

E. F. CHAFFEE.
WINDOW CONSTRUCTION.
APPLICATION FILED OCT. 27, 1916.

1,286,941.

Patented Dec. 10, 1918.

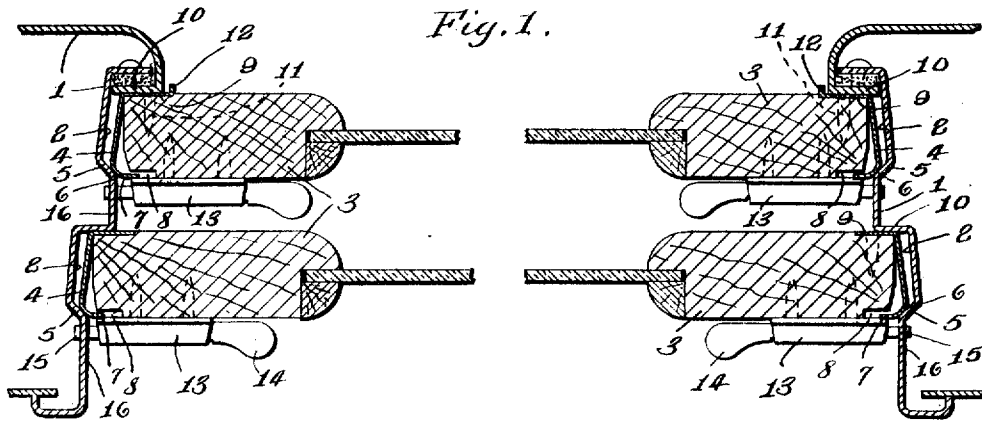


Fig. 3.

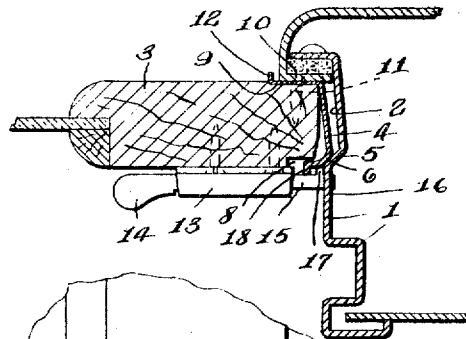
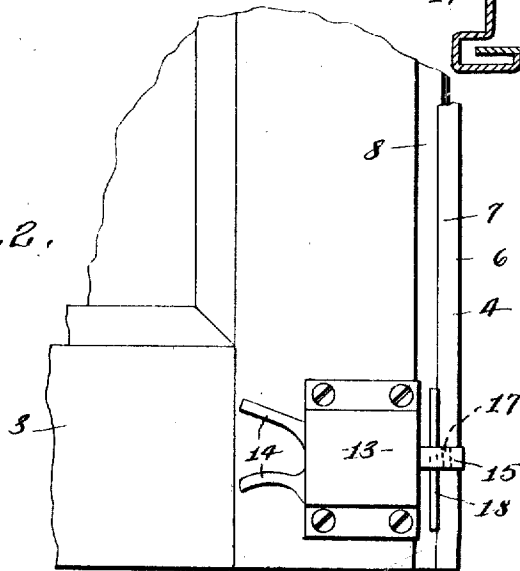


Fig. 2.



INVENTOR

Edward F. Chaffee

BY

Parsons & Rodell.
ATTORNEYS

UNITED STATES PATENT OFFICE.

EDWARD F. CHAFFEE, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE O. M. EDWARDS COMPANY, INC., OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

WINDOW CONSTRUCTION.

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Specification of Letters Patent.

Patented Dec. 10, 1918.

Application filed October 27, 1916. Serial No. 128,037.

To all whom it may concern:

Be it known that I, EDWARD F. CHAFFEE, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga and State of New York, have invented a certain new and useful Window Construction, of which the following is a specification.

This invention relates to window constructions particularly applicable to railway cars, and has for its object a particularly simple, efficient and durable means for normally holding the window sash from displacement and permitting the ready removal thereof without removing the window stops and also making the window weather tight; and the invention consists in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a cross-sectional view, partly broken away, of a window construction embodying my invention a double sash being shown.

Fig. 2 is a fragmentary elevation of a lower right hand corner of the sash and contiguous part of the frame.

Fig. 3 is a cross-sectional view through a portion of a single sash and its frame.

This window construction comprises generally a frame element formed with guides, a sash element in the guides, and yielding means coacting with said elements for holding the sash from displacement out of the guide in a direction at an angle to the general plane of the sash, that is, forwardly or inwardly toward the interior of the car. The yielding means is yieldable when a portion of the sash is partly displaced out of its normal position and sufficient force to overcome the holding action of the yielding means is applied to the sash.

In this embodiment of my invention, this yielding means also acts as a weather strip. 1 designates the frame formed with vertical guides or channels 2, the frame being here shown as formed of sheet metal and as designed for a double sash in Fig. 1, and for a single sash in Fig. 3.

3 designates the sash movable vertically in the guides or vertical channels 2.

The yielding means for holding the sash from displacement in the guides is yieldable laterally or edgewise relatively to the sash when a sufficient force to overcome the frictional engagement of the said means with the frame, is applied in a direction at an angle to the plane of the sash, and said means is here shown as a resilient metal strip 4 extending lengthwise of each edge of the sash 3 and located in the contiguous guide. The strip is preferably fixed to the sash near one of the edges of said strip and has its other end free, the major part of the strip diverging from the edge face of the sash and the free edge of said strip coacting with the contiguous wall of the guide 2. The strip is here shown as fixed to the sash at the rear edge of the strip and as engaging the front wall 5 of the guide.

The front wall 5 of each guide and the front portion of each strip have coacting faces which cause the free end of the strip to yield inwardly toward the edge face of the sash and thus disengage from the wall 5 during the displacement of the window sash 3, and as here shown, the wall 5 is formed inclined or beveled at an angle to the general plane of the sash 3 and the coacting surface of the strip is rounded or beveled as at 6.

The free end of the strip 4 is also formed with an angular flange 7 which laps the front or inner face of the sash 3, it usually extending into a groove or rabbet 8 in the sash. The flanges 7 of the strips make the construction weather tight and also serve to finish the margins of the sash on the front face thereof. Each strip 4 is also formed with a base flange 9 lapping the outer or rear face of the sash 3 and engaging the rear wall 10 of the guide 2 which wall is parallel to the general plane of the sash. The base flange 9 is secured to the sash in any suitable manner as by screws 11. The base flange 9 is also formed with an outwardly turned lip 12 which is located outside of the guide and near the wall 10, said lip 12 supplementing the weather tight feature of the construction.

13 are the usual window catches located

near the lower corners of the sash 3 and serving to hold the window at different elevations, these catches including the usual pinch levers 14 which operate bolts 15. Each bolt 15, as here shown, coacts with a suitable rack which is provided in any suitable manner, as by forming perforations in a portion 16 of the window frame construction. The bolt 15 is also shown as provided with means as a shoulder 17 coacting with a shoulder or outturned flange 18 provided on the contiguous portion of the flange 7 of each strip 4, the flange 18 being arranged so that when the pinch lever is operated, the shoulder on the bolt 15 engages the flange 18 and tends to pull the free edge of the strip 4 so that it exerts less frictional resistance on the walls 5 of the guide 2. Hence, the window sash can be more readily raised or lowered. In fact, the bolts if moved far enough will carry the contiguous portion of the strip entirely free of the front wall of the guide, so that if the sash is raised slightly, the lower end of the sash can be pulled forwardly out of its guide and continued pulling on the sash will wholly remove it from the frame.

In operation, to remove the sash, it is slightly raised until the lower margin thereof is disengaged from the sill and the lower end of the window sash pulled inwardly, the force thus applied causing the free edges of the strips 4 to be cammed or compressed inwardly by the surfaces 5 of the guides 2, and the entire window removed from the frame. To replace the sash, the reverse of this operation takes place, the upper end of the sash first being placed in the guides and the lower end swung inwardly so that the strips 4 snap into the grooves or channels 2. When the catches or the bolts 15 thereof are constructed to cooperate with the strips 4, the lower portions of these strips 4 are first disengaged from the inclined walls 5 of the guide by operating the levers 14 and then the window removed as before described.

What I claim is:—

1. In a window construction, the combination of a frame formed with vertical guides, a sash movable in the guides, the front wall of one of the guides being formed with a cam surface inclined relatively to the plane of the sash and opposed to the rear walls of the guide, and a spring strip extending lengthwise of the edge of the sash and being fixed at its outer edge to the sash, the body of the strip diverging from the edge face of the sash and coacting at its front edge with said inclined cam face, and being compressible by said cam face toward the edge of the sash when force is applied tending to displace the sash forwardly out of the guides, substantially as and for the purpose set forth.

2. A window construction comprising a

frame element formed with guides, a sash element movable in the guides, and a yielding strip located in each of the guides and fixed at one edge to one of said elements and having its body portion spaced apart from the sash and the bottom wall of the guide and being provided at its front edge with the cam surface arranged at an angle to the plane and engaging the front face of the other of said elements, the strip being compressible to move said cam surface out of engagement with the part with which it is engaged when force is applied to the sash tending to displace the same forwardly out of the guides, substantially as and for the purpose specified.

3. In a window construction, the combination of a frame formed with vertical guides, a sash movable in the guides, the front wall of one of the guides being formed with a cam surface inclined to the plane of the sash and opposed to the rear wall of the guide, a spring strip extending lengthwise of the edge of the sash and fixed at its outer edge to the sash, the body of the strip diverging from the edge face of the sash and coacting at its front edge with said inclined cam face, and being compressible toward the edge of the sash when force is applied tending to move the sash forwardly out of the guides, and a sash holder carried by the sash and having means coacting with the free edge of said strip to compress said strip when the sash holder is operated, substantially as and for the purpose described.

4. In a window construction, the combination of a frame formed with vertical guides, a sash movable in the guides, the front walls of the guides being arranged at an incline relatively to the plane of the sash, and resilient strips extending along the edges of the sash and being fixed along their outer edges to the sash and having their front edges provided with inclined flanges engaging the front walls of the guides, the bodies of the strips being spaced apart from the edge faces of the sash and compressible toward said edge faces by the action of the inclined flange on the front walls of the guides when force is applied to the sash tending to move the same forwardly out of the guideways, substantially as and for the purpose specified.

5. In a window construction, the combination of a frame element formed with vertical guides, a sash element movable in the guides, the front walls of the guides being arranged at an incline relatively to the plane of the sash, resilient strips extending along the edges of the sash and being fixed along their outer edges to the sash and having their front edges provided with inclined flanges engaging said front walls of the guides, the bodies of the strips being spaced apart from the edge faces of the sash and

compressible toward said edge faces by the
action of the inclined flange on said front
walls of the guides when force is applied to
the sash tending to move the same forwardly
out of the guideways, and sash holders hav-
ing means coacting with said strips to com-
press the same upon the operation of the

sash holders, substantially as and for the
purpose set forth.

In testimony whereof, I have hereunto 10
signed my name, at Syracuse, in the county
of Onondaga, and State of New York, this
27 day of September, 1916.

EDWARD F. CHAFFEE.

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