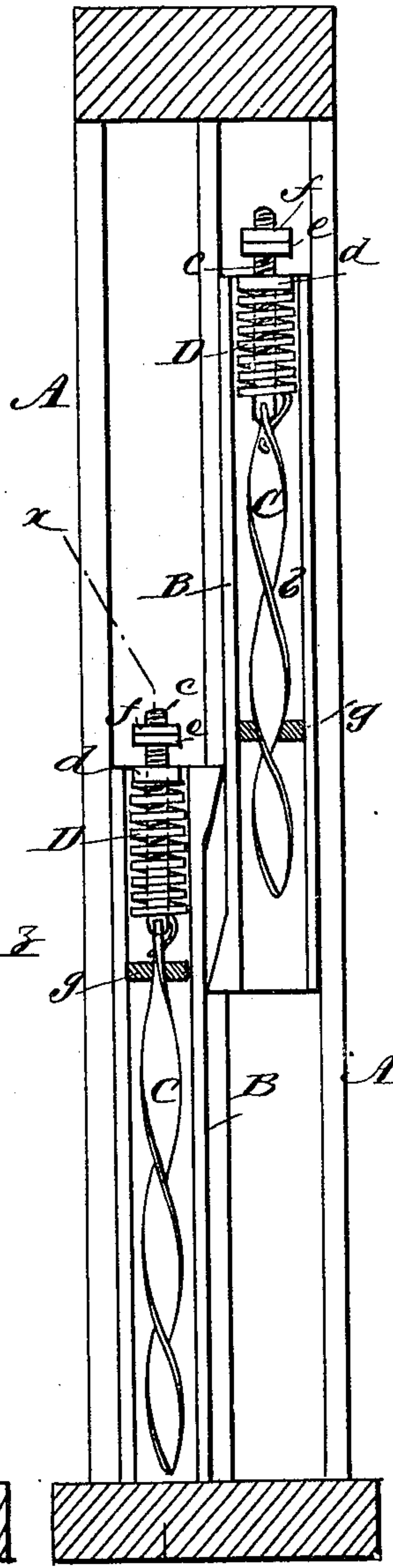
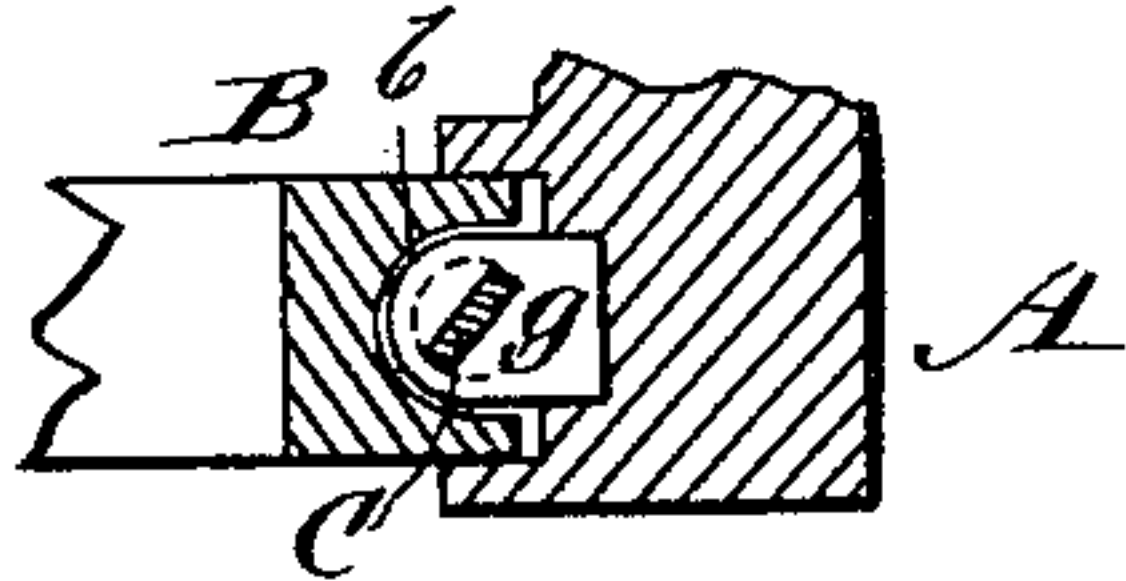


Fig. 3



WITNESSES:

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WILLIAM S. PATTIN, OF PORTSMOUTH, OHIO.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 350,695, dated October 12, 1886.

Application filed April 17, 1886. Serial No. 199,191. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. PATTIN, of Portsmouth, in the county of Scioto and State of Ohio, have invented a new and useful Improvement in Balancing Devices for Window-Sashes, of which the following is a full, clear, and exact description.

This invention consists in a certain combination of inclined plane or screw and spring applied to a rising and falling window-sash for operation within the window frame or casing, substantially as hereinafter described, whereby box-frames with weight and cords to balance the sash are dispensed with, the sash can be taken out with little or no trouble, and the balancing devices can be applied to a common plank frame.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a partly-sectional face view of a window-frame fitted with upper and lower sliding sashes having my invention applied, the section being taken on the line *x x* in Fig. 2. Fig. 2 is a vertical section upon the line *y y* in Fig. 1, and Fig. 3 a horizontal section in part upon the line *z z* in Fig. 1.

A indicates the window-frame, and B B the upper and lower sliding sashes therein.

Arranged longitudinally within an upright groove, *b*, in either side of either sash is a twisted blade, inclined plane, or screw, C, and an attached spiral spring, D, above the upper end thereof, with a regulating-screw, *e*, secured to the top of the twisted blade, and passing through a keeper, *d*, on top of the sash, also provided with adjusting and jam nuts *e f*. The twisted blade C passes through a nut or partially-threaded eye-plate, *g*, secured to the window-frame and projecting within the groove *b* of the sash.

The twisted blade C and spring D are so constructed and arranged that in the closing of the sash the twisted blade C, in passing through the nut or eye-plate *g*, will be turned in a suitable direction to turn and compress the spring D. This will induce a tendency, by the passage of the twisted blade through the fixed eye-plate *g*, to raise the sash, which effort will be counteracted by the weight of the sash, thus keeping the sash balanced. As the sash is lifted by hand, the twisted blade C will

be turned in a reverse direction, and the spring D will be relaxed, but will still have a tendency to raise or balance the sash, and as a set-off to the weakening action of the spring the twist of the blade C is made irregular, the twist increasing or quickening from the upper toward the lower end of the blade, and the screw-thread-like opening in the eye-plate *g*, through which the blade works, being made sufficiently free or loose to accommodate the irregularities in the twist of the blade.

The spring D may be regulated by turning it at its lower end to adapt it to the weight of the sash, and then turning the jam-nut of the regulating-screw *e* down on the keeper *d*, to hold the spring so that it will carry the weight required.

Both sides of either sash are similarly fitted, and the twisted blades C should be so arranged that they will readily enter the nut or eye-plate *g*, and so that when the sash is fitted to the window-frame it will work up and down without catching on the nut or eye-plate, but pass up and down through it, and be readily turned and wind or unwind the springs during such passage, the springs being attached at their one end to the twisted blades and at their other ends to the keepers *d*.

I am aware that it is not new to employ in connection with a window frame and sash a screw mounted in suitable bearings and engaging with a nut, which screw is connected with a tension-spring.

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

1. In balancing devices for sliding window-sashes, the combination, with the sash and window-frame, of the irregularly-twisted blades C, the springs D, and the threaded eye-plate *g*, substantially as specified.

2. The combination, with the window-frame A and either laterally-grooved sash B, of the fixed threaded eye-plate *g* and keepers *d*, the irregularly-twisted blades C, the springs D, the adjusting-screws *e*, and the nuts *e f*, essentially as and for the purposes herein set forth.

WILLIAM S. PATTIN.

Witnesses:

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