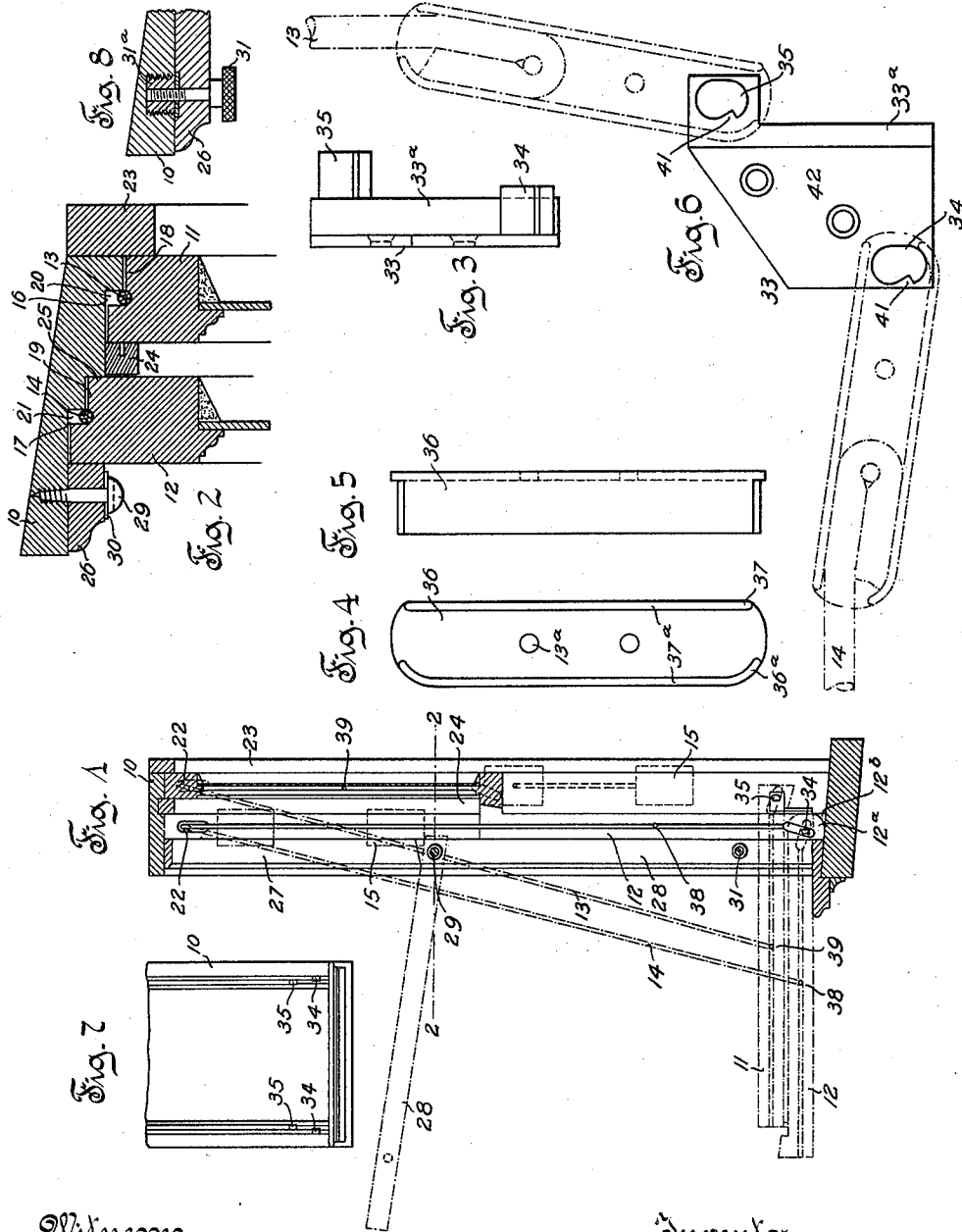


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WINDOW.

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1,032,752.

Patented July 16, 1912.



Witnesses

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WINDOW.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDERICK J. GRUHL, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Windows, of which the following is a full, clear, and exact specification.

My invention relates to windows, and more particularly to that class in which the sashes may be actuated in various ways to render them capable of being handled with great facility.

The object of my invention is to provide a simple and inexpensive window of which a full, clear, and complete description follows.

My object is accomplished by providing jambs and sashes having cooperating parts whereby the sashes may be swung inwardly to render the washing of windows a safe, simple, and easy matter, and at the same time providing a structure which prevents the admission of cold air and dust or other foreign particles by using the sash cords as weather strips.

The invention is illustrated in the accompanying sheet of drawings in which—

Figure 1 is a vertical sectional view of a window equipped with my invention; Fig. 2 is a sectional view taken in the plane of the line of 2—2 of Fig. 1, with both sashes in the upper part of the frame; Fig. 3 is a front elevation of a member provided with lugs and forming a part of my invention; Figs. 4 and 5 are side and front elevations of a lug-receiving member adapted to cooperate with the member having lugs and also forming a part of this invention; Fig. 6 is a side elevation of that shown in Fig. 3, with the lug-receiving member dotted in to show two relative positions as the lug-receiving member is rotated about the lugs as pivots; Fig. 7 is a fragmentary front elevation of a window frame, showing the relative positions of the members having lugs; and, Fig. 8 is a fragmentary view of the jamb and stop provided with a quick-acting thumb screw.

The window comprises jambs 10 and two sashes, an upper one 11 and a lower one 12. These sashes are slidably mounted in the jambs and are provided with the regular sash cords 13 and 14 respectively, which have weights 15 at their ends. The jambs 10, instead of being rabbeted the full thick-

ness of the window sashes, are rabbeted only a fractional part of the thickness of said sashes as indicated at 16 and 17. The sashes 11 and 12 are also rabbeted only a fractional part of their thickness as shown at 18 and 19 respectively. By means of this particular style of rabbeting, channels 20 and 21 are formed between the jamb and sashes for the reception of the sash cords 13 and 14 respectively. The weighted sash cords, which run over pulleys 22 secured in the jamb 10, are so located in the cord channels 20 and 21 as to act as weather strips to prevent the admission of dust or cold air which might have a tendency to enter through the slight clearance spaces formed between the jamb and sashes.

The upper sash is located between stops 23 and 24 and its vertical sliding movement guided thereby. The stop 23 extends up and down the full length of the jamb on the back, while the other or parting stop 24 extends only half way the length of the jamb, as is clearly shown in Fig. 1. This provision is made so that the upper sash 11, after it has been lowered, can be swung inwardly for cleaning purposes and the like, to be considered more in detail hereinafter. The lower sash 12 is located and guided between a portion 25 of the jamb and a front stop 26 which is formed in two parts. One of the parts 27, which is the upper part, is permanently fixed to the jamb. The other or lower part 28 of the stop is pivotally secured to the jamb by an ordinary screw 29 having a washer 30 and which passes through said stop and screws into the jamb 10. A thumb-screw 31 also passes through the stop and screws into a metal plug 31^a in the jamb 10. This screw 31 is to be removed, when so desired, to permit the swinging of the lower part 28 of the stop 26 into the position as indicated in dotted lines in Fig. 1. By swinging this part 28 of the stop 26 out of its normal position, the sashes 11 and 12 may be swung inwardly. Both sides of the jamb and sashes are the same with the exception that they are right and left hand sides.

I have made provisions whereby the sashes may be swung inwardly so access to all parts thereof may be had readily. This end is accomplished by securing or fixing members having a plurality of lugs into opposite sides of the jamb and securing lug-receiving members in the sashes so that the lug-re-

ceiving members may engage said lugs and swing about said lugs as pivots. I prefer to use members 33 having a plurality of lugs 34 and 35, although I could use members each having only one lug. These lugged members 33 may be fixed in said jamb by screws or in any other simple manner, and they are located so that the lugs lie directly in the grooves or paths in which the sashes slide. The lugs 35 on opposite sides of the jamb are naturally closer together than the lugs 34 for the reason that the upper sash is narrower than the lower sash. In other words, the lugs on each lugged member are offset from each other or are located in different vertical as well as horizontal planes. These lugged members are each provided with a shoulder 33^a against which the curved and bottom part 12^a of the lower sash 12 slides and rests when said sash is swung into a horizontal position. The jamb 10 has a small curved portion 12^b to conform with the curved bottom part 12^a of the lower sash 12. A small curved block could be set into the jamb instead of curving the jamb, if so desired. The lug-receiving members 36 have elongated channel portions and are fixed in the sides of the sashes in any simple manner, such as by screws, and each is provided with a curved lip 36^a and a straight lip 37, both of which lips form parts of the shoulders 37^a. These lips are adapted to engage the lugs and permit the admission and withdrawal of the lugs only in certain positions. One end of each of the sash cords 13 and 14 is doubled upon itself, squeezed into these lug-receiving members, and screws, which pass through the holes 13^a, crowded in between the doubled portions of the cords. By means of this arrangement the cords are firmly gripped. These doubled cords also form cushions to prevent undesirable jarring when the sashes, especially the upper one, is drawn down to the extent that the cords 13 engage the lugs 35. The cords are also fastened to the sashes at points such as 28 and 29 so that the sashes will be perfectly balanced when they are swung inwardly, as shown in dotted lines in Fig. 1.

Having described the structure of the window, its operation will now be considered. If it is desired to swing the windows inwardly for washing or other purposes, the lower part 28 of the front stop 26 is first to be swung from its normal position, as indicated in dotted lines in Fig. 1. In order to swing this part 28 of the stop, it is only necessary to loosen the quick-acting thumb-screw 31, withdrawing it from the jamb 10. This part 28 of the stop is held in its swung position by the friction between it and the jamb caused by the screw 29. Draperies or curtains of any description, whether they be long or sash, may be

thrown back of, or swung up with, these stops which are on opposite sides of the jamb. With this arrangement it is unnecessary to remove the curtains from their fastenings. If the lower window is raised, it should be lowered so that its lug-receiving members 36 will be pushed down over their cooperating lugs 34. In this position, the lower sash 12 may be swung into its horizontal position. When the sash is not lowered sufficiently so that the lugs 34 are wholly within the lug-receiving members 36 the sash may still be swung into a horizontal position without distorting or breaking off the flanged lips 36^a and 37 for the reason that the lips 36^a pass into detents 41 formed in the lugs. Under such circumstances, as the sash is swung inwardly, the lips 37 slide over the back and top portions 42 of the lugs and the lugs are forced out of engagement or at least not held by the lug-receiving members. So in order for the sash to be locked in a swung position it is necessary that the sash be lowered sufficiently in the first place for the lug-receiving members to completely receive the lugs. In this swung position the sash cannot be pulled or forced out of the jamb or frame on account of the broad side of the oval shaped lugs presenting themselves to the lipped portion of the member 36. In order to draw the lug-receiving members away from the lugs, the sash will have to be swung around into its vertical position so that the narrow part of the lugs can pass the lips of the lug-receiving members. The upper sash 11 may now be lowered until it comes into effective engagement with its cooperating lugs 35 and swung about said lugs as pivots until it has reached a horizontal position, as shown in dotted lines in Fig. 1. It is possible for the upper sash to be swung about the lugs 35 without its movement being interfered with for the reason that the parting stops 24 only extend half way the length of the jamb as above mentioned. In this swung position the windows may be washed or repaired from the inside. The window-sashes may also be adjusted for ventilating purposes if so desired.

With this simple arrangement no danger is occasioned when the windows are being washed or repaired. The fixtures used in this construction may be applied to the ordinary window and the same benefits derived, only slight modifications of the jambs and sashes being necessary.

There may be many modifications in the precise form and arrangement here shown and described, and I aim in my claims to cover all such modifications which do not involve a departure from the spirit and scope of my invention.

What I claim as new is:

1. In a window, the combination of a 130

jamb, members fixed in said jamb, said members having elongated lugs provided with detents, a sash mounted in said jamb, and channel lug-receiving members having 5 restricted openings and secured to said sash, said sash being adapted to rotate about said lugs, said sash being removable from said lugs when said sash is in a vertical position and also when the walls of said restricted 10 openings engage the detents of said lugs and irremovable when the sash is in a swung position due to the elongations of said lugs.

2. In a window, the combination of a jamb, an oval-shaped pivot having a detent 15 in one of its longest side portions and fixed in said jamb, a sash, and a channel-member in said sash and having a restricted opening, said pivot having one of its dimensions less than that of said opening to permit engage- 20 ment of said channel-member therewith and another dimension greater than that of said opening to maintain such engagement when the channel-member is turned relatively to said pivot, the detent being adapted to en- 25 gage the wall of said restricted opening and to detach the channel-member from said pivot if they be swung relatively to each

other before said opening in the channel-member has passed beyond the pivot.

3. In a window, the combination of coop- 30 erating jamb and sash members, an elongated pivot having a detent and being secured to one of said members, and a pivot-receiving member having a restricted open- 35 ing and being secured to the other of said cooperating members, said pivot-receiving member being adapted to rotate about said pivot and being removable from said pivot when said pivot-receiving member is in its 40 normal position and also when one of the walls of said restricted opening engages the detent of said pivot, said pivot-receiving member being irremovable from said pivot when said pivot-receiving member is in a 45 swung position due to the elongation of said pivot.

Milwaukee, Wis., Dec. 21, 1910.

In testimony whereof I affix my signature, in the presence of two witnesses.

FRED J. GRUHL.

Witnesses:

PAUL E. GRUHL,
ADAM KERSKI.

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