

UNITED STATES PATENT OFFICE.

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ADJUSTABLE SCREEN.

SPECIFICATION forming part of Letters Patent No. 683,307, dated September 24, 1901.

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To all whom it may concern:

Be it known that I, EDWARD C. LINCK, a citizen of the United States, and a resident of St. Louis, in the State of Missouri, have invented new and useful Improvements in Adjustable Screens, of which the following is a full, clear, and exact description.

This invention relates to that class of screens for windows which may be adjusted to fit within window-casements which vary in width.

The object of my invention is to provide an adjustable window-screen of simple novel construction which is light, strong, and durable and which may be manufactured readily at a low cost.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved screen having its parts adjusted to increase its width. Fig. 2 is a transverse sectional view substantially on the line 2 2 in Fig. 1. Fig. 3 is a transverse sectional view on the line 3 3 in Fig. 1, and Fig. 4 is a transverse sectional view on the line 4 4 in Fig. 1.

The frame of the improved screen comprises two sections 5 and 5^a, each having rectangular form and suitable dimensions for efficient service. Preferably the frame-sections are constructed of sheet metal, which is rendered non-oxidizable either by coating it with molten metal or alloy which does not rust or by painting it, sheet-tin being well adapted for use as a material from which to manufacture the improved screen-frame. To give necessary rigidity to the members of each screen-frame 5 and 5^a, each side bar and end bar of the same is formed of a sheet-metal strip having a width sufficient to permit it to be double-folded, as clearly shown in Fig. 3, providing two exterior laps *a a*, which are disposed, respectively, at opposite sides of a central lap *a'*.

The double-folding of the material to pro-

vide three laps *a a a'* for each member of each screen-frame section 5 or 5^a affords a rounded corner *a*² along the two opposite side edges of each frame member, and a suitable space intervenes between each outer lap *a* and the center lap *a'*. The frame-section 5 is composed of four members—an upper bar, a lower bar, and two side bars—each having the particular construction which has been described.

To increase the stiffness of the frame members, each one is bent to render it concave on the outer surface and correspondingly convex on the opposite or inner surface.

The corresponding ends of the four members composing the rectangular frame-section 5 are mitered, as usual, to permit the formation of right-angular corners when said bars are assembled, and each corner of the frame-section 5 is rendered substantial by the provision of a stiffening corner-bracket 6. The corner-brackets 6 are similar in form and construction and may be cut and bent from sheet metal such as is used in the formation of the frame members that have been described.

If sheet metal is employed as a material for the production of the corner brackets 6, triangular pieces of such material are provided, and along two of the edges of each piece, which together form a right angle the material is folded so as to double each of said edge portions that are then bent at right angles toward the same side of the flat body of the bracket-piece, thus providing an angular flanged edge, as is clearly shown for one corner-bracket in Fig. 3, *b b* indicating the lap-folded portions of one flange, and *b'* the return-bent edge of the same.

To adapt each corner-bracket 6 to fit neatly in place along the inner side surface of the screen-frame section 5, the thickened and right-angularly-disposed flanges *b* are each bent to render their outer surfaces, which seat upon the inner surface of the frame-section, coincident therewith, as clearly indicated in Fig. 3, and said corner-brackets 6 are to be secured in place by soldering or other approved means.

The woven-wire screen material 7 is of any preferred mesh, and to hold it in place

stretched across the opening of the frame-section 5 said screen material is cut in rectangular form and of sufficient greater area than that of the opening in the screen-frame section to afford a proper margin along each side thereof. The edge portions of the screen material 7 are bent laterally and forced into the crevices between the laps *a a a'* of each bar of the frame-section 5 by any suitable means, and the material is thus stretched taut, the kinking of the inserted edge portions of the screen material and a subsequent compression of the laps *a a a'* thereon serving to hold the screen material in place and smoothly drawn over the area of the frame-section 5.

The frame-section 5^a is constructed in a manner similar to the construction of the frame-section 5, with the exception that one side bar is omitted from the frame-section 5^a, and the height of the screen-frame provided for the frame-section 5^a is so proportioned that its concaved outer surfaces may slidably engage the convex inner surfaces of the upper and lower frame members of the frame-section 5, whereby the two frame-sections are securely but loosely connected and adapted to slide one on the other.

To render the sliding connection between the bars of the frame-sections 5 5^a more reliable at the end of the frame-section 5^a which is not joined together by a frame-bar, a clip-piece 8 is provided for each upper and lower frame-bar, and said clips, which are preferably formed of sheet-metal strips bent to double a portion of each one, and thus stiffen it, have such a form in cross-section as adapts said clips to fit neatly upon the ends of the top and bottom bars of the frame-section 5^a, whereon they are respectively affixed, and also to loosely embrace the upper and lower bars of the frame-section 5, so that a lateral displacement of the ends of the upper and lower bars of the frame-section 5^a is prevented.

The screen-cloth covering for the frame-section 5^a is held upon said frame-section in the same manner as the like material is secured upon the frame-section 5. The wire-cloth coverings 7 for the frame-sections 5 and 5^a may have loose contact, particularly at the free vertical edge of the screen-cloth material which is held upon the frame-section 5^a, and to prevent raveling said edge should be the woven selvage of the reticulated material. The upright frame-bar of the frame-section 5^a has mitered junction with adjacent ends of the upper and lower frame members thereof, and said right-angular corners have corner-brackets 6, which are formed and secured in place similarly to the corner-brackets on the frame-section 5, so that the outer corners of the adjustable screen-frame 5 5^a are rendered substantial.

A clamp 9, formed of a metal strip substantially U-shaped, is provided to retain the two

screen-frame sections 5 5^a at a desired point of sliding adjustment either opened or closed, and to this end one limb of the clamp is perforated and threaded therein to receive the thumb-screw 10. The clamp-body is placed upon the slidably-engaged upper bars of the two frame-sections, as shown in Figs. 1 and 4, and the clamp by an obvious adjustment of the thumb-screw 10 is secured in place and in turn clamps the frame-bars from longitudinal movement.

As the frame-sections of the improved screen are formed of sheet metal folded to render them substantial and said frame members are adapted for rapid production in quantity by ordinary sheet-metal cutting and forming tools, it is obvious that the screens may be manufactured rapidly and at a low cost. Furthermore, the sheet-metal frames for the improved adjustable screen are far more durable than those made of wood, as the ordinary wooden-framed window-screens quickly warp and swell from dampness they are exposed to and in a short time become worthless.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An adjustable screen, comprising two frame-sections, each formed of double-folded sheet-metal strips having mating concave and convex formations on upper and lower edges, that slide one on the other, screen-cloth coverings for said sections held thereon by folded engagement of their marginal portions with the crevices between the laps or folds on the frame-sections, clips on ends of two frame-bars slidable on adjacent frame-bars, and means to hold the frame-sections from sliding.

2. An adjustable screen, comprising two frame-sections formed of sheet-metal strips folded at edges to stiffen each frame-bar, some of said bars having concave and convex formations which slide on each other, clips secured to two of the bars on one frame-section and adapted to fit and slide upon two frame-bars of the other frame-section, a clamp adapted to fit over two engaged frame-bars, one on each frame-section, and a set-screw passing through the body of the clamp to have bearing upon engaged portions of the frame-sections and prevent their sliding movement.

3. An adjustable screen, comprising two frame-sections formed of sheet-metal strips, each double-folded to provide two outside laps and a central lap thereon, and spaced apart to provide two crevices for each frame-bar, the upper and lower bars of the two frame-sections having mating concave and convex formations on their edges, which adapt them for interlocked slidable engagement, corner-pieces fitting in the angular corners of the frame-sections and secured thereto, screen wire-cloth coverings for the screen-frame sections, held thereon by entrance of

their marginal portions within communicating crevices between the lapped portions of each frame-bar, clips on the ends of the two frame-bars and which hook upon adjacent
5 frame-bars, and a clamp adapted to hold the frame-sections at any point of sliding adjustment.

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

EDWARD C. LINCK.

Witnesses:

WM. C. LINCK,
CHAS. VORHAUER.