F. A. SWANSON.

WINDOW SCREEN.

APPLICATION FILED SEPT. 14, 1916.

1,287,135.

Patented Dec. 10, 1918.

2 SHEETS—SHEET 1.

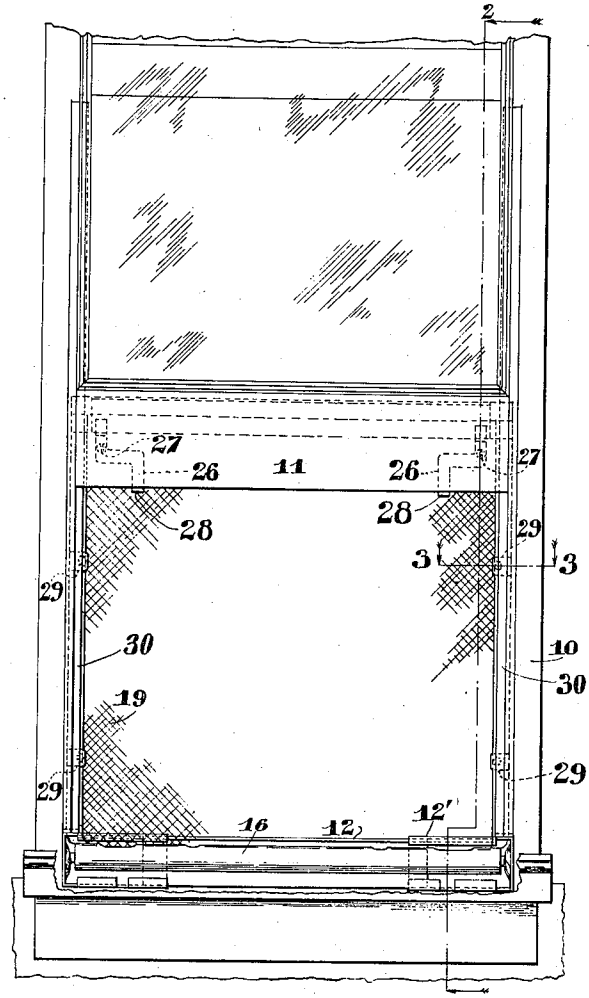


Fig. 1.

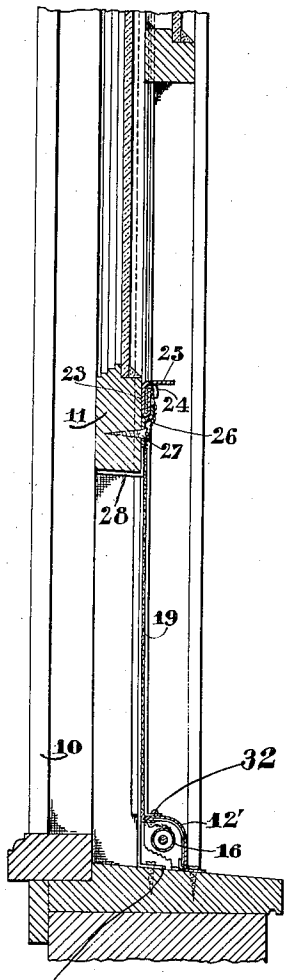


Fig. 2.

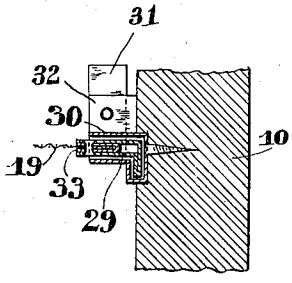


Fig. 3.

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2 SHEETS—SHEET 2.

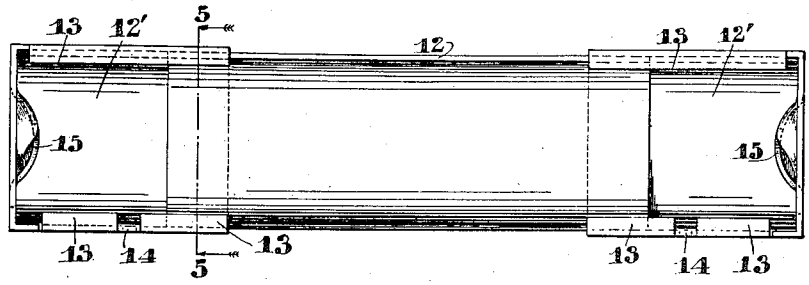


Fig. 4.

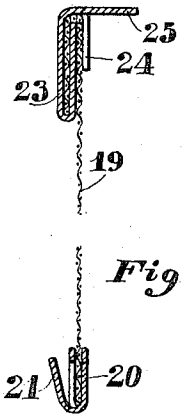


Fig. 7.

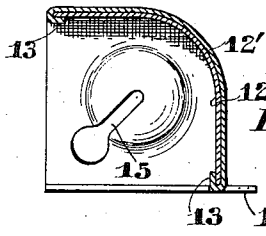


Fig. 5.

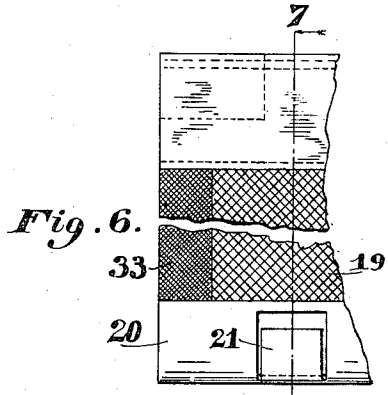


Fig. 6.

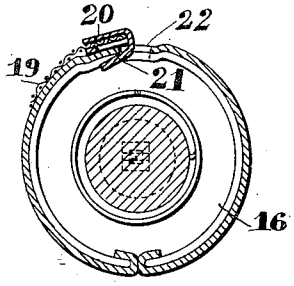


Fig. 9.

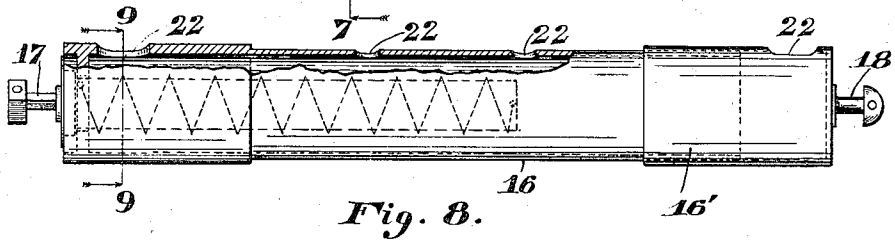


Fig. 8.

WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK A. SWANSON, OF CHICAGO, ILLINOIS.

WINDOW-SCREEN.

1,287,135. Specification of Letters Patent. Patented Dec. 10, 1918.

Application filed September 14, 1916. Serial No, 120,168.

To all whom it may concern:

Be it known that I, FRANK A. SWANSON, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Window-Screens, of which the following is a specification.

My invention relates to improvements in window screens and has for its object the production of a construction of this character which will be of an improved design and efficient in use. Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a front elevation of a window sash and frame to which is applied a window screen, embodying the invention,

Fig. 2, a section taken on line 2—2 of Fig. 1,

Fig. 3, an enlarged detail section taken on line 3—3 of Fig. 1,

Fig. 4, a front elevation of the housing employed in the construction,

Fig. 5, a section taken on line 5—5 of Fig. 4,

Fig. 6, a fragmental front elevation of a window screen proper,

Fig. 7, a section taken on line 7—7 of Fig. 6,

Fig. 8, a partially sectional side elevation of a spring actuated roller included in the construction, and

Fig. 9, an enlarged detail section taken on substantially line 9—9 of Fig. 8.

The preferred form of construction as illustrated in the drawings is designed for use in connection with a window frame 10 in which is slidably mounted a sash 11, as will be readily understood. Mounted upon the outer sill of the window frame is an elongated housing open at its front and bottom sides. Said housing is formed of sheet metal and consists of a central section 12 and adjustably connected end sections 12′. The sections 12′ slidably engage over the ends of section 12, the former being provided with inwardly turned engaging flanges 13 adapted to embrace the adjacent edges of section 12, as will be readily understood. The housing is securely fastened to the window sill by means of screws adapted for engagement with outwardly projecting ears 14 formed upon housing sections 12′. The ends of said housing are depressed and said depressed portions are formed with inclined key hole slots 15, the narrow portions of said slots being inclined upwardly and terminating substantially centrally of said portions as clearly shown in Fig. 5. Arranged in said housing is a spring actuated roller 16 provided at one end with an adjustable telescoping section 16′ whereby said roller may be adjusted to various lengths. Said roller is provided with square and cylindrical studs 17 and 18 respectively, having enlarged outer ends which studs are adapted for engagement with the slots 15 in the ends of the housing to rotatably support the roller thereon.

Coöperating with the rollers is a flexible adjustable screen 19 of wire mesh which is provided at its lower end with a reinforcing channel bar 20, the lower end of said screen being gripped in the channel bar, as clearly shown in Fig. 7. Said channel bar is formed at intervals with outwardly bent ears or lips 21 which are adapted for engagement with slots 22 formed in the roller in order to releasably connect the screen therewith, as clearly shown in Fig. 9. Provided at the opposite end of said screen is a reinforcing channel bar 23 in which the end of the screen is secured as clearly shown in Fig. 7. Said bar 23 is formed at its upper edge with an additional lip or flange, the end portions 24 of which are bent into engagement with the screen. The central portion 25 of said flange, however, extends horizontally outwardly forming a grip or handle, as will be readily understood.

The last mentioned end of the screen 19 is designed for connection with the lower portion of sash 11 and to this end said sash is provided at its outer side with angular keepers 26 pivotally connected thereto, as at 27. The upper ends of keepers 26 are offset upwardly, as clearly shown in Fig. 2, in order to adapt the same for secure engagement with the reinforcing strip 23, the lower ends 28 of said keepers being formed for engagement under the lower edge of the sash in order to limit rocking movement of said keepers in one direction and to afford ready engagement by an operator stationed within the house or at the inner side

of the window. With this arrangement it will be seen that the engagement or disengagement of the upper or outer end of the screen may be readily and expeditiously effected by simply manipulating the accessible lower ends 28 of the keepers 26.

Provided at intervals at the lateral edges of the screen 19 are angular holders or engaging fingers 29 which are securely fastened to the edges of the screen preferably by riveting. The outer ends of said holders 29 slidably engage with channel guides 30, the channels of said guides being angular in cross section to conform with the formation of the holders 29 as clearly shown in Fig. 3. With this arrangement it will be seen that the edges of the screen will be guided in the vertical movement thereof and securely held against displacement from the guides through the angular formation of the holders 29 engaging with said guides. The guides 30 are inserted in place of the ordinary parting strips of a window frame, which parting strips are removed, the guide members 30 being seated in the channels or grooves of said parting strips, as clearly shown in Fig. 3. This being the case it will be seen that the members 30, in addition to serving as guides for the screen, also serve the additional function of guides or parting strips for the window sashes in the sliding of the latter in the window frame. The lower end of each of said guides is formed with two horizontally disposed ears 31 and 32, the former of which engages against the window sill and the latter of which engages against the upper side of the roller housing to securely hold the latter in place.

For reinforcement of the lateral edges of the screen, the same are provided with reinforcing strips 33 of fabric or other suitable material. With the construction as set forth it will be seen that the spring actuated roller will normally keep the screen wrapped thereon. In the opening or raising of the sash, however, the screen will be automatically raised therewith and unwound from the roller in order to span the opening below the sash, as clearly shown in Fig. 2. In the lowering of the sash, the screen will be automatically wrapped upon the roller through the influence of the spring cooperating therewith and when the sash is entirely lowered the screen will be entirely closed in the housing 12—12′. Said housing will serve to effectually protect the screen against the weather and in concealing the screen will result in the production of a construction which is of neat and pleasant appearance. The tension of the spring cooperating with the roller causes the studs 17 and 18 to normally engage with the upper ends of slots 15, the roller being thus held central in the housing. When it is desired to remove the roller, however, it is only neecssary to move the same downwardly and forwardly or to a position in which the enlarged ends of the studs are registering with the enlarged ends of said slots, in which event said enlarged ends of said studs will be permitted to pass freely from engagement with said slots.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. The combination with a movably mounted window sash of a flexible, adjustable screen coöperating therewith; a stationary housing; a roller mounted in said housing to which one end of said screen is connected; and a connection between the opposite end of said screen and the window sash, said connection comprising keepers pivotally mounted on said sash, said keepers having outer ends engaging with the upper end of said screen, and having inner ends projecting downwardly and inwardly under the lower edge of the sash, substantially as described.

2. The combination with a movably mounted window sash of a flexible, adjustable screen coöperating therewith; a stationary housing; a roller mounted in said housing, to which one end of said screen is connected; a connection between the opposite end of said screen and the window sash, said connection comprising angular keepers pivotally mounted on said sash, each of said keepers having a lower portion adapted to engage under the sash to limit pivotal movement of the keeper and an offset upper portion; and a reinforcing rigid bar on said end of said screen with which the upper portions of said keepers are adapted to releasably engage, substantially as described.

3. The combination with a movably mounted window sash of a flexible, adjustable screen coöperating therewith; a stationary housing; a spring actuated roller mounted in said housing; sockets in the periphery of said roller; a reinforcing rigid bar on one end of said screen; lips on said bar adapted for releasable engagement with said sockets; and a connection between the opposite end of said screen and said sash, substantially as described.

4. The combination with a movably mounted window sash of a flexible, adjustable screen coöperating therewith; a stationary housing; a roller mounted in said

housing to which one end of said screen is connected; studs at the respective ends of said roller having enlarged outer ends, elongated key hole slots in the ends of said housing for releasable engagement by said studs, said slotted portions being bellied inwardly; and a connection between the opposite end of said screen and said sash, substantially as described.

5. The combination with a movably mounted window sash of a flexible, adjustable screen coöperating therewith; a stationary housing; a spring actuated roller mounted in said housing to which one end of said screen is connected; studs at the respective ends of said rollers having enlarged outer ends; inclined elongated key hole slots in the ends of said housing for releasable engagement by said studs, the narrow ends of said slots extending upwardly and terminating in the centers of the ends of said housing; and a connection between the opposite end of said screen and said sash, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK A. SWANSON.

Witnesses:
JOSHUA R. H. POTTS,
CORA F. SCHIEBER.