F. REINL.

WINDOW SCREEN.

APPLICATION FILED JULY 2, 1920.

1,402,892. Patented Jan. 10, 1922.

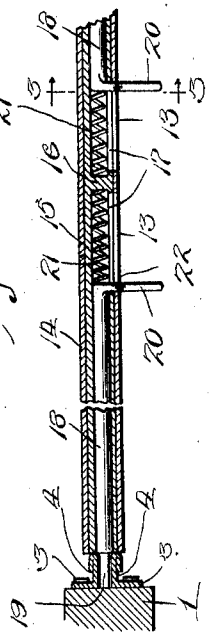


Fig. 2.

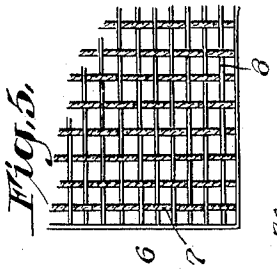


Fig. 5.

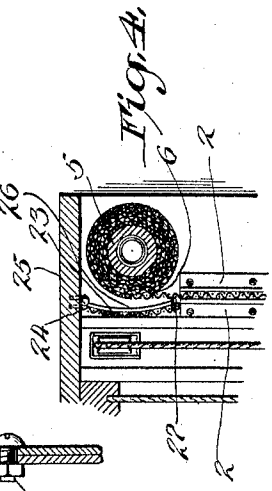


Fig. 4.

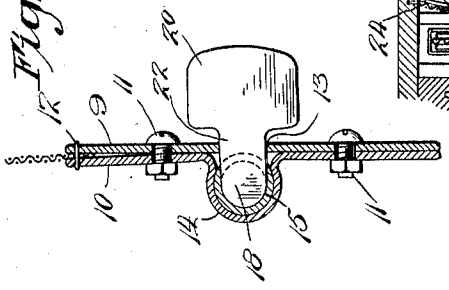


Fig. 3.

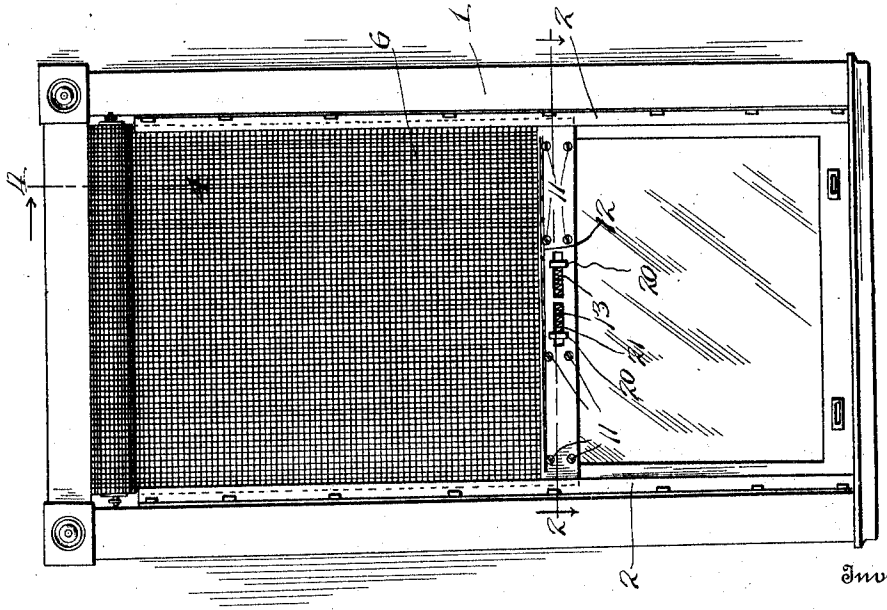


Fig. 1.

Witness

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UNITED STATES PATENT OFFICE.

FREDERICK REINL, OF SECAUCUS, NEW JERSEY.

WINDOW SCREEN.

1,402,892. Specification of Letters Patent. Patented Jan. 10, 1922.

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To all whom it may concern:

Be it known that I, FREDERICK REINL, a citizen of the United States, residing at Secaucus, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Window Screens, of which the following is a specification.

This invention relates to window screens and has for its object the provision of a window screen which may be readily adjusted to cover the open portion of a window and which may be extended at will to cover the entire window. The invention has for one object the provision of a screen which may be readily rolled so that when the window is closed the screen may be disposed in a small compass at the top of the window frame and a further object of the invention is to provide means whereby the window may be held against rolling when extended to any desired degree, while a still further object of the invention is to provide simple means to prevent the entrance of insects through the space above the rolled portion of the screen.

The several stated objects of the invention and such other objects as will incidentally appear are attained in such a device as is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a window equipped with my improved screen;

Fig. 2 is an enlarged section on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged section on the line 3—3 of Fig. 2;

Fig. 4 is a detail section on the line 4—4 of Fig. 1;

Fig. 5 is a plan view of a portion of the screen showing the construction of the reticulated material.

The window frame 1 may be of any preferred construction and dimensions. In applying my window screen to a window frame, I secure to the inner opposed edges of the frame, at the inner sides of the front beads, guide strips 2 which are formed of sheet metal bent longitudinally to present an attaching web 3 through which fastening devices may be inserted into the window frame and laterally disposed webs 4 which are spaced apart to provide a way in which guiding and locking bars upon the screen may run. Upon reference particularly to Fig. 2, it will be noted that the outer longitudinal edges of the guides are doubled upon themselves so that the presence of sharp edges which might injure persons operating the screen will be avoided. The guides 2, as shown clearly in Figs. 1 and 4, terminate short of the top of the window frame 1 and between the upper extremities of the guides and the top of the frame I mount in any convenient manner a spring roller 5 similar in construction and operation to the well-known shade roller. To this spring roller, I secure one end of a netting 6, the warp threads 7 of which are textile cords, preferably linen, so that they will conform readily to the periphery of the roller when the screen is wound and will reduce the weight of the screen to a minimum. The woof members 8 of the netting are preferably composed of light wires so that the screen will have the requisite resistance to winds and will maintain its shape without lessening any of the high flexibility imparted by the employment of textile cords as the warp members. The netting may be given any desired color to comply with the wishes of the user and it will be of such width that the edges thereof will pass between the guides 4 and will thereby be held smooth when the screen is extended. Moreover, these guides will close the space or gap which would otherwise be left between the edges of the screen and the sides of the window frame so that entrance of insects will be positively prevented.

The lower end of the screen is secured to a casing consisting of an inner plate 9 and an outer plate 10 which are secured together by screws 11 so as to positively and firmly clamp the lower end of the screen and these plates may, if desired, be constructed with spaced openings to receive a binding strip 12 which may be interlaced or woven through the same and through the lower edge of the screen so as to positively connect the screen with the plates. The inner plate 10 is provided with longitudinal slots 13, while the outer plate has formed upon it a tubular rib 14 which is located in the same horizontal plane as the slots as will be readily understood on reference to Fig. 3. A tube 15 is fitted within the tubular rib 14 and this tube 15 is provided with a stop 16 at its center and also constructed with slots 17 arranged to register with the slots 13 in the plate 9. Within the tube 15, I slidably mount the plungers 18 which are provided at their

outer ends with tongues 19 adapted to fit between the guides 4 and bind against the sides of the window frame while at their inner ends, the plungers are provided with handles 20 through which pressure may be applied to the plungers to withdraw them from the frames against the force of springs 21 coiled within the tube 15 between the inner ends of the plungers and the stop 16, as clearly shown in Fig. 2 and as will be readily understood. The handles 20 are preferably formed integral with the plungers 18 and have reduced portions or necks 22 which extend through the slots 17 and 13, as clearly shown.

At the outer side of the spring roller 5, I provide a guard 23 which may consist of a textile strip 24 or of a strip of any light reticulated material. The upper edge of this strip 24 is secured to a light rod or wire 25 which is disposed against the top of the window frame and secured in the sides of the same, light springs 26 being secured to said rod and to a similar rod 27 extended through the lower edge of the strip 24 whereby to hold the lower edge of the strip against the screen 6, as shown in Fig. 4.

It will be readily understood from the foregoing description, taken in connection with the accompanying drawings, that I have provided a window screen which may be readily adjusted to cover the entire window or any desired portion of the same so that whether the upper or the lower sash be moved to open position the entrance of insects will be prevented. The parallel guides between which the side edges of the screen are received effectually hold the screen smooth and prevent it flapping about under the influence of high winds and the plungers 18 with their tongues 19 will bear against the sides of the window frame with sufficient force to positively hold the screen in the position in which it may be set. Obviously, the entrance of insects through the upper end of the window frame is prevented by the guard 23 and this guard is so supported that its lower edge will remain in contact with the screen 6 at all times without interfering with the adjustment of said screen. Particular attention is invited to the construction of the reticulated fabric forming the screen. The transverse metallic elements impart to the screen the desired rigidity which will hold it smooth when extended while the textile longitudinal members impart great flexibility thereto so that it may wind very readily and easily upon the spring roller.

Having thus described the invention, what is claimed as new is:

The combination with a window frame, of guides secured to the inner opposed sides of the frame, a roller mounted in the upper end of the frame, a screen wound upon the roller and having its side edges receivable in the guides, a guard strip secured to the upper end of the frame, and springs having their upper ends secured at the upper edge of the strip and their lower ends connected to the lower edge of the strip to hold the same in engagement with the screen at the upper ends of the guides.

In testimony whereof I affix my signature.

FREDERICK REINL. [L. S.]