No. 666,054. Patented Jan. 15, 1901.

A. S. J. HAYGOOD.

SASH BALANCE.

(Application filed Aug. 29, 1900.)

(No Model.)

Fig. 1.

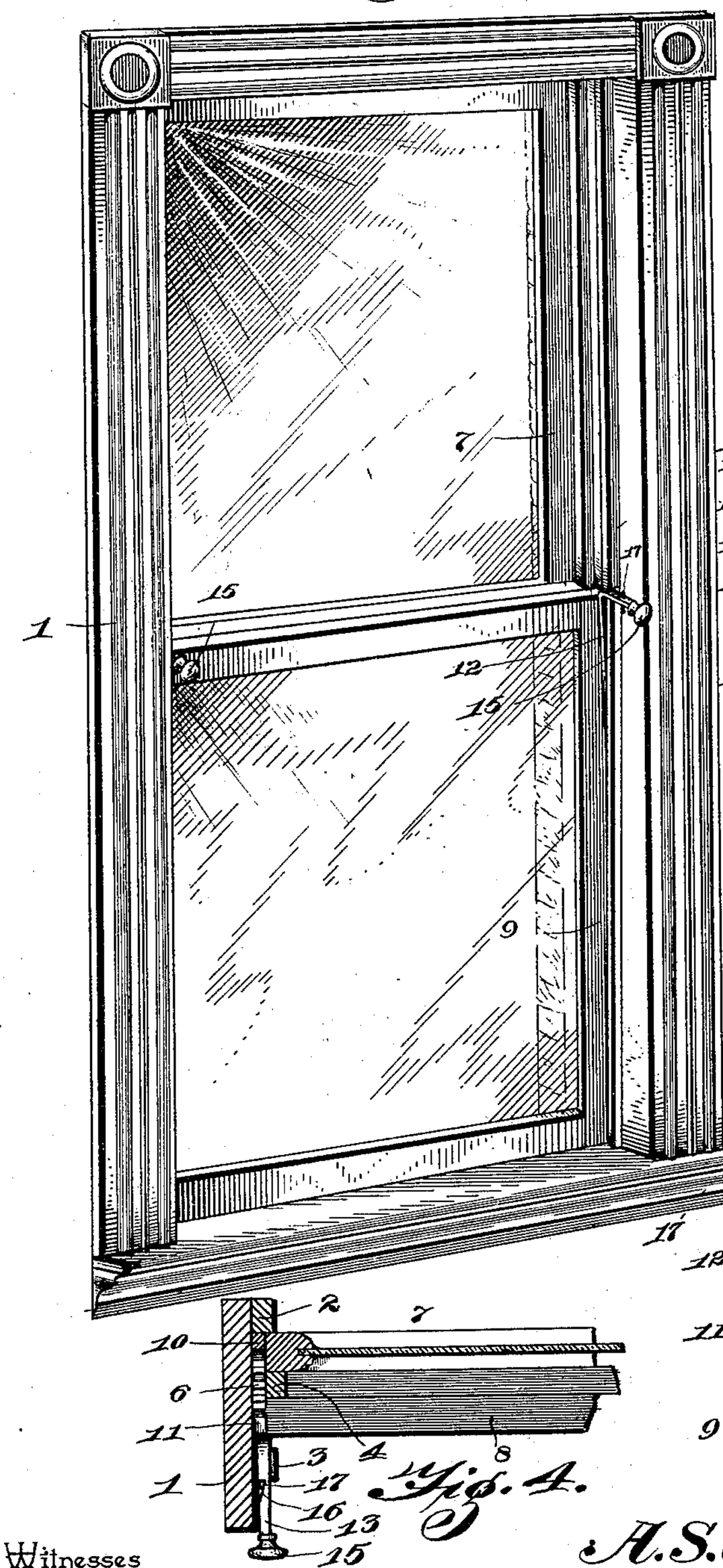

Fig. 2.

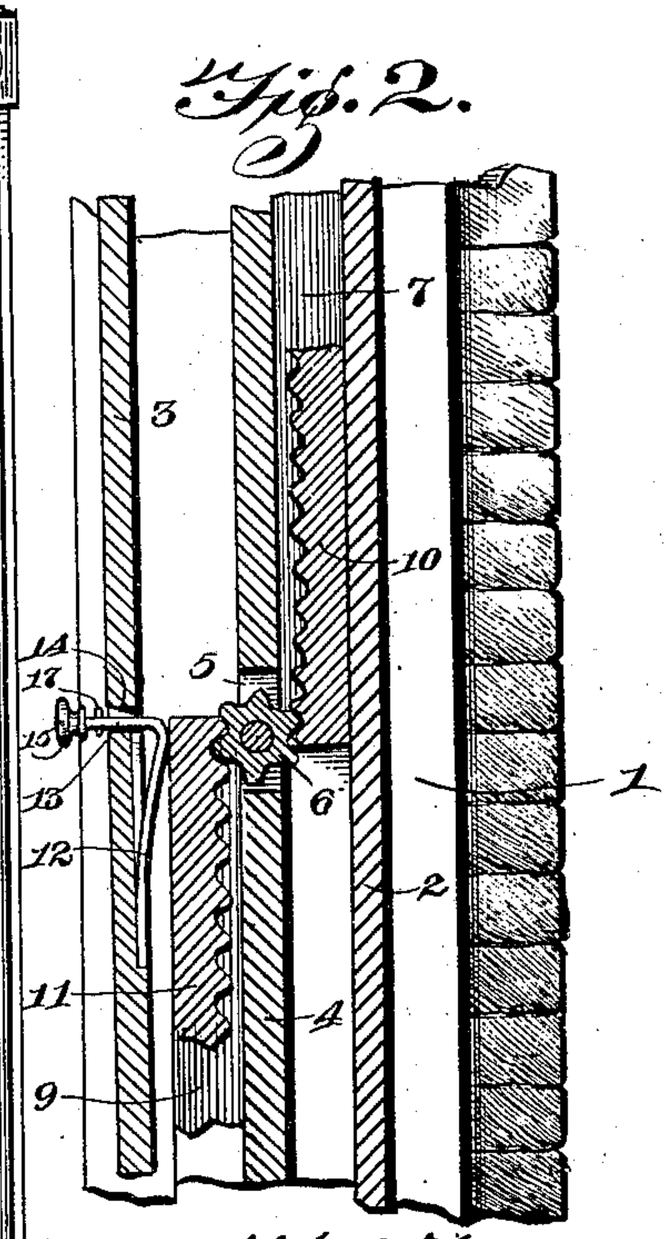

Fig. 3.

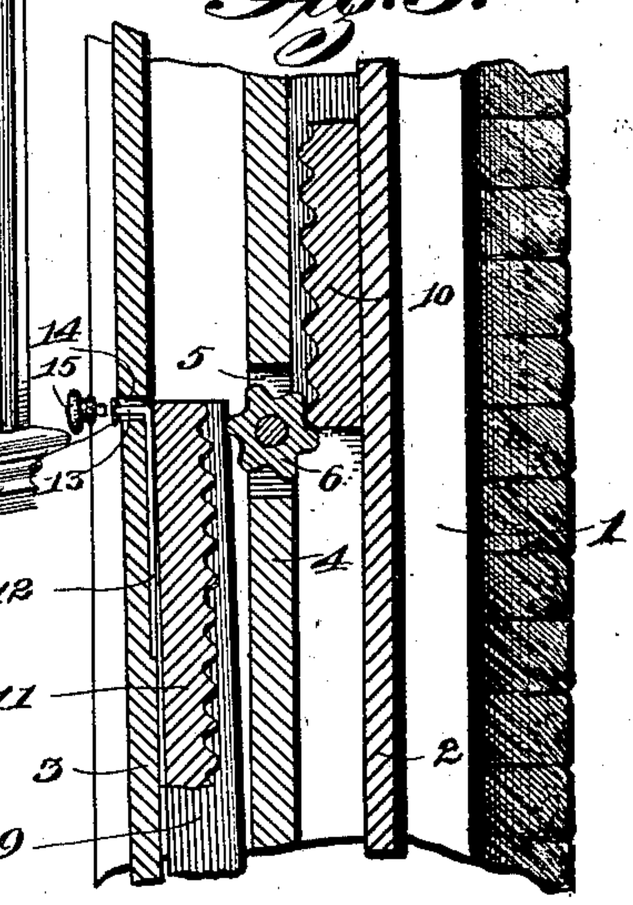

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

ALBERT S. J. HAYGOOD, OF HOLDENVILLE, INDIAN TERRITORY.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 666,054, dated January 15, 1901.

Application filed August 29, 1900. Serial No. 28,418. (No model.)

To all whom it may concern:

Be it known that I, ALBERT S. J. HAYGOOD, a citizen of the United States, residing at Holdenville, Creek Nation, Indian Territory, have invented a new and useful Window-Sash Balance, of which the following is a specification.

This invention relates to means for operating and balancing window-sash; and the object in view is to provide a simple and reliable mechanism in conjunction with the upper and lower sash and at an intermediate point and operating to open both sash by the actuation of either one, preferably the lower one, and adjustable means in connection with the lower sash for arranging the latter for individual operation, the mechanism being entirely concealed from exterior view and the use of the same dispensing with all cords, pulleys, weights, and the like.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of a window-frame looking toward the inside thereof and embodying the features of the improvement, this view illustrating the concealment of all the parts. Fig. 2 is an enlarged section through the side of the frame, showing the racks on the sash, the intermediate pinion, and means for causing the two sash to unitedly operate, the parts in this view being adjusted to produce a united operation of the sash. Fig. 3 is a view similar to Fig. 2, showing the parts arranged for individual operation of the lower sash. Fig. 4 is a horizontal section through one side of the frame in the plane of the pinion.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a window-frame of ordinary form of construction, having the usual outside and inside stops 2 and 3 and the parting-bead 4. The improved mechanism can be used in connection with either one or both sides of the frame, but, as shown, is preferably applied to both sides, so as to better balance the sash and avoid binding action of the same, which might result if the mechanism were used on one side only. Within a recess 5, centrally located in the parting-bead 4 on each side of the frame, is a pinion 6, arranged in a plane at a right angle to the direction of movement of the upper and lower sash 7 and 9. The pinion 6 is free to rotate in either direction and is adapted to mesh with racks 10 and 11, secured, respectively, to the side stiles of the sash 7 and 9, the racks being applied directly against the outer ends of said stiles and freely movable with said portions of the sash within the grooves of the frame between the outside and inside stops and the parting-bead. The teeth of the rack 10 project inwardly and are always in mesh with the pinion, and the rack 11 has its teeth projecting outwardly and adjustable with the lower sash 9 toward the pinion, so that the teeth thereof may be cleared from those of the said pinion. As clearly shown in Figs. 2 and 3, the racks are not as wide as the ends of the sash-stiles to which they are applied to obtain the desirable concealment thereof from exterior view, and the difference in distance is taken up by enlarging the pinion diametrically to cause the teeth thereof to always be in the plane of mesh with those of the racks.

The lower sash at each side has an operating device therefor, which consists of spring 12, secured at its lower extremity against the inner side of the inside stop 3 and having an upper right-angular extremity 13 freely passing through a slot 14 in the said inside stop and provided with a knob or button 15 at its inner free end. The outer edge of the right-angular extremity inside of the inside stop is formed with an angular notch 16 to have locking engagement with a projection 17 on the adjacent portion of the frame. When the spring 12 is in normal position, it rests flat against the outer side of the inside stop, as shown by Fig. 3, and while in such condition the lower sash is free for independent vertical adjustment, because the rack thereof can clear the pinion. When the said spring is pushed outward and locked by the projection 17, it firmly bears on the side stile of the lower sash and throws the rack of the latter into meshing position with the pinion, as clearly shown by Fig. 2, and under this latter arrangement the actuation of the lower

sash will cause the upper sash to move simultaneously, and as the lower sash is raised the upper sash will be lowered, and vice versa.

The same mechanism is applied to both sides of the sash by preference, as before stated, and is fully concealed; but in light frames and sash only one side mechanism of the character set forth may be necessary, and in this event the operation would be precisely the same as that explained in connection with the duplicate provision of said mechanism.

The several devices are easily applied and are of a strong and durable nature, and it is obvious that changes in the form, size, and proportions of the several parts may be resorted to without departing from the principle of the invention.

Having thus described the invention, what is claimed as new is—

1. The combination with a window-frame and upper and lower sash, of a pinion mounted for free rotation in opposite directions in the parting-bead of the frame and arranged in a plane at a right angle to the sash, the said pinion having a continuously-fixed operative position, a rack on the outer end of the side stile of each sash, the teeth of the racks being in the direction of those of the pinion, and means directly engaging and moving the side of one sash to throw the rack thereof out of the plane of mesh with the said pinion.

2. The combination with a window-frame and upper and lower sash, of a pinion mounted for free rotation in opposite directions in the parting-bead of the frame and arranged in a plane at a right angle to the sash, a rack on the outer end of the side stile of each sash and having the teeth thereof directed inwardly toward those of the pinion, and a push-spring for engagement with the inner portion of the side stile of the lower sash to cause engagement of the rack of the latter with the said pinion, the said spring when released permitting the rack of the lower sash to run clear of the pinion.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALBERT S. J. HAYGOOD.

Witnesses:
W. W. SCOTT,
J. H. HARRINGTON.