(No Model.)

L. A. WALSWORTH.

METALLIC HINGED SASH.

No. 456,454. Patented July 21, 1891.

Fig. 1.

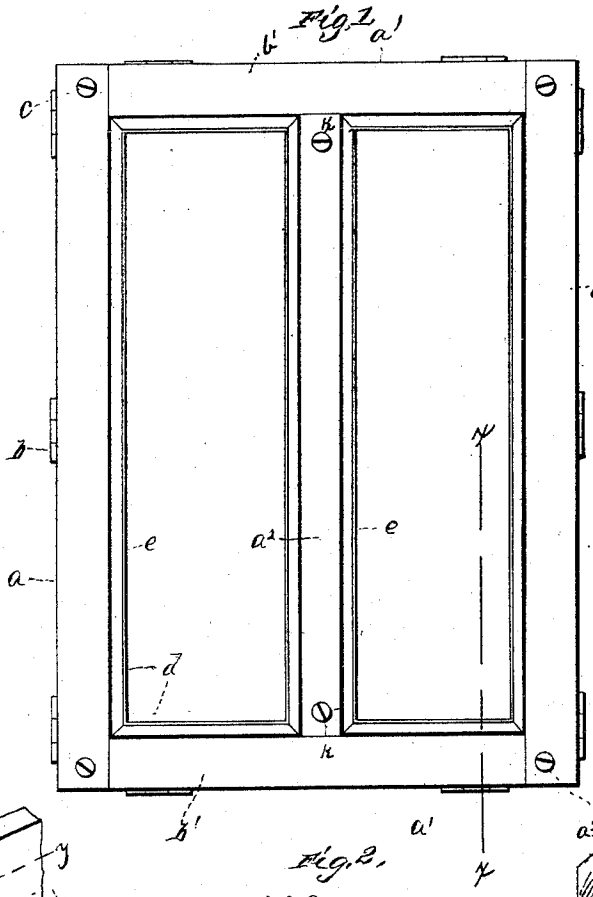


Fig. 5.

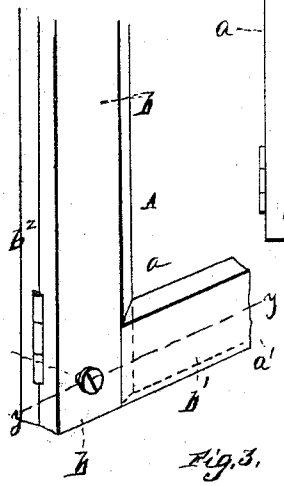


Fig. 6.

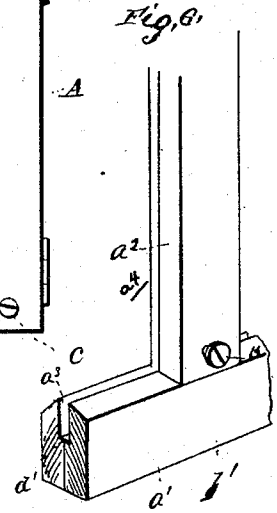


Fig. 2.

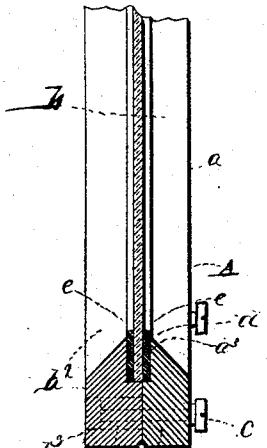


Fig. 3.

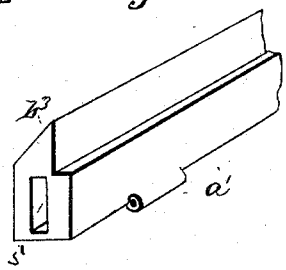


Fig. 4.

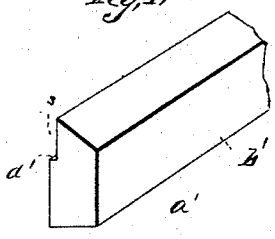
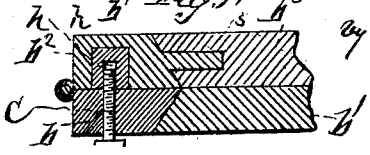


Fig. 7.



Witnesses
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Phillemasi.

Inventor
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by E. W. Anderson
his Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LURON A. WALSWORTH, OF UNION CITY, MICHIGAN.

METALLIC HINGED SASH.

SPECIFICATION forming part of Letters Patent No. 456,454, dated July 21, 1891.

Application filed August 16, 1890. Serial No. 362,183. (No model.)

To all whom it may concern:

Be it known that I, LURON A. WALSWORTH, a citizen of the United States, and a resident of Union City, in the county of Branch and State of Michigan, have invented certain new and useful Improvements in Metallic Hinged Sashes; and I do 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a front elevation. Fig. 2 is a vertical section on the line $x\ x$, Fig. 1, and Figs. 3 and 4 are detail views. Figs. 5 and 6 are detail views showing the manner in which the parts are connected. Fig. 7 is a horizontal section on the line $y\ y$, Fig. 5.

This invention relates to certain improvements in window-sashes; and it consists in the novel construction and combination of parts hereinafter disclosed.

In the drawings, A refers to a window sash or frame, preferably of metal, comprising the side and end pieces $a\ a'$ and the middle rail or piece a^2. The side portions $a\ a$ of the sash or frame are each formed of a section b, hinged to a section b^2, relatively stationary thereto, and is held thereto by screws c, which pass through said section b and engage screw-threaded sockets h in the section b^2. The end portions $a'\ a'$ are formed each of the section b', hinged to the relatively stationary section b^3. These sections are held together by the middle piece or rail a^2, the beveled ends of which bear against the beveled edges of the sections b'. This rail a^2 is held to its place against its similar back piece a^4 by the screws K, and in this manner the sections b' are held securely in their places. The relatively stationary sections b^2 and b^3 of the rails and stiles are connected to each other by the tenons and sockets s', thus holding the rails and stiles together. The piece a^4 may be integral with the rail b^3, as shown in Fig. 6, or it may be a separate piece having beveled ends held thereto by screws or pins, or it may have a socket-and-tenon connection with said rails. I have shown the integral form only for illustration, as the other methods are well known. The beveled or inclined portions of the hinged and stationary sections, and also of the middle piece or rail a^2, are provided with inwardly-extending parallel portions a^3, forming the walls or sides of the grooves or channels d receiving the panes of glass. The inner edges of the portions or walls a^3 are provided with flanges d', forming the bottoms of the glass-receiving grooves d and seats for rubber strips or cushions e to firmly secure the panes of glass in position without the use of putty. From this arrangement it will be seen that the panes of glass can be readily put in place without requiring precision of fit, as is necessary as ordinarily practiced, besides, as above intimated, dispensing with the use of putty for securing the glass in addition greatly expediting this operation. The simple removal of the screws permits the throwing back of hinged sections when it is desired to put in the glass or remove a broken pane or panes.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. The window-sash having its side and end pieces or portions formed of hinged sections provided with inwardly-extending portions, forming the glass-receiving grooves, having flanges at their inner edges, providing seats for rubber strips, substantially as set forth.

2. The window-sash having the hinged sections provided with inwardly-extending portions standing parallel to similar portions on the stationary portions of said sash, said inwardly extending portions having flanges at their inner edges, substantially as specified.

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

LURON A. WALSWORTH.

Witnesses:
H. S. LAMBERT,
JOHN M. HAYS.