C. TRAUT & H. HIGGIN.

WINDOW SCREEN.

APPLICATION FILED JULY 6, 1914.

1,223,535.

Patented Apr. 24, 1917.

2 SHEETS—SHEET 1.

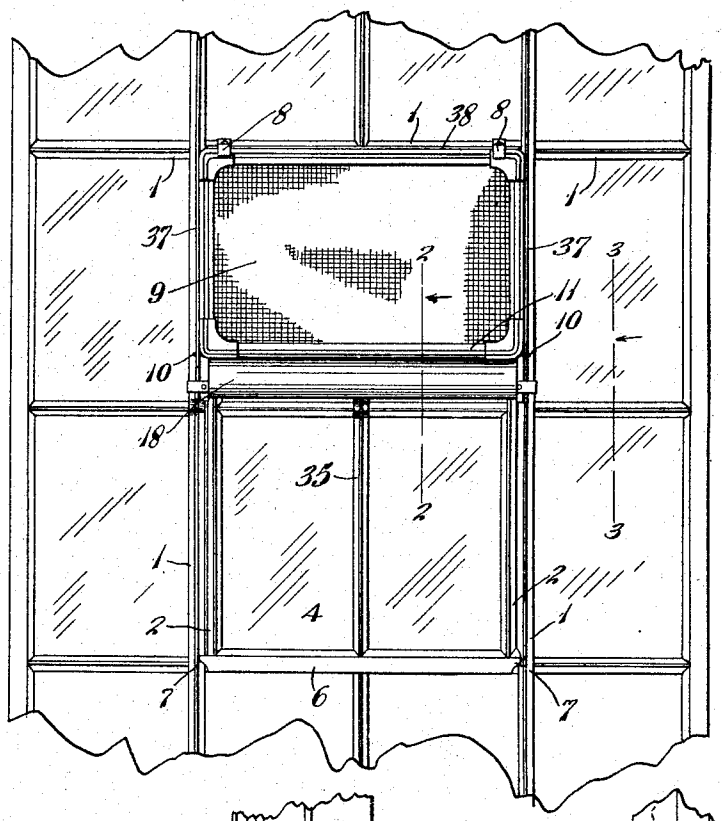


Fig. 1

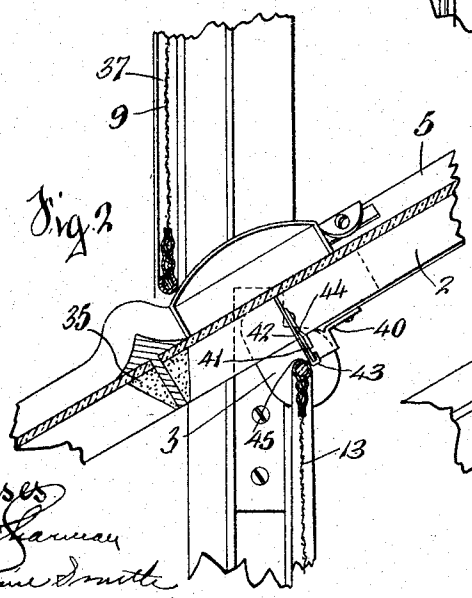


Fig. 2

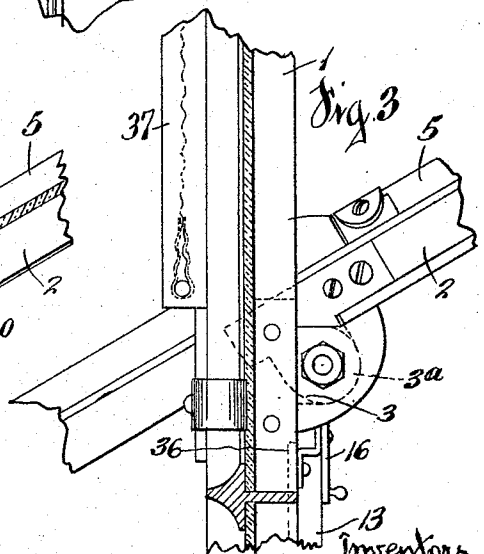


Fig. 3

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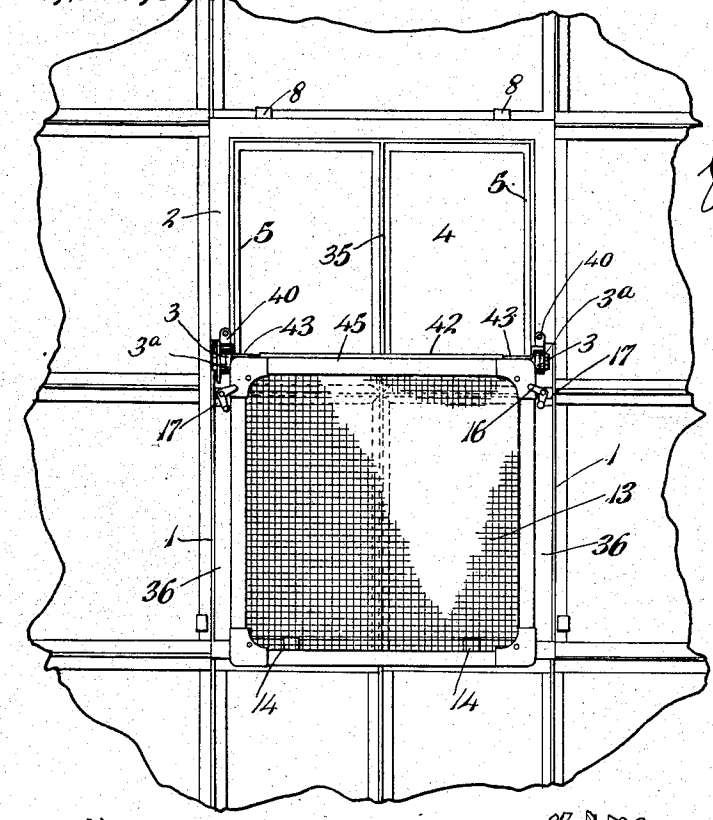


Fig. 4

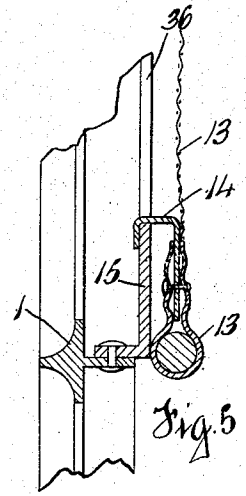


Fig. 5

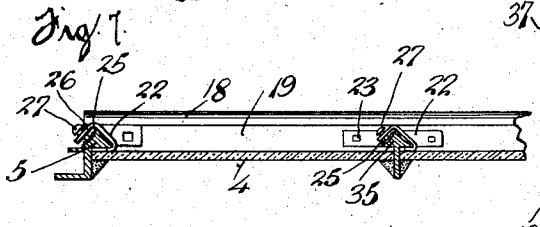


Fig. 7

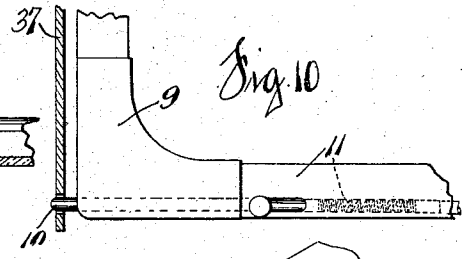


Fig. 10

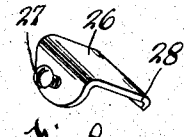


Fig. 8

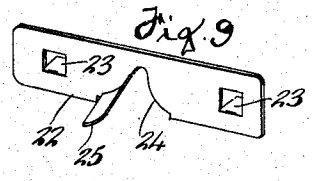


Fig. 9

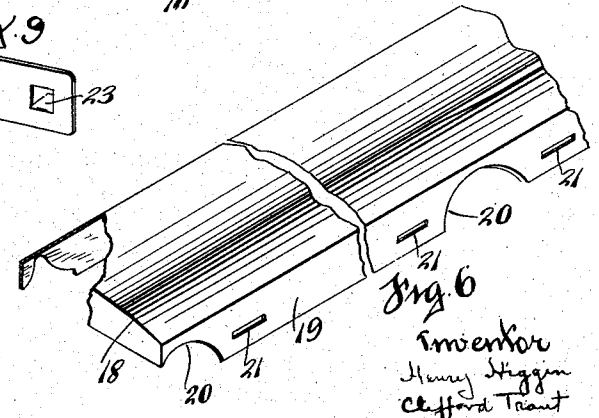


Fig. 6

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WINDOW-SCREEN.

1,223,535. Specification of Letters Patent. Patented Apr. 24, 1917.

Application filed July 6, 1914. Serial No. 849,274.

To all whom it may concern:

Be it known that we, CLIFFORD TRAUT and HENRY HIGGIN, citizens of the United States, and residents of the city of Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Window-Screens, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The object of the invention is to provide a screen for windows having a revolving sash, such as are particularly used in ventilator windows in steel sash installation. The object is, furthermore, to do away with box screens such as have, in the past, been used, and also to so provide for the mounting of parts and their arrangement that they permit of easy adaptation to metal frame windows.

To accomplish the objects as above set forth, we mount the screens by clipping them to the window frame, one screen on one side and one on the other of the sash of the window so as to give free movement to the sash in one direction, and by means of certain contacting means preserve a constant, insect and dustproof contact between the sash in any position and the screens, as will be hereinafter specifically pointed out and claimed.

In the drawings,

Figure 1 is a front elevation of a ventilator window, taken from the outside, and set in a steel sash of a large factory window.

Fig. 2 is a vertical section of the revolving sash and screen closure, taken on the line 2, 2, of Fig. 1.

Fig. 3 is a section on the line 3, 3, of Fig. 1, showing the screen and sash parts in side elevation.

Fig. 4 is a front elevation of the device taken from the inside.

Fig. 5 is a detail vertical section of the lower mounting means of the bottom screen.

Fig. 6 is a perspective view of the contact plate for the upper screen.

Fig. 7 is a horizontal section of the revolving sash, taken above the pivotal point, so as to show the mounting means for the contact plate.

Figs. 8 and 9 are details of the clamping clip and holder plate used in mounting the contact plate.

Fig. 10 is a detail elevation of a lower corner of the top screen showing the mounting means.

The ventilator window which is chosen for purposes of illustration here, has its framework in the munnions of a large metal window of which the ventilator forms but a part. The ventilator window has a sash 2 pivoted on each side in the middle so as to revolve or swing on the hinge members 3 and 3ª on the window and on its framework respectively. The sash has lights 4, 4, and mullions 5, 5, on the sash, and if desired munnions 35 between the panes of glass in the window.

It will be understood that this window is the ordinary revolving ventilator window of common usage. To complete the framework so that the screens may be mounted, frame members 36, 36, are placed in the munnions 1, lying flush with their web portions, for the lower screen (Fig. 4), and for the top screen. Outwardly extending members 37, 37 for the sides and 38 for the top are secured to the web portions of the munnions 1 (Fig. 1).

It will be understood that the window is intended to be swung in one direction only, the other direction being blocked off by the screens. To open the window, it is pulled down at the top from the inside of the room in which it is placed and the bottom sash rail 6 is extended at the ends 7, 7, to contact with the framework or munnions 1, and prevent movement in the wrong direction.

The screen frames are of metal, as are the parts of the window throughout, and they are mounted so as not to move in the ventilator frame. The upper screen 9 fits between the members 37, 37, 38, and underneath clips 8, 8, on the piece 38 at the top, and has sliding and spring-pressed rods 10 incased in each end of its bottom frame piece 11 and extending therefrom to coact with properly placed apertures in the frame strips 37, 37, to hold the lower ends of said top screen firmly. The apertures need be of a size merely to permit of a single position of the rods 10 therein, because it is not desired to have the screen ride up and down. This screen is thus easily detachable, but securely held.

The lower screen 13 has clips 14 secured into its bottom frame piece, and these clips

find a tight seat on a strip 15 secured to the munnion 1, forming the bottom frame piece for the ventilator. The top of this screen frame is engaged at each side by a pivoted latch 16, mounted on a plate 17 on the frame pieces 36, 36. This screen is thus, also, rigidly mounted on the frame piece 36, and can be removed by swinging away the latches 16 and pulling outwardly the top of the screen until it is free of the contact device which will be hereinafter described.

Means are provided for maintaining a constant contact between the ventilator sash and the screen frames, so that insects and dust are excluded. For the upper screen frame, a contact plate 18, segmental in cross section, is provided (Figs. 6–10), and it is adapted to be mounted and adjusted so that its segmental surface is substantially centered at the pivotal point of the ventilator. To accomplish this, it was necessary to make the plate adjustable, both longitudinally and laterally. Owing to the fact that exact uniformity of size in structure of this kind cannot be counted upon, the longitudinal adjustment *i. e.* across the window, was found necessary, so that the lateral adjustment could be accomplished.

The plate 18 has a flange 19 around it, and in this flange are cut-away places 20 of considerable size so as to clear the mullions 5, 5, and munnion 35 of the upper ventilator sash, heretofore described, when adjusted into any desired position. On the sides of these cut-away portions, slits 21, 21 are cut in the flange of the contact plate, and guide plates 22, having rearwardly extending tongues 23 stamped in them are mounted over the cut-away portions 20. These guide plates can be positioned, as desired, with regard to the cuts 20, by cutting the slits 21 at the time when the window is being set up, or else the slits or slots can be made of such a length as to allow for adjustment, so as to overcome the variations in spacing the munnions, and save the time that would otherwise be lost if the workman had to do it on the job. The tongues pass through the slits and are clenched to hold the parts together.

The guide plates 22 have cut-away portions 24 in them, which cuts are to be made exactly to fit the shape of guideway on the ventilator, which is to be used (for the mullions 5, 5, and munnion 35 in the example here). A portion of the section cut in the plate 22 to form the aperture 24 is bent at right angles out from the edge of cuts 24 and forms tongues or slide plates 25, shaped to fit and lie along one side of the mullion, in this case, or if some other guideway were used, to fit one side of such guide.

Some of the putty must be scraped out from the edges of the mullions 5, 5, and the munnion 35, to allow of the use of the small clamps 26 which must hook over the edges of the above named strips between them and the glass. These clamps have faces to mount clamp screws 27 and hook portions 28 to engage the free edges of the mullions and munnion as described. To secure the contact plate 18 in place, it is first moved along the mullions until the segmental surface has reached a point where it is substantially centered at the pivotal point of the window. The clamps are then screwed in place and will securely mount the contact plate, by pressing the tongues 25 tight against the mullions and munnion, and grasping the free edges thereof with the hooked ends.

A flat contact plate to be mounted at its ends on the sash frame 2 and extend between the top of the lower screen and the window glass is provided as follows. Brackets 40 for the plate are mounted on the sash frame 2 just above its termination for the upper half of the sash. The holding portion 41 of these brackets consisting of a laterally disposed strip extends in at each side. The contact plate 42 which extends directly at right angles to the sash has a flange which is bent over at 43 over the strips 41 at each side, and the plate 42 has mounted on it, for further engagement of the strips 41, clips 44 (Fig. 2). This plate is mounted so as to lie on the top edge 45 of the lower screen. The lower screen lies so that its top bead is in the axial line of the pivots of the ventilator window. Thus the swinging of the window will cause the plate to ride on the top edge 45 of the lower screen because the plate will remain substantially in a radial position with regard to the pivot point, or the screen edge.

By reference to specific structural points whereby we accomplish the purpose mentioned heretofore, *i. e.* rigid detachable screens, and complete closure in all positions, and by adopting ventilators for steel sash as an objective, it is not desired to be limited in the claims that follow to anything but structure and adaptability of like mechanical nature together with all obvious changes suggested by the disclosure made.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a revolving window having a sash pivoted to one side of the frame thereof, screens for said window one on each side of the window, the one having its edge on the line of the window pivot, and a curved contact member on the window having an arc adapted to maintain constant contact with the other screen.

2. In a revolving window having a sash mounted off the center of its frame, screens for said window rigidly and non-slidably mounted in vertical position, one above the center of the window on one side, and one below the center on the other, and rigid

means on the window to maintain constant sliding contact with both screens in all positions without depressing or elevating either screen.

3. In a revolving window, with a frame therefor, a screen mounted in the frame and terminating near the pivotal center of the window and a curved contact plate on the window, to bear on the screen and means for adjusting the plate so that the surface thereof is substantially centered at the pivotal center of the window.

4. In a revolving window, with a frame therefor, a screen mounted in the frame and terminating near the pivotal center of the window, and a curved contact plate on the window, to bear on the screen, and means for mounting the plate on the mullions of the window and adjusting the plate along said mullions so that the surface thereof is substantially centered at the pivotal center of the window.

5. In a revolving window, with a frame therefor, a screen mounted in the frame and terminating near the pivotal center of the window, a curved contact plate mounted on the window so as to fit over the mullions thereon and tight against the window, and so as to bear on the screen, and means for securing the plate to the said mullions at any desired position, for the purpose described.

6. A means for mounting a screen for a pivoted window on the munnions of a steel sash, comprising laterally extending top and side plates secured to the webs of the munnions, means on the top plate to hold the screen against the munnion, and means for detachably securing the bottom of the screen to the side plates.

7. In a revolving window, with a frame therefor, a screen rigidly mounted in the frame and terminating near the pivotal center of the window, a curved contact plate mounted on the window so as to fit over the mullions thereon and tight against the window, and so as to bear on the screen, and means for securing the plate to the said mullions at any desired position, for the purpose described.

8. In a revolving window, a sash pivoted therein, screens, one above the center of the window on one side, and one below the center on the other, one of said screens having its upper edge substantially on the pivot line of the window and the other screen having its edge out of said line, and means on the sash for preserving a constant contact with the screen members adjacent the pivot thereof, comprising members of a shape and position to contact with said screen members at a point always equidistant from the pivot center of the sash, whereby said screens do not require a resilient mounting.

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