No. 871,215. PATENTED NOV. 19, 1907.

E. M. ERB.

SASH CONSTRUCTION.

APPLICATION FILED SEPT. 17, 1906.

2 SHEETS—SHEET 1.

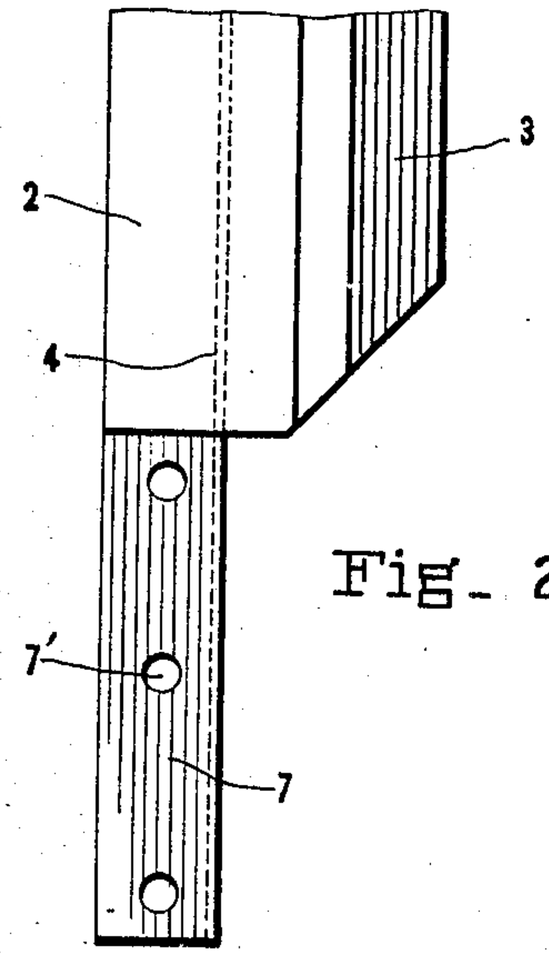

Fig. 2.

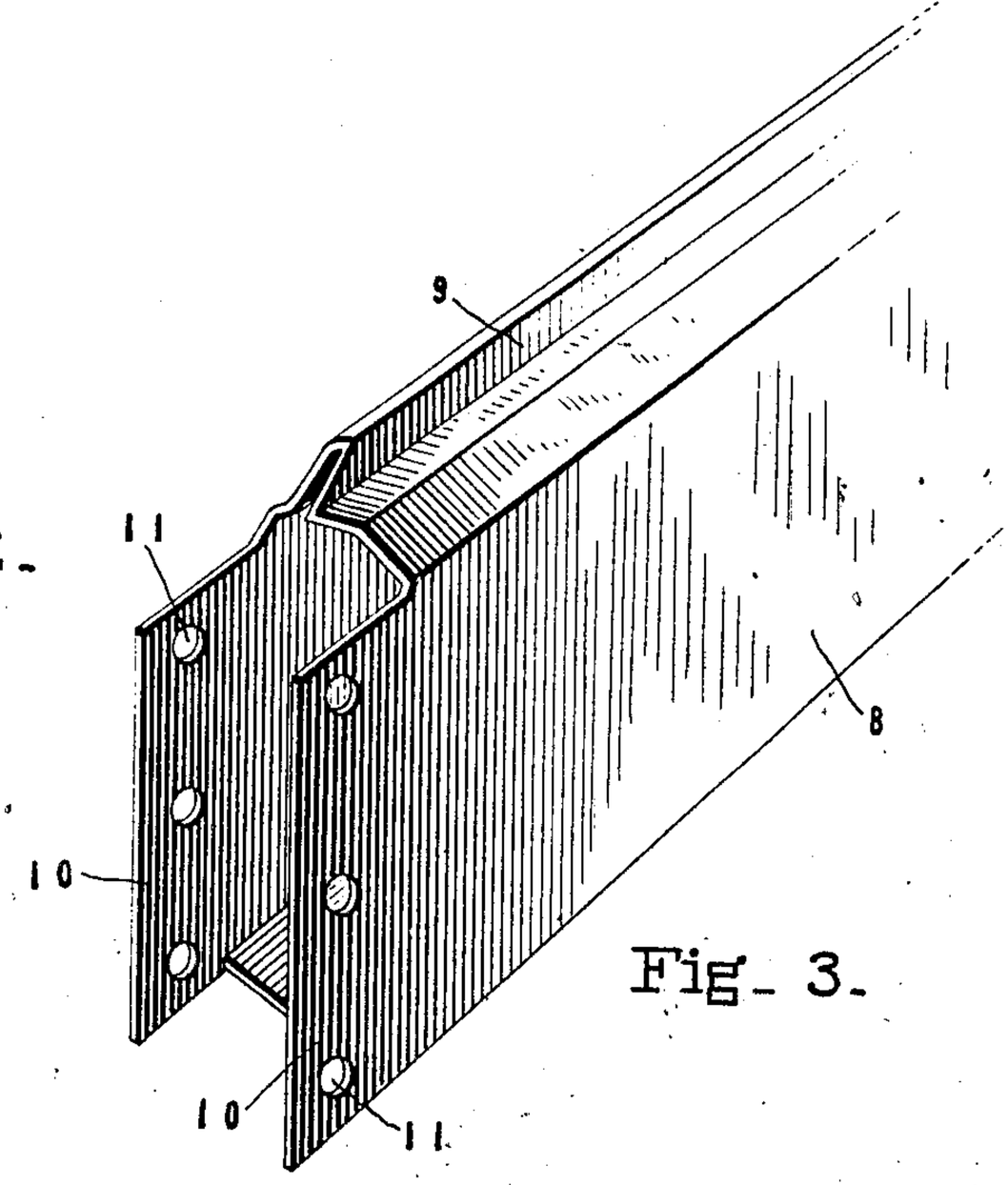

Fig. 3.

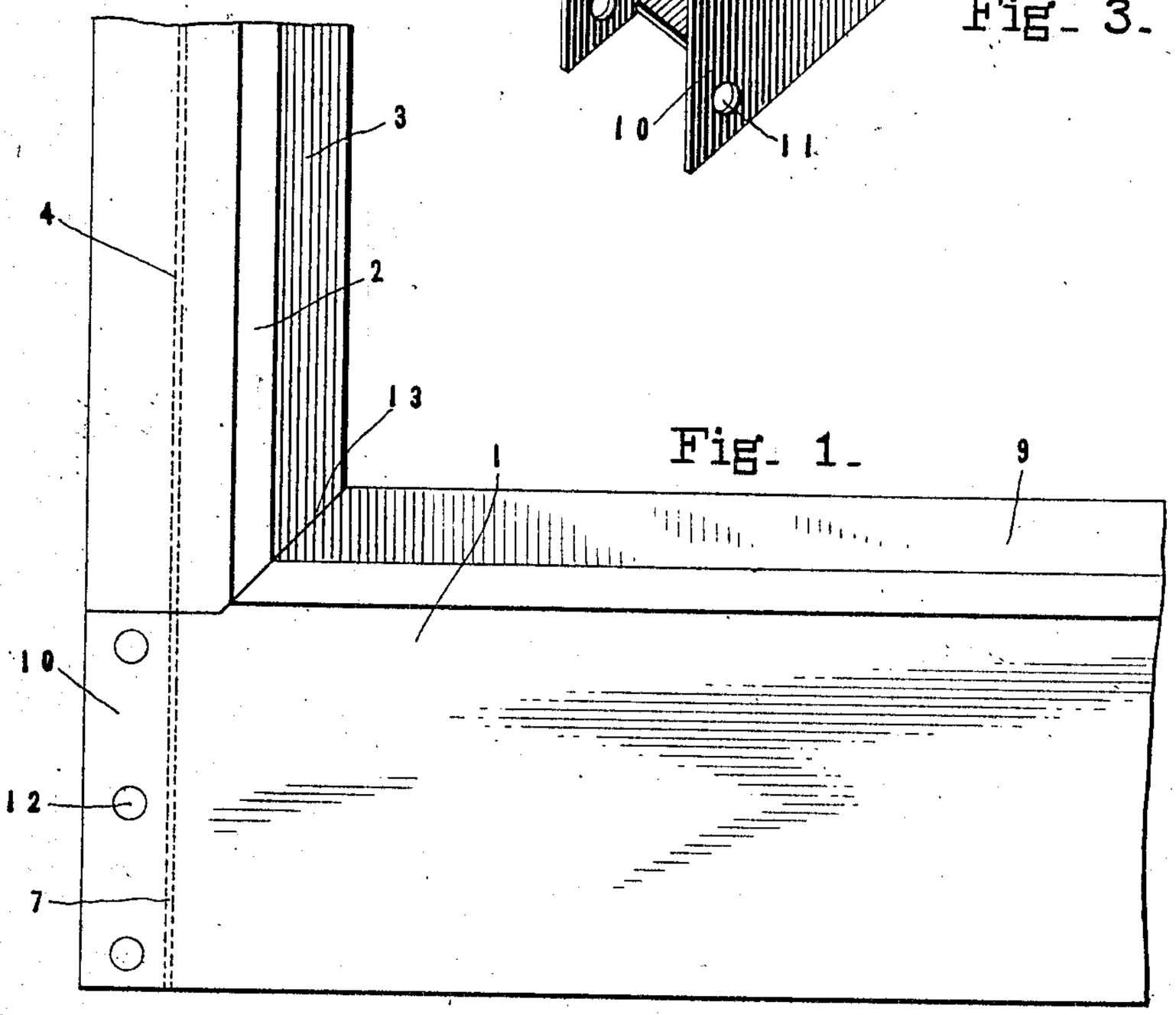

Fig. 1.

Witnesses
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2 SHEETS—SHEET 2.

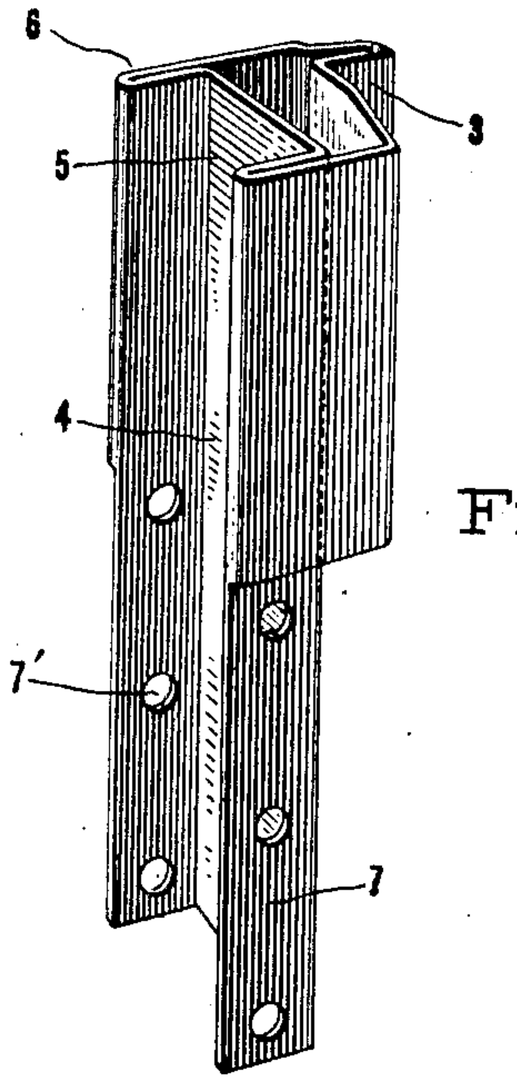

Fig. 4.

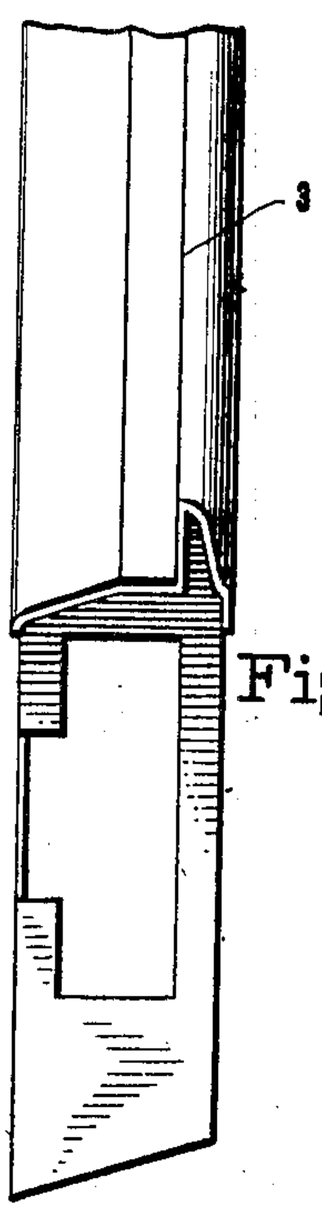

Fig. 5.

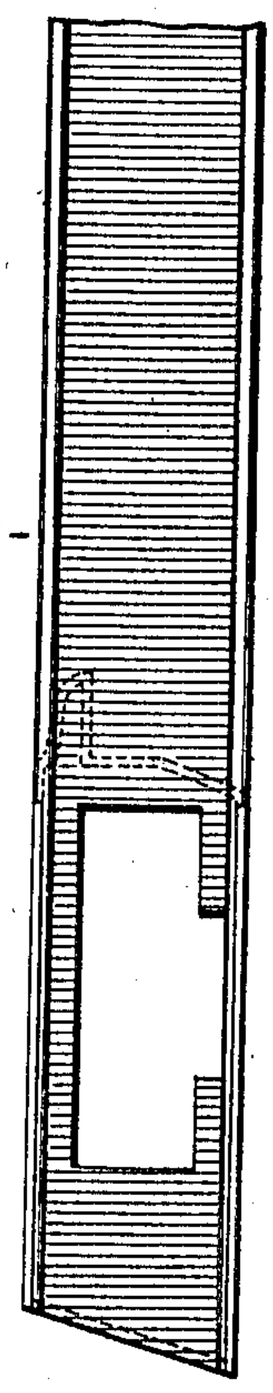

Fig. 6.

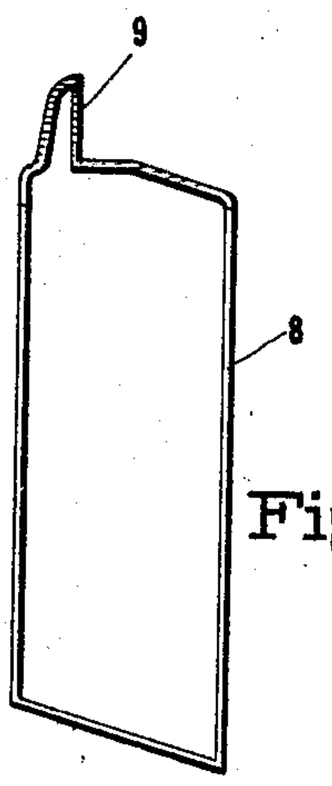

Fig. 7.

Witnesses
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UNITED STATES PATENT OFFICE.

EDMUND M. ERB, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO ROBERT M. DIXON, OF EAST ORANGE, NEW JERSEY.

SASH CONSTRUCTION.

No. 871,215. Specification of Letters Patent. Patented Nov. 19, 1907.

Application filed September 17, 1906. Serial No. 334,972.

To all whom it may concern:

Be it known that I, EDMUND M. ERB, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Sash Constructions, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to sash construction, and one of its objects is to provide a stronger and more durable construction of this nature than has been heretofore provided.

Another object of the invention is to provide a new and improved manner of securing together the stiles and rails of metallic sash frames.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction herein described and the scope of the application of which will be indicated in the appended claims.

In the accompanying drawings, wherein is shown one of the various possible embodiments of my invention, Figure 1 is a view in elevation of a portion of a metallic sash showing the same; Fig. 2 is a similar view showing the lower portion of a sash stile constructed in accordance therewith; Fig. 3 is a view in perspective showing the manner of constructing the bottom rail of the sash; Fig. 4 is a similar view of the portion of the sash stile shown in Fig. 2; Fig. 5 is a view in elevation of the inner side of the lower portion of the sash stile; Fig. 6 is a similar view of the outer side thereof; Fig. 7 is a transverse sectional view taken through the bottom rail of the sash.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Before proceeding with a description of the structural features constituting the invention, it may here be noted that the sashes of car windows or like structures are subjected to severe torsional and racking stresses which, unless the sash is of exceedingly strong and rigid construction, soon distort it from its original shape and cause it to bind in its frame when raised or lowered. Such defects, which are prevalent in prior constructions, I have remedied by the construction disclosed herein, and it should be apparent from the following that sashes constructed in accordance with this invention, while capable of withstanding severe strains without distortion, are yet of exceedingly simple and light construction.

Referring now to the drawings, wherein I have shown but a portion of a sash constructed in accordance with my invention, 1 denotes the lower left-hand portion of the sash, such showing being deemed sufficient to illustrate my invention, as the remaining joined portions of the sash are similarly constructed.

An end portion of one of the side stiles of the sash is shown at 2. This stile is shown as comprised by a hollow metallic member, a portion of which is outwardly set to form a shoulder 3 against which the glass abuts when seated in the frame. The outer edge portion 4 of the stile is depressed to form a longitudinally-extending groove 5 which extends the entire length of the stile. Portions of the inner surface of the inwardly depressed portions are folded back into engagement with the inner surfaces of the lateral sides of the stile as shown at 6, such construction resulting in the walls of the recess being of double thickness. The depressed portion 4 of the stile is extended beyond the end thereof as shown at 7, and apertures 7′ are formed therein for the reception of rivets or other devices for attaching the same to the rail. The rails of the sash, one of which is shown at 8, are also comprised by hollow metallic members having outwardly set shoulders 9 shaped similarly to shoulders 3 of the stiles, and at their outer ends have the material at their upper and lower portions cut away to provide lateral flanges 10. Between these flanges is received the extended portion 7 of the stile, and inasmuch as this portion is inwardly offset a distance equal to the thickness of the sheet metal of which the sash is constructed, the outer surfaces of flanges 10 will come flush with the outer surface of the stile, as shown in Fig. 1. The flanges 10 of rail 8 are provided with openings 11 which register with those of the extending portion of the stile, and through these regis-

tering openings are inserted rivets 12 or other devices by means of which said stiles and rails are securely interfastened. The inner meeting portions of the stiles and rails are suitably shaped so that they will closely fit together as shown at 13.

It will accordingly be seen that I have provided a construction wherein are realized, among others, the various ends and objects herein set forth. The rails and stiles of the sash, while of exceedingly light construction, are provided with joints capable of withstanding great stresses without becoming loose or distorted. Such joined portions are, moreover, exceedingly neat in appearance. The portions of the stile which are folded back against the inner lateral surfaces thereof result in the walls of the longitudinally-extending recess being of double thickness. This construction also adds to the strength of the structure.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. I desire it also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein-described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In sash construction, a rail provided with end flanges, a stile formed of a hollow metallic member a portion of which is depressed and folded back upon other portions thereof, said folded-back portion being extended beyond the ends of the stiles and inserted between the flanges of the rail, and means for securing said extended portions to said flanges.

2. In sash construction, a hollow metallic rail having portions thereof removed from its upper and lower end portions to form lateral flanges, a stile comprising a hollow metallic member a portion of which is depressed and folded back upon other portions thereof, said folded-back portions being extended beyond the ends of the stile and inserted between the flanges of the rail, and means whereby said extended portion and said flanges may be secured together.

3. In sash construction, a hollow metallic rail having portions thereof removed from its upper and lower end portions to form lateral flanges, a stile comprising a hollow metallic member a portion of which is depressed and folded back upon other portions thereof to form a longitudinally-extending recess therein, said folded-back portion being extended beyond the end of the stile and inserted between the flanges of the rail, said flanges and said extended portion having registering openings, and means extending through said openings adapted to secure said parts together.

4. In sash construction, in combination, a rail provided with end flanges, a stile comprising a hollow metallic member a portion of which is depressed and folded back upon other portions thereof, said folded-back portion being extended beyond the end of the stile and inserted between the flanges of the rail, the outer surface of said stile and the outer surfaces of said flanges coming flush with each other, and means extending between said extended portion and said flanges for securing said parts together.

5. In sash construction, a rail formed with end flanges, a stile comprising a hollow metallic member, said stile having inwardly-offset integral end extensions adapted to be embraced by the flanges of said rail, and means for securing said inwardly-offset portion and said flanges together.

In testimony whereof I affix my signature, in the presence of two witnesses.

EDMUND M. ERB.

Witnesses:
C. H. WILCOX,
H. M. SEAMANS.