May 20, 1941. V. B. DOMECKI 2,242,993

WINDOW CONSTRUCTION

Filed June 16, 1939

Fig. 1.

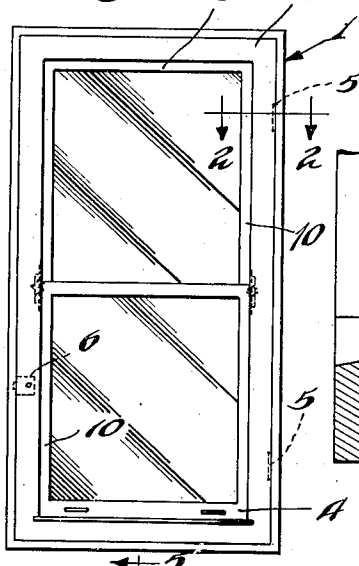


Fig. 2.

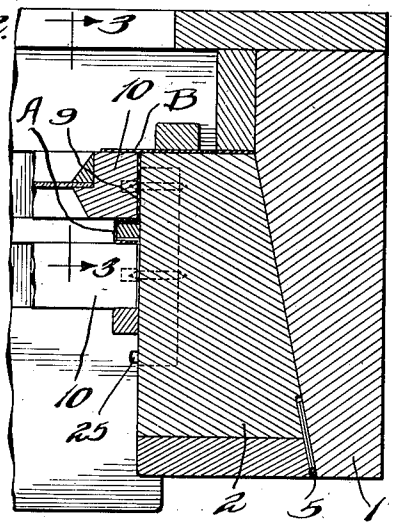


Fig. 3.

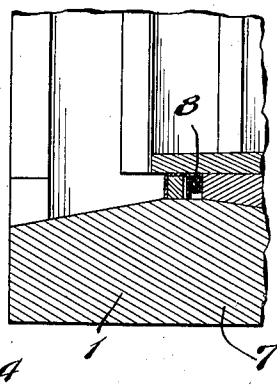


Fig. 4.

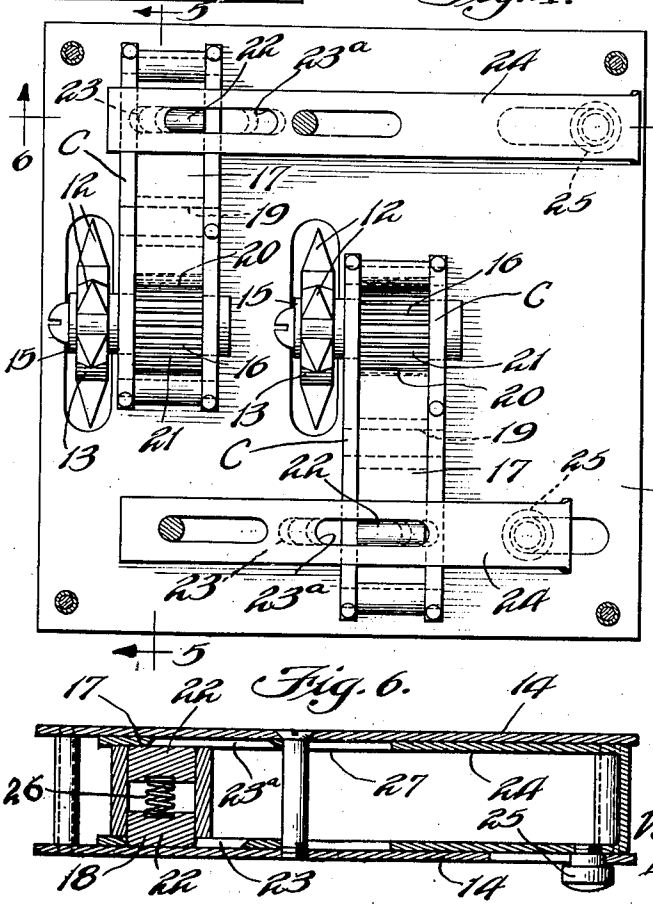


Fig. 5.

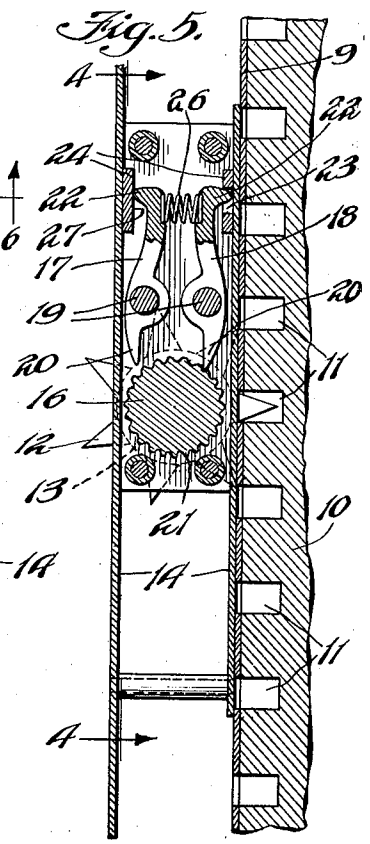


Fig. 6.

Inventor
Vincent B. Domecki
By Parkinson & Lee
Attys.

Patented May 20, 1941 2,242,993

UNITED STATES PATENT OFFICE

2,242,993

WINDOW CONSTRUCTION

Vincent B. Domecki, Chicago, Ill.

Application June 16, 1939, Serial No. 279,500

2 Claims. (Cl. 292—280)

The present invention relates to a window construction and more particularly to novel latching and retaining means whereby the sliding sashes may be conveniently raised and lowered and maintained in any desired position. The invention comprehends a novel latching and locking mechanism controlled or operable from the inside of the window and so constructed and arranged that each sash may be selectively raised and lowered and locked in any predetermined position of adjustment in either or both directions of travel.

The novel latching and locking mechanism comprises a star or toothed wheel having teeth or projections adapted to seat in or engage with notches provided in one or both side rails of the slidable sashes, cooperating latching members so arranged with respect to the star or toothed wheel as to prevent or permit raising or lowering of the sash, and a manually operable means for controlling the latching members so as to permit manual selective raising or lowering of the sash, and to lock the sash in any desired open or closed position.

A further novel feature of my window construction is the provision of mounting the slidable sashes in a sub-frame which is hinged or pivoted to the main frame of the window, in such manner that the sashes and sub-frame may be swung inwardly and washed from the interior of the building.

Further objects, advantages and capabilities will be apparent from the following description and the disclosure in the drawing, or are inherent in the device.

In the drawing:

Fig. 1 is a view in front or side elevation of the window.

Fig. 2 is an enlarged fragmentary view in horizontal cross section taken in a plane represented by the line 2—2 of Fig. 1.

Fig. 3 is a view in vertical cross section taken on the line 3—3 of Fig. 2.

Fig. 4 is a view in vertical cross section taken in a plane represented by the line 4—4 of Fig. 5, but showing the operative parts in side elevation.

Fig. 5 is a view in vertical cross section taken on the line 5—5 of Fig. 4.

Fig. 6 is a view in horizontal cross section taken on the line 6—6 of Fig. 4.

Referring more particularly to the disclosure in the drawing, the novel window comprises a main frame 1 having an auxiliary or sub-frame 2 carrying the slidable sashes 3 and 4. The sub-frame is hinged or pivoted to the main frame at 5, 5, and provided with a lock or latch 6 permitting this sub-frame and the sashes to be swung inwardly for convenience in washing, repair and replacement of the glass. The window is shown as provided with a desired trim and sill 7, with the sub-frame provided with a sealing strip 8, preferably of rubber or other yieldable sealing material. In order to maintain the slidable sashes in relatively close fitting sealing relation with the sub-frame 2, the invention comprehends a metal plate 9 and a parting strip A formed of yieldable or resilient rust-resisting metal. The channel formed by the plate A, parting strip 9 and exterior plate B, is adapted to conformably receive a side rail 10 of the slidable sashes and to provide a weather tight seal by reason of the resiliency of the metal.

The novel latching and locking mechanism for the slidable sashes comprises complementary members carried by the sub-frame 2 and the sash rails 10. In the disclosed embodiment, the metal plate 9 is suitably secured to the sub-frame and this plate and sash rail 10 are provided with aligned openings 11 for receiving a tooth 12 of a star or toothed wheel 13. The teeth 12 and the openings 11 are so spaced and related that each sash may be quickly raised or lowered, as the occasion arises.

As clearly shown in Fig. 4, a pair of star or toothed wheels 13 are mounted in a housing 14 in such manner that one controls vertical movement of the upper sash 3 and the other a similar movement of the lower sash 4. Each wheel 13 is mounted on a shaft 15 carrying a sprocket or ratchet wheel 16 so that a raising or lowering of the sash will rotate the star wheel 13 and its respective ratchet wheel 16, unless that star wheel is locked against rotation. In the illustrative embodiment shown in Fig. 4, the mechanism for controlling rotation of the ratchet and star wheels comprises a pair of pawls or dogs 17 and 18, each pivotally mounted upon a stub shaft 19 journalled between spaced plates C, and provided with a latching tooth 20 adapted to be received intermediate spaced teeth 21 on the ratchet wheel and when in engagement, preventing the ratchet wheel from rotating in one direction.

Each dog or latch is provided at its upper end with a projection or tooth 22 adapted to be received within a slot 23 or 23a in a U-shaped operating lever 24 slidable in the housing 14 and manually controlled and shifted by a handle or knob 25. The rear face of the upper end of each dog or pawl 17 and 18 is notched to seat a compression spring 26 which tends to force the projection or tooth 22 outwardly, and when

a slot **23** or **23***a* is in alignment with this projection, the latter is forced into the slot and the tooth **20** of the dog or pawl engages the sprocket or ratchet wheel and locks this wheel against rotation in one direction of movement.

An examination of the location of the slots **23** and **23***a* in Fig. 6 of the drawing will make it apparent that intermediate the ends of these slots is a locking position in which the projection or tooth **22** of each dog is spring-pressed or forced into its respective notch and the ratchet wheel is locked against rotation in either direction by the teeth **20, 20**. In this view, the upper or outer end of the pawl is engaging against the inner side of the arm **27**, while the upper end of the inner pawl is seating in the slot **23**. As the lever is shifted sidewise or to the left in Fig. 6, at the instant both pawls are in registry with the slots **23** and **23***a*, the spring will force these pawls into locking engagement with the star wheel and the window will be held against vertical movement. When but one of the pawls or dogs engages the sprocket or ratchet wheel, that wheel is prevented from rotating in one direction but is permitted to rotate in the opposite direction as will be evident from Fig. 5, and the window may be manually raised or lowered.

It will be evident that the novel latching mechanism may be provided at one side of the window frame where the window is small, or one may be secured in each side jamb of the frame as shown in Fig. 1. This is a matter of choice or controlled by the size and weight of the sashes.

Having thus disclosed the invention, I claim:

1. In mechanism including a toothed wheel mounted for rotation in a window frame for latching and retaining a slidable sash in a desired position in either direction of its travel in the frame, means to lock the sash against movement when in either an open or closed position, and comprising a ratchet wheel secured to said toothed wheel, a pair of pawls adapted to selectively or jointly engage the teeth of the ratchet wheel, a spring engaging said pawls and tending to force the pawls into seating engagement with the ratchet wheel, a projection at the end of each pawl, and a manually operated member for controlling the seating engagement of the pawls whereby to selectively latch the ratchet and toothed wheels against rotation in either desired direction or to lock said wheels and sash against movement in both directions of travel, said member having a pair of arms each provided with a slot adapted to receive the projection on the end of one of said pawls when the slots are moved into a position in which one or the other is in alignment with its respective projection at which time the spring forces the pawl having its projection in alignment with a slot, into latching engagement with the ratchet wheel, or into a position in which both slots are aligned with the projections at which time both of said pawls are moved into latching engagement by the action of the spring.

2. In mechanism for controlling the raising and lowering of a slidable sash having a side rail provided with spaced notches and a toothed wheel mounted for rotation in the window frame, a ratchet wheel rotatable with the toothed wheel, a pair of pawls associated with the ratchet wheel in such manner that each pawl is adapted to lock the ratchet wheel against rotation in one direction and to permit its rotation in the opposite direction, a spring tending to force the pawls into seating engagement with the ratchet wheel, a manually slidable U-shaped operating lever having spaced arms adapted to engage and selectively retain either desired pawl out of engagement with the ratchet wheel, and a slot provided in each arm so that when the lever is slid into a position in which both the slots are aligned with the pawls, the spring forces both pawls into engagement with the ratchet wheel so as to lock the ratchet wheel, toothed wheel and sash against movement.

VINCENT B. DOMECKI.