

C. O. KUEHNY.
 REVERSIBLE WINDOW SASH.
 APPLICATION FILED SEPT. 1, 1910.

999,802.

Patented Aug. 8, 1911.

Fig. 2.

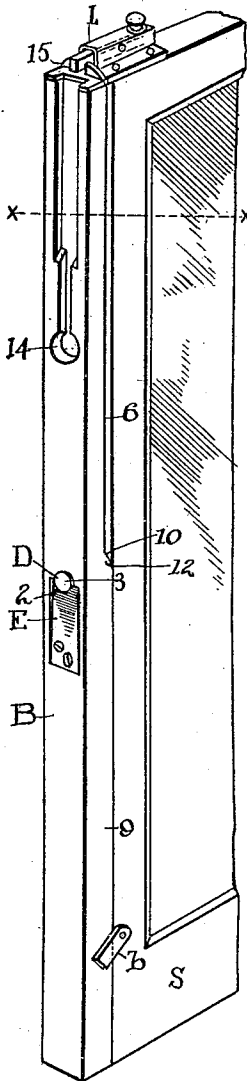


Fig. 1.

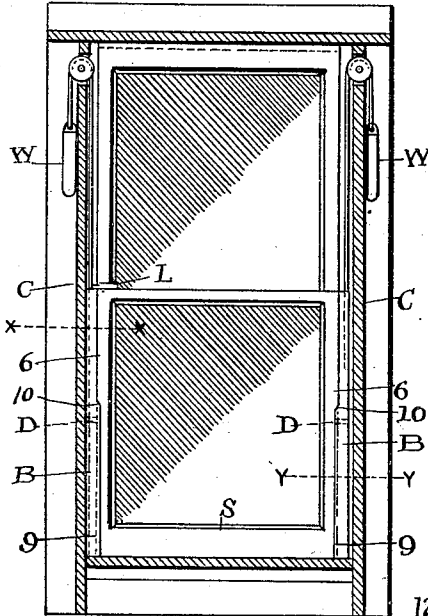


Fig. 3.

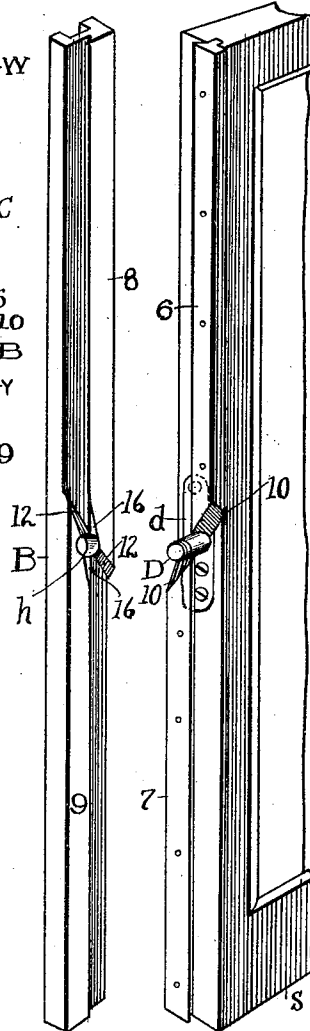


Fig. 4.

Fig. 5.

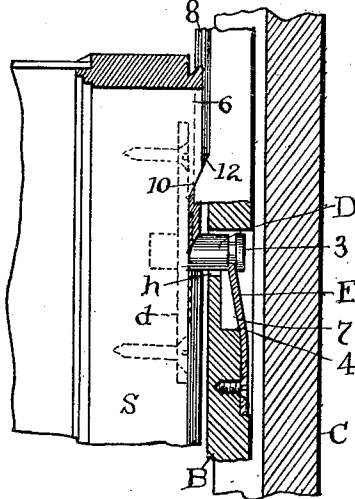


Fig. 6.

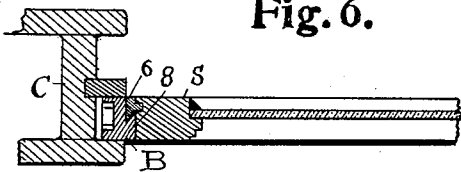
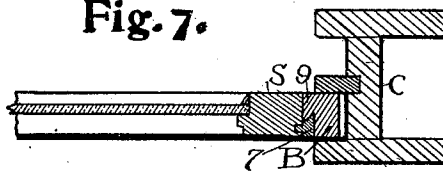


Fig. 7.



ATTEST
 E. M. Fisher
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 BY Fisher & Knapp ATTYS.

UNITED STATES PATENT OFFICE.

CHARLES O. KUEHNY, OF LAKEWOOD, OHIO, ASSIGNOR OF ONE-FOURTH TO WENDELIN KUEHNY, ONE-FOURTH TO AUGUST KUEHNY, AND ONE-FOURTH TO J. H. JANSEN, ALL OF CLEVELAND, OHIO.

REVERSIBLE WINDOW-SASH.

999,802.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed September 1, 1910. Serial No. 579,993.

To all whom it may concern:

Be it known that I, CHARLES O. KUEHNY, citizen of the United States, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Reversible Window-Sashes, of which the following is a specification.

My invention relates to an improvement in reversible window sashes, and while the construction shown herein relates to the lower sash of a window, it is to be understood that the same principle applies to the upper sash. Illustration with a single sash is therefore made for simplicity in the development of the invention as herein set forth and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a front elevation of a window sash embodying my improvement. Fig. 2 is an enlarged perspective view of a portion of the window sash and showing the special edge strip engaged therewith and constituting an essential operating part of the sash as hereinafter more fully described. Fig. 3 is a perspective inner face view of said strip or piece detached from the sash, and Fig. 4 is a perspective view of the corresponding edge of the sash, or edge upon which the said strip is attached, the said two parts being opened in respect to each other in these two views and disclosing special details in each. Fig. 5 is an enlarged sectional view of said strip and sash in working relation and with the sash partially open. Fig. 6 is a cross section on line $x-x$, Fig. 1, and Fig. 7 is a cross section on line $y-y$, Fig. 1, these views showing different or reverse details according to their view point.

The invention as thus shown comprises a window sash S of any ordinary or common size according to its place of use and whether in private dwellings, office buildings or stores, and the novelty therein consists in the means by which the sash is made reversible without removing it from the window and without interfering with its sliding movements up and down in the window casing.

The first or most important element in

the means referred to is the supplemental carrying strip B , one at each side of the sash and both alike. Said strips are practically separate pieces or parts though in essential particulars also working parts of the sash and operatively connected therewith at the middle of the sash by pivot studs or trunnions D . The said studs or trunnions are preferably cast integral with a plate d which is set in a recess in the edge of the sash and flush therewith while said stud projects out far enough to make working engagement with piece B through a hole h therein and a spring catch and support E fixed to or in the edge of said piece B and having its free end lying across a recess 2 in said edge and engaging a head 3 on said pivot stud. The said spring lies across a shoulder 4 to give increased tension especially as said parts are separated more or less as the sash is rotated in reversing and as will now appear. Thus, as a special and novel feature of construction or relation between said parts it will be seen that each part has a meeting strip or strips extending the full length thereof and in meeting or closing relation so as to practically seal the crack or space between said parts against the flow or passage of air into the apartment when the sash is otherwise closed. To these ends said strips indicated by 6, 7, 8 and 9, respectively, are of a width equal to about half the thickness or width of the sash S or carrier B on which they are laid and covering the outer half in one case and the inner half in the other case of said parts. Thus, the strips 6 and 7 are top and bottom of the sash, respectively, and the strips 8 and 9 top and bottom of the carrier B , and strips 6 and 7 are separate pieces fastened onto the sash and partially overlapping pivot plate d at their inner ends and meeting at stud D , while strips 8 and 9 are preferably integral with carrier B and come opposite the corresponding strips 6 and 7 on the sash with which they match at their edges and meeting ends and by which a practically continuous seal is provided the full depth of the sash. A further feature of these strips is that they are undercut or underbeveled at their meeting edges, Fig. 7, so that the edge of one matches in be-

neath the edge of the other and thus a perfectly close sealed working union is effected between said sash and carrier while spring E serves to exert a constant closing spring
5 tension to make said joint close and sure.

As herein shown the sash is adapted to be swung inward at the top and outward at the bottom, and the said meeting strips are each beveled at an angle to their axis at
10 their inner ends as indicated by 10 and 12 respectively and with said bevels in parallel alinement so as to match one with the other in the respective strips. Thus, the bevels 10 in the sash match the bevels 12 in the
15 carrier and one lies flat on the other when the sash is closed. But the instant the sash starts to swing open these bevels work one against the other somewhat on the principle of cams, as seen in a measure in Fig. 5, and
20 carrier B is correspondingly pressed back or away from the sash as said parts ride upon said bevels. The springs E, are of course under their severest tension or strain as this occurs, and then as the sash is
25 turned back to its closed position the springs do their most essential work of drawing and holding the sash and its carrier bar closely together with the beveled strips engaged or interlocked as seen in Fig.
30 6. It will be noted that a portion of the overhanging edge of each cleat on one member adjacent to the pivot is cut away as at 16 to enable the sash and stile to engage and be disengaged. The said carrier bar or
35 piece B has room in the window casing C to slide back and forth within limits to accommodate its separation as to the sash when the sash turns on said cam bevels and causes a slight spreading movement. The
40 studs or projections D therefore serve as pivots for the sash which are hung upon said bars B and are supported free of the bar itself on the springs E. The said springs are cut out on a half round 2 at the
45 top to engage in the annular channel or groove behind the head 3 on said pivot studs and thus afford both support and operative connection therewith.

The complete sash with its carrier bars
50 B is adapted to be slid up and down in the window as any ordinary sash may be, and the cords and weights W are shown in Fig.

1 and their place of connection with the sash at 14 in bar B, Fig. 2.

The upper sash may have the same general construction or make-up as to pivots
55 and strips and latch or lock L as shown herein, the parts being changed only as to their adaptation to the upper location of the sash. In this instance a pivot latch
60 member is used, which will automatically engage the catch 15 on bar B but any other or equivalent mechanism may be employed. A turn button b at the bottom engages said
65 parts together when closed.

It is to be noticed that the ends of the strips 8 and 9 on bar B overlap, relatively, at their inner ends and that the transverse
70 bevels 12 practically begin in or at the hole h and extend away therefrom in opposite directions at an acute slant or inclination to the axis of said strips. When the window is turned in reversing the sash the bars
75 B are separated by the thickness of the strips on one of said parts. This separation occurs against the action of springs E, which draw said parts together again when the window is turned back to close.

It will be noticed that the strips 6 and 7, Fig. 7, have tongue and groove connection
80 with the sash in addition to the bevel which matches the beveled strips 8 and 9 so as to make the intervening space perfectly air tight.

What I claim is:

In combination, a sash, a supplemental stile, a pivot connecting said sash and said stile, a spring tending to hold the sash and the stile together, and reversely beveled undercut sealing cleats on said sash and on
90 said stile which interfit to form an air-tight joint, and said cleats having abutting cam faces co-acting to separate the sash and stile as the sash is turned, a portion of the overhanging edge of each cleat on one member
95 adjacent to the pivot being cut away to enable the sash and stile to engage and be disengaged.

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

CHARLES O. KUEHNY.

Witnesses:

E. M. FISHER,
F. C. MUSSUN.