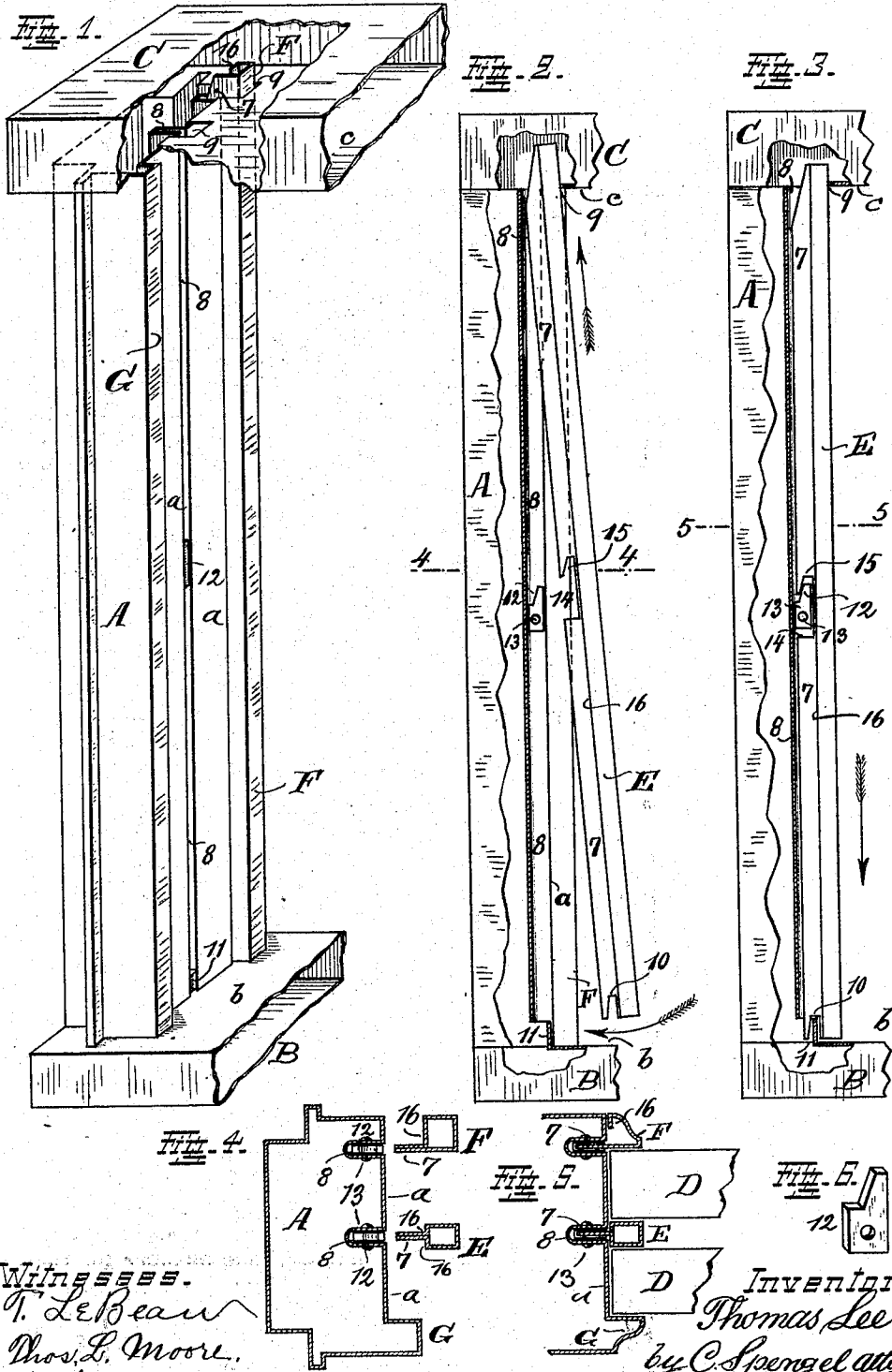


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METALLIC WINDOW.
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Patented Dec. 7, 1909.



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METALLIC WINDOW.

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To all whom it may concern:

Be it known that I, THOMAS LEE, a citizen of the United States, and residing at Home City, Hamilton county, State of Ohio, have
5 invented certain new and useful Improvements in Metallic Windows; and I do declare the following to be a clear, full, and exact description of the invention, attention
10 being called to the accompanying drawing, with the reference characters marked thereon, which forms also a part of this specification.

This invention relates to improvements in the construction of windows in which the
15 frames receiving the sashes are made of sheet-metal, and where these sashes are supported to have a sliding movement for opening or closing, guides being provided for them on the window-frame in which they
20 move.

My invention relates more particularly to these guides which are constructed in a manner to permit ready removal of the sashes when such becomes necessary, as for
25 instance for cleaning, repair, painting, or for any other purpose.

In the following specification and particularly pointed out in the claims at the end thereof, will be found a full description
30 of my invention, together with its parts and construction, which latter is also illustrated in the accompanying drawing, in which—

Figure 1, in perspective view shows one of the upright members of a sheet-metal
35 window-frame, adjoining parts of the sill at the lower end and of the cap at the upper end being also shown. Fig. 2, is a front elevation of this part of the frame with parts broken out, and illustrates the removable attachment of certain parts used in
40 connection with the sash-guide-ways. Fig. 3, in a similar view, shows a sash-guide-way in normal condition. Fig. 4, is an enlarged, horizontal section on line 4—4 of Fig. 2.
45 Fig. 5, is a similar section taken on line 5—5 of Fig. 3, parts of the frame being omitted. Fig. 6, is a perspective view, showing a certain part of the construction detached.

In the drawing, A indicates one of the upright-members of a window-frame, suitably constructed of sheet-metal according to customary approved methods.

B shows a part of the sill, and C a part
55 of the cap, the first at the lower end, and

the other at the upper end of the upright frame-member. Sill and cap extend over to meet another upright frame-member, similar to member A, but not shown, and with it complete the window-frame. Sashes are fitted
60 to this frame as indicated at D in Fig. 5, and guides are provided for them which form ways between which they may move. These guide-ways are formed by parts of the inner or jamb-side *a* of the upright
65 frame-members and by three guide-strips E, F and G which project from this jamb-side and between which, (as shown in Fig. 5) the sashes are guided in their sliding movements. There is an intermediate guide-strip
70 E, and two outer ones F and G. This former, since it is between the sashes and keeps them apart, is also called parting-strip.

If removal of a sash is required for any purpose, previous removal of the guide-
75 strips becomes necessary, that is the intermediate strip E and at least one of the other strips must be removed. Accordingly these two strips are arranged to be removable, while as to the third strip this is immaterial. This latter strip may therefore be an
80 integrally formed part of the window-frame as shown at G, or it may be permanently connected thereto. The other removable strips are shaped to form hollow, prismatic
85 or channel-shaped, slender and elongated rails and each is provided with a tongue, which tongues are integral extensions of these rails as shown at 7, the edges of the metal being extended accordingly. The
90 edge of one of the sides of each rail as shown in Fig. 5, or two of them as shown in Fig. 4 may be so extended for this purpose, the strips in the latter case forming substantially tubular structures. Otherwise
95 the guide-strips may be of plain, rectangular profile, as shown in Fig. 4, or the outer ones may be shaped to form a molding as shown in Fig. 5. Recesses or grooves 8 are provided in the jamb side *a* of each upright
100 window-frame member for the reception of tongues 7 of these guide-strips.

The insertion or removal of a guide-strip is best illustrated in Fig. 2. Openings are provided in the frame, opposite one of the
105 ends of each guide-strip, preferably their upper ones, and fitted to receive these ends as best shown in Figs. 1 and 2, where such openings are provided at 9 in the underside
110 of cap C. The insertion of a strip is

started at its upper end and in an inclined position, when with its end below its respective opening 9 and with its tongue partly entered into its complementary groove below said opening, it is first raised up into this opening and at the same time moved toward the jamb-surface *a* of the frame so that its tongue fully enters the groove intended to receive it. Thereafter the strip is pushed down until its lower end comes to a seat on the upper side *b* of the sill as shown in Fig. 3. The length of a strip is so arranged that after so seated its upper end fully occupies and preferably extends beyond opening 9 as shown in Figs. 1 and 3, whereby the strip is securely held in position at its upper end and incapable of movement in any direction horizontally. At their lower ends, the strips have upwardly extending notches 10, which notches, when a strip is moved down into position, engage projections 11 provided within grooves 8, and at their lower ends, so that each strip is also securely held at its lower end.

When a strip is first raised at the beginning of the manipulation for its insertion as above explained, it is lifted sufficiently to bring the open end of its notch 10, above the projection 11, it is to receive, as is readily understood so that, after the strip is lowered, said projection occupies the notch as shown in Fig. 3. These projections may be formed by metal attached, or by a part of the upper-side *b* of the sill which part may be turned up in form of a flange on the inside of the lower end of jamb *a*, as shown in Fig. 2, sufficient of the metal which surrounds grooves 8, at their lower ends having been cut away to clear this upturned metal. When the strips are of considerable length, it becomes desirable to provide additional holding means between their ends. They consist of hooks 12, rigidly secured within grooves 8, preferably by rivets 13, and of notches in tongues 7, complementary to these hooks. These notches consist of two parts and by one of which, shown at 14, a tongue clears the entire hook to permit it to enter its groove when a strip is first inserted while in raised position. The other part is an upward extension from the bottom of the notch as shown at 15 and is intended to receive the hook proper, which it does when the strip is moved down into its final position. The inner edge of the hooks and the outer edge of notch 15 opposite it, are each inclined, one complementary to the other, so that, when the guide-strips are pulled down, a wedge-action ensues whereby they are at the same time drawn up to a snug seat against the jamb-surfaces of the window-frame. This seat, as to the strips, is determined by shoulders 16 which form the base from which the tongues project, and which are produced by angularly bending the sides of

the strips accordingly, resulting also when the extended parts of these sides are shaped to form the tongues.

The thickness of the metal out of which hooks 12 are formed corresponds to the width of grooves 8, and these hooks act also as spacers for the grooves to hold them open and to their shape. Additional hooks may be provided if the length of the guide-strips renders such desirable. The guide-strips may be readily taken out at any time by simply raising them sufficiently to clear projections 11 and hooks 12, after which they may be removed in a manner indicated in Fig. 2. The means of attaching these hooks avoid any projections on the inside of the frame which might interfere with the movement of weights which balance the sashes.

Having described my invention, I claim as new:

1. In a window, the combination of sliding sashes, metallic strips to guide them during their movement, said strips having each a notch extending inwardly from one of their ends, a frame to which the sashes are fitted and which consists of upright and horizontal members one of which latter is provided with openings each adapted to receive one end of each guide-strip, and projections on the frame adapted to be engaged by the notches at the other ends of the guide-strips.

2. In a window, the combination of sliding sashes, metallic strips to guide them each of which is provided with a tongue, a frame consisting of horizontal and upright members to which the sashes are fitted and the upright members of which have grooves to which the tongues of the guide-strips are fitted and in which they are seated, devices to hold these latter removably in place and spacing means within these grooves to hold them to their shape, the tongues occupying these grooves being cut out to clear these spacing means.

3. In a window, the combination of sliding sashes, metallic strips to guide them which are provided with a tongue, a frame consisting of horizontal and upright members to which the sashes are fitted and the upright members of which have grooves to which the tongues of the guide-strips are fitted and hook-shaped spacing means rigidly secured within these grooves to hold them to shape, the tongues mentioned being adapted to engage with these means so as to be held in position by them.

4. In a window, the combination of sliding sashes, a frame consisting of horizontal and upright members to which these sashes are fitted, they moving between the opposite jamb-surfaces of these upright members, each of which latter is provided with grooves, metallic strips which guide these sashes and which have shoulders adapted to

seat against the jamb-surfaces of the up-
right members and tongues adapted to enter
the grooves in them, the tongues having
notches, each of which is upwardly ex-
tended, the extended part of each notch pre-
5 senting an inclined edge, hooks within the
grooves to hold the guide-strips in position
and means whereby these hooks are rigidly
held in place within these grooves, said
10 hooks beyond the point of their attachment
being extended upwardly, which upwardly
extended parts also present an inclined edge
complementary to the inclined edge in the
extended part of the notches, the notches be-

ing adapted to pass over the hooks when the 15
guide-strips are in elevated position after
which, when they are lowered, the inclined
edges of hooks and of notches engage each
other, drawing thereby the shoulders on the
guide-strips to a seat against the jamb-sur- 20
faces of the window-frame.

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

THOMAS LEE.

Witnesses:

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T. LE BEAU.