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PATENT SPECIFICATION

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(54) ADJUSTABLE SASH FASTENER

(71) We, YOSHIDA KOGYO K.K., a corporation duly organized under the laws of Japan and existing at No. 1, Kanda Izumi-cho, Chiyoda-ku, Tokyo, Japan, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a sash fastener for use with a sash window, sliding doors, or like unit, and to a sash fastener comprising a catch assembly having a rotary crescent, and a stationary hook member to be engaged by the rotary crescent for restraining the sashes in their closed positions. The invention has particular reference to improved means for adjusting in situ the position of the hook member for correct engagement with the rotary crescent of the catch assembly.

In a sash window unit or the like, some minor readjustment is usually necessary after the sashes have been installed within a supporting frame, in order that the sashes may be held in proper operable condition. If the unit is provided with the sash fastener of the kind defined above, the positions of its hook member and catch assembly are usually required to be adjusted with respect to each other for correct interengagement in the closed positions of the sashes. To this end, the hook member of a familiar example of the prior art sash fasteners is mounted on one of the sashes by means of screws passing through slots formed therein, so that the position of the hook member on the sash is adjustably variable within the limits determined by the length of each slot. According to this well known construction, however, the hook member becomes easily displaceable relative to the sash upon the slightest loosening of the screws, and it is difficult to drive the screws into the sash securely.

According to the invention, there is provided a sash fastener for use with a sash window unit or the like, wherein said sash fastener comprises a catch assembly adapted to be affixed to the meeting stile of

one of the sashes of the sash window unit and comprising a rotary crescent, and a hook member to be engaged by said crescent of said catch assembly to restrain the sashes in closed positions, the combination comprising a mounting plate formed integral with said hook member for securing to the meeting stile of the other sash, said mounting plate having at least a pair of spaced apertures therethrough, and a respective adjusting washer for use in securing said hook member to the meeting stile of said other sash by means of a respective fastening element passing through each of said apertures of said mounting plate, said adjusting washer including a head, a neck extending eccentrically from the head and so shaped and sized as to fit non-rotatably in a plurality of selectable rotational positions in the respective one of said apertures of said mounting plate, and a hole extending centrally through said head and eccentrically through said neck for receiving the respective fastening element.

The invention both as to its construction and mode of operation, together with the advantages thereof, will become apparent from the following description of an illustrative embodiment, when read in conjunction with the accompanying drawings in which like reference characters denote corresponding parts of the several views, and wherein:

Figure 1 is a side elevational view of a sash fastener as mounted on the meeting stiles of the sashes in a sash window unit in accordance with the invention;

Figure 2 is a horizontal sectional view of the arrangement shown in Figure 1;

Figure 3 is a front elevational view of a hook member together with a screw and an adjusting washer in the sash fastener shown in Figures 1 and 2;

Figure 4 is a vertical sectional view of some essential parts to illustrate a mode of adjustable securing of the hook member to one of the meeting stiles of the sashes in the sash fastener shown in Figures 1 and 2; and

Figure 5 is a rear elevational view of the adjusting washer shown in Figures 2 to 4, inclusive.

With particular reference to Figures 1 and 2, the sash fastener illustrated therein by way of a preferred embodiment of this invention broadly comprises a catch assembly 10 and a hook member 11. The catch assembly 10 comprises a mounting plate 12 adapted to be screwed or otherwise affixed substantially centrally onto the end face of a meeting stile 13 of one of the sashes of a conventional sash window unit. Also included in the catch assembly 10 is a rotary crescent 14 having a lever 15 and a pivotally connected at 16 to the plate 12. It is to be understood, however, that the construction of the catch assembly 10 as so far described is well known and does not, by itself, constitute a feature of this invention.

The hook member 11 is integrally provided with a mounting plate 17 adapted to be affixed, in a manner hereinafter to be described, onto the inside face of the meeting stile 18 of the other sash of the sash window unit so that the hook member may be correctly engaged by the rotary crescent 14 of the catch assembly 10 when the two sashes are in their closed positions, as will be seen from a consideration of Figures 1 and 2.

As illustrated in greater detail in Figures 3 to 5, inclusive, the mounting plate 17 of the hook member 11 has at least a pair of vertically spaced square apertures 19 for permitting fastening elements, screws 20 to pass therethrough via adjusting washers 21, respectively. Each of the adjusting washers 21 integrally comprises a head 22, a neck 23, and an end portion 24. The washer head 22 is circular in shape, and a tapped hole 25 for receiving the screw 20 extends centrally through the washer head and further through the neck 23 and the end portion 24. The washer neck 23 is shown to be square in shape, with a size to fit snugly in one of the square apertures 19 of the hook member mounting plate 17, and is arranged eccentrically with respect to the head 22 or the hole 25. The washer end portion 24 is arranged concentrically with the head 22.

It will be observed from Figure 4 in particular that the inside plate of the meeting stile 18 has a pair of vertically spaced bores 26 therethrough for receiving the end portions 24 of the adjusting washers 21, respectively. A backing plate 27 is arranged on the opposite side of the meeting stile inside plate with respect to its side on which the hook member mounting plate 17 is to be affixed. A pair of vertically spaced tapped holes 28 are formed through the backing plate 27 for screw-threadedly engaging the end portions of the screws 20, respectively, that have been driven into the

respective holes 25 of the adjusting washers 21 and through the hook member mounting plate 17 and the meeting stile inside plate.

According to the preferred embodiment of the invention hereinafter set forth, the position of the hook member 11 for correct engagement with the rotary crescent 14 of the catch assembly 10 is adjustable within limits by suitably selecting the angular position of the adjusting washers 21 relative to the hook member mounting plate 17 before the screws 20 are driven completely therein. Since the positions of the eccentric necks 23 relative to the meeting stile 18 are selectably variable by rotating the adjusting washers 21, the hook member 11 can be easily mounted in position for correct engagement with the rotary crescent 14. Such engagement of the hook member 11 by the rotary crescent 14 is effected, of course, by the manual rotation of the latter by the lever 15 in the closed positions of the two sashes, as illustrated in Figures 1 and 2.

Although the adjustable sash fastener according to this invention has been described in detail herein with reference to the accompanying drawings, it is to be understood that the invention itself is not to be restricted by the drawings or the description thereof. For example, while the apertures 19 in the hook member mounting plate 17 and the neck 23 of each adjusting washer 21 are made square in shape in the illustrated embodiment of the invention, it will be evident that this is purely by way of example and that they can be in the shape of, say, a regular hexagon, a regular octagon and so forth. The invention, therefore, should be interpreted broadly and in a manner comprehensive of all such modifications coming within the scope of the following claims.

WHAT WE CLAIM IS:—

1. A sash fastener for use with a sash window unit or the like, wherein said sash fastener comprises a catch assembly adapted to be affixed to the meeting stile of one of the sashes of the sash window unit and comprising a rotary crescent, and a hook member to be engaged by said crescent of said catch assembly to restrain the sashes in closed positions, the combination comprising a mounting plate integral with said hook member for securing to the meeting stile of the other sash, said mounting plate having at least a pair of spaced apertures therethrough, and a respective adjusting washer for use in securing said hook member to the meeting stile of said other sash by means of a respective fastening element passing through each of said apertures of said mounting plate, said adjusting washer including a head, a neck extending eccentrically from the head and so shaped and sized as to fit

Figure 5 is a rear elevational view of the adjusting washer shown in Figures 2 to 4, inclusive.

With particular reference to Figures 1 and 2, the sash fastener illustrated therein by way of a preferred embodiment of this invention broadly comprises a catch assembly 10 and a hook member 11. The catch assembly 10 comprises a mounting plate 12 adapted to be screwed or otherwise affixed substantially centrally onto the end face of a meeting stile 13 of one of the sashes of a conventional sash window unit. Also included in the catch assembly 10 is a rotary crescent 14 having a lever 15 and a pivotally connected at 16 to the plate 12. It is to be understood, however, that the construction of the catch assembly 10 as so far described is well known and does not, by itself, constitute a feature of this invention.

The hook member 11 is integrally provided with a mounting plate 17 adapted to be affixed, in a manner hereinafter to be described, onto the inside face of the meeting stile 18 of the other sash of the sash window unit so that the hook member may be correctly engaged by the rotary crescent 14 of the catch assembly 10 when the two sashes are in their closed positions, as will be seen from a consideration of Figures 1 and 2.

As illustrated in greater detail in Figures 3 to 5, inclusive, the mounting plate 17 of the hook member 11 has at least a pair of vertically spaced square apertures 19 for permitting fastening elements, screws 20 to pass therethrough via adjusting washers 21, respectively. Each of the adjusting washers 21 integrally comprises a head 22, a neck 23, and an end portion 24. The washer head 22 is circular in shape, and a tapped hole 25 for receiving the screw 20 extends centrally through the washer head and further through the neck 23 and the end portion 24. The washer neck 23 is shown to be square in shape, with a size to fit snugly in one of the square apertures 19 of the hook member mounting plate 17, and is arranged eccentrically with respect to the head 22 or the hole 25. The washer end portion 24 is arranged concentrically with the head 22.

It will be observed from Figure 4 in particular that the inside plate of the meeting stile 18 has a pair of vertically spaced bores 26 therethrough for receiving the end portions 24 of the adjusting washers 21, respectively. A backing plate 27 is arranged on the opposite side of the meeting stile inside plate with respect to its side on which the hook member mounting plate 17 is to be affixed. A pair of vertically spaced tapped holes 28 are formed through the backing plate 27 for screw-threadedly engaging the end portions of the screws 20, respectively, that have been driven into the

respective holes 25 of the adjusting washers 21 and through the hook member mounting plate 17 and the meeting stile inside plate.

According to the preferred embodiment of the invention hereinafter set forth, the position of the hook member 11 for correct engagement with the rotary crescent 14 of the catch assembly 10 is adjustable within limits by suitably selecting the angular position of the adjusting washers 21 relative to the hook member mounting plate 17 before the screws 20 are driven completely therein. Since the positions of the eccentric necks 23 relative to the meeting stile 18 are selectably variable by rotating the adjusting washers 21, the hook member 11 can be easily mounted in position for correct engagement with the rotary crescent 14. Such engagement of the hook member 11 by the rotary crescent 14 is effected, of course, by the manual rotation of the latter by the lever 15 in the closed positions of the two sashes, as illustrated in Figures 1 and 2.

Although the adjustable sash fastener according to this invention has been described in detail herein with reference to the accompanying drawings, it is to be understood that the invention itself is not to be restricted by the drawings or the description thereof. For example, while the apertures 19 in the hook member mounting plate 17 and the neck 23 of each adjusting washer 21 are made square in shape in the illustrated embodiment of the invention, it will be evident that this is purely by way of example and that they can be in the shape of, say, a regular hexagon, a regular octagon and so forth. The invention, therefore, should be interpreted broadly and in a manner comprehensive of all such modifications coming within the scope of the following claims.

WHAT WE CLAIM IS:—

1. A sash fastener for use with a sash window unit or the like, wherein said sash fastener comprises a catch assembly adapted to be affixed to the meeting stile of one of the sashes of the sash window unit and comprising a rotary crescent, and a hook member to be engaged by said crescent of said catch assembly to restrain the sashes in closed positions, the combination comprising a mounting plate integral with said hook member for securing to the meeting stile of the other sash, said mounting plate having at least a pair of spaced apertures therethrough, and a respective adjusting washer for use in securing said hook member to the meeting stile of said other sash by means of a respective fastening element passing through each of said apertures of said mounting plate, said adjusting washer including a head, a neck extending eccentrically from the head and so shaped and sized as to fit



- non-rotatably in a plurality of selectable rotational positions in the respective one of said apertures of said mounting plate, and a hole extending centrally through said head and eccentrically through said neck for receiving the respective fastening element.
- 5 2. A sash fastener as claimed in claim 1, wherein said adjusting washer further includes an end portion concentric with said head and having said hole extending centrally therethrough, said end portion being adapted to be received in one of a plurality of openings formed in the meeting stile of said other sash.
- 10 3. A sash fastener as claimed in claim 2, and comprising a backing plate adapted to engage the end of said fastening element projecting out of said end portion of said adjusting washer.
4. A sash fastener as claimed in claim 1, wherein said neck of said adjusting washer and the corresponding aperture of said mounting plate are each in the shape of a regular polygon in cross-section.
5. A sash fastener as claimed in claim 1, wherein said fastening element is a screw.
- 20 6. A sash fastener substantially as herein described with reference to and as illustrated in the accompanying drawings.
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