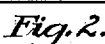
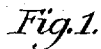


APPLICATION FILED OCT. 18, 1908.

Patented Apr. 11, 1911.

2 SHEETS—SHEET 1.



H. C. Witt.

Inventor.

August Krause
By Henry J. Miller
att'y.

A. KRAUSE.

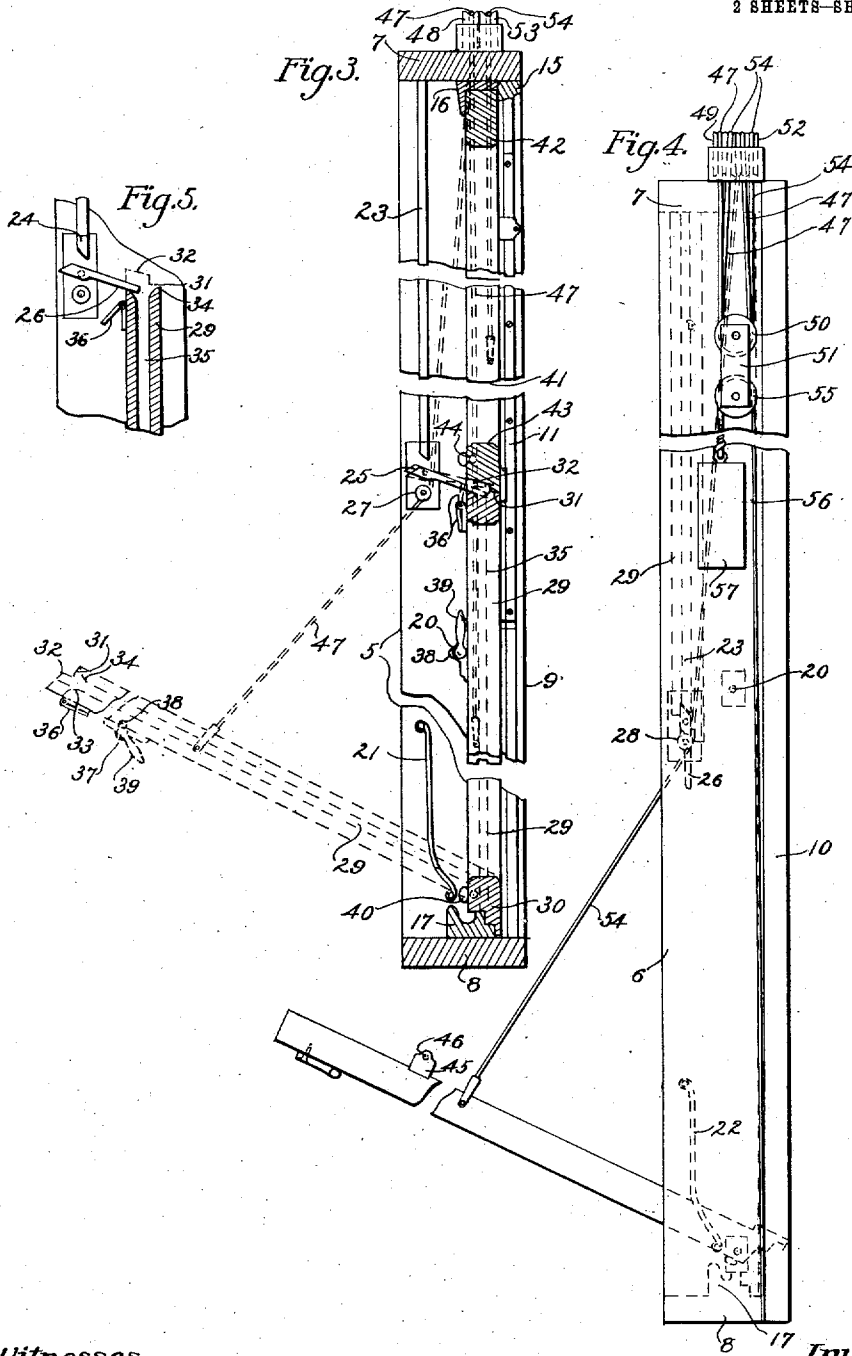
WINDOW.

APPLICATION FILED OCT. 18, 1909.

989,160.

Patented Apr. 11, 1911.

2 SHEETS-SHEET 2.



Witnesses.
 H. C. Witt
 E. H. Wilder.

Inventor.
 August Krause
 by Henry J. Miller
 atty.

UNITED STATES PATENT OFFICE.

AUGUST KRAUSE, OF BOSTON, MASSACHUSETTS.

WINDOW.

989,160.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed October 18, 1909. Serial No. 523,169.

To all whom it may concern:

Be it known that I, AUGUST KRAUSE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Windows, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

This invention has reference to improvements in windows having slidable sashes.

The object of this invention is to so construct a window having one or more slidable sashes that all of said sash or sashes may slide to and from a fixed point and that either sash may swing outward from said point.

Another object of the invention is to facilitate the cleaning of window sashes.

Another object of the invention is to so construct a window having two slidable sashes that both of said sashes may be secured in line to close the window.

Another object of the invention is to provide a window adapted to exclude dust.

Another object of the invention is to so construct a window having two slidable sashes that both of said sashes may be counterbalanced by a single weight.

Other objects of the invention will appear from the following description.

The invention consists in the peculiar construction of the several parts of the window frame and of the sashes therefor.

The invention also consists in such other peculiar features of construction and combination of parts as shall hereinafter be more fully described and pointed out in the claims.

Figure 1, represents a front elevation of the improved window, parts of the same being broken away. Fig. 2, represents a cross sectional view of parts of the same taken on line 2—2 Fig. 1 looking downward. Fig. 3, represents a vertical sectional view of parts of the improved window taken on line 3—3 Fig. 1 looking toward the left from said line, the positions of the sashes, when closed, being shown in full lines and the swinging outward of the lower sash being indicated. Fig. 4, represents a side elevation of the window partially broken away the normally, lower sash being indicated as moved upward and the normally, upper sash being in its lowermost position as when swung outward for cleaning. Fig. 5, repre-

sents a detail view of parts of the lower sash and one of its guiding pawls.

Similar numbers of reference designate corresponding parts throughout.

As shown in the drawings in its preferred form the improved window frame comprises the stiles 5 and 6 connected by the cross members 7 and 8 to form a rectangular frame for the sashes and having the outer facing frame formed by the vertical members 9 and 10 the inner edges of which define the width of the window opening and are provided with the vertical guide strips 11—12 while the inner faces of said members 9 and 10 are furnished with beadings 13 and 14, V shaped in cross section, as shown in Fig. 2. Cross member 7 has an outer strip 15 and the bevel strip 16, spaced from said strip, while the cross member 8 has the jamb 17.

The stiles 5 and 6 are furnished with sockets 18, 18, 19, 19, and 20, 20, arranged in pairs, and said members have at their lower portions the curved guides 21, 22 and, at their upper portions, the straight guide strips 23, 24 the lower ends of which are bevel, as shown in Fig. 3, and just below said bevel ends are pivotally mounted the pawls 25 and 26 having upper bevel ends which are adapted to be engaged with the bevel ends of the guide strips 23 and 24 whereby said pawls may be alined with said guides. Below the pivots of said pawls 25 and 26 are mounted the sash cord guides 27 and 28, herein shown as rotatable sheaves.

The lower sash is formed by the side stiles 29, 29 having V shaped grooves to receive the beads 13 and 14 of frame members 9 and 10, and by the lower rail 30, shaped in cross section, as shown in Fig. 3, to fit against jamb 17, and the meeting rail 31 having the lip 32 and, at its ends, having the curved shoulders 33, 34 forming the mouths of the slots 35, 35 which extend from said mouths downward along the sides of the stiles 29, 29 and with which the pawls 25 and 26 are normally engaged. On the fronts of said stiles 29, 29 near the shoulders 33, 34 are pivotally mounted the plates 36, 36 which when swung upward, as indicated in Fig. 3 act against the pawls 25 and 26 to swing the same upward out of engagement with said shoulders 33, 34. In bearings mounted on said stiles 29, 29 are journaled the shafts 37, 37 having the offset ends, 38, 38 adapted to be engaged in the sockets 20, 20, and the

handles 39, 39. On the lower rail 30, are mounted the slidable pivot bolts 40, 40 adapted to be engaged in the sockets 19, 19 when the lower sash is approximately at its lowest point of movement.

The upper sash has the stiles 41, 41 connected by the upper rail 42, shaped to fit tightly between the bevel strip 16 and the strip 15, and by the lower or meeting rail 43 which is shaped to receive lip 32 of the meeting rail of the lower sash, said rail has also slidable bolts 44, 44, adapted to be engaged in either of the pairs of sockets 18, 18 or 19, 19. The stiles 41, 41 have grooves fitting the beads 13, 14, in Fig. 2, and said stiles are furnished with plates against the edges of the metal guide strips 11 and 12 but which are free to swing past the lower ends of said guide strips when said upper sash has been moved downward sufficiently.

Secured to the left hand stile 29 is the cable 47 which extends through a perforation in frame member 7, over the sheave 48 and on groove of sheave 49, around one of the grooves of sheave 50, rotatable in frame 51, back over one groove of sheave 52, over sheave 53 and through frame member 7 and is attached to the left hand stile 41 of the upper sash. Cable 54 is secured to the right hand stile of the lower sash and passes upward through the frame member 7, over the other groove of sheave 49 over the other of the pair of grooves in sheave 50, of frame 51, over the other groove of sheave 52, down through frame member 7 and is fastened to the right hand stile of the upper sash. Frame 51 has, in addition to sheave 50, the grooved sheave 55 over which the cable 56 is led, one end of this cable being secured to the stile 6 of the window frame and the other end of which is provided with the counterbalance weight 57. The above mentioned sheaves 48, 49, 50, 52, 53, and 55 are preferably made of glass to avoid noise, and are rotatably mounted.

With both sashes in the positions shown in Figs. 1 and 3, the rail 42 of the upper sash fits closely between strip 16 and jamb 15 and the pressure exerted by offset ends 38 of bolts 37 in the sockets 20 when said bolts are rotated by the swinging upward of their handles 39, effects the pressing of both sashes against the V shaped beads 13 and 14 and the rails 30 and 31 against their opposed parts so that the window, in this position, is practically closed against the entrance of dust. At this time the bolts 40, 40 are preferably secured in the sockets 19, 19.

Bolts 37 are slidable in their bearings for a limited degree and, when it is desired to open the window, the handles 39, 39 are swung downward and drawn toward each other to release the ends 38, 38 thereof from the sockets 20, 20, the lower sash is now free to swing inward, toward the interior of the

building, until the pawls 25, 25, engaged between shoulders 33, 34 of the lower sash, are in line with their associated guide strips 23, 23. If it is desired to slide upward the lower sash, bolts 40, 40 are released from sockets 19, 19 and said sash is moved upward, part of the weight thereof being balanced by the weight 57, the upper end of the sash being guided by the pawls 25, 25 to the guide strips 23, 23 which ultimately receive the grooves 35, 35 of the stiles 29, 29.

If, instead of moving upward the lower sash, it is desired to swing the upper end thereof inward, to the position indicated in Fig. 3, the bolts 40, 40 are preferably entered in the sockets 19, 19 and the plates 36, 36 are swung upward to lift the free ends of the pawls 25, 25 above the shoulders 33, 34 of the lower sash which sash may thereupon swing on the axis of the bolts, 40, 40 until the cables 47, and 54 are engaged by the sheaves 27, 28 of the window frame stiles, and ride over said sheaves, in the further movement of the sash in this direction which movement must be under a pressure sufficient to overcome the action of weight 57. When the lower sash is in the raised position the bolts 44, 44 of the upper sash may be released from their sockets 18, 18 and the upper sash may be slid downward until said bolts are in position to enter sockets 19, 19 such engagement of these bolts 44, 44 permits the rotation of said bolts in such sockets when the upper portion of this upper sash is swung inward to the position shown in full lines in Fig. 4 and, it will be seen, that in said movement the cables 47 and 54 are intercepted by the sheaves 27, 28 and ride over said sheaves while such swinging of said upper sash is resisted by the weight 57. When the upper sash is swung backward into the window frame and its bolts 44, 44 are released from the sockets 19, 19 said sash may be slid upward to its closed position. If now the upper sash be slid downward its bolts 40, 40 will be intercepted by the guides 21 and 22 and guided back to positions where said bolts may be entered in the sockets 19, 19.

It is evident that various modifications may be made in the specific construction of the several parts, and in the combination of the same without departing from the spirit of this invention.

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

1. A window comprising a main frame having side stiles furnished with sockets below the transverse center thereof and having an outer frame member forming a jamb, a pair of sashes slidable in said main frame and movable toward said jamb, said sashes having complemental overlapping meeting rails, and means carried by the sides of one

of said sashes below its meeting rail and adapted to engage in said sockets for exerting pressure on said sashes to force them against said jamb.

5 2. A window comprising a frame having a pair of fixed vertical guides and a pair of pivoted guide members adapted to form extensions of said fixed guides at the lower ends thereof, and a sash movably mounted
10 in said frame and provided with a pair of shoulders with which said pivoted guides engage, said sash provided with grooves for the reception of said fixed guides and pivoted members when the sash is swung up-
15 wardly in and at the rear of the frame.

3. A window comprising a frame having a pair of fixed vertical guides, a pair of guide members pivoted with respect to the lower ends of said fixed guides and adapted
20 when shifted in one direction to form a continuation of said fixed guides, a sash movably-mounted in said frame and having shoulders in releasable engagement with said pivoted members when these latter are
25 angularly disposed with respect to the fixed guides and hinged plates carried at the rear of the upper portion of said sash and adapted when shifted in one direction to
30 to permit of the shifting of the sash upon the guide members and onto the fixed guides.

4. A window comprising a frame including side stiles, vertically-disposed members connected to the front of the stiles, a pair of
35 sashes positioned in vertical alinement and mounted in the frame against said members, the meeting rails of said sashes overlapping each other, pivot bolts carried by the lower ends of each of said sashes, said lower sash
40 capable of being positioned rearwardly of said upper sash, guide strips for said lower sash arranged rearwardly of the upper sash, pivoted guide members arranged at the
45 the lower sash toward said strips when said lower sash is shifted to be positioned rearwardly of the upper sash, said stiles pro-

vided at their lower ends with sockets for the reception of the bolts at the lower ends
50 of each of the sashes, said lower sash capable of being moved downwardly in the frame to permit of these bolts engaging in said sockets whereby said upper sash can be swung
55 rearwardly, said lower sash capable of being swung rearwardly when its bolts are positioned in said sockets, and counter-balanced means for said sashes.

5. A window comprising a frame, a pair of movable sashes arranged therein, one of said sashes capable of being swung rear-
60 wardly of the other of said sashes and in parallelism therewith, fixed guides for that sash swung rearwardly of the other sash, pivoted guide members for guiding that sash swung rearwardly of the other sash to
65 said fixed guides, and curved guides arranged below said fixed guides and pivoted guide members and constituting means for guiding that sash swung rearwardly of the
70 other sash when it is swung downwardly in the frame toward normal position.

6. A window comprising a frame having sockets at its lower end, an upper and a lower movable sash mounted in the frame and normally arranged in vertical aline-
75 ment, bolts carried by the lower ends of each of said sashes, the bolts of each sash capable of engaging in said sockets to permit of the sash being swung inwardly, means for positioning the lower sash rearwardly of the
80 normal position of the upper sash when the upper sash is swung inwardly, means for guiding said lower sash to normal position after being shifted, counter-balance mechanism connected with said sashes, and means
85 engaging with the counter-balance mechanism to resist the swinging of a sash inwardly on its bolts beyond a predetermined point.

AUGUST KRAUSE.

Witnesses:

E. H. WILDER,
N. J. MILLER.