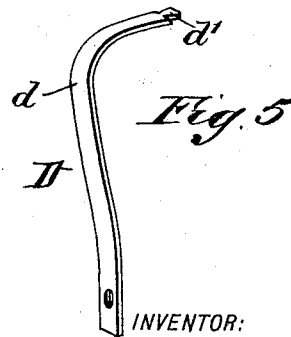
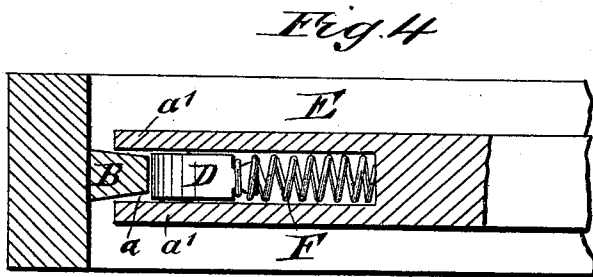
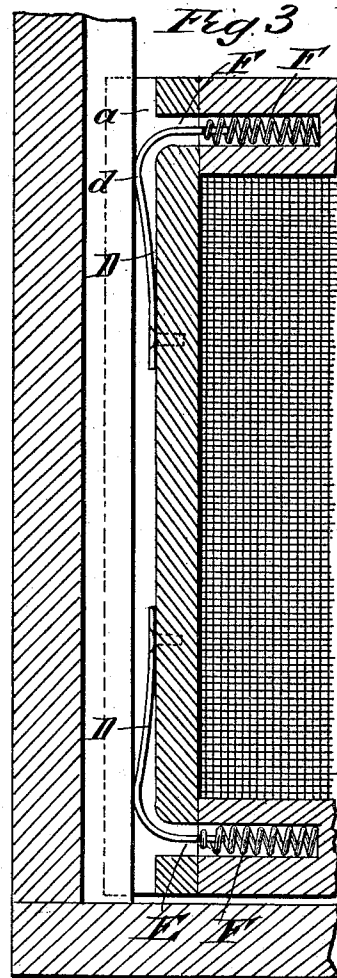
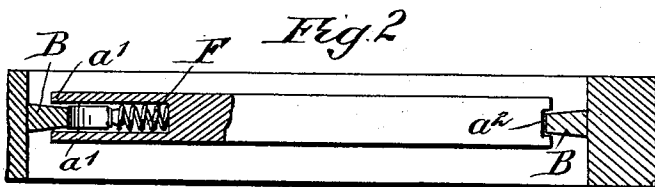
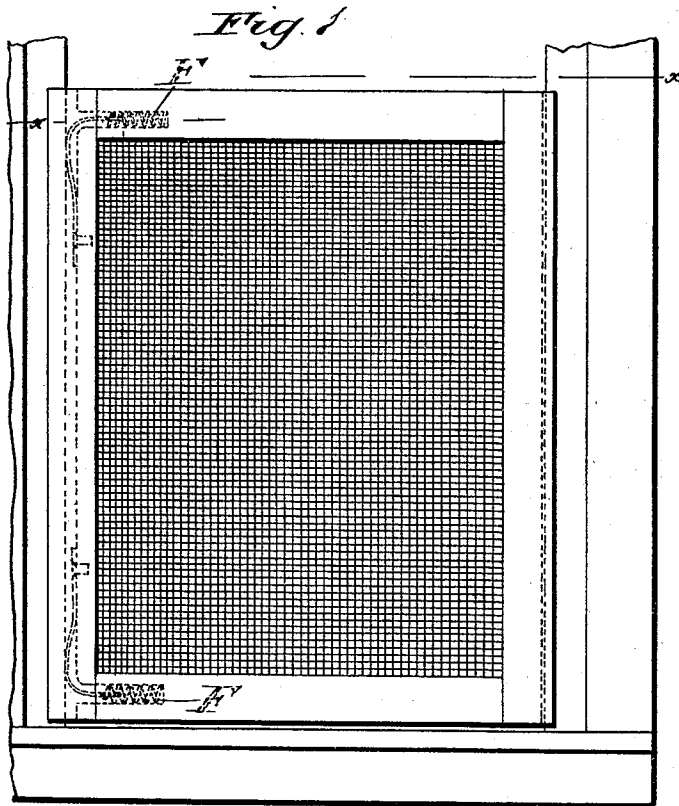


(No Model.)

W. E. COBB.
WINDOW SCREEN.

No. 479,752.

Patented July 26, 1892.



WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLARD E. COBB, OF PORTLAND, MAINE.

WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 479,752, dated July 26, 1892.

Application filed December 15, 1891. Serial No. 415,087. (No model.)

To all whom it may concern:

Be it known that I, WILLARD E. COBB, of Portland, in the county of Cumberland and State of Maine, have invented a new and Improved Window-Screen, of which the following is a full, clear, and exact description.

My invention relates to that class of window-screens in which springs are provided for maintaining the screen at an elevation in the window when desired.

The object of the invention is to provide a novel and improved arrangement of springs for the screen and to otherwise improve the screen, to the end that its efficiency and durability may be increased.

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

Figure 1 is an elevation of a screen embodying my invention and fitted to a window-frame. Fig. 2 is a plan view, partly in section, on line *xx* in Fig. 1. Fig. 3 is a sectional elevation of one end of the screen on a larger scale. Fig. 4 is a view similar to Fig. 2, but showing only one end of the screen and on a larger scale; and Fig. 5 is a perspective view of one of the plate-springs employed.

In constructing a screen embodying my invention there is produced in one side edge of the screen A a vertical groove *a*, thereby forming the side flanges *a'*, and in the opposite side a shallower vertical groove *a²* is formed. In connection with such grooved screen vertical strips B are employed, secured to the window-frame and adapted to be received or partly received within the grooves *a a²*. The strips or beads B are keystone-shaped in cross-section for giving ample room for any swelling of that part of the strip projecting into the grooves, and thus prevent binding of the strip between the walls of the groove.

Within the groove *a* at the bottom or inner wall thereof there are secured plate-springs D, which range longitudinally of the groove, and each has an outward bend or spring action, as at *d*, and the free end of each is in-bent and enters a preferably cylindrical recess E, formed in the screen at right angles

to the groove *a* and communicating therewith. The terminal of the plate-spring D at its free end is formed with a head *d'*, preferably dovetail or undercut, and around the latter is secured the terminal coil of a spiral spring F, which is housed within the recess E, the inner end of the spring abutting the bottom or inner wall of the recess and its outer end exerting an outward pressure on the plate-spring D. With this construction the full effect of both the spiral and plate springs is obtained, the spiral springs are guided in their movements, and the springs D will afford efficient contact with the face of the strips B; further, if the width of the window necessitates it the plate-springs may be forced flat against the screen-frame, the free ends being accommodated in the recesses E. The springs are preferably made of a composition that will not rust or corrode. It will therefore be seen that the spiral springs are at all times housed and protected, whereby their resiliency is permanently maintained, while the plate-springs afford the necessary contact-surface, and should the plate-springs become strained or lose their spring action the protected spiral springs will still effectively maintain them in close contact with the beads. In this way it will be seen that the desired contact surface and the necessary spring action are at all times insured.

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

1. The combination, with a window-screen frame having a vertical groove in one of its side edges and transverse recesses extending from the inner or bottom wall of said groove, of plate-springs secured at one end to the frame within the groove and bent to extend at their opposite ends into the transverse recesses, spiral springs housed within the said recesses and engaging the inwardly-bent ends of the plate-springs, the latter forming an efficient contact-surface, and the protected spiral springs serving to force the plate-springs outward at all times, substantially as described.

2. The combination, with a window-screen

frame having vertical grooves in its side edges and transverse recesses extending from the grooves into the frame, of plate-springs secured in the grooves and formed with an outward bend and inbent at one end, the extreme end being formed with dovetail or undercut projections, and spiral springs housed

in the recesses mentioned and engaging the dovetail projections of the plate-springs, substantially as described.

WILLARD E. COBB.

Witnesses:

IRA BERRY, Jr.,

GEO. H. KNIGHT.