(No Model.)

A. J. BARBER.

WINDOW SASH ADJUSTER.

No. 497,296. Patented May 16, 1893.

Fig. 1.

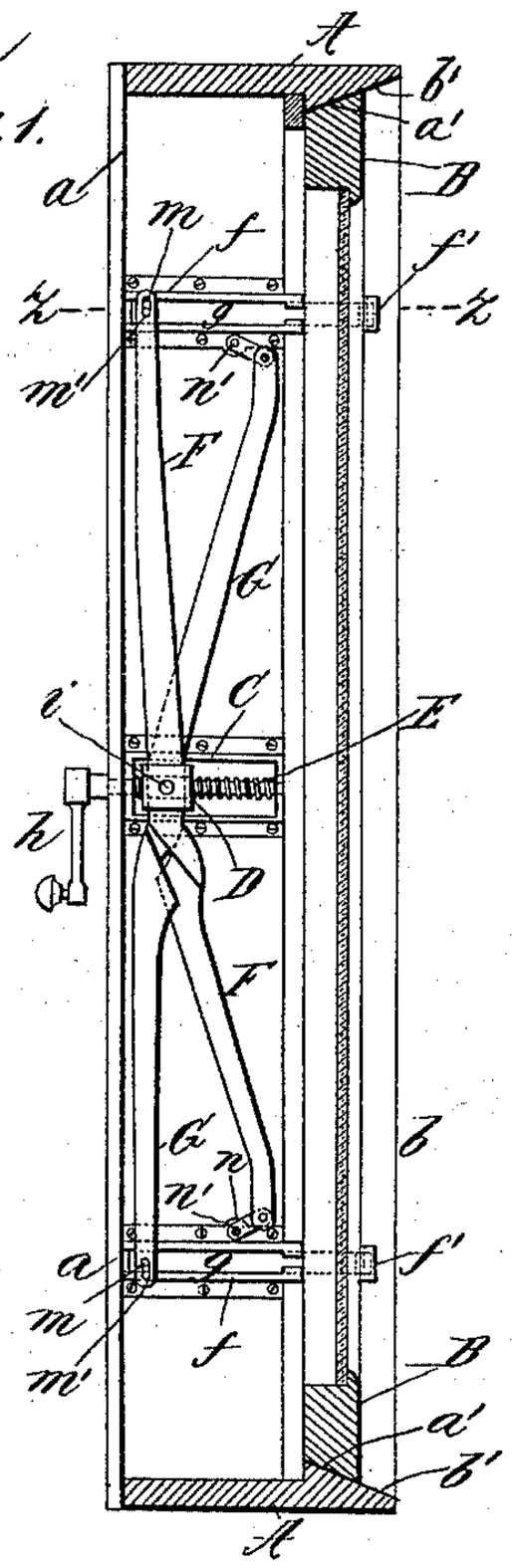


Fig. 2.

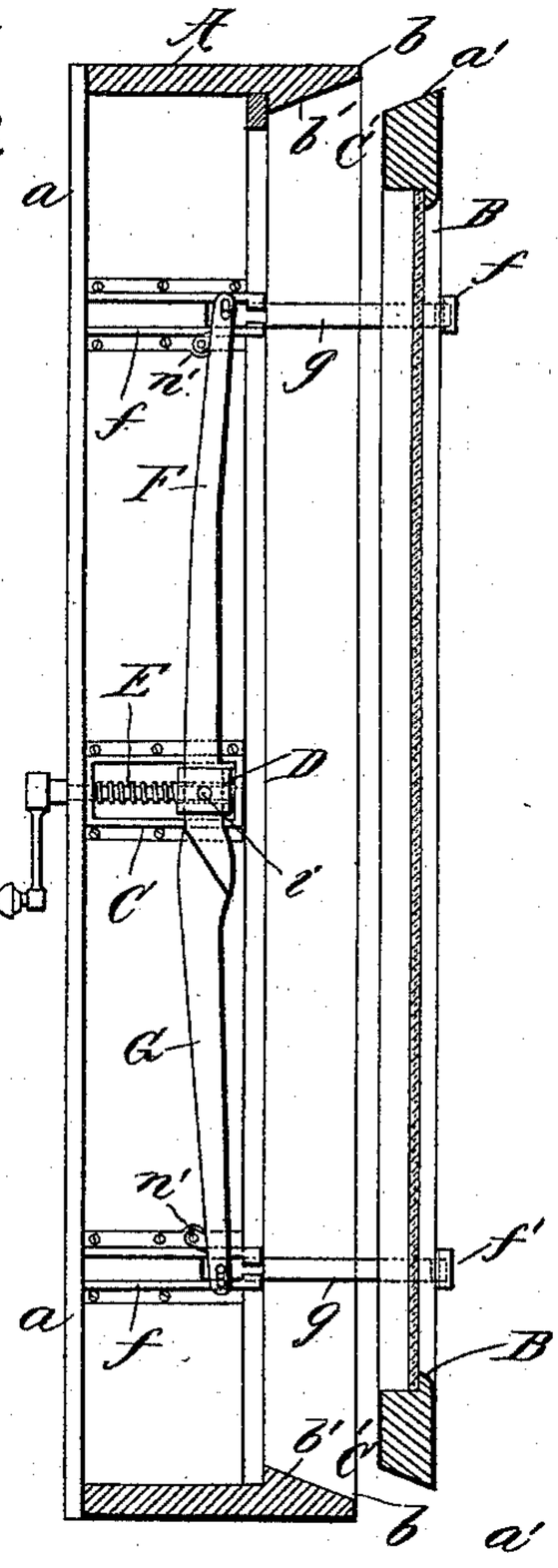
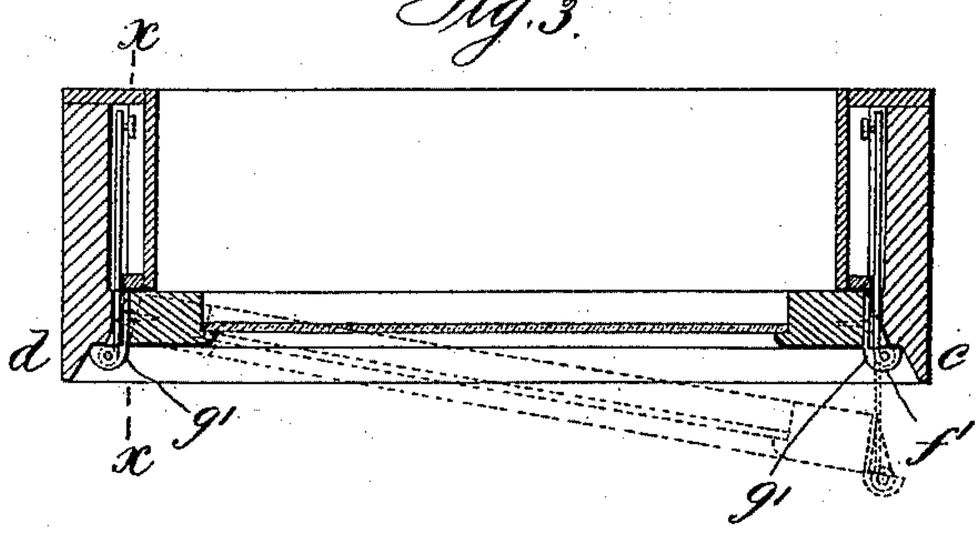


Fig. 3.



WITNESSES:

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WINDOW-SASH ADJUSTER.

SPECIFICATION forming part of Letters Patent No. 497,296, dated May 16, 1893.

Application filed July 16, 1892. Serial No. 440,287. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. BARBER, a citizen of the United States, residing at Sodus, in the county of Wayne and State of New York, have invented certain new and useful Improvements in Window-Sash Adjusters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1. is a vertical transverse sectional view taken in the line, X, X, at Fig. 3. of a window frame and sash provided with my said invention. Fig. 2 is a like view of the same but showing the parts in a different position. Fig. 3. is a horizontal transverse sectional view taken in the lines, Z, Z, of Fig. 1.

This invention is more especially designed for the windows of passenger railway cars where the temporary adjustment of the sash with its front and rear edge, either or both, outward from the frame is required to provide an opening or openings for purposes of ventilation. The invention may, however, be applied to windows of other structures where like results are desired.

Said invention comprises certain novel combinations of parts whereby the convenient and secure adjustment of the sash with reference to the frame may be very readily effected from within the car or structure, by the turning of a single screw or operating bolt at each of the edges to be adjusted.

When it is desired that both the front and rear edges of the sash shall be capable of adjustment the adjusting apparatus is duplicated, one of said apparatuses being placed at or near the front and the other at or near the rear edge of the sash, this duplication of the devices also enabling the sash to be moved bodily its entire width outward from the window frame as illustrated in Fig. 2, when desired. The arrangement just referred to is that shown in the drawings. When it is desired that but one edge of the sash shall be movable and adjustable outward from the adjacent part of the window frame, a single apparatus is placed at or near said edge to operate the same, while the opposite edge is hinged or pivoted to the frame in any suitable manner.

Referring now to the drawing, A, is the window frame. This is fixed in the wall or side of the car or other structure in the usual or in any suitable way. The inner side of the said frame is indicated at, *a*, in Figs. 1 and 2 and the outer at, *b*. The sash, B, is fitted into the outer side of the frame, A, in such a manner as to be movable bodily outward therefrom. Preferably the circumference of the sash, B, is beveled as shown at, *a'*, so as to fit upon or within the chamfered inner periphery *b'*, of the frame, A.

The construction and arrangement of the adjusting apparatus are shown more fully in Figs. 1 and 2. The manner in which said apparatus is duplicated, one apparatus at or near the forward edge, *c*, of the sash, and the other at or near the rear edge, *d*, thereof, is illustrated in Fig. 3. As that at the front edge has the same structure and operation as that at the rear, and conversely a description of one is equally a description of the other. Thus in each of the said duplicate mechanisms there are attached to the adjacent inner surface of the frame, A, two guides, *f*, in each of which works a slide, *g*, the outer end of which is firmly connected to the sash, so that the latter is suspended upon the outer ends of said slides. The manner in which the outer ends of the slides are connected to the sash is shown more fully in Fig. 3. The outer end, *f'*, of each slide has vertically a pivotal connection with the sash, the said end, *f'*, of the slide being pivoted to a stiff strap or arm, *g'*, firmly attached to the sash. Centrally or midway, or substantially so, between the two slides and firmly secured to the same inner side or surface of the frame, A, is a guide, C, in which is placed a nut, D. Through this nut extends a screw, E, which is supported in fixed bearings suitably provided in connection with the said central guide, C, in such manner that by turning the screw in one direction or the other, as the case may be, the nut is moved inward or outward. The inner end of the screw, E, has a crank, *h*, or equivalent device whereby it may be turned as desired. Pivoted to the nut, D, at, *i*, are two levers, F, and, G. One of these levers, F, has one end connected with the uppermost of the slides, *g*, by a pin, *m*, which passes through a slot, *m'*, in the said end of said lever. The opposite end of said lever is connected by a link, *n*, with

a fixed pivot or fulcrum n', at the opposite or lower part of the frame, A, preferably close to the guide, f, of the lower slide, g. Conversely the other lever, G, has its opposite or lower arm connected at its end with the opposite or lower slide by a like pin, m, and slot, m', while its upper arm is connected with an upper fixed fulcrum by a like link, n. By turning the screw in one direction the nut, D, is moved outward in its guide, C, and thus swings the two levers outward to a like degree, the free ends of the levers connected with the slides, g, g, thrusting the latter outward in like degree and moving the sash bodily outward from the frame, A, and providing the required and readily adjustable space at, C', between the edge of the sash and that of the frame, as illustrated in Fig. 2. By reversing the movement of the screw the edge of the sash is brought backward or inward toward its seat in the outer side of the frame. The width of the space, C', is of course readily changed to any desired extent by the desired operations of the screw. While the space or opening, C', is provided at one edge of the sash, B, as described; the opposite edge of said sash may remain inclosed or in snug contact with its adjacent seat on the frame, the position of the sash in such case being illustrated in dotted outline in Fig. 3. Said dotted outline shows the sash in the position, at an angle to the direction of movement of the car, in which the space or opening, C', is at the front so that the sash deflects the outer atmosphere into the car. By closing the sash at the front and opening it by using the duplicate adjusting apparatus at the rear edge of the sash, the ventilating operation is reversed, the tendency in such case being to draw the air from the car outward into the outer atmosphere. By simultaneously adjusting both apparatuses the front and rear edges of the sash may be moved outward from the frame, thus bringing the sash bodily away from the frame, in which case the current of outer atmospheric air will pass behind or within the sash with a modified effect both upon the ingress to and egress from the car. The turning movement of the sash incident to the outward and inward adjustment of one of the edges of the sash, is permitted by the pivotal connection hereinbefore described, of each of the slides, g, g, with the sash.

What I claim as my invention is—

1. The combination with the window frame, A, and sash, B, of fixed guides, f, f, on said frame, slides, g, g, working in said guides and pivotally connected at their outer ends with said sash, central fixed guides, C, nut, D, crossed levers, F, and, G, each pivoted to said nut at a point intermediate to its ends, with one of its said ends pivoted to a slide, g, and with its opposite end connected with a fixed fulcrum, all substantially as and for the purpose herein set forth.

2. The combination with the window frame, A, and sash, B, of the fixed guides, f, f, the slides, g, g, working in said guides and pivotally connected with the sash, the central fixed guide, C, nut, D, in said central guide, crossed levers, F, and, G, each slotted at one end for pivotal connection with one of the slides, g, and links, n, n, connecting the opposite ends of the said levers with fixed fulcra, all substantially as and for the purpose herein set forth.

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Witnesses:
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