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SCREEN AND STORM SASH HANGER.

APPLICATION FILED MAR. 8, 1921.

1,412,460. Patented Apr. 11, 1922.

Fig. 1

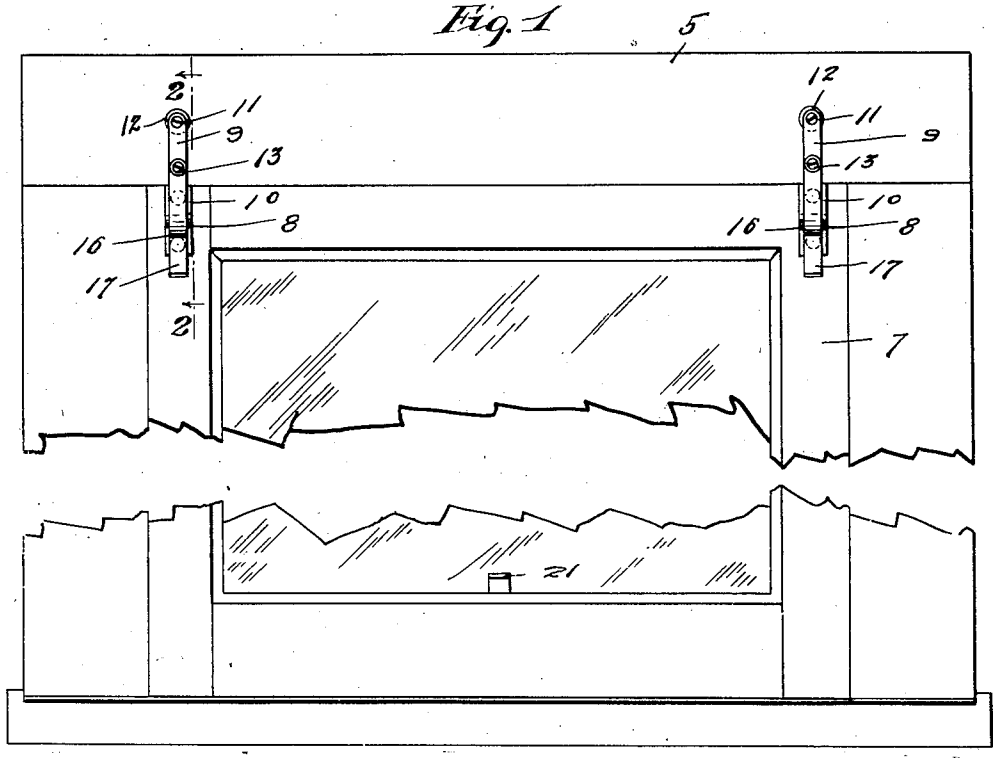


Fig. 2.

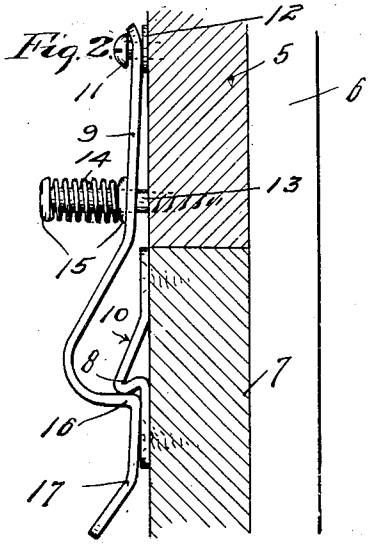
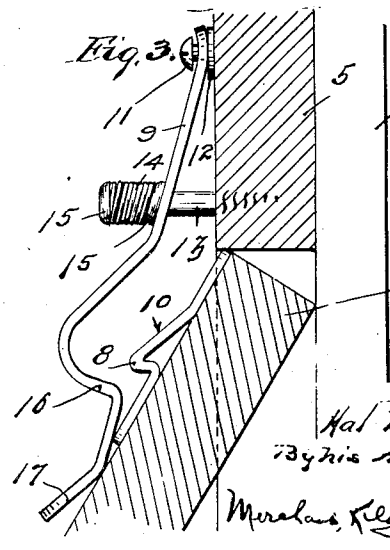


Fig. 3.



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SCREEN AND STORM-SASH HANGER.

1,412,460. Specification of Letters Patent. Patented Apr. 11, 1922.

Application filed March 8, 1921. Serial No. 450,564.

To all whom it may concern:

Be it known that I, HAL DICKINSON, 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 Screen and 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 object to provide an extremely simple and highly efficient separable hanger for storm sash, screens and the like, 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:

Fig. 1 is a fragmentary outside elevation of a frame and storm sash to which the invention is applied;

Fig. 2 is a view partly in edge elevation and partly in vertical section taken on the line 2—2 of Fig. 1; and

Fig. 3 is a view corresponding to Fig. 2, with the exception that the sash has been moved into an open position.

The numeral 5 indicates a window frame having the customary sash stops 6, and the numeral 7 indicates a storm sash mounted in said frame and seated against the outer stops 6. This sash 7 is suspended from the frame 5 for outward swinging movement by a pair of my improved separable hangers, each of which comprises a coupling lug 8 and a coupling arm 9. The coupling lugs 8 are secured to the upper ends of the stiles of the sash 7 by screws, and each thereof is provided with an upwardly inclined cam surface 10. The upper ends of the coupling arms 9 are secured to the frame 5 by loose hinge joints 11 afforded by screws inserted through bores in said coupling arms and screwed into said frame with sufficient clearance between the heads of the screws and the coupling arms to permit swinging movement of the coupling arms toward and from the frame 5.

As shown, the ends of the coupling arms 9, at their hinge joints 11, are curved to facilitate their swinging movement, and washers 12 are interposed between the coupling arms 9 and frame 5 to take the wear. To guide the coupling arms 9 during their swinging movement, pins in the form of screws 13 are loosely inserted through bores in the coupling arms 9 below their hinge joints 11 and screwed into the frame 5. Coiled springs 14, encircling the screws 13, are compressed between the heads thereof and coupling arms 9, and yieldingly hold said coupling arms pressed against the sash 7 and interlocked with the coupling lugs 8 and also yieldingly press the sash against its stops 6. Washers 15 are interposed between the springs 14 and the heads of the screws 13 and the coupling arms 9.

The lower ends of the coupling arms 9 are bent outwardly and then inwardly to afford hook lugs 16 adapted to interlock with the coupling lugs 8 and suspend the sash 7 from the frame 5 with freedom for swinging movement into and out of said frame. Fingers 17 are formed with the hook lugs 16 and extend downwardly therefrom in substantially the same plane as the bodies of the coupling arms 9, and their lower ends are bent outwardly.

In applying the sash 7 to the frame 5, the upper end of said sash is rested against the stops 6 with the lower end of the sash held outward, and then, by an upward sliding movement of the sash on the stop 6, the cam surfaces 10 are brought into engagement with the fingers 17 and thereby swing the coupling arms 9 outward against the tension of the springs 14 until the upper end of the sash 7 engages the top portion of the frame 5. This movement of the sash 7 carries the coupling lugs 8 above the hook lugs 16 and also brings the fingers 17 into engagement with either the lower end portions of the coupling lugs 8 or sash 7 or both. An inward movement of the lower end of the sash 7 to carry the same into the frame 5 and against the outer stop 6, will permit the coupling arms 9 to follow said sash against the tension of the springs 14 and thereby cause the hook lugs 16 to interlock the coupling lugs 8, as best shown in Fig. 3. In this position of the coupling arms 9, the straight portions of the fingers 17 bear against the lower end portions of the coupling lugs 8 and yieldingly press the sash 7 against the stops 6 to prevent said sash from rattling either when closed or partly open.

To remove the sash 7 from the frame 5,

an extreme outward movement of the lower end thereof will cause the fingers 17 to swing the coupling arms 9 outward, against the tension of the springs 14 a distance sufficient to carry their hook lugs 16 out of engagement with the coupling lugs 8, as shown in Fig. 4. A downward movement of the sash 7, with its upper end sliding on the outer stop 6, will carry the coupling lugs 8 below the hook lugs 16 and thereby permit the sash to be removed from the frame 5. Obviously, the application of the sash 7 to the frame or the removal therefrom may be easily accomplished by an operator standing within the building. It is also evident that the simple sliding movement of the sash 7 on the outer stop 6 will automatically operate the separable fasteners to connect the sash to the frame or release the same therefrom.

The above described invention, while extremely simple and of comparatively small cost to manufacture, has, in actual practice, proven highly efficient for the purpose had in view.

What I claim is:—

1. The combination with a frame and sash, of a separable hanger for the sash comprising a coupling lug applied thereto and a coupling arm applied to the frame and having a hook shoulder yieldingly held interlocked with the coupling lug when the sash is closed.

2. The combination with a frame and sash, of a separable hanger for the sash comprising a coupling lug applied thereto and a coupling arm applied to the frame and having a hook shoulder yieldingly held interlocked with the coupling lug when the sash is closed, said coupling lug having a cam surface arranged to be engaged by the coupling arm during a movement of the sash into the frame to cause said hook shoulder to interlock with said coupling lug.

3. The combination with a frame and sash, of a separable hanger for the sash comprising a coupling lug applied thereto and a coupling arm applied to the frame and having a hook shoulder yieldingly held interlocked with the coupling lug when the sash is closed, and means operative on the coupling arm under a pre-determined outward swinging movement of the sash to release said hook shoulder from the coupling lug.

4. The combination with a frame and sash, of a separable hanger for the sash comprising a coupling lug applied thereto and a coupling arm applied to the frame and having a hook shoulder yieldingly held interlocked with the coupling lug, said coupling lug having a cam surface arranged to be engaged by the coupling arm during an endwise movement of the sash into the frame to cause said hook shoulder to interlock with said coupling lug, and means operative on the coupling arm under a pre-determined outward swinging movement of the sash to release said hook shoulder from the coupling lug.

5. The combination with a frame and sash, of a separable hanger for the sash, comprising a coupling lug applied thereto and a coupling arm applied to the frame and having a hook shoulder yieldingly held interlocked with the coupling arm when the sash is closed and also yieldingly pressing the sash against its stop in the frame.

6. The combination with a frame and sash, of a separable hanger for the sash comprising a coupling lug applied thereto and a coupling arm applied to the frame and having a hook shoulder yieldingly held interlocked with the coupling lug when the sash is closed, said coupling lug having a cam surface and said coupling arm having a finger arranged to engage said cam surface during an endwise movement of the sash into the frame to cause the hook shoulder to interlock with the coupling lug and to be engaged by the sash during a pre-determined swinging opening movement of the sash to release said hook shoulder from the coupling lug.

7. The combination with a frame and sash, of a separable hanger for the sash comprising a coupling lug applied thereto and a coupling arm applied to the frame by a hinge joint and having a hook shoulder adapted to interlock with the coupling lug, a guide pin on the frame for the coupling arm, and a spring re-acting against the guide pin and operative on the coupling arm to yieldingly hold its lock shoulder interlocked to the coupling lug.

8. The combination with a frame and sash, of a separable hanger for the sash comprising a coupling lug applied thereto and a coupling arm applied to the frame by a hinge joint and having a hook shoulder adapted to interlock with the coupling lug, a guide pin on the frame for the coupling arm, and a spring re-acting against the guide pin and operative on the coupling arm to yieldingly hold its lock shoulder interlocked to the coupling lug, said coupling lug having a cam surface and said coupling arm having a finger arranged to engage said cam surface during a movement of the sash into the frame to cause the hook shoulder to interlock with the coupling lug and to be engaged by the sash during a pre-determined movement thereof to release said hook shoulder from the coupling lug.

In testimony whereof I affix my signature.

HAL DICKINSON.