

(No Model.)

A. WEINGAERTNER.
COMBINED BALANCE AND SWINGING SASH.

No. 462,609.

Patented Nov. 3, 1891.

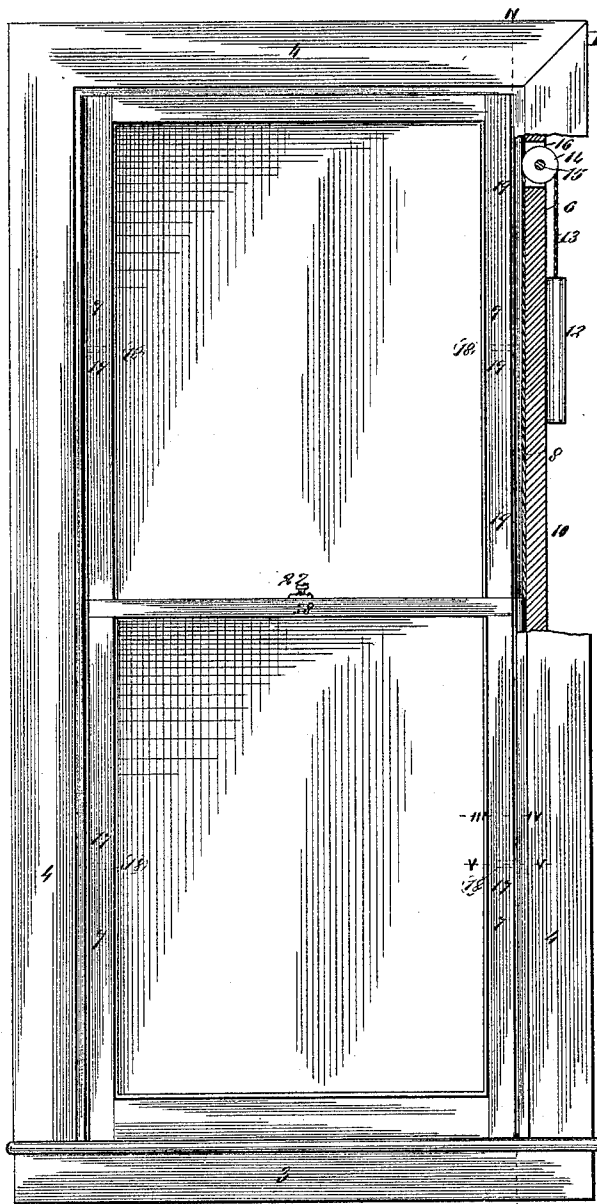


Fig. I.

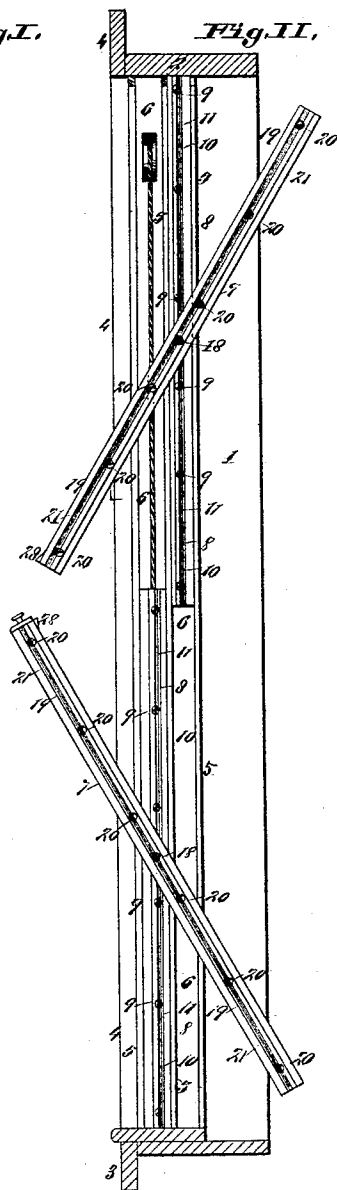


Fig. II.

Fig. III.

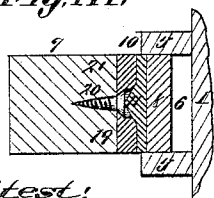


Fig. IV.

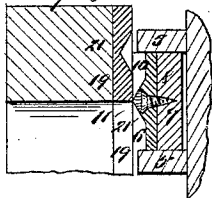
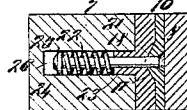


Fig. V.



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UNITED STATES PATENT OFFICE.

ALBERT WEINGAERTNER, OF ST. LOUIS, MISSOURI.

COMBINED BALANCE AND SWINGING SASH.

SPECIFICATION forming part of Letters Patent No. 462,609, dated November 3, 1891.

Application filed May 12, 1891. Serial No. 392,439. (No model.)

To all whom it may concern:

Be it known that I, ALBERT WEINGAERTNER, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Combined Balance and Swinging Sashes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to a window-sash whose side pieces are pivoted to sliding strips, which strips are hung by cords to balance-weights, the said cords running on the usual anti-friction pulleys, and the said strips sliding between the beading-strips, which beading constitutes the sides of the usual channel-grooves, in which, commonly, the sash slides, the said sash being pivoted to said strips, therefore either sliding therewith or turning on their pivots, as the case may be, to open the windows; and the invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a front elevation of the window frame and sash, with part broken away to show the pivot-connected sliding side strips and the balance-weight hanging of said strips, the windows being shut. Fig. II is a side view of the same, with the windows swung partially open on their pivots, and shows the projecting angle-tongues on the sliding balance-strips and the angle-grooves in the metal plates on the edges of the sash, in which angle-grooves said angle-tongues of the strips register when the sash is brought into alignment with the strips. Fig. III is an enlarged horizontal section taken on line III IV, Fig. I, and shows the balance sliding strip in the channel-groove of the window-frame with a wood back and metal face, the projecting angle-tongue on said metal face, and the metal edge plate of the sash with the angle-groove, in which said angle-tongue engages when the sash is in alignment with the balance-strip. Fig. IV is a like view taken on same line, showing the sash out of alignment with the balance-strip and the angle-tongue out of engagement with its angle-groove seat in the metal edge plate of the sash, the balance-strip being pushed back in its channel-groove bed in the window-frame in effecting said disengagement; and Fig. V is an enlarged hori-

zontal section taken on line V V, Fig. I, and shows the pivot-bolt center attachment of the sash, the said bolt passing through an integral socket-lug at the back of the metal edge plate of said sash, against which socket-lug a spiral spring mounted on said bolt is shown in engagement.

Referring to the drawings, 1 represents the stiles, and 2 the cross-bars of the window-frame. 3 is the sill, and 4 the face-boards of said frame. 5 are the beading-strips that are secured to the stiles of said frame and form the sides of the channel-grooves 6, in which the sash 7 usually works.

8 represents sliding balance-strips, made preferably of wood, to which are secured by screws 9 metal face-plates 10, which face-plates are furnished with projecting integral angle-tongues 11, which extend the length of said plates on their face sides. The said sliding balance-strips are housed and slide in said channel-grooves 6, the face edges of which strips come flush with the projecting edges of said beading-strips 5.

12 represent the balance-weights, which are suspended by cords 13, that pass over anti-friction pulleys 14, whose axles 15 have their journal-bearings in the stiles of the window-frames, in the pulley-boxings 16 in which stiles the pulleys work. The fast ends of said cords 13 are secured to the inside of said balance sliding strips, so that the weights 12 balance said strips and the sash 7, to the side bars 17 of which sash the said slide-strips are centrally connected by the pivot-bolts 18.

19 represent the metal edge plates of the sash that are secured thereto by the screws 20, and said metal plates are provided with angle-grooves 21, which extend the length of said plates on their face sides. When the sash is in its vertical position the projecting angle-tongues 11 of the metal plates of the sliding balance-strips fit in the then registering-recesses of the corresponding metal plates on the edges of the sash, in which position they are normally kept by the long pivot-bolts 18 and the spiral springs 22, which are mounted on said bolts. The heads of said long pivot-bolts are countersunk in the back of the metal face-plates 10, pass through perforations in said plate, in the angle-tongues 11, in the metal edge plates 19, and in the in-

tegral collar-tubes 23 at the back of said plates 19. The said bolts also extend sufficiently beyond said collar-tubes 23 and in the spring socket-boxings 24 in the vertical bars 17 of the sash to allow the mounting of said spiral springs 22 on said bolts between said collar-socket tubes and the washers 25, that are held on the end of the bolts by their inner terminal heads 26.

Now it will be seen that when the windows or sash are in their normal vertical position the said spiral springs draw the angle-tongues 11 of the face-plates 10 that are secured to the sliding balance-strips 8 into their angle-groove seats 21, and thus couple said balance sliding strips in alignment with the sash, to which they are pivotally connected. The weights 12, whose suspension-cords hang said sliding strips, exactly balance the weight of said strips in combination with said sash which is pivotally connected thereto, and thus in its normal vertical position the sash is co-operative with said balance sliding strips to raise or lower in alignment therewith. It will also be seen that as the face-plates 10 of said sliding strips are flush with the face projection of the beading-strips 5, the sash can be swung on its spring pivot-bolts 18 either from a closed position of said sash or after said sash has been respectively raised or lowered by sliding in combination with its balance-strips. In either or from either said vertical closed or open position of the sash it can be swung around at any angle, as shown in Fig. II. When said sash is swung on its pivot-bolts the bevel sides of the angle-tongues 11 on the metal face-strips 10, sliding on the bevel sides of their angle-groove seats, easily ride out of the same, the spiral springs 22, that previously held said angle-tongue in its seat, giving way under the pressure to allow said angle-tongue to ride out of its seat, the balance-strips 8 retiring backward in their channel-grooves 6 from the position shown in Fig. III to that shown in Fig. IV.

The common meeting-rail-latch fastening 27, of any suitable construction, secured to the meeting-rails 28 of the sash, may be utilized by throwing the latch to lock the coupling of said meeting-rails, and thus prevent the sash from swinging open on its pivots when it is desired to lock it closed.

Among the especial advantages in this combined balance and swinging sash are:

First. For ventilation in sultry weather or when it is desired to air the rooms the whole of the window can be opened for the free inlet and outlet of the air, instead of only partially opened, as it alone can be by the usual construction.

Second. The sash can be either elevated or lowered and afterward swung around on its pivots. Thus, for instance, when, as is customary in moving safes, heavy desks, &c., in and out of offices in any but the ground floor, they are respectively elevated or lowered on the outside of the office building and are passed through the windows, instead of the

complete removal of the sash, accompanied with the detachment of the balance-weights, as is now customary. With this combined balance and swinging device the lower sash is elevated vertically and both sashes are then swung around into a horizontal position, so as to allow ample room for the passage of the safe, &c.

Third. When it is required to clean the windows by swinging the sash, the outsides as well as the insides of the windows are cleaned from the inside, and the cleaner does not have to run the risk of loss of life or limb by climbing and working outside, however elevated is said building. The windows also in their swung position can be raised and lowered for the convenience of cleaning.

Fourth. The glazier can replace broken windows from the inside by swinging the sash around, and, fifth, the painter can paint and repaint both sash and frame without having to stand outside the window.

I claim as my invention—

1. In a combined balance and swinging sash for windows, the combination of the sliding balance-strips 8, the metal face-plates 10, applied to said strips and having angle-tongues 11, the hanging cords 13, secured to said strips, the weights 12, suspended from said cords, and the window-sash pivotally secured to said sliding balance-strips, and the plates 19, secured to the sash and having angle-grooves adapted to receive said angle-tongues, substantially as and for the purpose set forth.

2. In a combined balance and swinging sash for windows, the combination of the sliding balance-strips 8, the metal face-plates 10, secured to said balance-strips, the integral angle-tongues 11, that project from said plates, the hanging cords secured to said balance-strips, the weights 12, suspended from said cords, the sash 7, the metal edge-plates 19, secured to the edges of the side bars 17 of said sash, the said plates provided with the angle-grooves 21, in which said angle-tongues are seated when in alignment with said angle-grooves, and the pivot-bolts 18, that pivotally connect the sliding balance-strips 8 and their metal face-plates 10 to the side bars of the sash and its metal edge plates 19, substantially as and for the purpose set forth.

3. In a combined balance and swinging sash for windows, the combination of the sliding balance-strips 8, the metal face-plates 10, secured to said strips, the integral angle-tongues 11, that project from said plates, the hanging cords secured to said balance-strips, the weights 12, suspended from said cords, the sash 7, the metal edge plates 19, secured to the edges of the side bars of said sash, the said plates 19 provided with the angle-grooves 21, in which said angle-tongues are seated when in alignment with said angle-grooves, the pivot-bolts 18, that pivotally connect the sliding balance-strips 8 and their metal face-plates 10 to the side bars of the sash and its metal edge plates 19, the said side bars pro-

vided with the spring socket-boxings 24, the
integral collar-tubes 23, that project from the
back of the metal plates 19 and through
which said pivot-bolts pass to said spring
5 socket-boxings, the terminal heads on said
pivot-bolts, and the spiral springs 22, mounted
on said bolts, that enforce spring tension of
said angle-tongues on the metal face-plates

of said balance-strips in their angle-grooves
in the metal edge plates of the sash when in 10
alignment therewith, substantially as and for
the purpose set forth.

ALBERT WEINGAERTNER.

In presence of—

BENJN. A. KNIGHT,
SAML. KNIGHT.