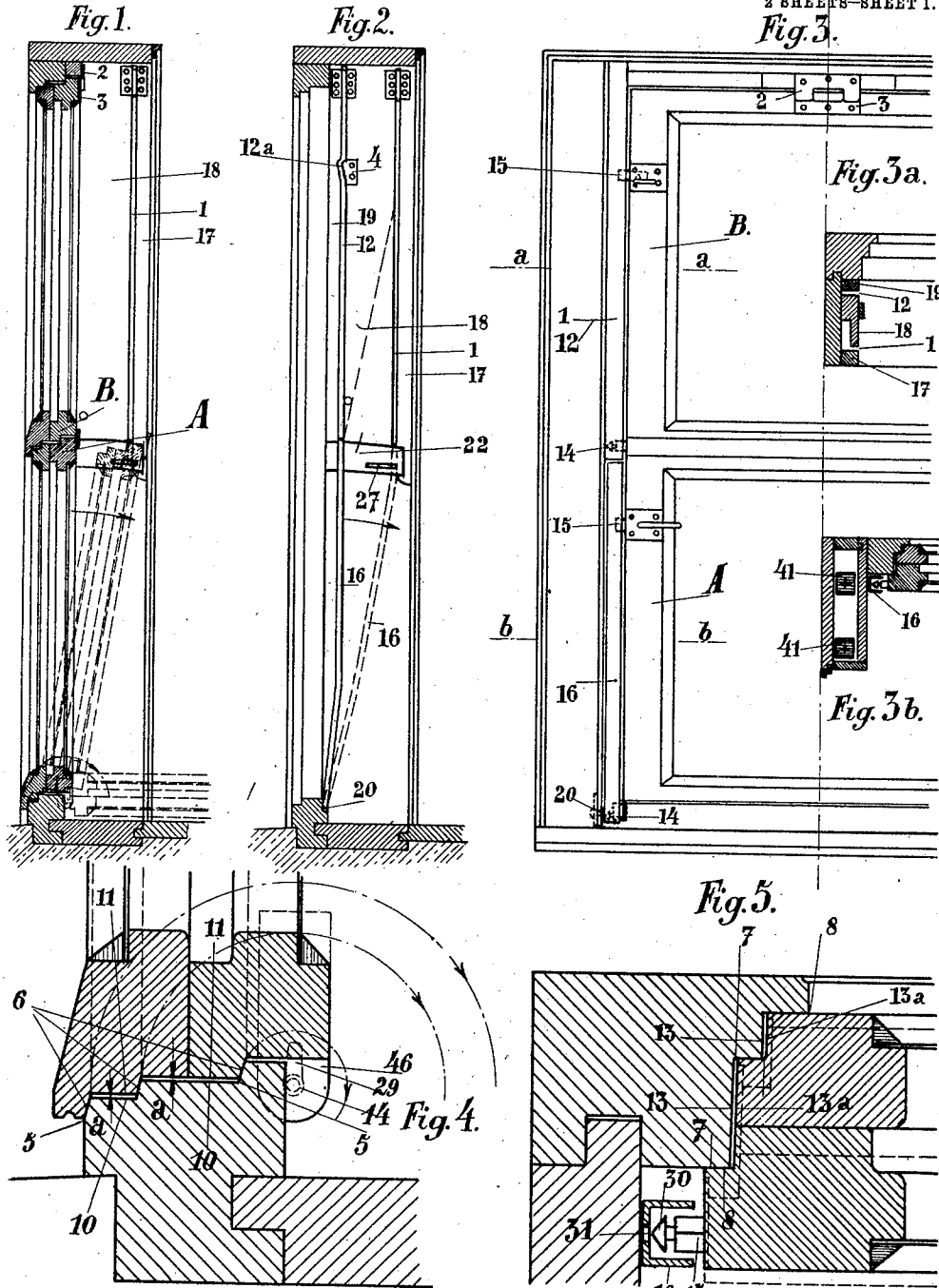


1,002,757.

Patented Sept. 5, 1911.

2 SHEETS-SHEET 1.



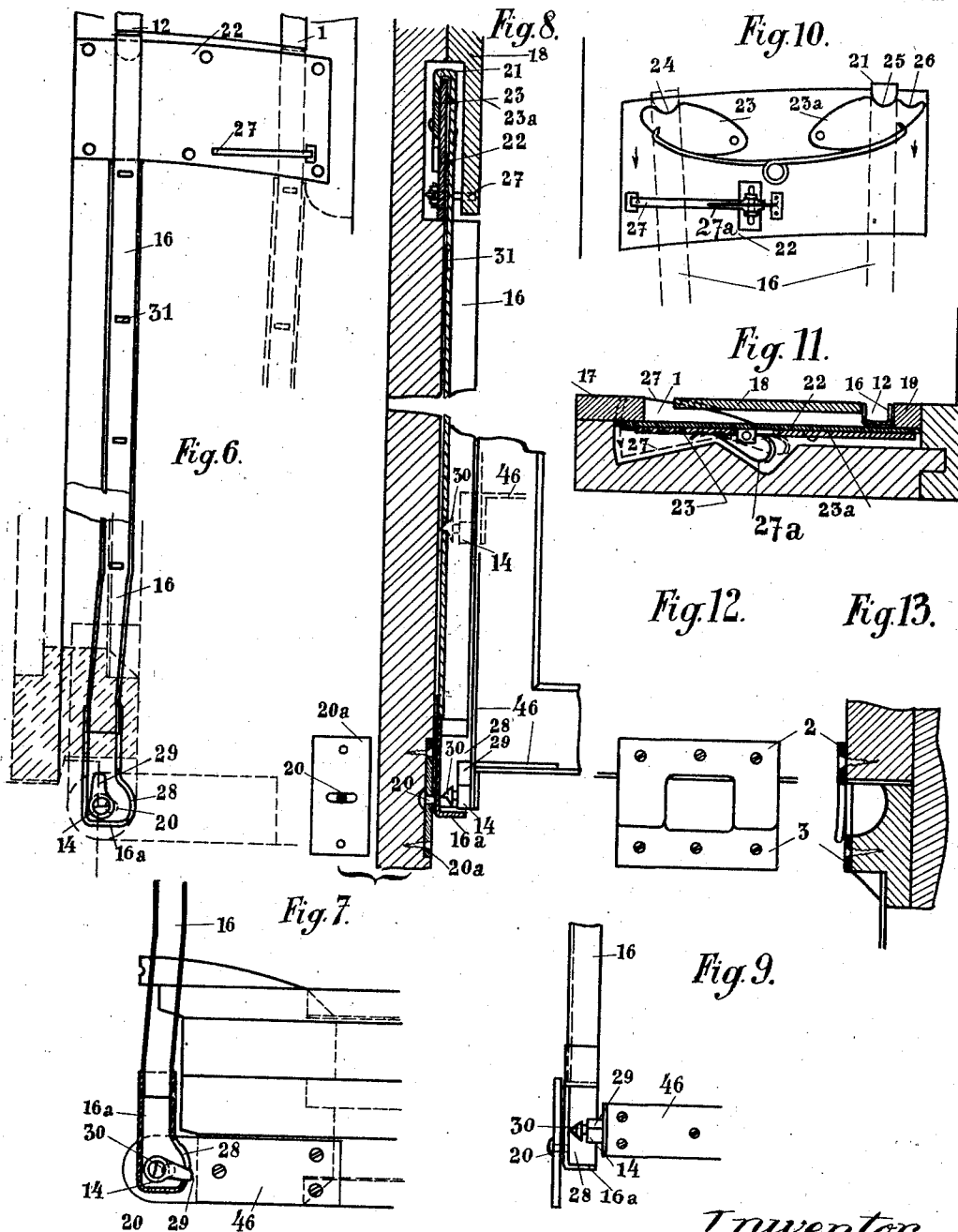
Attest.
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U. RIBAU.
SLIDING AND PIVOTING WINDOW.
APPLICATION FILED AUG. 19, 1908.

Patented Sept. 5, 1911.
2 SHEETS—SHEET 2.



Attest.

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UNITED STATES PATENT OFFICE.

UDO RIBAU, OF BUDAPEST, AUSTRIA-HUNGARY.

SLIDING AND PIVOTING WINDOW.

1,002,757.

Specification of Letters Patent.

Patented Sept. 5, 1911.

Application filed August 19, 1908. Serial No. 449,361.

To all whom it may concern:

Be it known that I, UDO RIBAU, a subject of the Austro-Hungarian Emperor, and residing at Budapest, Austria-Hungary, have
5 invented certain new and useful Improvements in Sliding and Pivoting Windows, of which the following is a specification.

This invention relates to improvements in sliding and pivoting windows having
10 stationary and movable guide tenons and partly movable guide grooves.

The improved window is enabled to be closed tight at all times by means of inclined beads or metal plates which slide over
15 each other when the window is being closed, and force the sashes outward into the guides of the window frame, while the sash beads are inclined and are so guided that they can be painted without being damaged by
20 the working of the window. Parts of the guide may form a device for automatically controlling the falling movement of the window.

Figure 1 is a sectional side elevation of the window; Fig. 2 a sectional side elevation of the window frame, the sashes being removed; Fig. 3 illustrates an elevation of part of the window looking from the inside of the room, two horizontal views (Figs. 3^a
30 and 3^b) being drawn in section; Fig. 4 is a vertical section through the sill frame of the window and the parts coöperating therewith; Fig. 5 shows a horizontal section through the window frame and parts coöperating therewith; Figs. 6 to 11 illustrate
35 in section and in elevation the movable guide and the pivoting arrangement of the sashes; Fig. 12 is a front elevation, and Fig. 13 is a vertical section of the arrangement for insuring a tight joint at the top of the
40 top sash when closed.

Referring to Fig. 1, after the window fastener has been opened, the bottom window sash A can be rotated inward on its
45 lower edge as far as the inner guide groove 1 and can then be slid upward, whereupon the top sash B can be lowered into the place of the bottom sash. Both sashes A and B can be tipped completely inward, and are
50 double, that is to say they are each composed of two apposed sash frames and are counter balanced by means of balance weights.

The top sash B can be closed tight without being affected by change of volume of the wood, by means of two small metal
55 plates 2 and 3 (Fig. 12) set in the same di-

rection at different inclinations, the plate 2 being arranged on the window frame so as to project half into the window opening, while the plate 3 is fixed on the upper cross
60 piece of the frame of the sash B, so that at the end of the upward sliding movement of the sash, these plates will slide over each other and thus press the sash into the grooves of the window frame.
65

The smooth mutual engagement of the plates 2 and 3 is secured by means of plates 4 which project into the grooves 12 opposite the upper groove recess 12^a, the guide tenons
15 sliding over the said plate when the sash B is pushed up, thus guiding the sash. The U-shaped excision and the hollowing out of the wood of the frame in this recess in the plate 3, allow of utilizing the latter as a
70 sash lift.
75

The tight closure of the bottom sash A is effected by means of inclined faces 5 on the window sill frame part, and of the faces 6 of the sash A, which slide over one another
80 in the last stage of the closing operation and press the sash A into the grooves of the frame, by reason of the fact that the faces 5 and 6, and the sash faces 7 and 8 act in opposite directions when the window is or is
85 being closed, that is to say, in the case of the faces 5 and 6, the sash frame overlaps the window frame on the outside, while in the case of the faces 7 and 8 the window frame overlaps the sash frame. The sash is
90 pushed outward by the inclined surfaces of the faces sliding over one another.

As the bottom sash A engages the top sash B, the closing of the fastener provided on the sash A will, in combination with the
95 above described arrangements, effect a perfectly tight closure of the window.

By reason of the fact that the plate 2 located on the window head frame piece has a slightly less inclination than the plate 3 mounted on the sash B, and has a springy
100 action due to its projecting, the sash cannot become loose owing to a change in volume of the wood. The space *a*, which is left in the manufacture between the faces 10 and 11 of the window head frame piece and
105 sash frames respectively prevents also all looseness of the sash A.

Any change in the volume of the wood, even if it should be different in the window frame and sash can merely cause a decrease
110 or increase of the distance *a* and a greater or less strain on the plate 2. Swelling of

the wood can never cause the faces 5 and 6 to press too hard against one another. Likewise a shrinking of the wood will never cause a gap between them sufficient to render the window loose.

The outer guide groove 12 (and likewise the grooved metal bar 16) is set back so far from the window frame faces as to leave a space between the faces 7 and 8 during the sliding movement of the sash B. A similar space is also produced between the parts 13 and 13^a by reason of their inclined position, so that the sash stiles cannot rub against the window frame stiles, and thus these stiles can be painted without hindering the working of the window.

The sashes are guided in the window frame by the tenons 14 attached by means of angle pieces 46 to the lower corners of the sashes, and by the bolts 15 attached at the sides of the top of the sashes. These tenons each engage at the lower part of the window frame in a metal groove 16, and at the upper part of the window frame in grooves 1 and 12 that are formed by means of fillets 17, 18, 19 attached to the window frame. The middle fillet 18 is partly hollow (as indicated by dotted lines in Fig. 2) in order to enable the wire cord passing from the guide groove 1 to follow the movement of the metal groove 16 when the bottom sash A is being closed.

The movable metal groove 16 is attached to the window frame at the bottom by means of a pin 20, and engages at the top by means of a bent tongue 21 over a slide bar 22 which is attached half way up to the window frame. The metal groove 16 can thus slide on the slide bar 22 and turning on the pin 20 as a pivot it can be pushed from the sash frame part 7 as far as the front end of the fillet 17. By this arrangement unsightly guide grooves and cross grooves are dispensed with in the lower half of the window frame, and the window frame has a smooth appearance with the exception of the groove 1, as the groove 12 is concealed by the top sash B.

In order to prevent indeterminate shifting of the metal groove 16, two spring cam plates 23 and 23^a are pivoted to the rear side of the slide bar 22 and have recesses 24, 25, 26 corresponding to the shape of the tongue 21. If the metal groove 16 is shifted, its tongue 21 will slide over the cam plates 23, 23^a, and press down the upwardly projecting parts of these plates, and it will be fixed in determined positions in the recess in these plates which then engage the tongue; for instance at 26 when the window is shut, at 25 as a continuation of the groove 12, at 24 as a continuation of the groove 1, while a considerable pressure upon the metal groove 16 is required in order to move it into other positions.

When the bottom sash A is pushed up into the upper groove 1 and the metal groove 16 is pushed back into the continuation of the groove 12 in order to serve as a guide for the top sash B, the sash A might fall if it were drawn down. To prevent this the slide bar 22 is provided with a spring bolt 27 which keeps the bottom end of the wooden groove 1 closed. It is only when the metal groove 16 constitutes the continuation of the groove 1, that the bolt 27 is pressed back by the back of the groove and the end of the wooden groove 1 becomes free for the operation of the sash.

The guide pins 14 serve, in addition to guiding the sashes, also for the attachment of the wire sash cords, and in combination with the bordered recess 28 in the metal groove 16, they form a safety tipping device by reason of the fact that the key-shaped lower part 29 of the pin 14 engages in the recess 28 of the metal groove 16 during the tipping movement (Fig. 7) and thereby holds the sash at the side, and secures it against being raised by the balance weights. The construction of the corner pieces 46 and the location of the pin 14 attached thereto, are such that during the tipping movement the axis of rotation of the sashes is such that it will be situated underneath the sash frames, so that continuous smooth faces can be provided.

The conical points 30 of the guide pins 14 are cut with a flat recess on their lower surfaces, and form with the slots 31 provided in the metal groove 16 an automatic safety device for preventing the sash from dropping, the arrangement being such that in case of the wire cord of a balance weight breaking, the sash will assume an oblique position, and the point 30 of one of the pins 14 will be pressed against the bottom of the groove so that in sliding down, the said point will catch in one of the slots 31 and thus preventing the sash from falling as indicated by dotted lines in Fig. 8.

The upper guide pins 15 (Fig. 3) are movable either like bolts in the direction of their length or like frictional fasteners, and so fixed that they can project and act as guides, or be withdrawn by means of a key or handle when it is desired to tip the window.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. In a sliding and pivoting window, the combination of top and bottom sashes, a grooved metal bar having a pin fixed to the window frame, and a bent tongue engaging over a slide bar attached to the window frame, spring plates located on the back of said slide bar, and a spring bolt on said slide bar, whereby the said grooved metal bar can pivot on the said pin and be

pushed forward and move with the sashes within limits, whereupon by the said spring plates engaging with the said tongue, the said grooved metal bar is fixed in position
5 for guiding the sashes into the upper grooves of the window frame, and whereby the said spring bolt closes the end of a groove in said window frame so as to prevent the top sash from falling when it is
10 pushed up, and uncovers said end when the grooved metal bar constitutes a continuation of the last mentioned groove, so as to release the top sash, as set forth.

2. In a sliding and pivoting window, the
15 combination of top and bottom sashes, said

bottom sash having a vertical guide groove therein with slots in said groove and a pin having a conical point with a flat underneath part whereby in case of breakage of the sash cords, the sash assumes an oblique
20 position and the said pin entering one of said slots in the guide groove, prevents the sash from falling, as set forth.

In testimony whereof, I have affixed my signature in presence of two witnesses.

UDO RIBAU.

Witnesses:

MAX ADLER,
MICHAEL TÖMÖR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
