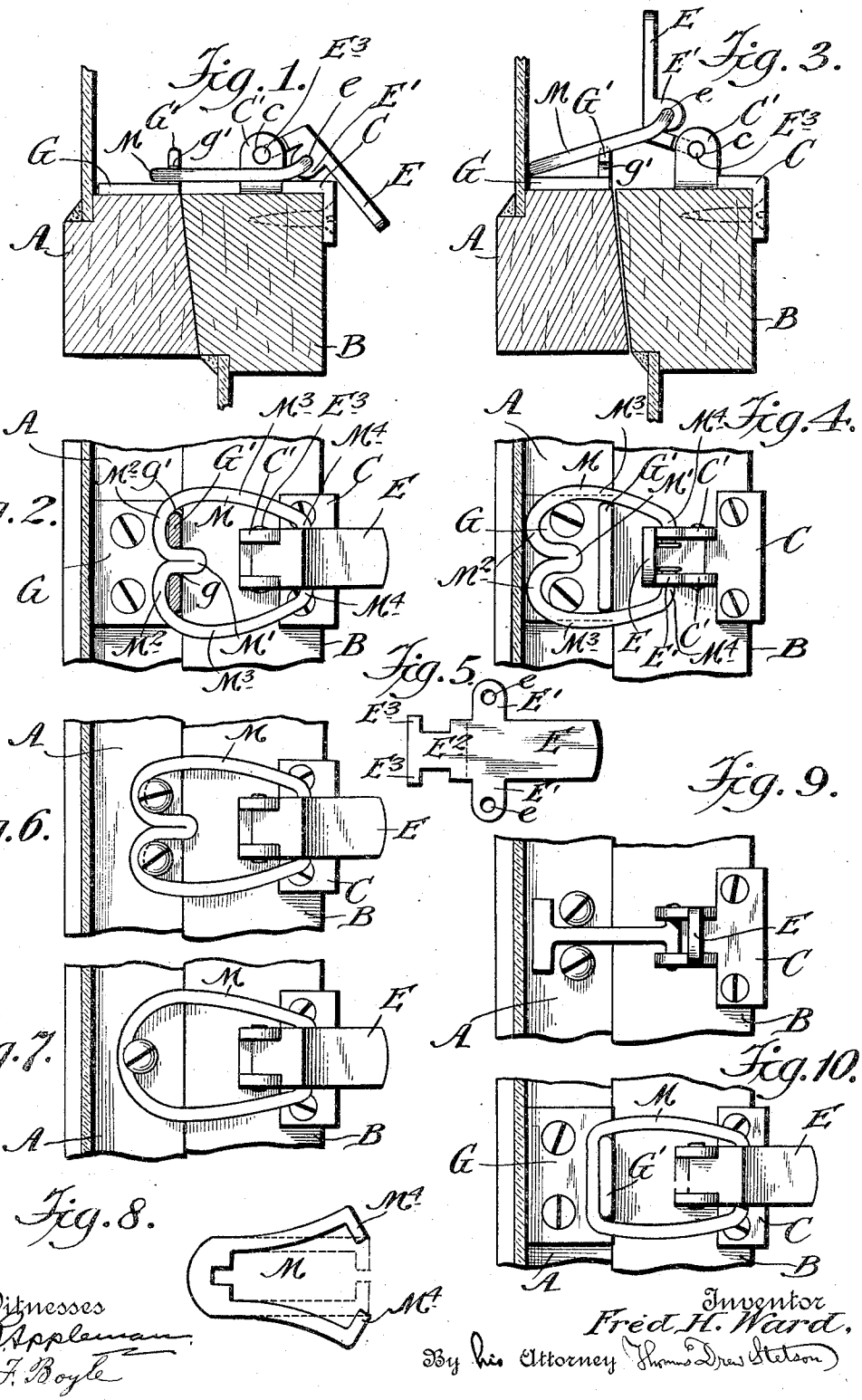
No. 783,338. PATENTED FEB. 21, 1905.

F. H. WARD.

SASH FASTENER.

APPLICATION FILED FEB. 11, 1904.



Witnesses
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No. 783,338. Patented February 21, 1905.

UNITED STATES PATENT OFFICE.

FREDERICK H. WARD, OF NEW YORK, N. Y.

SASH-FASTENER.

SPECIFICATION forming part of Letters Patent No. 783,338, dated February 21, 1905.

Application filed February 11, 1904. Serial No. 193,035.

To all whom it may concern:

Be it known that I, FREDERICK H. WARD, a citizen of the United States, residing in the borough of Brooklyn, in the city and State of New York, have invented a certain new and useful Improvement in Sash-Fasteners, of which the following is a specification.

My improvement pertains to that class much approved in which there are two parts, one secured on the upper edge of the lower sash and the other on the upper face of the lower rail of the upper sash. In my improved form, as in others, it it essential that the parts are adjusted so that they come together properly when the window is closed. It is common to apply them at the mid-width of the respective sashes. I will represent my parts as thus applied. They may be secured by screws in the ordinary manner. I have discovered that by making the link with a just sufficiently curved form it can be just sufficiently elastic to yield and allow a toggle action to be carried a little past the center and still hold the sashes very firmly in the closed position and have carried out the invention to give a very simple and durable construction with the full combination of qualities required. The front portion, that fixed on the lower sash, carries a short lever, to which is jointed a link which when thrown over engages with a keeper on the other part, that fixed on the upper sash. I have devised a form and arrangement which causes the loop to engage under a portion of the keeper. The operation not only secures each sash against being moved, but also draws the two sashes tightly together.

My improvement gives more than the usual security without involving complication or appreciable increase in the cost.

My fastener does not require any increased skill or labor to place and to operate it successfully.

In what I esteem the most complete development of the invention there is additional security attained by providing an inwardly-extending arm on the link, which arm engages with the upper sash and contributes to not only secure the link against being surreptitiously displaced, but contributes an additional engaging means adding still more to the reliability. The loop cannot be displaced by any operation from the outside, having that important quality in common with the more complicated, expensive, and short-lived constructions before used or proposed. The parts are strong to resist force in any direction.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a section through the joined portions of the sashes with my fastening device in elevation. This shows the device locked. Fig. 2 is a corresponding plan view. Fig. 3 is a section corresponding to Fig. 1, showing the loop in the act of being applied. Fig. 4 is a plan view corresponding to Fig. 2. Fig. 5 represents the blank for the lever in the condition which obtains before the ears are bent. Fig. 6 is a plan view corresponding to Fig. 2, showing a modification. Fig. 7 is a corresponding plan view showing a further modification. Fig. 8 shows a blank for a modification of the loop. The dotted lines show its condition after it has been bent in engaging it properly with the ears of the lever. Fig. 9 is a plan view showing a further modification. Fig. 10 is a plan view corresponding to Fig. 2, showing a modification.

Similar letters of reference indicate corresponding parts in all the figures where they appear. Supernumerals, as A', indicate certain smaller subdivisions.

Referring to Figs 1, 2, 3, and 4, A is the bottom rail of the upper sash, and B is the top rail of the lower sash. On the rail A is screwed a plate G, formed with two uprights G' G', each having a notch g' at each edge. On the rail B is screwed a plate C, having ears C', each provided with a smoothly-punched hole c. These punched ears are bent squarely up under conditions which will presently appear. E is an operating-lever. E' E' are ears turned down thereon and provided each with a single smooth hole e. I will represent the loop as formed of hard wire, using the letter M to designate the whole loop. M' is an inwardly-extending tongue formed by a sharp bend of the wire. M^2 M^2 indicate the portions of the

wire which extend to the right and left. M^3 are curved portions extending inward toward the fulcrum. M^4 indicates arms extending toward each other at the pivotal ends of the loop. These arms serve as axes or pivots on which the loop can turn. They are retained by having their ends upset or headed. The end adjacent E^2 is formed with trunnions which extend laterally therefrom, as indicated by E^3 E^3. In assembling the parts these trunnions are received in the holes *c* in the ears C′ in the act of bending downward the metal to form the latter.

The parts are easily made by hand or by simple machinery. The heading of the ends of wires after being thrust through other parts, like my trunnions, involves no difficulty with modern appliances. I attach importance to the curvature of the extending portions of the loop, because these parts by partially straightening under the strain supply the necessary elasticity to allow the movement of the lever E to carry the line of the centers E^3 and M^4 down past the horizontal line in completing the engagement and bringing it back again up past the horizontal line in which the tension is greatest in the lifting and unlocking movements of the lever.

The lever E is of stout sheet metal cut to form and bent nearly at right angles adjacent to the ears E′. When the sash is fastened, the operating end of the lever inclines greatly downward. (See Fig. 1.) The trunnions E^3, made integral, are the fulcrum of the lever E. The construction is specially simple and in being engaged carries the loop far outward on the upper sash with the lever E upright and in being operated draws the loop inward to effect efficient engagement by swinging the lever E far below the level position. In brief, the loop M is an elastic bridge, giving all the yielding required in the manipulation and a reliable fastening when secured, even if the tongue M should be, from any chance, ineffective. The lever E is bent nearly at right angles adjacent to the ears E′, so that when the sash is fastened the operating end of the lever extends downward. (See Fig. 1.) We may term the trunnions E^3 the "fulcrum" of the lever E. The arrangement allows the retaining-loop to be depressed so that the ends M^4 lie below the line of the trunnions. In tightening the fastening the movement goes beyond such line, thus holding the loop forward in place by its own tension. The construction attains complete securing without requiring any catch or other additional parts to maintain the fastened condition.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. Instead of the specially-formed plate G, with its two uprights G′ G′, recessed or notched at *g*, I can use two plain screws set to the proper depth in the upper sash to be engaged by the loop. Fig. 6 shows such a modification. Fig. 7 shows how the invention can be made available with only one such screw by modifying the form of the loop. In this and the form shown in Fig. 10 the tongue M′ is omitted and the space between the notched uprights is omitted. In other words, one upright properly notched serves. Although I term this a "loop" and show it extending around, it can be made T-shaped and extending between two uprights corresponding to G′, serving as two keepers. Fig. 9 shows such a T-shaped substitute. In this form, as in the others, the pivoting of the lever is effected by the aid of pivotal projections cut by the dies from the sheet metal from which it is formed. These are engaged in eyes formed upward in the lever and engaged therewith by being thrust from the interior outward. The engagement is effected in this form by bending the eyes upward instead of downward. The stout T shape at the other end of this form of loop is adapted to engage with two screws or analogous projections set in the upper sash.

Some of the novel features can be used without the whole. In nearly all the forms the loop engages under an overhanging keeper, so that the loop is held securely locked in position for efficient service until the lever E is operated to relax the tension. The invention may be used without such locking.

I claim as my invention—

1. In a sash-fastener the lever E of sheet metal bent as shown, with trunnions formed integral, pivoted on the lower sash and the greatly-curved loop M of hard wire affording much elasticity pivoted on such lever E in combination with each other and with a keeper G′ fixed on the upper sash, having recess *g* with which the loop is engaged, all substantially as herein specified.

2. In a sash-fastener the combination with two uprights G′ G′ projected from the upper sash having recess *g*, a loop M having the inwardly-projecting tongue M′, and a lever E pivotally mounted on the upper portion of the lower sash, all arranged and operated substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

FRED. H. WARD.

Witnesses:

THOMAS DREW STETSON,

M. F. BOYLE.