No. 702,094. Patented June 10, 1902.

D. E. FLEMING.

ADJUSTABLE WINDOW SCREEN.

(Application filed July 18, 1901.)

(No Model.)

Fig. 1.

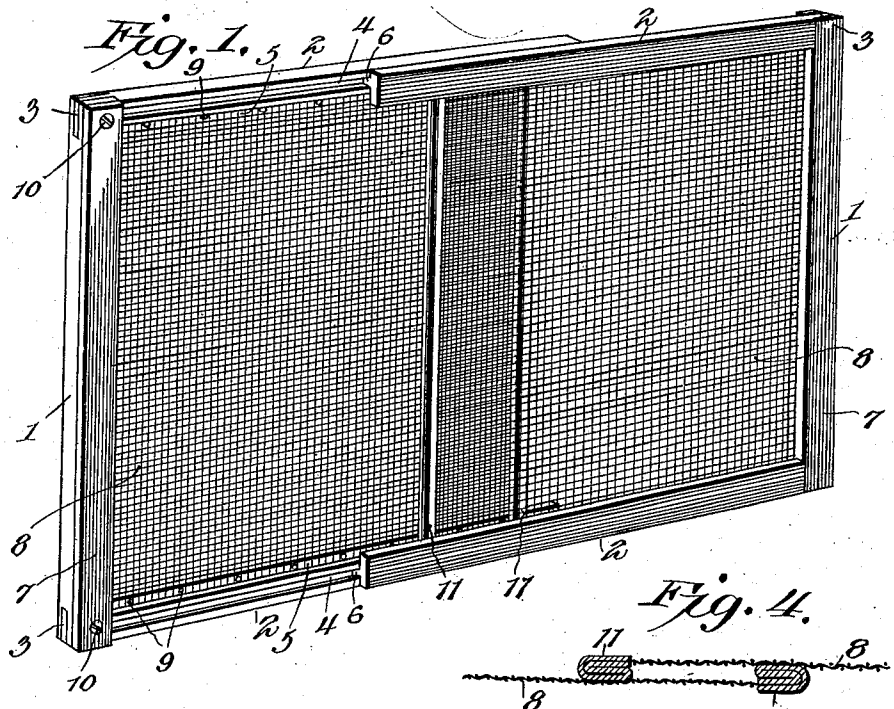


Fig. 4.

Fig. 2.

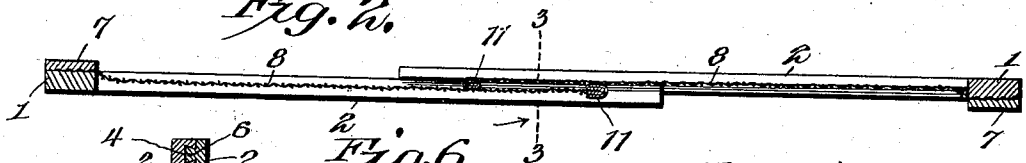


Fig. 6.

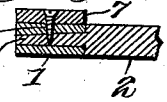


Fig. 5.

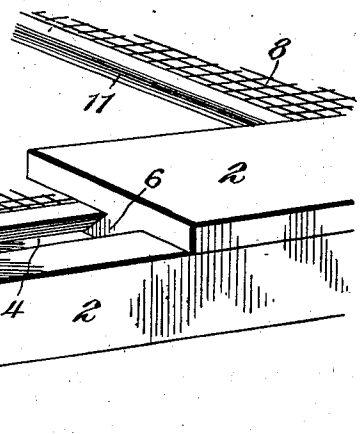


Fig. 3.

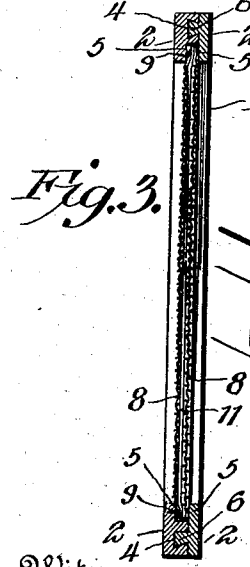
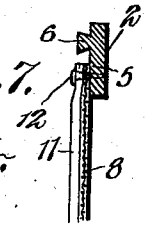


Fig. 7.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID E. FLEMING, OF HILLSDALE, MICHIGAN.

ADJUSTABLE WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 702,094, dated June 10, 1902.

Application filed July 18, 1901. Serial No. 68,779. (No model.)

To all whom it may concern:

Be it known that I, DAVID E. FLEMING, a citizen of the United States, residing at Hillsdale, in the county of Hillsdale and State of Michigan, have invented a new and useful Adjustable Window-Screen, of which the following is a specification.

This invention relates to window-screens, and has for its object to provide an improved adjustable screen wherein the sections thereof are slidably connected in a simple and durable manner to facilitate the expanding and collapsing thereof for applying and removing the screen with respect to a window.

It is furthermore designed to provide an improved frame structure, so as to stiffen and strengthen the same and to reduce the parts thereof to a minimum, so as to simplify the manufacture and reduce the cost of the frame.

Heretofore there has been an open-ended space between the overlapped portions of adjustable screen-sections whereby insects may readily pass from the outer side to the inner side of the screen; and in view of this disadvantage it is also the object of my invention to effectually close the space between the overlapped screen-sections and to maintain the space closed at any and all adjustments of the screen, thereby to effectually exclude insects, and without complicating the structure and adjustment of the screen.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a screen constructed in accordance with the present invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a transverse sectional view. Fig. 4 is an enlarged detail sectional view taken through the overlapped portions of the screen-sections. Fig. 5 is a detail perspective view of one corner of the screen. Fig. 6 is a detail sectional view to show a corner connection of one of the frame-sections. Fig. 7 is a detail sectional view showing the connection between one end of one of the metallic screen-strips and the adjacent frame portion.

Like characters of reference designate corresponding parts in all the figures of the drawings.

Referring to the drawings, it will be seen that the present screen is formed in opposite duplicate sections, each of which has a wooden frame comprising an outer end piece 1 and the opposite duplicate longitudinal side pieces 2, the inner side of the frame being open, thereby providing a three-sided frame. Upon reference to Fig. 5 of the drawings it will be observed that each side piece is provided with a reduced tapered tenon 3, which is fitted snugly into a correspondingly-shaped bifurcation or mortise in the adjacent end of the end piece, thereby to form a strong and durable connection between these parts of the frame, it being understood that a suitable glue or adhesive element is employed to effectually connect the tenon to the walls of the mortise or bifurcation. One of the screen-sections has the inner side of each longitudinal frame-piece provided with a longitudinal dovetailed groove or seat 4, which extends for the entire length of the frame and is located adjacent to the outer edge thereof, the opposite inner edge being reduced upon its inner side to form an outer longitudinal flange 5, that is flush with the outer side of the frame. The other section has its longitudinal frame-pieces provided with dovetailed tongues 6, which are slidably mounted in the respective grooves of the first-mentioned member, so as to slidably connect the sections and permit of longitudinal adjustments thereof in opposite directions, the inner movements of the sections being limited by the coöperation of the inner ends of said sections with the screen-retaining strips 7, that are applied to the inner sides of the respective end pieces of the frames. Each section is provided with a foraminous wire screen 8, that has its opposite longitudinal edges secured to the inner sides of the respective flanges 5 by means of tacks or other suitable fastenings 9 and the outer edge of the screen being connected to the adjacent end piece 1 in a similar manner. The hereinbefore-mentioned screen-strip 7 is then applied

to the inner face of the end piece, so as to overlap and cover the outer marginal edge of the wire screen, and is secured to the said end piece by means of the opposite terminal fastenings 10, preferably in the form of screws. As best indicated in Fig. 2 of the drawings, it will be seen that each wire-screen portion terminates short of the inner end of its frame and is provided with a substantially U-shaped metallic edge strip 11, that embraces the said edge portion and is then folded over therewith flat against the inner side of the wire screen, thereby providing an inwardly-directed and laterally-offset edge strip which lies in frictional engagement with the inner side of the opposite screen portion. By this arrangement the space between the overlapped portions of the screen-sections has its opposite ends normally closed by the respective edge strips, thereby to effectually prevent passage of insects inwardly between the screen-sections. It will also be observed that these edge strips travel in opposite directions in the same plane, so that when the sections are at their outer limits these strips lie in mutual engagement, thereby forming stops to limit the extension of the screen. Moreover, these edge strips serve to protect the inner edge of the wire-screen portions and also stiffen and strengthen the same. As best indicated in Fig. 7, it will be seen that each end of the strip is flattened and secured to the flange portion 5 by means of a suitable fastening 12, whereby the strip constitutes an inner end piece for the adjacent frame-section.

Upon reference to Fig. 6 it will be seen that the fastening 10 pierces the adjacent tongue 3, so as to insure a strong and durable connection between the under and side pieces in addition to that obtained by the glue or other adhesive material.

From the foregoing description it is apparent that the present invention provides an exceedingly simple and inexpensive screen, as each screen-section has but three separate pieces in the frame thereof, the tongue portions being formed integrally with the frame and the screen-strips being applied merely to cover and protect the marginal edges of the wire-screen portions. Furthermore, the screen-sections are arranged to effectually exclude the inward passage of insects through the joint between the overlapped portions thereof, which is an important advantage of the present invention, and this feature is secured without increasing the cost of the screen and also without interfering with the convenient adjustment of the screen-sections.

What I claim is—

1. A window-screen, comprising substantially duplicate overlapping frame-sections, wire screens secured to the adjacent faces of the respective frame-sections, and screen-strips secured to the inner faces of the outer ends of the respective frame-sections and covering the outer marginal edges of the respective screens, the inner faces of the opposite longitudinal sides of one frame-section being provided with longitudinal dovetailed grooves which open through the inner end of the section, and the inner faces of the opposite longitudinal sides of the other frame-section having integral longitudinal dovetailed tongues slidably mounted in the respective grooves of the first-mentioned frame-section.

2. A window-screen comprising opposite substantially rectangular duplicate overlapping frame-sections, wire screens secured to the adjacent faces of the frame-sections, and metallic U-shaped strips embracing the outer free edges of the respective wire screens to form the inner ends of the frame-sections, and folded over therewith against the inner faces thereof and lying in frictional engagement with the screens of the respective other sections, whereby the folded-over portions of the strips travel in the same plane and form stops for mutual engagement to limit outward movements of the frame-sections, and also form closures for the space between the overlapped portions of the sections, the opposite ends of the strips being fastened to the opposite sides of the respective frame-sections.

3. A window-screen, comprising opposite substantially duplicate screen-sections, each of which has a three-sided frame, a wire-screen portion secured to the inner side of the frame, and a screen-strip secured to the inner side of the end of the frame and covering the outer marginal edge of the screen portion, the inner faces of the opposite longitudinal sides of one frame being provided with longitudinal dovetailed grooves which open through the inner end of the frame, the inner faces of the opposite longitudinal sides of the other frame having integral longitudinal dovetailed tongues slidably mounted in the respective grooves, and substantially U-shaped metallic edge strips embracing the inner end edges of the respective wire-screen portions and folded over therewith flat against the inner sides of said screen to form laterally-offset stop-strips lying upon the inner sides of the respective screen portions and in frictional engagement with the respective opposite screen-sections.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DAVID E. FLEMING.

Witnesses:

RUBEN E. FLEMING,

MERTON FITZPATRICK.