

(No Model.)

A. McCANDLESS.
WINDOW SCREEN.

No. 570,326.

Patented Oct. 27, 1896.

Fig. 1.

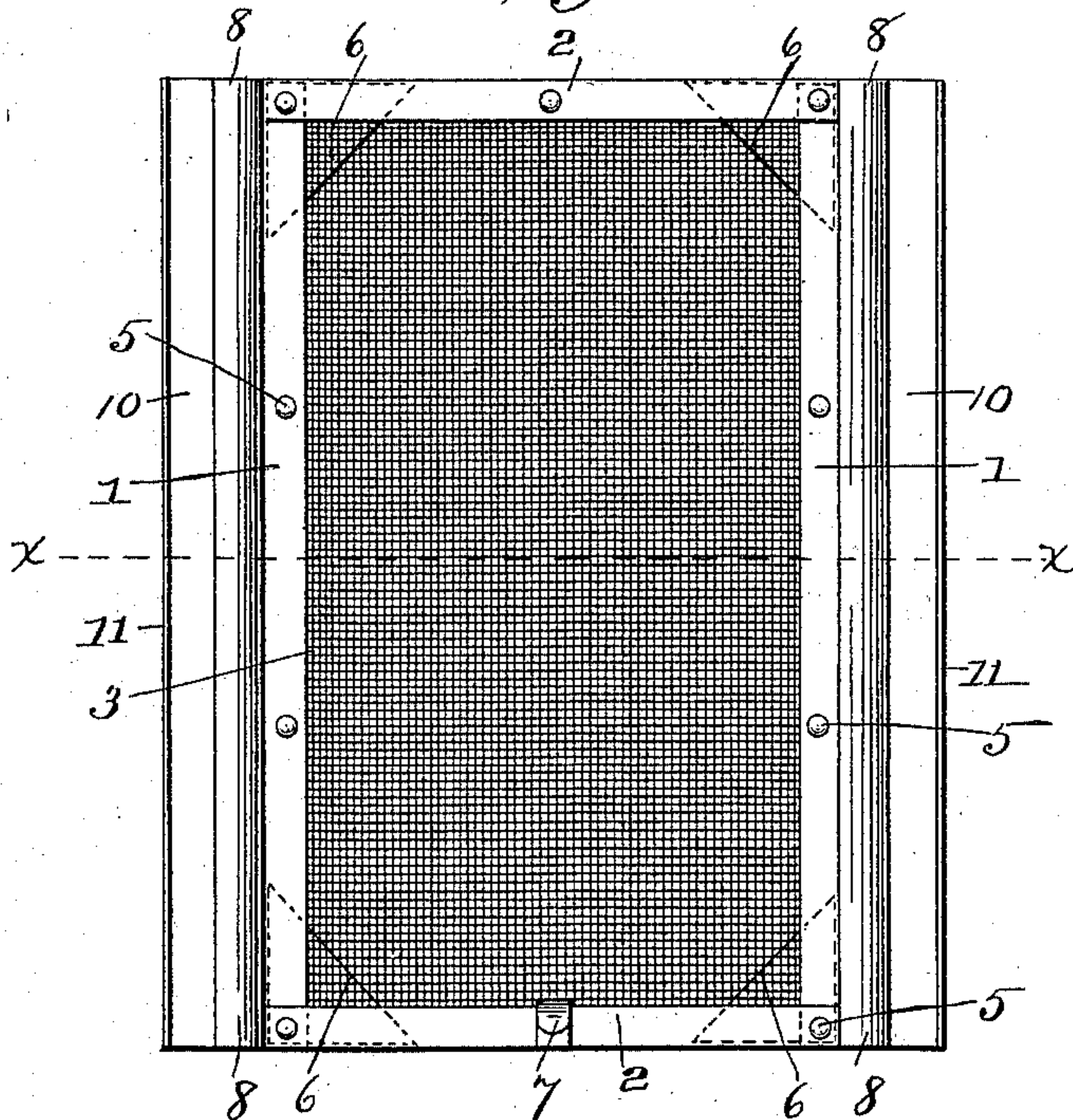


Fig. 2.

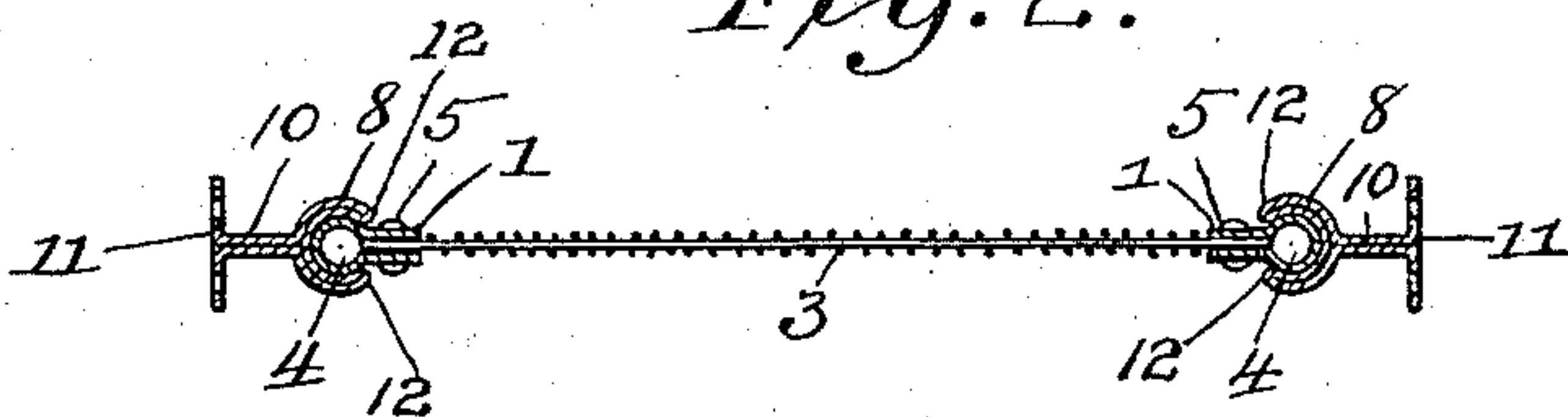
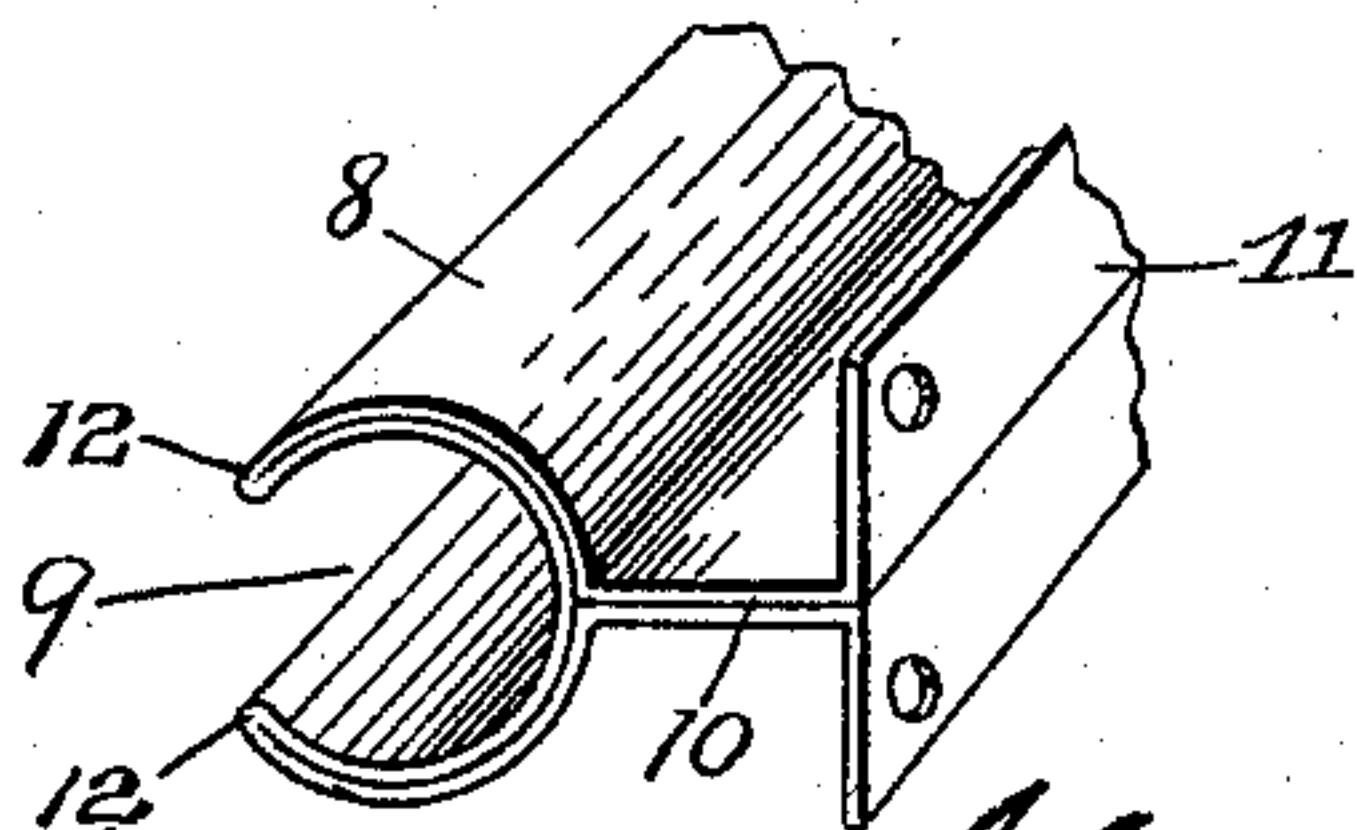


Fig. 3.



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ALEXANDER McCANDLESS, OF MOBERLY, MISSOURI.

WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 570,326, dated October 27, 1896.

Application filed April 22, 1896. Serial No. 588,582. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER McCANDLESS, a citizen of the United States, residing at Moberly, in the county of Randolph and State of Missouri, have invented certain new and useful Improvements in Window-Screens, of which the following is a specification.

My invention relates to window-screens, and has for one of its objects to provide a screen all the parts of which are of metal.

Another object of my invention is to provide a screen which can be readily connected with the window-frame in such a manner and by such means that it may be easily raised or lowered therein and removed therefrom.

Still another object of my invention is to provide a screen which may be cheaply constructed and which will be strong, light of weight, and durable; and in accomplishing these ends my invention relates more particularly to the manner of forming the sides of the frame in which the wire cloth or netting is fixed and the guides or supports attached to the window-frame wherein the screen-frame is moved up and down.

One of my objects in constructing a screen and the guides wherein it is moved vertically entirely of metal is to avoid the annoyance caused by the alternate swelling and shrinking of wooden frames, which when swollen are moved with great difficulty and when they shrink often fall out of the window-frames.

Heretofore window-screens have been made of sheet metal, but such screens have not possessed sufficient rigidity to keep the wire-netting stretched tight enough to prevent it from sagging. To remedy this defect, reinforcing-rods have been used, around which the wire-netting has been clamped, but this construction adds weight and increases the cost of manufacture. Sliding screens have usually been made to slide up and down between the window-casing in open grooves. The objection to this construction is that the screen, if of light weight and made of material easily bent, may be pushed from or blown out of the window. One of the objects of my invention is to provide a screen the edges of which may be held by a cylindrical rib formed therewith in a cylindrical groove or guide attached to

the window-casing, great force being necessary to displace the screen when so secured. This construction also permits the use of light-weight materials in its manufacture.

These objects I accomplish by the means and in the manner hereinafter more specifically pointed out and described, reference being made to the accompanying drawings, in which similar numerals relate to corresponding parts in all the figures of the drawings.

Figure 1 is a front view of my improved screen. Fig. 2 is a cross-section on the line $x x$ of Fig. 1. Fig. 3 is a detail view.

In carrying out my invention I use thin sheet metal, which may be tin-plate, or I may prefer to use ordinary iron plate, the thickness of which will depend to a certain extent on the size of the screens being made.

The sides 1 and the ends 2 of the frame wherein the wire cloth or netting 3 is fixed each consist of a single piece of metal which is first cut into a strip of the required width though the length of the strip may be sufficient for a number of side pieces or for a number of end pieces. The end pieces 2, comprising the frame, are formed by turning the strip of sheet metal so cut back on itself and when completed they and their edges are even.

The side pieces of the frame are provided with a cylindrical rib or tongue 4, made by turning the strip of metal of which it is composed back at the middle and bending it to the required shape. These flat sides are then brought together and the margins of the wire cloth or netting 3 are inserted between them and the flattened sides of the end pieces and the netting held in place by rivets 5, inserted in apertures punched or cut through these pieces.

The end pieces 2 are fitted over the flat part of the side pieces 1 at each end thereof, and have their ends abutting against the cylindrical rib or tongue 4 at the point where it is constricted to begin the flattened part of the side piece. Each of the four corners of the screen-frame are reinforced or braced by means of triangular pieces 6 of sheet metal placed between the folded parts of the end and side pieces with their right-angled edges

against the end and side pieces. Instead of riveting the parts of the screen-frame and the netting therein together they may be united with solder. A lift 7 is attached to the lower
5 end piece of the screen-frame.

When the screen-frame is constructed in the manner above described, it is rigid and of light weight, there are no tacks nor nails projecting from the face of the frame, and the
10 netting will not be caught and torn away, as often occurs with netting tacked or nailed to wooden frames. The screen is held in a vertical position between the window-frames by means of hollow cylindrical guides 8, pro-
15 vided with a longitudinal slot 9. The rib or tongue 4 of the side pieces 1 of the frame of the screen is inserted in this hollow cylinder. This cylindrical guide is supported by a
20 flange 10, which is integral therewith and forms part of a T-shaped base 11, the head of which is attached directly to the window-casing by nails or screws, or it may, for the purpose of adjustment to windows of slightly-
25 varying width, be attached to a strip of wood and the latter in turn nailed to or attached in any suitable manner to the window-casing. These guides 8 are constructed, as shown in cross-section in Fig. 2, of a single piece of
30 sheet metal which is turned back on itself at two points 12 12, and the sides thus doubled formed into a circular channel provided with a slot 9, extending longitudinally of the guide for its entire length.

The flange 10, which supports the cylindrical part of the guide at a distance from
35 the window-casing, is formed by constricting the doubled sheet metal at a point diametrically opposite the slotted portion of the guide and forcing the parts in contact with
40 each other. The margins of the doubled sheet are then turned outward from each other at a right angle and form the T-head 11. This construction of the guides which hold the screen produces a rigid support and
45 is much stronger and more durable than could be formed were the walls of the slotted cylinder single and made of two or more pieces.

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

1. A supporting-guide for a window-screen, consisting of a hollow cylinder formed of a single piece of sheet metal, said cylinder provided with a T-head base for attachment to
55 the window-casing and with a longitudinal slot opposite the flange of said base to receive

a window-screen, substantially as shown and described.

2. In a window-screen, the combination with a screen provided with a hollow cylindrical rib on each side of the frame formed of sheet metal and integral therewith, of a hollow cylindrical guide having a longitudinal slot therein, said guide provided with a
60 T-head base and adapted to receive the cylindrical rib of the screen-frame therein, substantially as shown and described.

3. The combination with a window-casing, of a window-screen having a cylindrical rib formed integral with each side of its frame, cylindrical guides attached to each side of
70 said casing by a T-head base, each of said guides having a longitudinal slot opposite the flange of said base and adapted to receive said cylindrical ribs and permit of a vertical
75 movement therein, substantially as shown and described.

4. A guide for attachment to the casing of a window for holding a sliding screen therein, consisting of a hollow cylinder formed of a
80 single piece of sheet metal folded back on itself at two points, the edges of said folded parts brought into proximity to each other to form a longitudinal slot, said sheet metal constricted at a point diametrically opposite said
85 slot to form a flange and the edges of said metal then spread to form a base for supporting said guide, substantially as shown and described.

5. A window-screen consisting of a wire-
90 netting supported in a frame formed of sheet metal folded over the margin of the netting and riveted or soldered together thereon, each side of said frame made of a single piece of sheet metal having a hollow cylindrical guide
95 formed integral with said frame on the outer edge thereof, the folded margins of the sides of said frame constricted to contact with said netting, the corners of said frame braced with
100 triangular pieces of sheet metal having their right-angled margins inserted between the folded sides and ends of said frame and riveted or soldered therewith and a lift attached to the lower end of said frame, substantially
105 as shown and described.

In testimony whereof I hereto affix my signature in the presence of two witnesses.

ALEXANDER McCANDLESS.

Witnesses:

M. A. ARNETT,
J. H. BABCOCK.