A. H. MIX.

WINDOW SCREEN.

APPLICATION FILED SEPT. 28, 1911.

1,066,834. Patented July 8, 1913.

Fig. 1.

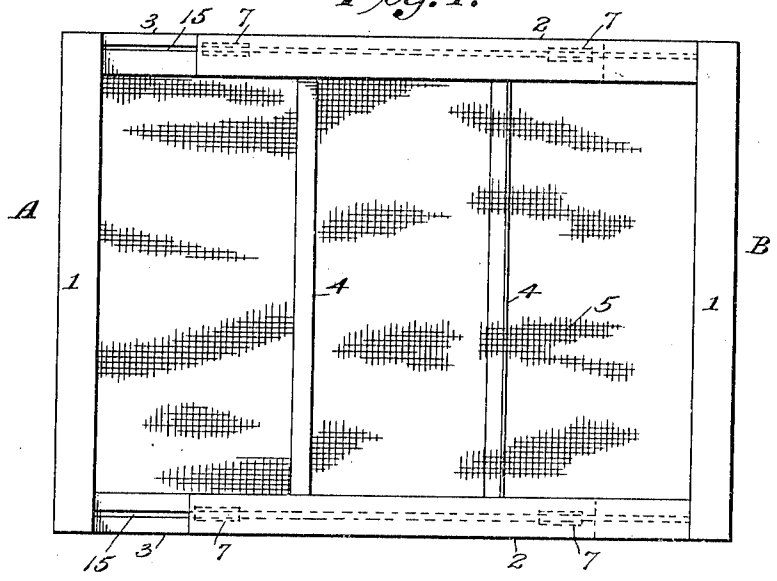


Fig. 2.

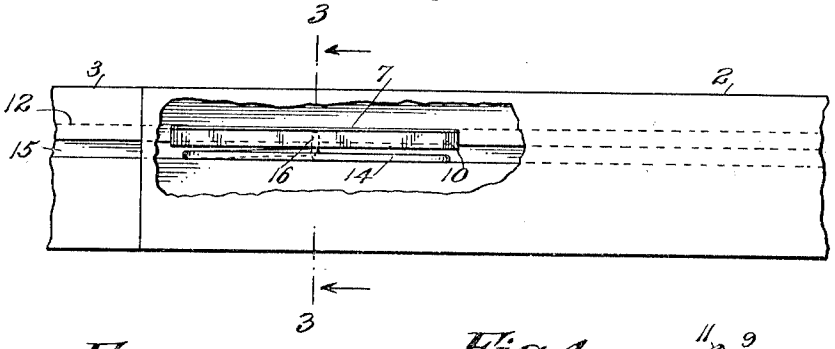


Fig. 3.

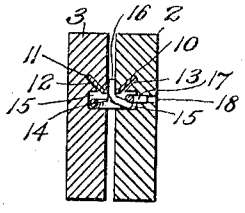
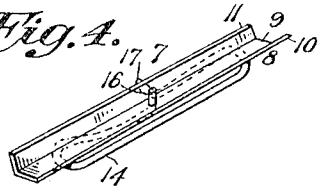


Fig. 4.



Attest:

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ALLEN HOWARD MIX, OF NORFOLK, VIRGINIA, ASSIGNOR OF ONE-HALF TO PAUL R. HOWARD, OF NORFOLK, VIRGINIA, AND ONE-HALF TO WILLIAM C. BIDDLE, OF NEW YORK, N. Y.

WINDOW-SCREEN.

1,066,834. Specification of Letters Patent. Patented July 8, 1913.

Application filed September 28, 1911. Serial No. 651,680.

To all whom it may concern:

Be it known that I, ALLEN HOWARD MIX, a citizen of the United States, residing at Norfolk, county of Norfolk, and State of Virginia, have invented certain new and useful Improvements in Window-Screens, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in extension screens used for protecting openings such as windows, etc., of that class in which there is employed a two-part frame, the members of which are slidably connected so that they can be extended or collapsed to accommodate openings of varying dimensions.

An object of the present invention is to provide a device which shall be simple and inexpensive, whereby the sliding sections of the screen are so connected together as to allow them to be freely moved back and forth, but which will automatically act to hold them securely in position when they have been adjusted as desired.

A further object of the invention is to provide such a construction which may be easily and quickly assembled, which will compensate for warping or any slight variation in the sections due to defects in cutting out or machining the parts, and which shall be concealed when in position.

With these objects in view, the invention consists generally in providing a flexible holding device which is located between the sliding rails of the frame of the screen, which secures these rails slidingly together, but at the same time exerts a sufficient pressure to hold the rails in position when they have been extended or collapsed to the desired position, a sufficient number of these holding devices being provided to effect the desired result.

For a fuller understanding of the invention, a detailed description of the same will be given in connection with the accompanying drawing, in which—

Figure 1 is a face view of a screen with which the invention is adapted to be used; Fig. 2 is a view on an enlarged scale of a portion of one of the pairs of side rails of the screen, the upper rail being broken away to show the construction and positioning of one of the holding devices; Fig. 3 is a cross section on line 3—3 of Fig. 2, showing the holding device in position, and Fig. 4 is a detail perspective view of one preferred form of the holding device.

Referring now to these drawings, the invention is shown in connection with an extension window screen, though it may be used in other relations. The screen shown is a two-part screen made up of sections A, B. Each of these sections comprises end rails 1 of suitable material, as wood, and side rails 2, 3, the latter being arranged to lap over on each other and having a sliding movement with respect to each other. Cross pieces or rails 4 of suitable material, as thin metal, shaped to prevent ingress of insects are provided, secured near the ends of the side rails and extend across from one to the other, and suitable netting 5, is secured in any desired manner to the end and side rails and the cross pieces.

The holding devices for slidably connecting the side rails together may be varied somewhat in construction. They will, however, be so constructed as to have a certain degree of flexibility in order to compensate for any slight defect in the side rails due to warping, or formed in cutting out, and so as to have a holding or clamping action, so that they will automatically operate to clamp the rails together when they have been slid or moved to the desired position, and yet permit them to be freely moved when it is desired to change or adjust the positions. To obtain the desired clamping action, in the best constructions there are provided a plurality of these holding or clamping devices, one being provided at or near the end of each of the side rails 2, 3, these holding devices being indicated generally by the numeral 7, (see dotted lines Fig. 1).

Where a plurality of the holding devices are employed, they will be similar in construction, and a description of one of them will suffice for all. In the preferred form, each of the devices includes a plate 8 made of thin metal shaped as shown in Fig. 4, and in cross section as shown in Fig. 3, and is provided with a flat portion 9 and side pieces or wings 10, 11 extending obliquely from the portion 9. The side rails 2, 3 on each side of the frame are provided with inclined grooves 12, 13 which are adapted to receive the side wings 10, 11 of the plate 8 and slide thereon. The plate thus acts to

slidingly connect the rails 2, 3 on each side of the frame with a dove-tail connection. To cause the plate to act to clamp the side rails 2, 3 on each side of the frame together automatically when they are moved to the desired position, and to permit of a certain degree of flexibility, for the reasons pointed out, means are provided which in the preferred construction comprise a spring 14 which is or may be of wire. This spring 14 is seated in suitable oppositely facing slots 15 provided in the rails 2, 3 and one of the free ends 16 of the spring extends through a suitable aperture in the portion 9 of the plate and bears against this portion. The spring thus bearing against the portion 9 of the plate tends to force the wings 10, 11 against the walls of the grooves 12, 13 of the rails with a clamping action and effects a connection of the rails together, and at the same time is sufficiently flexible to permit the rails to be slid along the wings of the plate when it is desired to change the position of the frame, and also sufficiently flexible to compensate for any slight defects in the rails. Preferably, in the best constructions, the spring 14 is so dimensioned and arranged as to exert a side pressure against the walls of the grooves 15, this side pressure effecting a further clamping action and holding the sections in position after they have been moved as desired. To prevent the plate and spring from getting out of position, the other free end of the spring 17 is extended into a hole 18 formed in one of the side rails and is thus held in position and prevented from sliding independently of the rails as they are moved. With this construction of clamping plate, the side rails are held together, but at the same time they are permitted to be freely slid to adjust the frames to any desired position within the limits of their extension. Such construction, furthermore, provides a very effectual joint, cheap to make, which is automatically clamped in position, which is easily operated, and in which no binding of the parts occurs. The joint is, furthermore, concealed from view, and presents a very neat and workmanlike construction.

Certain changes and variations may, of course, be made in the construction of the device without departing from the invention, which is, therefore, not limited to the precise construction shown and described.

What is claimed is:—

1. In an extension screen, the combination of a two-part frame each part comprising side rails having a sliding movement relatively to each other, grooves in each side rail, holding devices located in the grooves for securing the parts together and holding them in position, and wire springs yieldingly clamping the parts.

2. In an extension screen, the combination of a two-part frame each part comprising side rails having a sliding movement relatively to each other, grooves in each side rail, holding plates, positioned in the grooves and connecting the rails on each side of the frame, and springs acting to press the plates in the grooves and clamp the side rails in position.

3. In an extension screen, the combination of a two-part frame each part comprising side rails having a sliding movement relatively to each other, grooves in each side rail, holding plates positioned in the grooves, and springs acting to press the plates in the grooves and clamp the side rails in position, the springs being held against endwise movement independently of the movement of the rails.

4. In an extension screen, the combination with the side rails provided with grooves, of holding plates in the grooves between the rails, and wire springs between the rails acting to press the plates into the grooves and yieldingly connect the rails.

5. In an extension screen, the combination with the side rails provided with inclined grooves, of holding plates 7 having side wings 10, 11 located in the grooves, slots 15 in the rails, and wire springs located in the slots so as to lie between the rails and acting to press the plates into the grooves and yieldingly connect the rails.

6. In an extension screen, the combination with the side rails provided with inclined grooves, of holding plates 7 having wings 10, 11 located in the inclined grooves in the rails, slots as 15 in the rails, and wire springs located in the slots and having bearing engagement with the sides of the slots for holding the rails yieldingly together.

7. In an extension screen, the combination with the side rails, of a dove-tail connection between the rails, and a wire spring yieldingly supporting the connection.

8. In an extension screen, the combination with the rails having inclined grooves, of a metal plate 7 forming a dove-tail connection between the rails, and a wire spring forming a yielding support for the plate.

In testimony whereof, I have hereunto set my hand in the presence of two subscribing witnesses.

ALLEN HOWARD MIX.

Witnesses:
THEODORE S. GARRETT, Jr.,
JOHN CAHILL, Jr.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."