A. W. HINEY.

WINDOW SCREEN.

APPLICATION FILED JULY 17, 1911.

1,026,864.

Patented May 21, 1912.

2 SHEETS—SHEET 2.

FIG. 2.

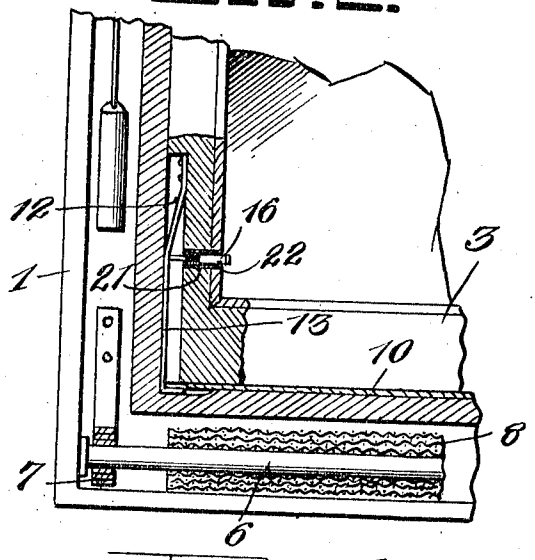


FIG. 5.

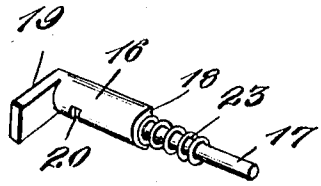


FIG. 4.

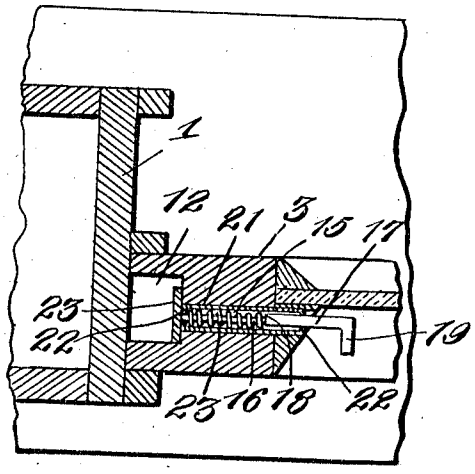
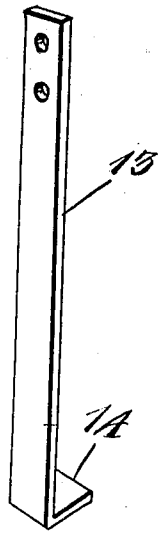


FIG. 6.



Witnesses

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2 SHEETS—SHEET 1.

FIG. 1.

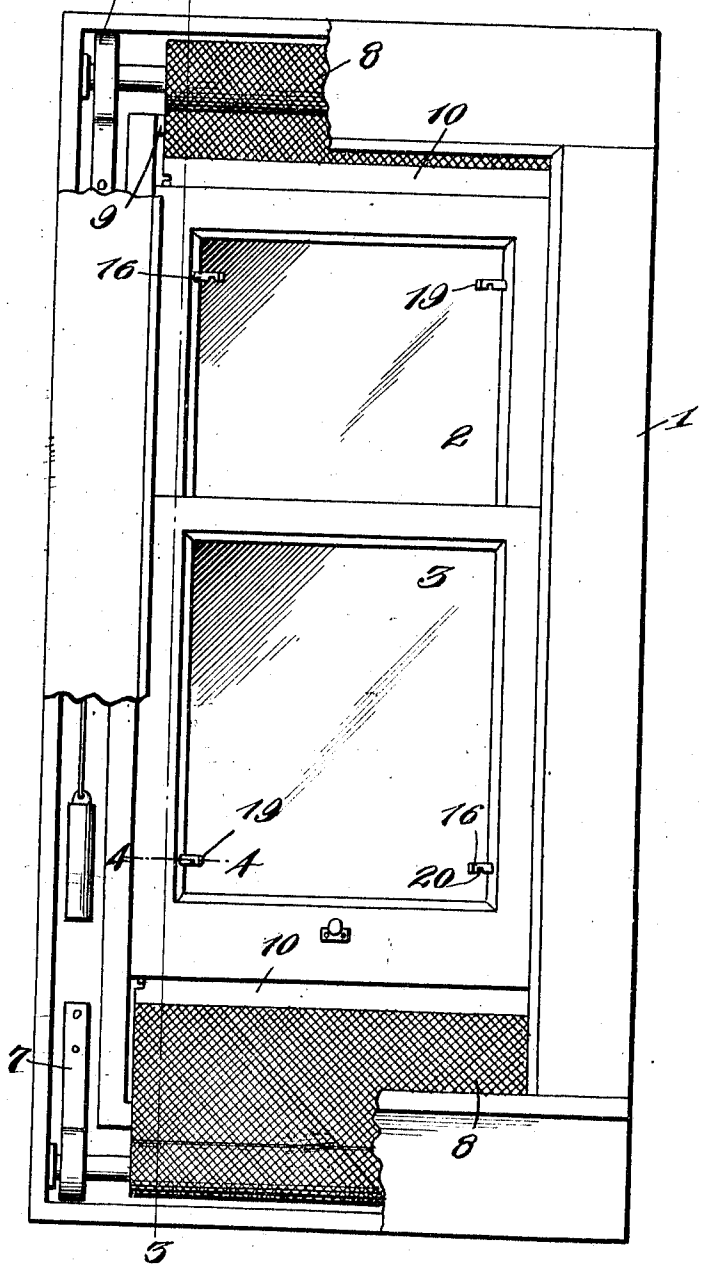
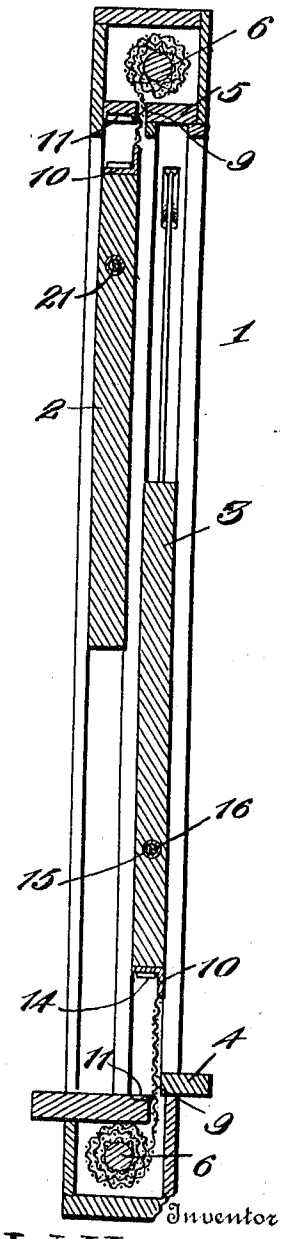


FIG. 3.



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UNITED STATES PATENT OFFICE.

ALFRED W. HINEY, OF PHILADELPHIA, PENNSYLVANIA.

WINDOW-SCREEN.

1,026,864. Specification of Letters Patent. Patented May 21, 1912.

Application filed July 17, 1911. Serial No. 638,920.

To all whom it may concern:

Be it known that I, ALFRED W. HINEY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Window-Screens, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to new and useful improvements in window screen attachments and more particularly to a rolling window screen, and my object is to provide a device of this character which may be readily attached to the upper or lower sashes of a window to be drawn up or down thereby, whereby the window-opening may be screened to whatever extent the sashes may be opened.

A further object of the invention resides in providing an improved means for the engagement of the screen with the sash.

A further object of the inventions resides in providing a device which is extremely simple in construction, thereby readily and cheaply manufactured, and one which is extremely effective and useful in operation.

With these and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawings forming a part of this application, Figure 1 is a front elevation of a window casement or frame partly in section showing my improved device applied to use. Fig. 2 is a fragmentary vertical longitudinal section through the casing. Fig. 3 is a vertical transverse section therethrough. Fig. 4 is a horizontal section as seen on line 4—4, Fig. 1. Fig. 5 is a detail perspective of one of the pins which operates the mechanism on the sash for engaging the screen, and Fig. 6 is a similar view of one of the spring locking members.

In carrying out my invention, I shall refer to the drawings in which similar reference characters designate corresponding parts throughout the several views and in which 1 indicates a window casement or frame, and 2 and 3 the upper and lower sashes, respectively, said sashes being slidably mounted in the casement in the usual or any preferred manner. Also mounted in the casement 1 below the lower sill 4 and above the upper sill 5, is a roller 6, the same being rotatable therein, and each end of each of said rollers has secured thereto, one end of a coiled leaf spring 7. The opposite ends of said springs are secured to the casement, whereby it will be seen that the tendency of said springs will be to unwind and rotate said rollers therewith. As stated, the springs 7 are coiled so as to be normally under tension, and secured to each of said rollers 6, is one end of a gauze wire screen 8, said screen being rolled on said roller with the coiling of the springs therearound, and the opposite ends of said screens are extended through slots 9 in said sills 4 and 5. The extreme free ends of said screens have each secured thereto, a longitudinal metallic strip 10, said strip being angular in cross section, whereby the same cannot be drawn through the longitudinal slot 9 in the sill. As the springs tend to normally retain the roller in the position in which the spring is rolled, it will be seen that the one arm of the angular strip 10 will normally rest upon the outer face of the sill.

The width of each screen is substantially equal to the width of the sill, or as wide as necessary to prevent flies or other insects from entering through the frame, but the strips 10 secured to the ends thereof have the angular portions which rest upon the sills of the frame, a fraction shorter at each end than the width of the screen, and each of said sills at the sides thereof, is provided with depressions or cut-away portions 11 over which extend portions of the angularly bent strips 10. The purpose of these depressions will be hereinafter and more particularly described.

The sashes 2 and 3 have the side edges thereof provided with vertical channels 12 in which are disposed the spring members 13. These spring members are secured at one of their ends within said channels, and the free ends thereof extend beyond the upper and lower edges, respectively, of said upper and lower sashes, said protruding or projecting ends being bent at right angles to the general trend of said springs to form lugs or the like 14. The tendency of these springs is to fit closely against the inner walls of the channels 12, and each of said sashes 2 and 3 is also provided with a pair of transverse channels 15, one on each side of each sash opposite one another and intersecting the channels 12 on the outer side

edges of said sashes. Extending through each of the transverse channels 15 is a pin or the like 16 reduced in its length to form an elongated portion 17 and a shoulder 18 between said elongated portion and the main body portion thereof. The opposite end to that having the reduced portions 17 thereon is bent at substantially right angles to the general trend of the pin to form a finger piece 19, and said pin is also provided adjacent the finger piece with a notch or the like 20 in one side thereof, the purpose of which will be hereinafter and more particularly described. The channels or sockets 15 are each lined with a metallic lining 21, and the ends of said lining are bent to form substantially annular flanges 22 at these points, said annular flanges reducing the openings of the channels. The pins 16 extend through the lined channels so that the reduced ends 17 form the outer ends thereof, and encircling the reduced portions 17, are the coil springs 23 which are disposed between the shoulders 18 of said pins and the annular flanges 22 at the outer ends of the lined channels. The length of the pin 16 is greater than the length of the channel 15, but it will be seen that the tendency of the spring 23 will be to retain said pin in such a position that the extreme free end of the portion 17 will be flush with the inner wall of the channel 12. This allows its extreme free end to normally engage the inner face of the springs 13, and when it is desired to force the last referred to springs outwardly, pressure is placed upon the inner ends or finger pieces of the pin 16. If it is desired to retain said springs 13 in their extended positions, the pins 16 are given a slight turn or twist until the notches 20 thereof are engaged with the annular flanges 22 at the inner ends of the channels 15, whereby said pins and springs will be retained in their extended positions.

In operation, it will be seen that the sashes 2 and 3 within the casement may be raised or lowered as usual without affecting the screen whatsoever, but should it be desired at any time to raise the screen with the raising of the lower sash, or lower the upper screen with the lowering of the upper sash, said sashes are first drawn tightly to their closed positions, and in these positions, it will be seen that the lugs 14 of the springs 13 will be disposed immediately over the depressions or cut-away portions 11 of the sills. Pressure upon the inner ends or finger pieces of the pin 16 will dispose the lower ends of the springs 13 outwardly and correspondingly dispose the lugs 14 outwardly, whereupon, with a slight further pressure upon the sash, one way or the other, depending upon which sash is being referred to, and simultaneously with the release of pressure upon the pins 16, the lugs 14 will be locked beneath the angular portion of the strip 10. The sash may then be raised and lowered, and it will be seen that the screen will be drawn therewith and cover the window-opening to whatever extent the sash may be opened. Whenever it is desired to release the screen from its engagement with the sash, pressure is placed upon the pins 16 to release the locking lugs on the ends of the springs 13 from their engagement with the strip 10, whereupon the screen will be drawn to its normal rolled position beneath the sill, due to the tension of the springs 7 which are wound tighter upon the drawing of the screen outwardly with the sash. When it is desired to prevent the locking lugs 14 from any possible engagement with the strip 10 when the sash is disposed in its closed position, pressure may be placed on the pins 16 until the notches 20 thereof register with the flanges 22 at the ends of the channels 15, whereupon a slight twist of said pin will dispose said notches in locking engagement therewith and retain the same in such position. In this position, it will be seen that the springs 13 may be adapted to engage the side walls of the frame or casement in which the sashes are moved to retain the sashes in any adjusted position. This, of course, is a double use for the springs 13.

From the foregoing, it will be seen that I have provided a rolling screen in connection with the window casement, which screen is adapted to be raised or lowered, at will, with the raising and lowering of the sashes. It will still further be seen that I have provided an improved means for connecting the ends of the rolling screen with the sashes, whereupon the same may be raised and lowered therewith. It will still further be seen that the portion of the means which is devised for use in connection with the engagement of the screen with the sash, may be used as a sash fastener or lock when so desired. Furthermore, it will be seen that my device is of such simple construction as to be readily and cheaply manufactured, and one which is very effective and useful in operation.

What I claim is:—

1. In a device of the character described, the combination with a window-frame, the sill of which is provided with an elongated slot, and a sash slidably mounted in said frame; of a rolling screen also mounted in said frame below said sill, one end of said screen being extended through the slot in said sill, means carried on said sash adapted for engagement with the extended end of said screen, said sill being provided at the ends of said slot with depressions for coöperation with the screen-engaging means on said sash, and means on said sash to manually actuate said mentioned means.

2. The combination with a window-frame, the sill of which is provided with an elongated slot, said sill being also provided with depressions at the ends of said slot, and a sash slidably mounted in said frame; of a rolling screen also mounted in the frame below said sill, one end of said screen being extended through said slot and provided with an angular strip, spring-engaging members carried on said sash in alinement with the depressions in said sill, and means carried on said sash to operate said engaging members, whereby the latter may be engaged with the strip of said screen when said sash is lowered to the sill.

3. The combination with a window-frame, the sill of which is provided with an elongated slot, said sill being also provided with depressions at the ends of said slot, and a sash slidably mounted in said frame; of a rolling screen carried in said frame below said sill, one end of said screen being extended through said slot and provided with an angular strip thereon, spring members carried in channels on the side edges of said sash, the free ends of said springs being bent at right angles to the general trend of said springs to form locking lugs thereon, said locking lugs being disposed in alinement with the depressions in said sill, and means carried on said sash to manually operate said spring members, whereby the same may be engaged with the strip on said spring when said sash is lowered to the sill.

4. The combination with a window-frame, the sill of which is provided with an elongated slot, said sill being also provided with depressions at the ends of said slot, and a sash slidably mounted in said frame; of a rolling screen also carried in said frame and having one end thereof extended through said slot and provided with an angular strip thereon, spring members carried on said sash, the free ends of which are bent to form locking lugs and disposed in alinement with the depressions in said sill, and pins carried on said sash for the manual operation of said spring members, whereby the locking lugs may be engaged with the strip of said screen when said sash is lowered into engagement with the sill.

5. The combination with a window-frame, the sill of which is provided with an elongated slot, said sill being also provided with depressions at the ends of said slot, and a sash slidably mounted in said frame; of a rolling screen carried in said frame below said sill, one end of said screen being extended through said slot and provided with an angular strip thereon, spring members carried on the side edges of said sash and having the free ends thereof bent to form locking lugs, said locking lugs being disposed in alinement with the depressions of said sill, and pins extending through the frame of said sash and adapted to coöperate with said spring members, whereby when said sash is moved to its closed position, said spring members may be engaged with the angular strip of said screen.

6. The combination with a window-frame, the sill of which is provided with an elongated slot, said sill being also provided with depressions at the ends of said slot, and a sash slidably mounted in said window-frame, said sash having channels extending transversely of the frame and communicating with the side edges thereof; of a rolling screen carried in said frame below said sill, one end of said screen being extended through said slot and provided with an angular strip thereon, spring members carried in channels on the side edges of said sash, the free ends of said spring members being bent to form locking lugs and disposed in alinement with the depressions of said sill, and pins extending through the channels in said frame and adapted to engage said spring members, whereby the same may be manually operated to engage the angular strip of the screen when the sash is moved in its closed position.

7. The combination with a window-frame, the sill of which is provided with an elongated slot, said sill being also provided with depressions at the ends of said slot, and a sash slidably mounted in said window-frame, said sash having channels extending transversely of the frame and communicating with the side edges thereof; of a rolling screen carried in said frame below said sill, one end of said screen being extended through said slot and provided with an angular strip thereon, spring members carried in channels on the side edges of said sash, the free ends of said spring members being bent to form locking lugs and disposed in alinement with the depressions of said sill, pins extending through the channels of said sash adapted to coöperate with said spring members, and means to retain said pins in their inoperative positions.

8. The combination with a window frame, the sill of which is provided with an elongated slot, said sill being also provided with depressions at the ends of said slot, and a sash slidably mounted in said window-frame, said sash having channels extending transversely of the frame and communicating with the side edges thereof; of a rolling screen carried in said frame below said sill, one end of said screen being extended through said slot and provided with an angular strip thereon, spring members carried in channels on the side edges of said sash, the free ends of said spring members being bent to form locking lugs and disposed in alinement with the depressions of said sill, pins extending through the channels of said sash adapted to coöperate with said spring

members, means to retain said pins in their inoperative positions, and additional means to retain the same in their operative positions.

9. The combination with a window-frame, and a sash slidably mounted therein, the frame of said sash being provided with transverse channels and also provided with longitudinal channels in the side edges thereof; of spring members carried in the channels on the side edges of said sash, and pins disposed in said transverse channels and adapted to coöperate with said spring members to force the same outwardly.

10. The combination with a window-frame and a sash slidably mounted therein, the frame of said sash being provided with longitudinal channels in the side edges thereof and also provided with transverse channels communicating therewith; of spring members carried in the channels on the side edges of said sash, pins disposed in said transverse channels and adapted to coöperate with said spring members to force the same outwardly, and means to retain said pins in their inoperative positions.

11. The combination with a window-frame and a sash slidably mounted therein, the frame of said sash being provided with longitudinal channels in the side edges thereof and also provided with transverse channels; of spring members carried in channels on the side edges of said sash, pins disposed in the channels of said sash and adapted to cooperate with said spring members to force the same outwardly, means to retain said pins in their inoperative positions, and additional means to retain said pins in their operative positions.

12. The combination with a window-frame and a sash slidably mounted therein, the frame of said sash being provided with longitudinal channels in the side edges thereof and also provided with transverse channels; of spring members carried in channels on the side edges of said sash, pins disposed in the channels of said sash and adapted to coöperate with said spring members to force the same outwardly, and spring members encircling said pins to retain the same in their inoperative positions.

13. The combination with a window-frame and a sash slidably mounted therein, the frame of said sash being provided with longitudinal channels in the side edges thereof and also provided with transverse channels; of spring members carried in channels on the side edges of said sash, pins disposed in the channels of said sash and adapted to cooperate with said spring members to force the same outwardly, spring members encircling said pins to retain the same in their inoperative positions, and additional means to retain said pins in their operative positions.

14. The combination with a window-frame and a sash slidably mounted therein, the frame of said sash being provided with vertical channels in the side edges thereof and also provided with transverse channels communicating with said channels, and metallic linings for said transverse channels; of spring members carried in the vertical channels on the side edges of said sash, pins disposed in said transverse channels and adapted to cooperate with said spring members to force the same outwardly, and spring members encircling said pins to retain the same in their inoperative positions, said pins being provided with notches adapted to engage portions of the metallic linings of said channels to retain said pins in their operative positions.

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

ALFRED W. HINEY.

Witnesses:
R. J. GRAHAM,
J. B. MULL.