

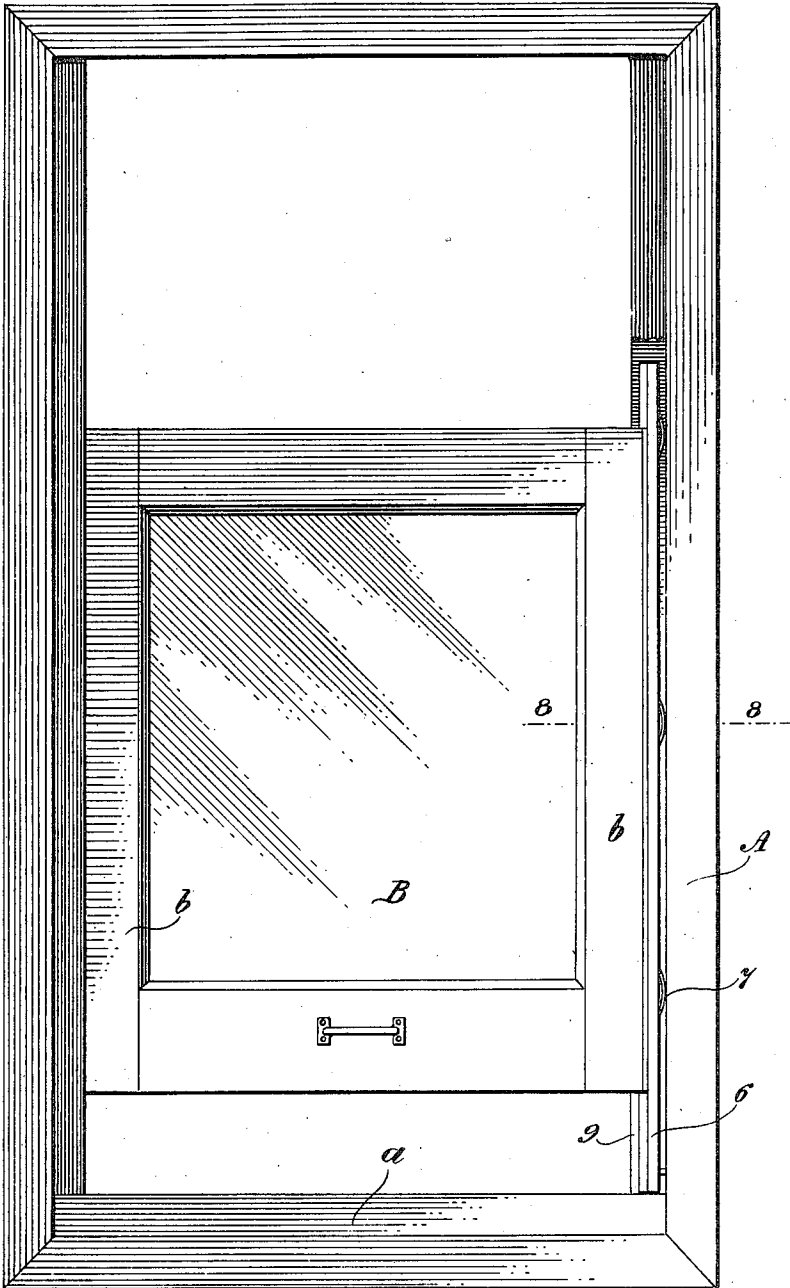
D. HOYT.
WINDOW.

APPLICATION FILED JAN. 16, 1909.

1,045,555.

Patented Nov. 26, 1912.

3 SHEETS—SHEET 1.



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Fig. 1.

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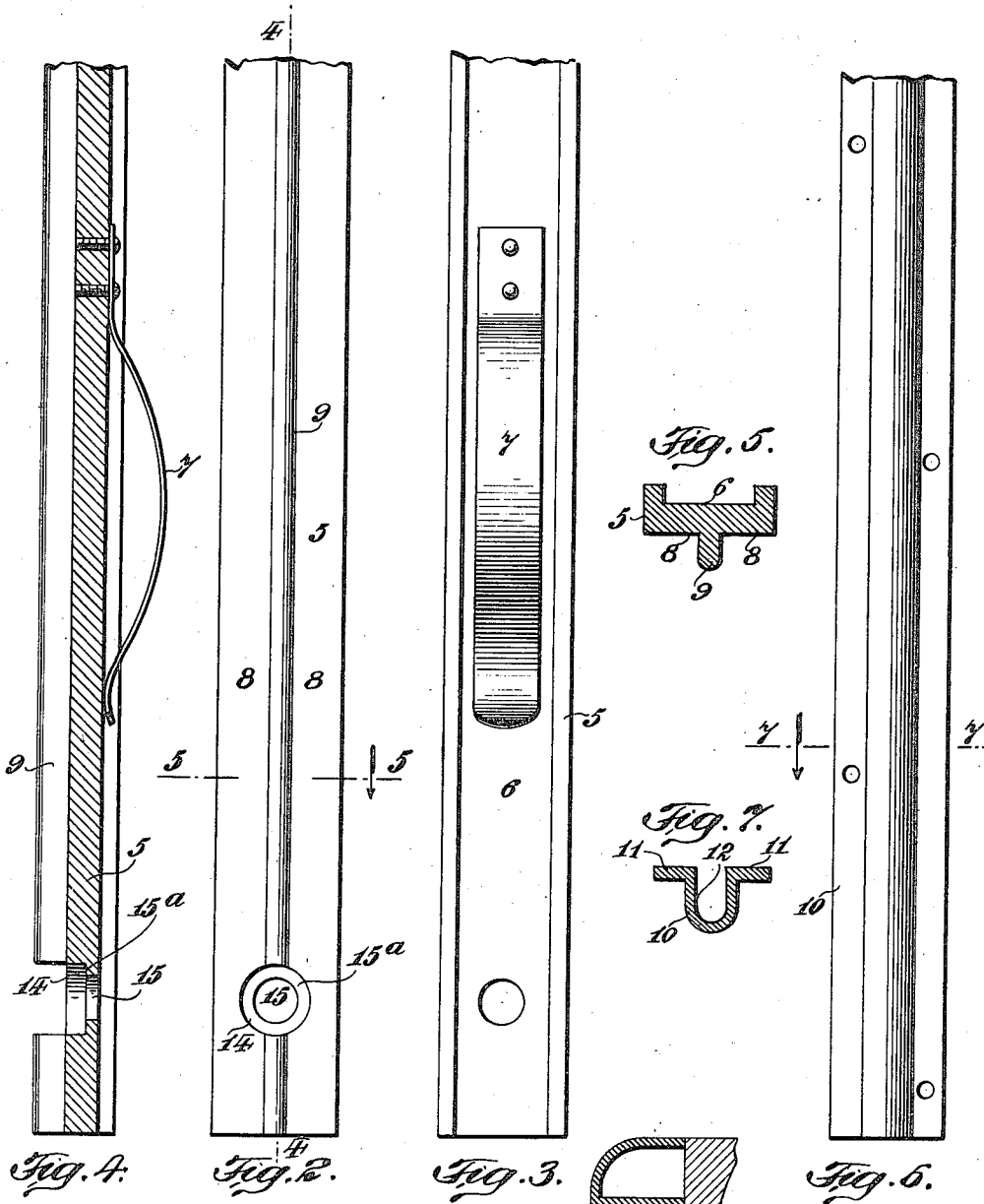


Fig. 1. Fig. 2. Fig. 3. Fig. 4. Fig. 5. Fig. 6. Fig. 7. Fig. 8. Fig. 9. Fig. 10. Fig. 11. Fig. 12.

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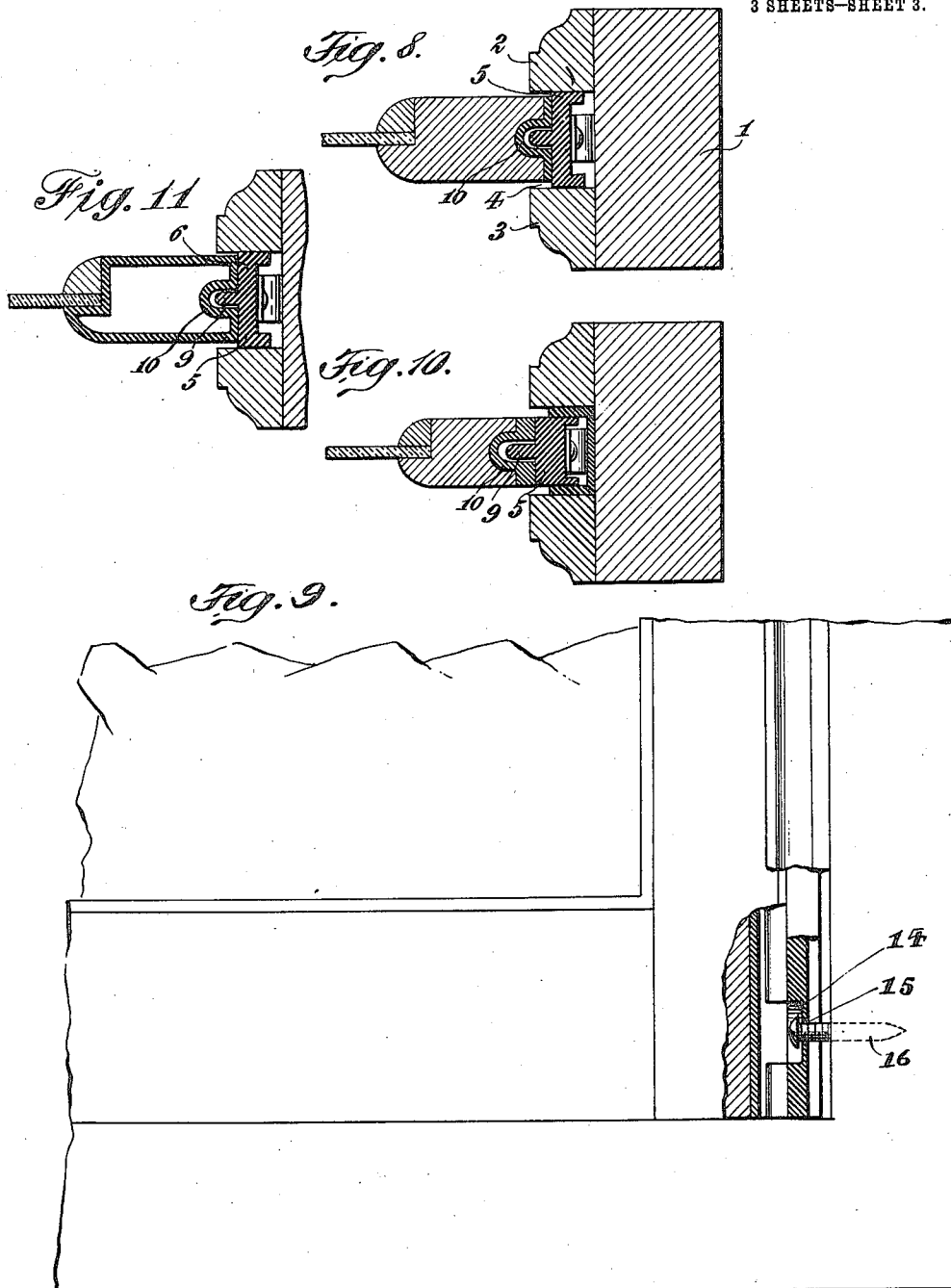
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3 SHEETS—SHEET 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

DANIEL HOYT, OF NEWARK, NEW JERSEY.

WINDOW.

1,045,555.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed January 15, 1909. Serial No. 472,391.

To all whom it may concern:

Be it known that I, DANIEL HOYT, a citizen of the United States, and a resident of the city of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Windows, of which the following is a specification.

The present invention relates to certain novel and useful improvements in windows and has particular application to car windows.

The object of this invention is to construct a window sash for use in cars which can be manufactured in numbers at a factory and can be readily applied without change to a car where the window frames vary in form or dimension, without the necessity of fitting or cutting either the sash or the window frame in which it is set, so that any sash may be applied to any window opening of a car; and to provide a sash construction which will always permit an easy and proper working of the sash without regard to any swelling, shrinking, or other derangement of the parts of the frame or sash of whatever material from which they may be constructed.

The invention consists in the construction, combination, and arrangement of parts set forth in and falling within the scope of the appended claims.

In the accompanying drawings Figure 1 is a face view of a window embodying my improvements, a portion of the inside stop thereof being broken away; Fig. 2 is a face view of a metal bar employed by me, which I have designated "sash post"; Fig. 3 is a rear face view of Fig. 2; Fig. 4 is a longitudinal, sectional view of Fig. 2 taken on the line 4—4; Fig. 5 is a cross-sectional view of Fig. 2 taken on the line 5—5; Fig. 6 is a face view of a metal strip employed by me and which I have designated "sash slide"; Fig. 7 is a cross sectional view taken on the line 7—7 of Fig. 6; Fig. 8 is a cross sectional view of Fig. 1, taken on the line 8—8; Fig. 9 is an enlarged detail view of a portion of Fig. 1 and showing one manner of fastening the sash post; Fig. 10 shows metal stops; Fig. 11 shows a construction wherein a metal sash is employed. Fig. 12 is a cross sectional view of another embodiment of the invention.

In carrying out my invention I employ the ordinary posts of a window frame as

indicated by the numeral 1, on the face of which are located the outside sash stops 2, and the inside sash stops 3, as shown in cross section in Fig. 8; these strips forming a way or groove 4 constituting a housing for a purpose to be presently described. Within this housing 4 I locate a metallic bar or sash post 5, shown more clearly in detail in Figs. 2, 3, 4 and 5. It is necessary that this sash post be heavy and strong enough to maintain its straight rigid shape at all times so as not to be bent, compressed or twisted during the opening or closing movements of the window sash, or the swelling of the adjacent wooden parts of the window frame. The sash post 5 is preferably grooved on the rear side as at 6, to accommodate a suitable tensioning device such as the leaf springs 7, the latter being interposed between the sash post 5 and the vertical post 1 of the window frame. These tensioning devices may be placed at intervals as required, as shown in Fig. 1. It will readily be apparent that the ordinary tendency of the springs is to thrust or force the sash post 5 outward from the window frame posts 1 when the sash is placed in position. The front side of the sash post or the side nearest the sash has flat bearing surfaces 8, as clearly shown in Figs. 2 and 5, and in the center of the face of the post and between the bearing surfaces 8, 8 running vertically the length of the post, is formed a tongue 9 and designed to guide the sash in its travel. The sash posts are of less length than the frame so that they may be placed against the side edges of the sash and together placed in the window frame bodily over the sill cap and under a car window heading.

I make the window sash B with parallel sides *b, b*. On the side edges of the sash I secure the metallic sash slides 10, clearly shown in Figs. 6 and 7. The outer face of the sash slide has flat bearing surfaces 11, 11, to correspond with the flat bearing surfaces 8, 8 of the sash post 5, and adapted to slide in contact with the latter. In the center of the face of the sash slide and between the bearing surfaces 11, 11 running vertically the length of the sash is formed a channel way 12, made deeper than the tongue 9 of the sash post 5 and into which the latter projects as shown in Fig. 8.

It will of course be understood that each side of the window frame is provided with a sash post and that each side of the window

sash is provided with a sash slide, and further, that the tensioning means may be used on one or both sides.

It will be noted by reference to Fig. 8 that the sash post 5 is wider in cross section than the sash slide 10 or the side *b* of the sash, so that it is impossible for any contact to take place between the movable sash and the frame or stops except the bearing flat surfaces 11, 11 of the sash slides 10 against the flat bearing surfaces 8, 8 of the sash post 5, the rigid structure of the post 5, which is located wholly within the space between stops, effectively preventing the stop pieces from moving toward each other and thereby binding on the sash.

Fig. 9 is an enlarged section of Fig. 1, with a portion of the sash post broken away, showing a longitudinal sectional view of a portion of the post provided with means for preventing the sash post from lifting off the sill while raising the sash. At the face of the post 5 a relatively large hole 14 is drilled partly through the post and from the center of this hole a smaller hole 15 is drilled, leaving a shoulder 15^a as shown in Fig. 4. Through the hole 15 the body of a screw 16 is inserted, the diameter of the screw 16 being of a size to allow the post 5 to work in and out freely, the screw 16 being firmly secured in the window frame 1, and the head of the screw standing free from contact with the post in the hole 14.

In installing the window sashes in the frames the outside stops are first secured in place, and posts 5 are then applied to the sides of the window sash, which, together with said posts which carry the springs, are placed in the window frame opening so that the outside faces of the posts are against the outside stops. When the sash and posts are in this position, the springs on the posts will force the latter into close contact with the side edges of the sash, and, said side edges being parallel, the posts will also be parallel. The inside stops are then secured in place with their inner faces closely adjacent the inside faces of the posts.

The invention as above described provides an inexpensive and simple construction furnishing at all times perfect fitting guide-ways for the sash, where the sash with the sash posts will be interchangeable in any window opening of a set, where the sash is practically dust and air proof, which cannot rattle and yet can be raised and lowered readily, where swelling or shrinking of any woodwork composing the frame, stops or sash will not affect the perfect working of the window, doing away with all compensating springs, weather strips and other devices of the kind. It will be noted that when the sash and sash posts are installed in the window opening the sash posts automatically assume their proper position to

the sash, and remain stationary. If from any cause the sash stops should become loose after being secured in position, the sash posts will still maintain their proper positions in relation to the sash and be held there the same as before by the force of the tensioning devices.

Fig. 10 shows metal stops which prevent the possibility of the stops binding the posts, and outside of the metal stops finishing strips may be placed as shown in said figure, these metal stops being of any depth required, or any shape to constitute finishing strips as well as housings.

In Fig. 11 I have shown a construction wherein the window sash is made out of metal, and consequently the employment of the strip 10 is avoided, the channel being formed in the sash side at the time of manufacture.

Fig. 12 illustrates a form of the invention where the post is not provided with a tongue and the sash with a groove as heretofore described, but the outside and inside stops are metal and constitute the housing for the post and the side edges of the sash, and they may also constitute finishing strips.

What I claim is:—

1. A car window comprising a window frame, outside and inside stops on the frame forming housings, a window sash having its side edges projecting and slidably disposed within the housings, said sash being of less thickness than the width of the housings between the stops, rigid metallic sash posts located within the housings between the stops and between the side edges of the sash and the window frame, said posts being made wider in cross-section than the thickness of the sash, and of practically the same width as the housings and having their side edges between and adjacent the inner faces of the stops so that the stops cannot bind the sash, and means between the posts and the frame to urge the posts against the sash.
2. A car window comprising a window frame, outside and inside stops forming housings, a sash formed with parallel sides which project into the said housings, said sash being of less thickness than the width of the housings so as not to contact the stops, a sash post in the space between the stops and of greater width than the thickness of the portion of the sash projecting between the stops, and having its side edges between and adjacent the inner faces of the stops, and a tongue and groove connection between the posts and the side edges of the sash to center the sash between the stops and out of contact therewith, and springs intermediate the post and the frame to urge the posts against the sash.

3. A car window comprising a window frame, a sash adapted to slide within the frame, movable sash posts wider in cross sec-

tion than the sash and located between the
frame and the sash, means to force the posts
away from the frame into sliding engage-
ment with the sash, stops placed outside and
5 inside the sash, and secured to the frame
against the posts and inclosing the side
edges of the sash to prevent the passage of
air behind the posts, and a tongue and
groove connection between the sash and

posts to prevent contact between the sash 10
and the stops.

In witness whereof I have signed my name
to this specification in the presence of two
subscribing witnesses.

DANIEL HOYT.

Witnesses:

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T. E. HARDENBERGH, Jr.