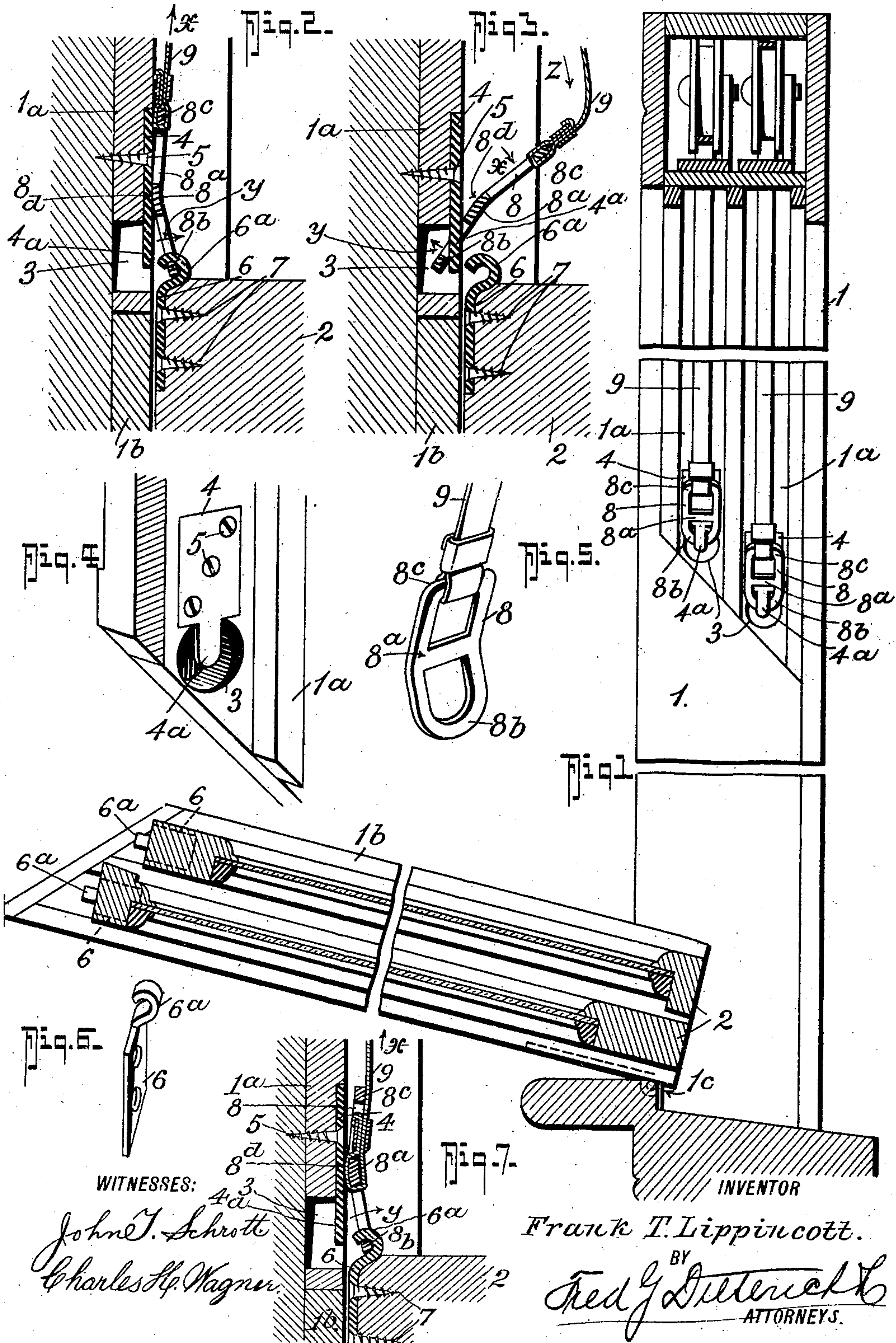


F. T. LIPPINCOTT.  
SASH CORD CONNECTOR.  
APPLICATION FILED MAR. 23, 1910.

979,014.

Patented Dec. 20, 1910.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

FRANK T. LIPPINCOTT, OF NEWARK, OHIO.

## SASH-CORD CONNECTOR.

979,014.

Specification of Letters Patent.

Patented Dec. 20, 1910.

Original application filed October 22, 1909, Serial No. 524,073. Divided and this application filed March 23, 1910. Serial No. 551,066.

*To all whom it may concern:*

Be it known that I, FRANK T. LIPPINCOTT, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Sash-Cord Connectors, of which the following is a specification.

My invention is an improved means for quickly and automatically connecting and disconnecting the sash cords from windows and simultaneously securing the ends of said sash cords to the window frame in a position where they may be quickly and effectively reconnected with the window sash when desired.

The invention is more specifically designed for use in connection with a window of the type disclosed in my co-pending application filed October 22, 1909, Ser. No. 524,073, of which application the present application is a divisional part.

In its more subordinate nature, the invention resides in those novel details of construction, combination and arrangement of parts, all of which will be first described in detail and then be specifically pointed out in the appended claims, and illustrated in the accompanying drawings, in which:—

Figure 1, is a central vertical longitudinal section of a window of the type disclosed in my co-pending application referred to with the invention applied. Fig. 2, is a detail central vertical longitudinal section showing the position of the parts when the sash cord is connected to the sash. Fig. 3, is a similar view showing the position of the parts when the sash cord is automatically disconnected from the sash and connected to the holder on the window frame. Figs. 4, 5 and 6, are detail perspective views of the fixed frame carried plate and the connecting link with the sash cord and the fixed window sash carried plate which co-operates as indicated in Figs. 2 and 3. Fig. 7, is a detail view showing an alternative way of connecting the cord to the connector.

Referring now to the accompanying drawings in which like letters and numerals of reference indicate like parts in all of the figures, any suitable sash balancing means may be provided for sustaining the weight of the window sash and continuously tending to pull upon the sash cord 9 to balance the weight of the window sash as stated.

The sash cords or ribbons 9 at their free

ends are secured to double eye members 8, one end 8<sup>c</sup> of which joins with the sash cord or ribbon 9, while the other end 8<sup>b</sup> is adapted to connect with the window sash. The double eye member 8 has a central brace or bridge portion 8<sup>a</sup> and is bent along its line of bridge member so that the two eye portions 8<sup>b</sup>—8<sup>c</sup> will lie in different planes and form a fulcrum at the place 8<sup>a</sup>, indicated in Figs. 2 and 3 of the drawings, for a purpose presently explained.

Hook plates 6 are secured to the sides of the window sash by screws 7 or other suitable means and the plates 6 have hooks 6<sup>a</sup> opening outward toward the window frame. Secured in the groove of the window frame section 1<sup>a</sup>, at suitable locations, preferably at the position indicated in the drawings, are tongue plates 4 which are countersunk into the frame and lie flush with the inclosed surface thereof, the tongue plate 4 having downwardly directed tongues 4<sup>a</sup> which project into alinement with a hole 3, which may be bored or otherwise provided in the frame section 1 to receive the eye 8<sup>b</sup> of the double eye member 8 to retain the sash cord in a definite position while the window sashes are being removed. The tongue plates 4 may be secured by a screw 5 or other suitable means, as indicated.

The window frame 1 includes the fixed grooved section 1<sup>a</sup> and the movable sections 1<sup>b</sup> which are hinged at 1<sup>c</sup> and in which sections the window sashes 2 slide.

The manner of connecting the sash ribbon or cord with the window sash and with the tongue plate or fixed cord sustaining member form the essential features of my invention as by its use rapid connection and disconnection between the sash cord and window sash may be made and at the same time the sash cord or ribbon can be automatically shifted from connection with the window sash into connection with the fixed holder, or vice versa, as conditions may require.

By particular reference to Figs. 2 and 3, it will be observed that when the parts are in their normal position, as shown in Fig. 2, the tension on the sash cord 9 is directed upwardly in the direction of the arrow *x*, in Fig. 2, and by reason of the eye members 8<sup>b</sup>—8<sup>c</sup> lying in different planes and bent at the bridge 8<sup>a</sup>, the bridge forms a fulcrum at 8<sup>a</sup>, causing the double eye member 8 to act as a lever, as it were, to move the eye member



8<sup>b</sup> in the direction of the arrow  $y$ , in Fig. 2, when connected with the hook 6<sup>a</sup>.

In order to disconnect the sash cord 9 from the window sash, the sash is moved until the hook 6<sup>a</sup> is opposite the hole 3 and the tongue 4<sup>a</sup>, as shown in Figs. 2 and 3 of the drawings. The operator then grasps the sash cord or ribbon 9, adjacent to the eye member 8<sup>c</sup>, or he grasps the upper end of the eye member 8<sup>b</sup> and pulls downwardly on the sash cord or ribbon 9 in the direction of the arrow  $z$  in Fig. 3 and inwardly in the direction of the arrow  $x$  in Fig. 3, which causes the eye member 8<sup>b</sup> to move in the direction of the arrow  $y$  in Fig. 3 and automatically and simultaneously disconnect the eye member 8<sup>b</sup> from the hook 6<sup>a</sup> and move it into the hole 3 into engagement with the tongue 4<sup>a</sup> to hold it in that position until it is again desired to connect the sash cord with the window sash, when the movements just described are reversed. Thus it will be seen that with one action the sash cord is disconnected from the window sash and connected with the fixed holder of the frame to be in position for reconnection with the window sash when desired. Furthermore, by constructing the member 8, as shown and described, the tension on the sash cord 9 when the parts are positioned, as shown in Fig. 2, (it being understood, of course, that the invention is applied to each side of the window) will serve to hold the sash centered in the frame and reduce considerably the friction of the sides of the window sash in the grooves, thus making it easy to raise and lower the window sash and prevent chattering of the window sash in the grooves during the action of raising and lowering.

In this application I make no claim to the specific construction of the window *per se*, as that forms the subject-matter of my original application.

From the foregoing description taken in connection with the accompanying drawings, the complete construction, operation and advantages of my invention will be readily understood by those skilled in the art to which the invention appertains.

What I claim is:—

1. In a window having a frame and slidable sashes, the combination with sash cords for sustaining said sashes at each side, of a single means at each side of the window for connecting the respective sash cords with said sashes and simultaneously centering said windows in said frame.

2. In a window construction, a frame and window sashes slidable therein together with sash cords for counterbalancing said sashes, sash cord connectors removably connecting said sash cords with said sashes, said sash cord connectors having provisions in virtue

of which the tension of the sash cords will center said sashes in the frame.

3. In a window construction, a window frame having window sash receiving grooves, sashes slidable in said grooves, sash cords under tension for sustaining said sashes, a fixed sash cord holder secured to said window frame at each side of each sash, said holders each having a tongue portion and said frame having a hole adjacent to each tongue portion, a hook member secured to each sash at each side and having the opening of the hook adjacent to the frame, a connecting member carried by each sash cord for engaging the respective hook members and the respective fixed sash cord holding members at times, said connecting members having portions lying in different planes to provide a fulcrum bearing, in virtue of which when said hook members are in alignment with the respective tongues of said fixed holders, said connecting members may be disconnected from said hook members and simultaneously connected with said fixed holding members and vice versa, and when said hook members are out of alignment with the respective holding members said connecting members will be held from disconnecting with said hook members, substantially as shown and described.

4. In a window having a movable sash and having a frame, a sash cord under tension, a fixed holding member secured to the window frame and having a tongue portion projecting into a hole in the window frame, a hook member secured to the side of the sash, and a connecting link member carried by the sash cord and having a body bent transversely to lie in two planes and having an eye portion to engage such hook member and said tongue portion alternately, substantially as shown and described.

5. In a window construction, a window frame having grooves, and sashes slidable in said grooves, and sash cords under tension for sustaining said sashes, a double eye member secured to the end of each sash cord, each double eye member being bent transversely to lie in two planes and provide a fulcrum, a hook member on each side of each sash to cooperate with the respective double eye members, and a fixed holding member on each side of each window sash to cooperate with said hook members and said double eye members in virtue of which said double eye members may be simultaneously disconnected from said hook members and connected to said fixed members.

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Witnesses:

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