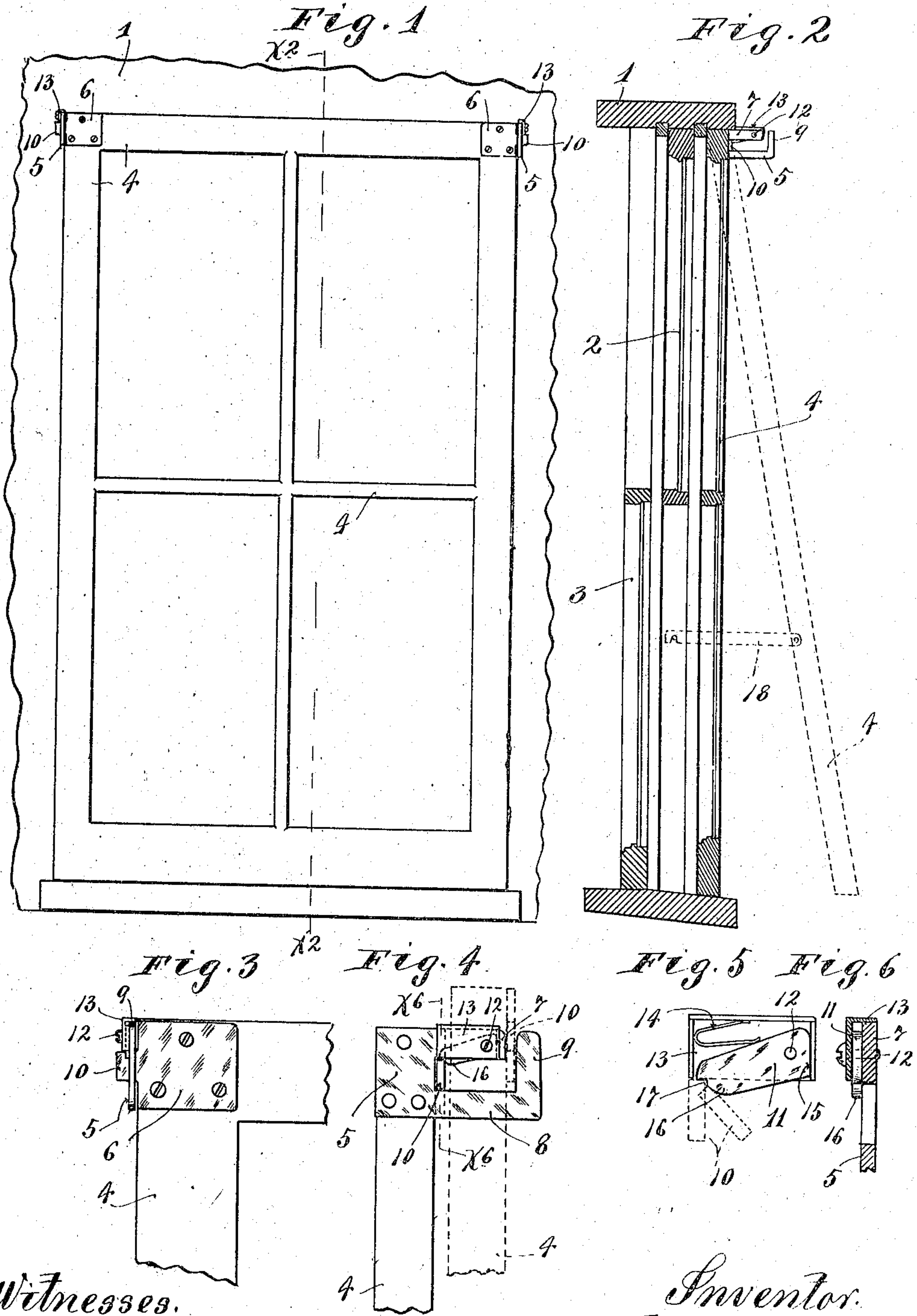


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STORM SASH HANGER.
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Patented Aug. 10, 1909.



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UNITED STATES PATENT OFFICE.

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STORM-SASH HANGER.

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To all whom it may concern:

Be it known that I, HARLAN P. BENTON, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Storm-Sash Hangers; and I do hereby 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.

My invention has for its especial object to provide an improved storm sash hanger, and to this end it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in elevation looking at the outside of a storm sash and showing the same connected to a window frame by a pair of my improved hangers; Fig. 2 is a vertical section taken on the line $x^2 x^3$ of Fig. 1; Fig. 3 is a detailed view in elevation showing one of the improved hangers and a portion of the storm sash; Fig. 4 is a side elevation of the hanger shown in Fig. 3; Fig. 5 is a detailed view showing some of the parts of the improved hanger; and Fig. 6 is a vertical section taken on the line $x^6 x^7$ of Fig. 4.

The window frame is indicated as an entirety by the numeral 1 and the upper and lower sliding sash are indicated, respectively, by the numerals 2 and 3.

The numeral 4 indicates the storm sash.

Each hanger comprises a member 5 which is secured to the upper and inner side portions of the window frame 1 and a member 6 which is secured to the upper corners of the storm sash 4. Both of these members are preferably stamped from flat metal sheets, but may be cast. Screws are preferably employed to connect the said members 5 and 6, respectively, to the frame 1 and sash 4. The relatively fixed member 5 has an outwardly projecting upper arm 7 and an outwardly projecting lower arm 8, which latter is provided with an upwardly extended stop lug or finger 9. The upper end of the stop lug 9 is spaced outward from the outer end of the upper arm 7 so as to leave a narrow vertically extended entrance passage through which a projecting vertically elongated trun-

nion 10, formed on the outer end of the co-operating hinged member 6, may be passed by vertical edgewise movement, indicated by dotted lines in Fig. 4. The vertical distance between the arms 7 and 8 is only sufficient to permit the trunnion 10 to be slid laterally between the same when the storm sash is in a vertical or approximately vertical position.

To the upper arm 7 a lock dog 11 is pivoted by a screw 12. This lock dog is preferably incased by a metal shield 13, which, as shown, is attached to the said arm 7 by the screw 12. This shield protects the lock dog 11 from snow, rain and dirt. Preferably a light spring 14 is applied between the shield 13 and dog 11 and coöperates with gravity to hold the free end of the dog in its lowermost position. The downward movement of the lock dog is, as shown, limited by the engagement of a flat surface 15 with one end of the case. The lowermost position of the lock dog is best shown in Figs. 4 and 5, by reference to which it will be seen that the said lock dog is provided with an inclined and rounded cam surface 16 that terminates in a lock shoulder 17 located slightly inward of the extreme free end of said lock dog.

The operation of the improved hangers applied as above described is as follows: The storm sash, while held in an approximately vertical position, is raised so that the elongated trunnions 10 will pass above the upper ends of the stop lugs 9, and then the said trunnions are lowered vertically through the passage between the said lugs 9 and the upper arms 7. Then the storm sash is drawn or moved inward, forcing the trunnions 10 laterally in the channels between the arms 7 and 8, under which movement the said trunnions will engage the surfaces 16 of the lock dogs 11 and force the same upward. When the trunnions reach their extreme position, shown by full lines in Fig. 4, the lock dogs will drop to their operative positions and their shoulders 17 will engage the upper edged portions of said trunnions and thus hold the same against lateral outward movement. This secures the upper edge of the storm sash in its properly seated position, but permits the sash to be swung from its closed position approximately into the position indicated by dotted lines in Fig. 2 without releasing the trunnions 10 from the coöperating lock dogs. When, however, the storm sash is swung outward, so as to throw the trunnions 10 into

the extreme angular position shown in Fig. 5, the upper end of the storm sash may be forced outward and the trunnions caused to move into alinement with the passages between the stop lugs 9 and arms 7. This being done, and the sash being swung approximately into a vertical position, it may be easily detached by moving the trunnions 10 edgewise vertically upward through the said entrance passages. These hangers, therefore, adapt the storm sash to be easily hung or detached from the inner side of the window.

The stop lugs 9 are highly important because they prevent a storm sash from being blown or accidentally detached even if they should become disconnected from the lock dogs or from any other means relied upon to hold the trunnions in their innermost positions. Also independently of these stop lugs, the yielding spring pressed or yieldingly held lock dogs are important because they permit the storm sash to be applied while in approximately a vertical position.

The hanger above described may be constructed at comparatively small cost and in actual practice has been found highly efficient for the purposes had in view.

In Fig. 2 the storm sash is shown as held in its open dotted line position by a link 18, which, however, forms no part of my present invention.

From what has been said it will be understood that the improved hanger above described is not limited to the precise construction shown in the drawings and, on the contrary, is capable of modification within the scope of my invention.

What I claim is:

1. In a sash hanger, the combination with a member having outwardly projecting upper and lower arms, the latter having an upwardly extended stop lug spaced outward from the end of said upper arm, of a cooperating member having a trunnion insertible between said arms through the entrance pas-

sage formed between said stop lug and upper arm.

2. In a sash hanger, the combination with a member provided with outwardly extended upper and lower arms, the latter having an upwardly projecting stop lug spaced outward from the end of said upper arm, of a lock dog mounted on said upper arm, and a cooperating member having an elongated trunnion movable edgewise through the entrance passage formed between said lug and the outer end of said upper arm and movable laterally between said arms, said dog serving to hold the said trunnions in operative position except when moved to a predetermined angle in respect thereto.

3. A sash hanger comprising two members, one having a trunnion supporting arm and the other a trunnion engaging lock dog and the other member having an elongated trunnion adapted to rest upon said supporting arm and to be engaged and held in operative position by said lock dog but to be released from said lock dog when moved to a predetermined angular position in respect thereto.

4. The combination with a window frame and a sash, of a pair of hangers for said sash, each comprising a member rigidly secured to said window frame and provided with upper and lower outwardly extended arms, the latter having an upwardly extended stop lug spaced outward from the end of said upper arm, and a cooperating hanger member secured to said sash and provided with vertically elongated trunnions insertible by vertical edgewise movement through the entrance passage formed between said stop lug and upper arm and movable to operative position between said two arms.

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

HARLAN P. BENTON.

Witnesses:

ALICE V. SWANSON,
HARRY D. KILGORE.