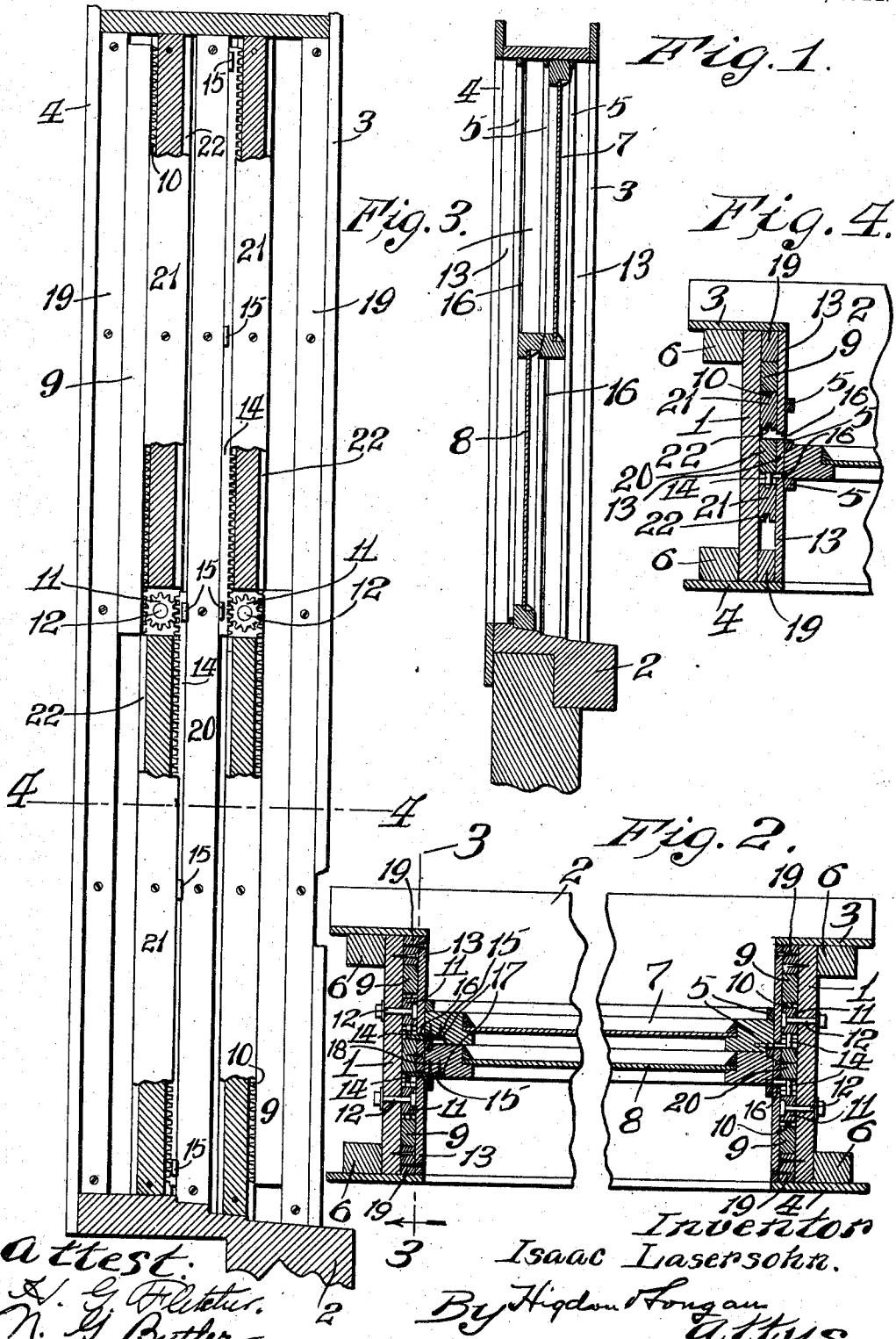


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SASH BALANCING MECHANISM.
APPLICATION FILED SEPT. 13, 1910.

981,093.

Patented Jan. 10, 1911.



Attest:
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UNITED STATES PATENT OFFICE.

ISAAC LASERSOHN, OF ST. LOUIS, MISSOURI.

SASH-BALANCING MECHANISM.

981,093.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed September 13, 1910. Serial No. 581,918.

To all whom it may concern:

Be it known that I, ISAAC LASERSOHN, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Sash-Balancing Mechanism, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved sash-balancing mechanism, and consists in the novel construction and combination of parts hereinafter described and claimed.

The object of my invention is to simplify and cheapen the construction of the window-frame and other parts of a double-sash window having balanced-sashes, and also to do away with the trouble and expense of renewing broken sash-cords and chains. This result I accomplish by doing away with the usual "box" window-frames, and by applying to the window-frame the mechanism hereinafter described and shown in the annexed drawings, in which—

Figure 1 is a sectional side-elevation of a window and its double sash, as the same appear after my invention has been applied thereto, the section being taken centrally. Fig. 2 is a sectional plan-view of same, the section being taken with both sashes partly elevated. Fig. 3 is a sectional side-elevation, taken on line 3—3 of Fig. 2, looking in the direction indicated by the arrow. Fig. 4 is a detail sectional plan, in which the section is taken on the line 4—4 of Fig. 3.

The window-frame is very much simplified, comprising only the essential parts, the usual jambs 1, the sill, 2, outer casing 3, inner casing 4, and the sash-stops 5.

The numeral 6 indicates the vertical studing or posts for supporting the window-frame.

Each sash, 7 and 8, is balanced at each vertical edge by means of a long thin metallic weight 9. The said weights 9 are provided on one edge with rack-teeth 10 which engage the teeth of a pinion 11 mounted on a bolt 12 which is passed through said jamb 1, the said bolt being properly countersunk in the face of said pinion to permit the removable side casing 13 to rest flush with the countersunk face of said pinion, and thereby act as a guide for the weights 9.

The teeth of the pinion 11 engage the teeth of a metallic rack 14 secured to the

sash by integral lugs 15, which extend laterally through slots 16 between the edges of the side-casings 13 and are mounted in recesses 17 formed in the inner faces of the sash rails. Suitable nails or screws 18 secure the said lugs 15 to said sash-rails.

Vertical guide-strips 19 are secured to the jambs 1 to form outer and inner guides for the weights 9, and a central vertical guide-strip 20 is located between the adjacent backs of the racks 14 of the upper and lower sash, and forms a guide for the same, as well as spacing said racks apart the proper distance during operation.

It will be seen that the guides and other parts of the balancing-mechanism are all conveniently located upon the inner face of the jambs 1, so that ready access may be had to any desired part simply by removing the side casings 13.

The operation is as follows: Upon raising or lowering either of the sashes, the sash-racks 14 engaging the corresponding pinions 11 cause said pinions to be rotated on their supporting-bolts 12, and this movement of said pinions causes the teeth thereof to engage the teeth of the corresponding racks on the balancing-weights 9, so that as the said sashes are moved up or down their balancing-weights will move in an opposite direction. Said balancing-weights are made just heavy enough to properly balance the weight of the sash.

For the purpose of more effectually guiding the weights 9, I provide grooved guide-strips 21 both above and below the pinions 11, said strips having a groove 22 in their opposite edges. (See Figs. 3 and 4.)

What I claim is:

1. The improved sash-balancing mechanism, comprising the combination with the window-frame, of the jambs 1, pinions 11 mounted on the inner faces of said jambs, long weights 9 having teeth on their edges to engage said pinions and adapted to slide vertically adjacent to the inner faces of said jambs, the racks having lateral lugs which affix them to the sash, the sash to which said lugs are affixed, central guide strips located on the inner faces of said jambs between the opposite backs of said racks, and removable casings inclosing the inner faces of the weights and pinions and spaced apart to form slots in which said lugs may move up and down.

2. The improved sash-balancing mecha-

nism, comprising the window-frame, the
jambs 1, the sash, suitable weights sliding on
the inner faces of said jambs, racks affixed to
said sash, pinions connecting said weights to
5 said sash, guide-strips 21 on the inner faces
of said jambs above and below said pinions
and having opposite grooved-edges, and the
removable side-casings 13 spaced apart to
form slots in which the connecting-lugs of

said racks move up and down when the 10
sashes are raised or lowered.

In testimony whereof, I have signed my
name to this specification, in presence of two
subscribing witnesses.

ISAAC LASERSOHN.

Witnesses:

E. L. WALLACE,
JOHN C. HIGDON.