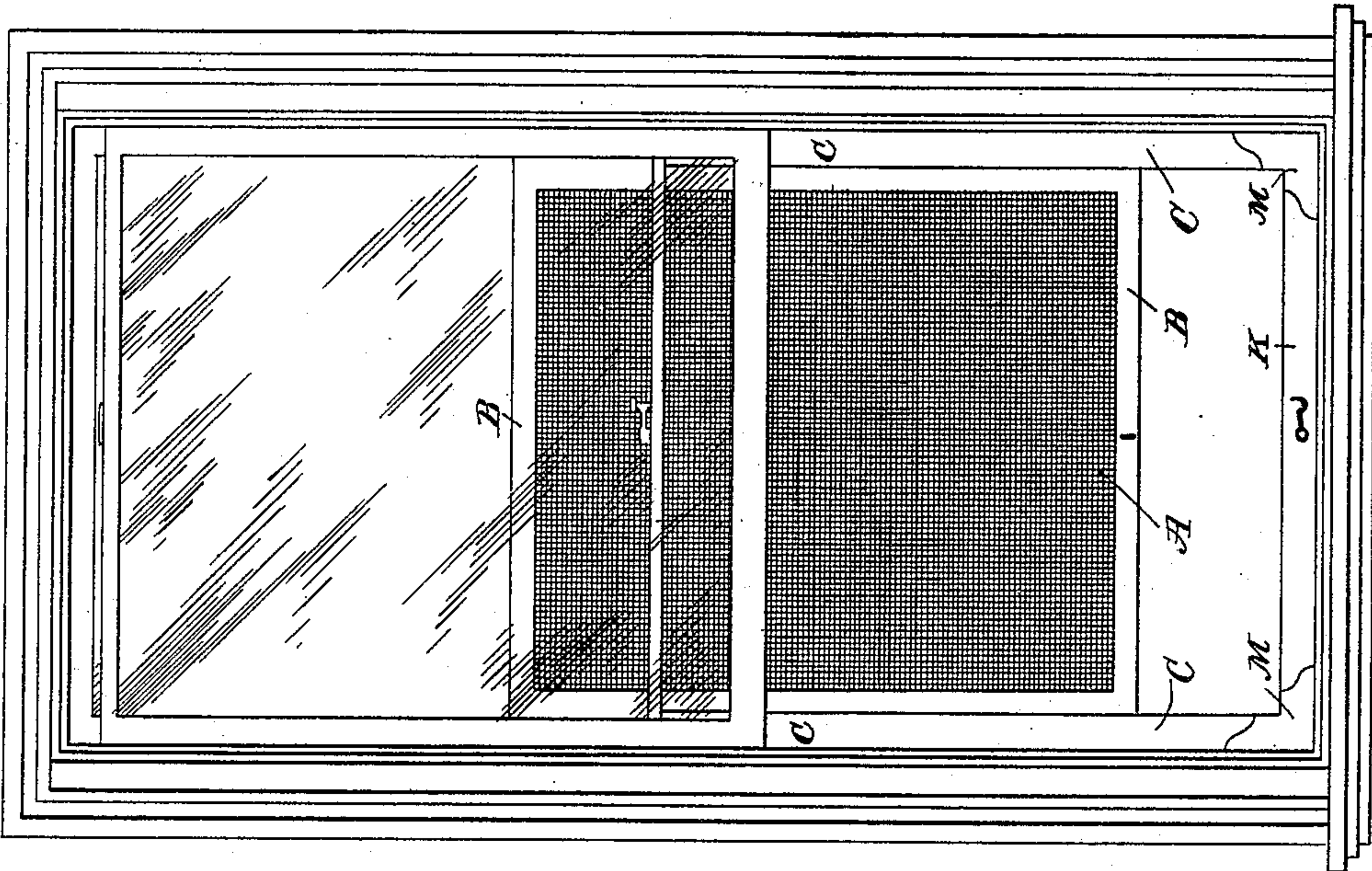
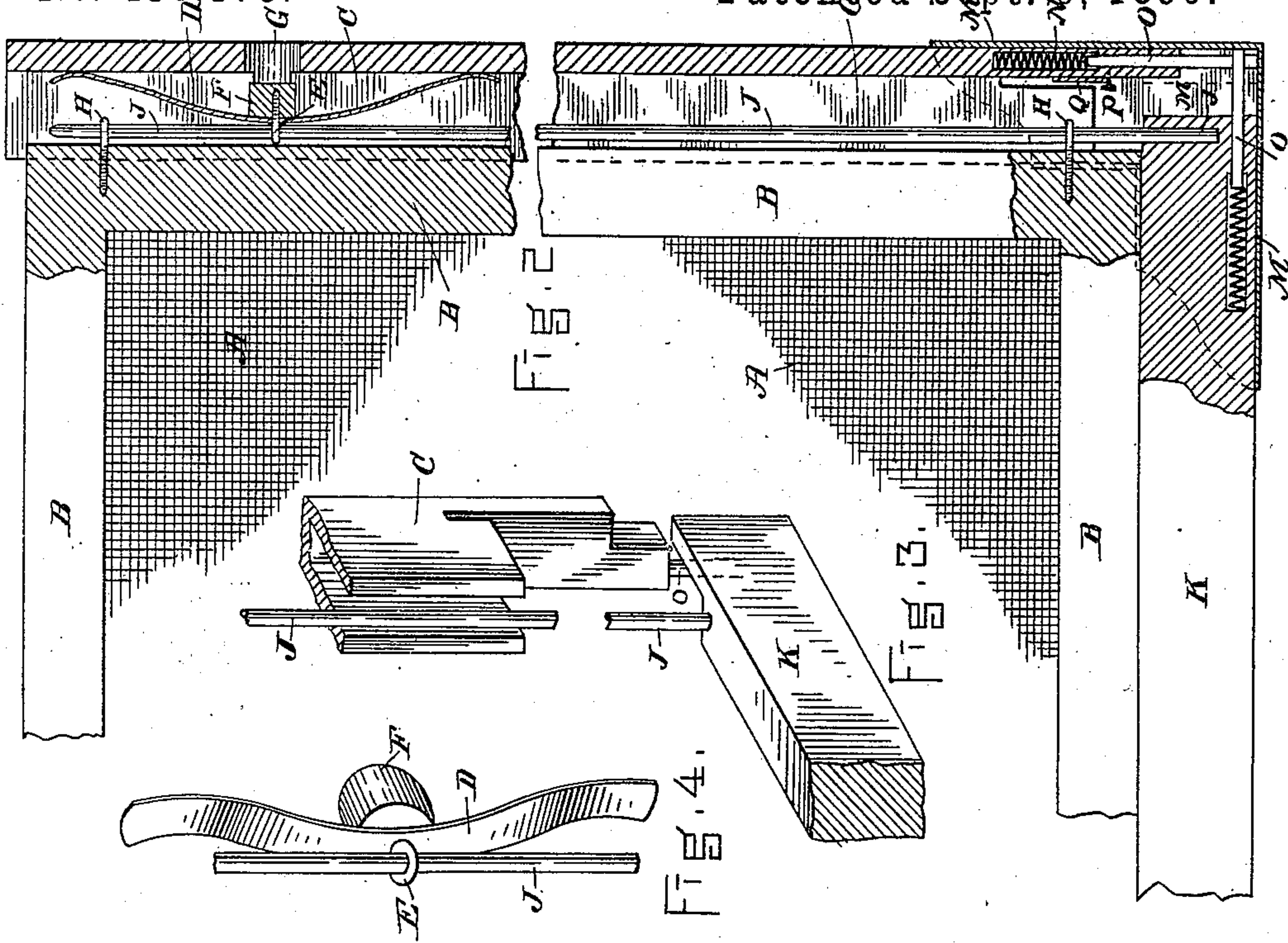


(No Model.)

F. A. EDWARDS.
WINDOW SCREEN.

No. 436,173.

Patented Sept. 9, 1890.



WITNESSES
G. Henry Marsh.
James P. Prince

FIG. 1.

INVENTOR.
Frederick A. Edwards
by *A. H. Fennell*
his attorney

UNITED STATES PATENT OFFICE.

FREDERICK A. EDWARDS, OF LINCOLN, MAINE.

WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 436,173, dated September 9, 1890.

Application filed October 11, 1889. Serial No. 326,717. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK A. EDWARDS, of Lincoln, in the county of Penobscot and State of Maine, have invented certain new and useful Improvements in Window-Screens, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of this invention is to furnish a window-screen having a yielding border or outer frame adjustable by a spring action as to its width only, or both vertically and horizontally, so as to fit window-casings of various sizes and provided with an inner frame, to which the netting is secured, such inner frame and netting being held within grooves in the edges of the yielding border and permitted to move vertically therein when desired.

The present invention may be considered as an improvement on the devices set forth in my application, Serial No. 309,484, filed May 3, 1889, for patent on "extension window-screen," such application showing the screen with its inner frame, doubly-adjustable outer border, and corner-pieces into which the ends of the vertical and horizontal members of the yielding outer frame projected when compressed. Said first application had not, however, the vertically-sliding movement of the netting within the grooves of the yielding frame peculiar to my present improvement.

Another peculiar feature of this improvement provides projecting staples or screw-eyes fixed in the edges of the side pieces of the inner frame and corresponding yielding eyes in the grooves of the outer frame, with vertical guide-rods fixed in each end of the bottom bar of the outer frame and extending upwardly through both such eyes or staples, so as to form guides for the vertical sliding of the netting-frame, as well as a means for preventing disconnection of the yielding border from it laterally. With this construction I am accustomed to place flat arched springs in the side grooves of the yielding frame near the top of the inner frame to give the adjustment in width, such springs being free at each end and held in place by the stem of the screw-eye, which is connected to a loose plug movable in a transverse perforation in the outer frame. The springs which give the

vertical elasticity to this frame are preferably spiral and placed within the hollow corner-pieces. Similar springs at right angles thereto may re-enforce the arched side springs, if required. A simple pin in the frame-piece engaging with a cross-strip of the corner-piece forms an effective stop to prevent dismemberment of the frame vertically, while the loose plugs prevent lateral disconnection of the side bars of the two frames.

My improved frames will commonly be made in sizes such that one-half of a window-casing will be covered by the netting-frame. Such netting may occupy the lower or the upper half of the window, and may slide in the grooves of the outer frame vertically when required, as in opening or closing blinds. In case the outer frame is made of only half length no upper cross-piece is required, a shoulder being made at the top of the uprights, which, fitting under the middle sash-rail, brings the inner frame closely against the inner meeting-rail.

In the drawings, Figure 1 is a front view showing one of my improved screens in position, the netting-frame partly raised. Figs. 2, 3, and 4 are enlarged details.

A represents the netting or screen proper, having the permanent frame B.

C C are the grooved side bars of the outer or yielding frame, in which the frame B moves vertically. Within these grooves are springs D D, preferably of the flat arched form shown, with the convex face of each turned toward the edge of the inner frame B and the free ends of each bearing against the bottom of the grooves. The springs D D are suitably anchored so that they may yield laterally without being moved out of proper working position by the sliding of the screen A B. Figs. 2 and 4 represent them held by screw-eyes E, which are fixed in loose shallow plugs F, placed in transverse perforations G, which extend through the bottom of the grooves to the outer face of the bars C. These perforations do not extend through to the inner face of said bars, and hence do not permit the plugs to draw inwardly too far. The spring ends extend each way from the screw-eyes E and give them a lateral support.

Screw-eyes H H, or equivalent staples, are fixed in the outer edges of the permanent

frame B, and vertical rods J J extend through both the eyes E E and H H, thus preventing the lateral separation of the side bars of the two frames and forming smooth guides for the vertical movement of the inner frame. 5 The rods J are fixed perpendicularly in the ends of the bottom bars K of the outer frame at a distance from each other equal to that of the screw-eyes H H, and extend upwardly 10 just within the grooves of the side bars, which conceal the rods, the springs, and the screw-eyes.

It will be seen that the rods J, running through the two sets of screw-eyes, serve to 15 tie together the side bars of the inner and outer frames, preventing too great separation, but not preventing their lateral yielding within the range of the springs D D and the movable screw-eyes E and plugs F. Hence 20 the side bars C C may approach each other until the springs are fully compressed and may separate until the plugs strike the bottom of the recesses in which they move.

The corner-pieces M may be briefly described. They are hollow metallic shells having internal recesses at right angles to each other to receive and permit longitudinal movement to the ends of the side bars C C and bottom bar K. The arms of these 30 corner-pieces are of an area in cross-section equal to that of said bars, for which they

form guides. The yielding movement of the frame in one or both directions may be controlled by devices within the corner-pieces, as in Fig. 2. The spiral spring N in this 35 case bears against a dowel O, working in an endwise perforation in the side bar C, the outer end of the dowel bearing against the inner wall of the corner-piece. A stop is formed by a pin P in the side bar abutting 40 against an internal projection or cross-strip Q in the corner-piece, such bar being grooved or slotted to give the cross-strip just sufficient movement.

I claim as my invention— 45

The netting A, with permanent frame B, horizontal bar K beneath said frame, and laterally-yielding side bars C, grooved to receive the edges of frame B, in combination with the springs D, anchored by screw-eyes E and 50 plugs F, working in sockets G of the bars C, and with the eyes H fixed in frame B, and the tie-rods J through eyes E and H, substantially as set forth.

In testimony whereof I have signed my 55 name to this specification, in the presence of two subscribing witnesses, on this 16th day of September, A. D. 1889.

FREDERICK A. EDWARDS.

Witnesses:

C. W. FULLER,

C. A. NUTE.