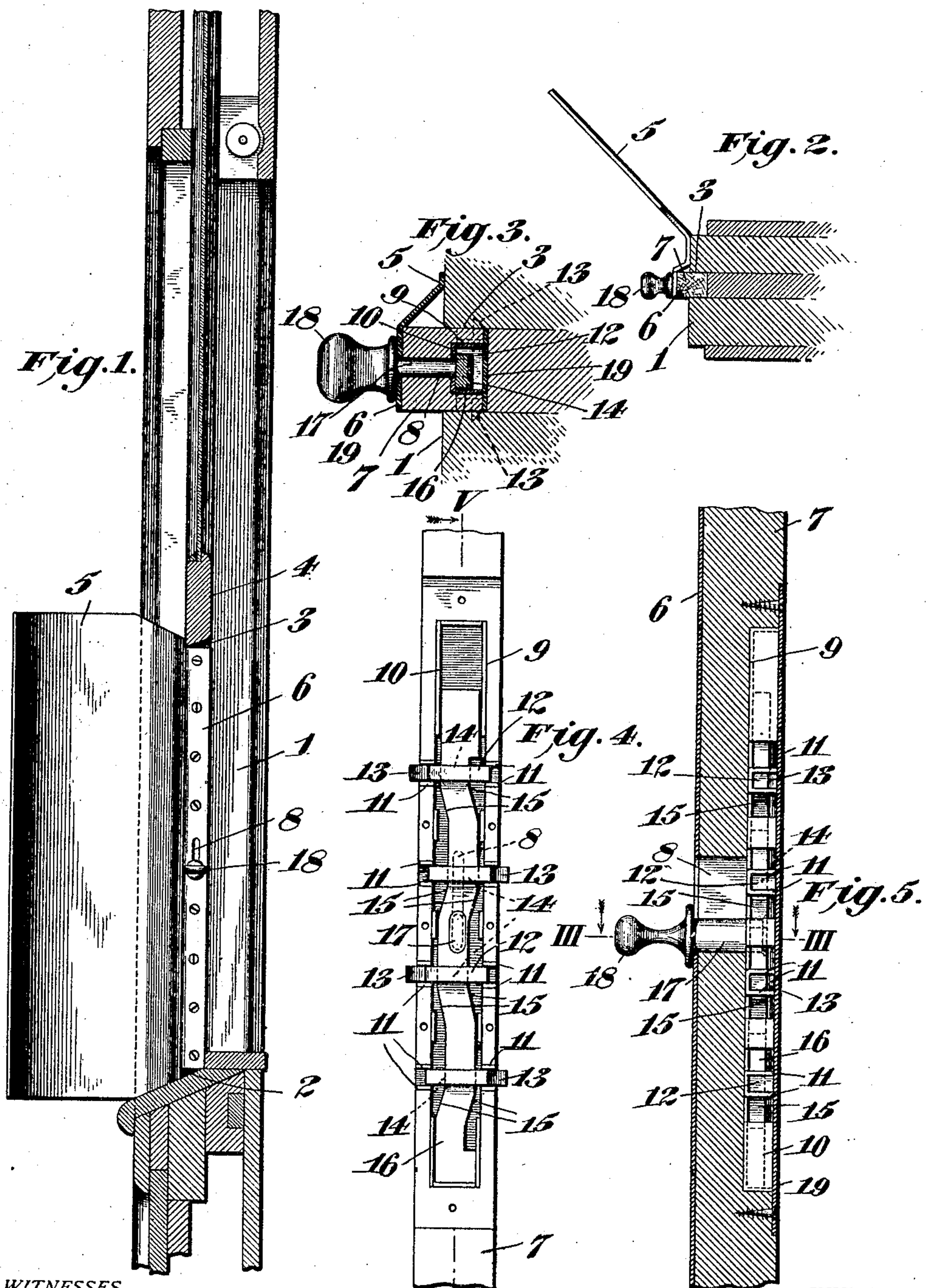


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PATENTED APR. 30, 1907.

J. L. REPLOGLE & G. E. THACKRAY.
DUST DEFLECTOR.

APPLICATION FILED OCT. 19, 1906.



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DUST-DEFLECTOR.

No. 852,035.

Specification of Letters Patent.

Patented April 30, 1907.

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To all whom it may concern:

Be it known that we, JACOB L. REPLOGLE and GEORGE E. THACKRAY, citizens of the United States, residing in the borough of Westmont, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Dust-Deflectors; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention consists in general of a dust-deflector which can be temporarily secured in location to project outside of a window or similar opening, the extending portion of same being inclined laterally with respect to the plane of the opening so that the air laden with dust, cinder, smoke, etc., will impinge against same at an angle and be deflected outwardly, thus protecting the space interior of the opening or window from these annoyances, while at the same time permitting air to enter for ventilation.

Our invention is particularly adapted for use in connection with windows of passenger cars, the location and arrangement of the dust-deflector being such that it can be readily secured to the window frame and project from the car side at an angle sloping with the direction of the movement of the air, thus deflecting the dust and cinders away from the window.

Heretofore it has been customary to use dust-deflectors for car windows which project at right angles to the surface of the window or car, the result of this being that the wind forms an eddy around the dust-deflector, which carries dust, cinders and smoke into the window despite this attempt at protection. In addition to this, it has been discovered that the speed of fast trains is limited principally by the air resistance to their movement and it has been stated that eighty to ninety per cent. of the power expended in hauling said trains is to overcome the resistance of the air. The old style of window guard projecting at right angles adds greatly to this resistance with the effect of requiring increase of locomotive power and causing decrease of speed on account of the wind resistance, which often occasions trains to run behind their schedule time, with all the difficulties and discomforts which this entails.

Our improved window guard obviates the difficulties due to the eddies and consequent entrance of the dust and cinders which occurs with the old style guard projecting at right angles, and our improved inclined deflector also decreases the air resistance of the train, thus reducing the amount of power required and permitting speed to increase as necessary.

Having thus given a general description of our invention, we will now, in order to make the matter more clear, refer to the annexed sheet of drawings which forms part of this specification, and in which like numbers and characters refer to like parts:

Figure 1 is a transverse vertical section through the window of a car showing our dust-deflector in elevation. Fig. 2 is a horizontal section through the side of a window frame showing a plan view of our dust-deflector. Fig. 3 is a horizontal sectional elevation on the line III—III of Fig. 5. Fig. 4 is a rear elevation of a portion of the locking strip of our dust-deflector with the back plate removed to show the mechanism by which it may be locked to the window frame. Fig. 5 is a vertical sectional elevation on the line V—V of Fig. 4.

Referring now to the various characters of reference on the drawings:—1 represents the window frame or casing and 3 the customary groove or recess therein in which the sash slides up or down; 2 is the window sill or ledge shown as sloping outwardly and 4 is the bottom rail of the window sash.

5 is the projecting portion of our dust-deflector which extends at an angle from the car side about as shown, but we do not limit ourselves to this precise angle, as it may be greater or less as desired.

In the drawings, the portion 5 is shown as made of sheet metal, for the purpose of lightness and strength, but we do not limit ourselves to the use of this material, as it may be made of fiber, wood, or other material, as may be desirable or expedient, with the slight changes in the construction necessary for this purpose.

6 indicates a bent up or flanged portion of the deflector plate 5 which is attached to the locking strip 7 by means of screws as shown.

8 indicates a slot or opening in the locking strip in which the shank 17 of the handle or knob 18 may be slidably moved backward or

forward for the purpose of locking or unlocking our device within the groove or recess of the window frame as will hereafter be described.

5 9 represents a rabbet extending for a portion of the length in the rear side of the locking strip 7 which contains a portion of the operating mechanism for locking and unlocking our dust-deflector.

10 In this case, the locking strip 7 is shown as constructed of wood, which is provided with a metal casing 10 for the purpose of properly retaining and guiding the parts of the locking mechanism, said locking strip being also provided with guides or metal bushings 11 in
15 which the locking teeth 12 are mounted, said bushings thus insuring a close fit and the easy operation of the teeth. The locking teeth 12 are provided with chisel shaped
20 points 13, the flat sides of which face outwardly as shown, for the purpose of squarely holding the locking strip within the window frame as illustrated in Fig. 3, the beveled edges being on the rear side of said locking
25 teeth as indicated. Although in this case, the locking teeth 12 are shown as provided with chisel points, they may be made with square or rounded ends or tipped with rubber or other elastic material which would
30 cause them to bind by friction against the interior surface or groove of the window frame, thus locking the strip by pressure without indenting the frame as shown. The locking teeth 12 are provided with notches or
35 rabbets 14 of substantially rectangular form, so proportioned as to slidably fit on the locking bar 16. The locking bar 16 is formed with a series of inclined surfaces 15, this bar thus having a sinuous form as shown, such
40 that when it is moved downward the inclined surfaces act as wedges or inclined planes to project the locking teeth from their casing and when the locking bar is moved in the opposite direction the inclined
45 surfaces on the other side retract said teeth until the ends are within the casing, all as can be readily understood by inspection of Fig. 4 of the drawings.

19 represents a cover plate on the back of
50 the locking strip for the purpose of covering and holding the locking mechanism in position as shown particularly in Figs. 3 and 5.

To place our dust-deflector in position, the window sash is first raised, the deflector with
55 its locking teeth retracted within their casing is placed so that the locking strip fits within the groove or rabbet of the window frame below the sash, the movement of the knob or handle 18 in the proper direction
60 then causes the locking teeth to project from their casing and engage the sides of the groove in the window frame and the arrangement of the locking strip is such that when this is accomplished, the flat or vertical sur-
65 faces of said locking strip bear against the

edges of the grooves 14 in the locking teeth, thus maintaining them in position without reaction while the deflector is in use. Our dust-deflector is withdrawn from the window
70 by a reversal of this operation, and in order to avoid the use of right-hand or left-hand styles of deflectors, we prefer to make the projecting portion 5 beveled both on the top and bottom, as shown particularly in Fig. 1
75 of the drawings, whereby it may be used on either side of the window or on either side of the car.

Although we have described and illustrated the locking teeth 12 as constructed with rabbets or grooves 14 of substantially rectan-
80 gular form, we do not limit ourselves to this specific arrangement, but may make the locking teeth with round, square or other shaped holes through their intermediate portions in which the locking bar 16 is in-
85 serted for the purpose of operating same by the action of the inclined sides of said locking bar when moved in a longitudinal direction.

Although the locking bar 16 is shown as a flat and rectangular section, we may make
90 it of circular or other section bent or shaped in a sinuous manner to provide the inclined surfaces as described and preferably with intervening surfaces parallel to the longitudinal axis of the locking strip, said interven-
95 ing surfaces being in contact with the sides of the grooves or holes in the locking teeth when they are projected to maintain them without reaction.

Although we have shown and described
100 our improvements in considerable detail, we do not wish to be limited to the exact and specific details shown and described, but may use such substitutions, modifications or equivalents thereof, as are embraced within
105 the scope of our invention or as pointed out in the claims.

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

1. A dust-deflector comprising a portion having a plane surface adapted to project laterally in an inclined direction, said inclined
115 portion being provided with a locking strip arranged to fit within the groove of a window frame and means for positively and removably securing the same thereto.

2. A dust-deflector for window openings or the like, comprising a portion having a plane surface projecting laterally and out-
120 wardly in an inclined direction, a locking strip adapted to fit within the groove of a window frame, one or more locking teeth mounted in said strip and means for positively projecting and retracting the teeth
125 therefrom for the purpose of locking and unlocking the same in and from the window frame.

3. In a dust-deflector, a locking-strip adapted to fit within the groove of a window
130

frame, a series of locking teeth mounted in said strip, a sinuous locking bar adapted to co-act with said teeth and to project or retract same by the longitudinal movement of said strip.

4. In a dust-deflector, a locking strip adapted to fit within the groove or recess of a window frame, one or more locking teeth slidably mounted in said strip, grooves or rabbets in said locking teeth, a sinuous locking bar fitted within the rabbets of said teeth, all so arranged that a movement of said bar in one direction will project said teeth from the locking strip, and a movement in the opposite direction will retract said teeth.

5. A dust-deflector comprising a portion adapted to project from the side of a window in a laterally inclined direction, said projecting portion being provided with a locking strip secured thereto adapted to fit within the groove of a window frame, one or more

locking teeth slidably mounted in recesses provided therefor in said locking-strip, rabbets in said locking teeth, a slidable bar provided with a series of parallel and inclined surfaces on both sides thereof mounted within the rabbets of said teeth, a knob or handle projecting from said locking bar whereby said bar may be moved longitudinally in either direction for the purpose of projecting said teeth from or retracting same within said locking-strip by the action of said inclined surfaces, and means for securing the locking mechanism aforesaid in position.

In testimony whereof, we hereto affix our signatures in the presence of two witnesses.

JACOB L. REPLOGLE.
GEORGE E. THACKRAY.

Witnesses:

ELMER SEAVEY,
TOM H. KYLER.