

C. P. FLORA.
 ROLLER WINDOW SCREEN.
 APPLICATION FILED JAN. 8, 1908.

912,104.

Patented Feb. 9, 1909.

2 SHEETS—SHEET 2.

Fig. 2.

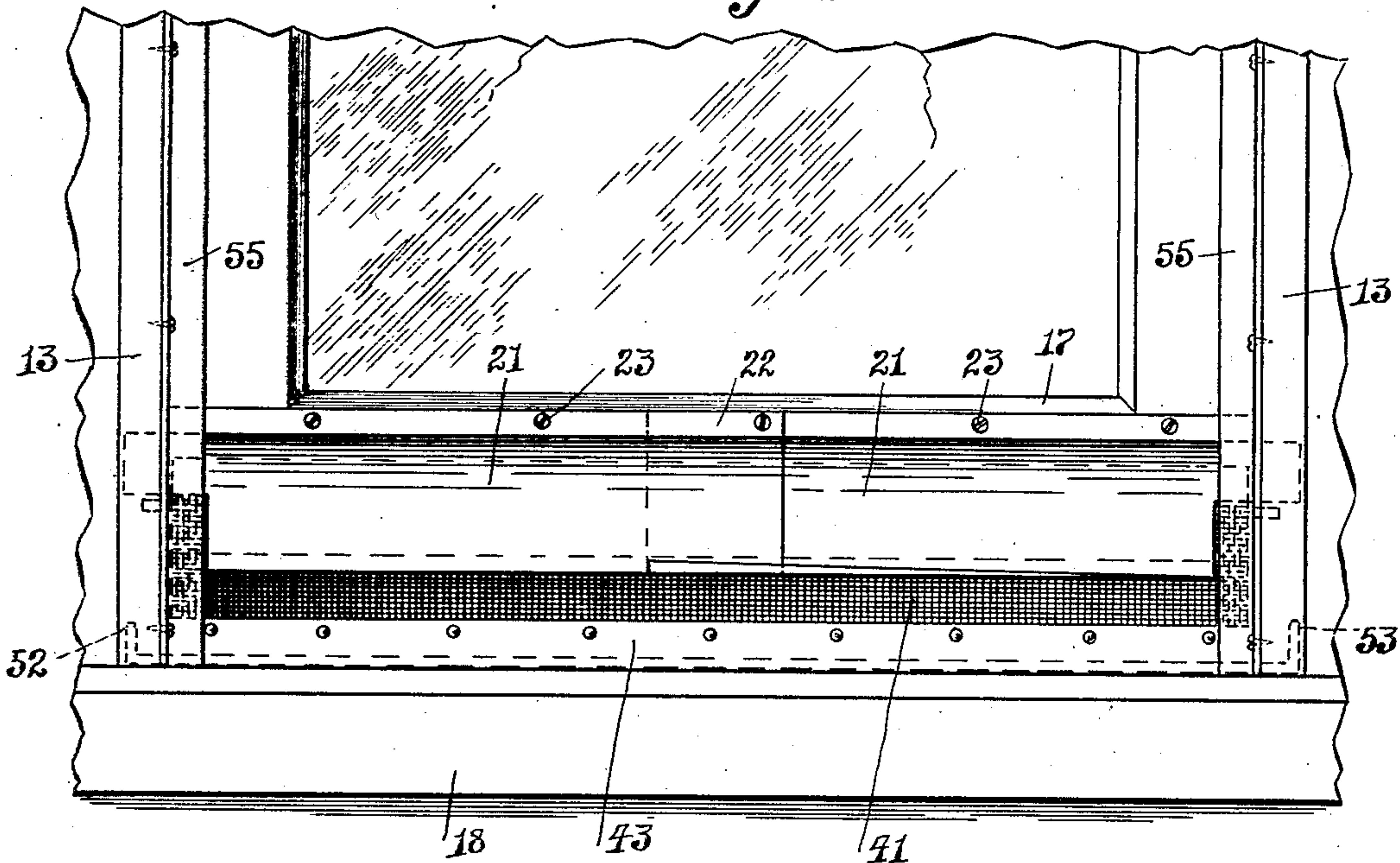


Fig. 5.

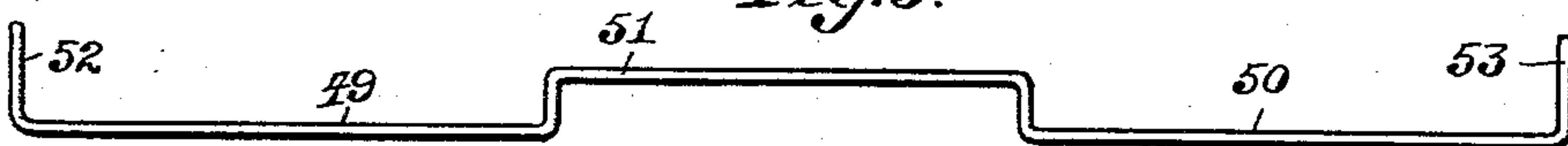


Fig. 6.

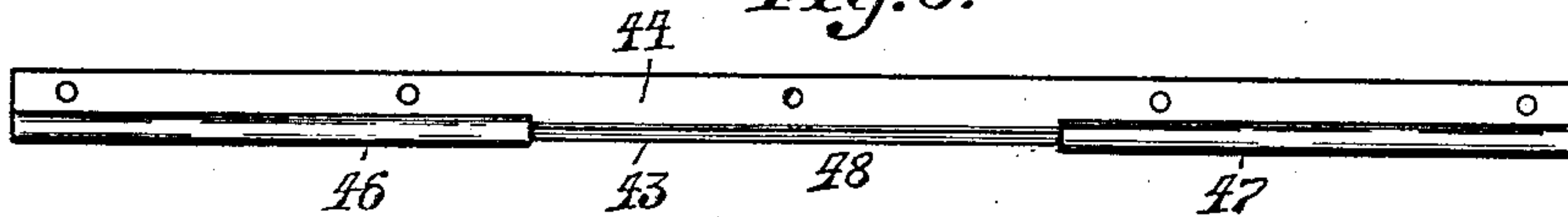


Fig. 7.

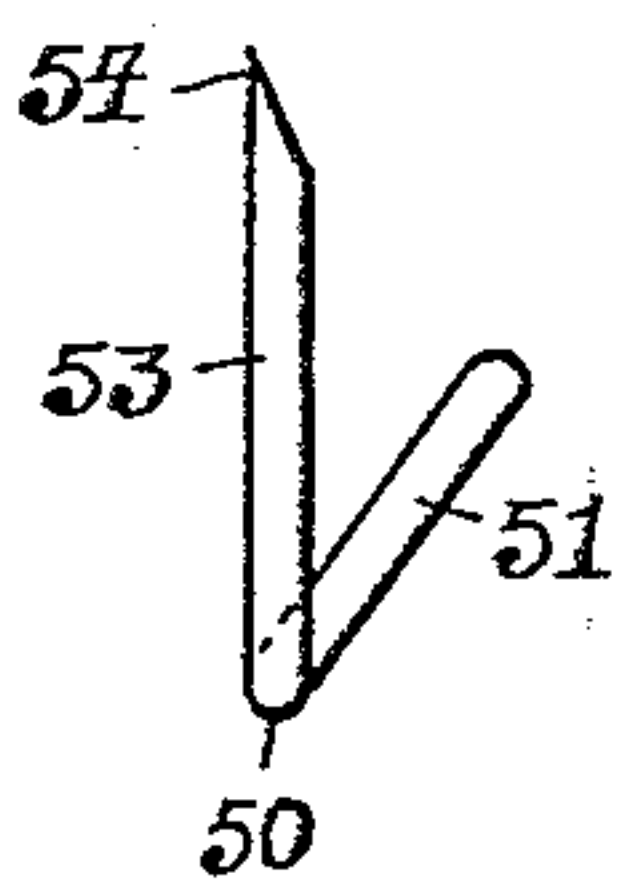


Fig. 8.

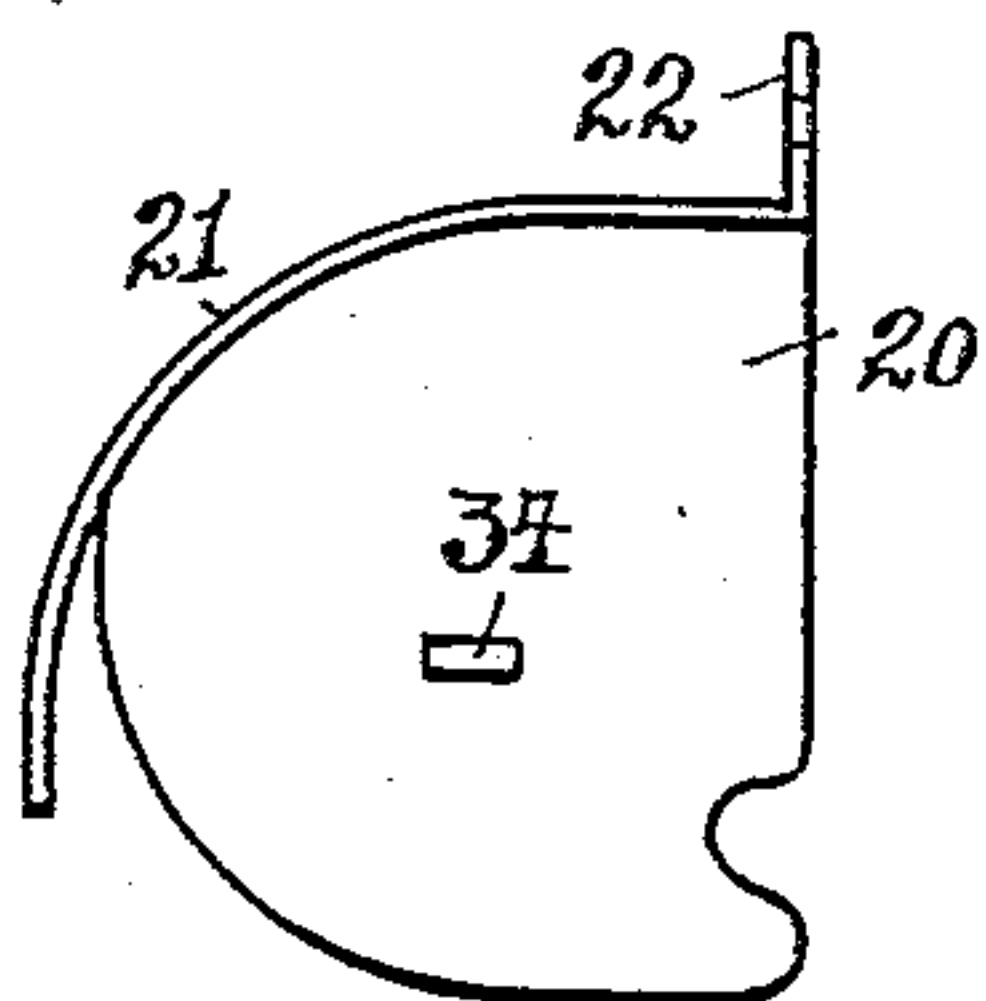


Fig. 9.

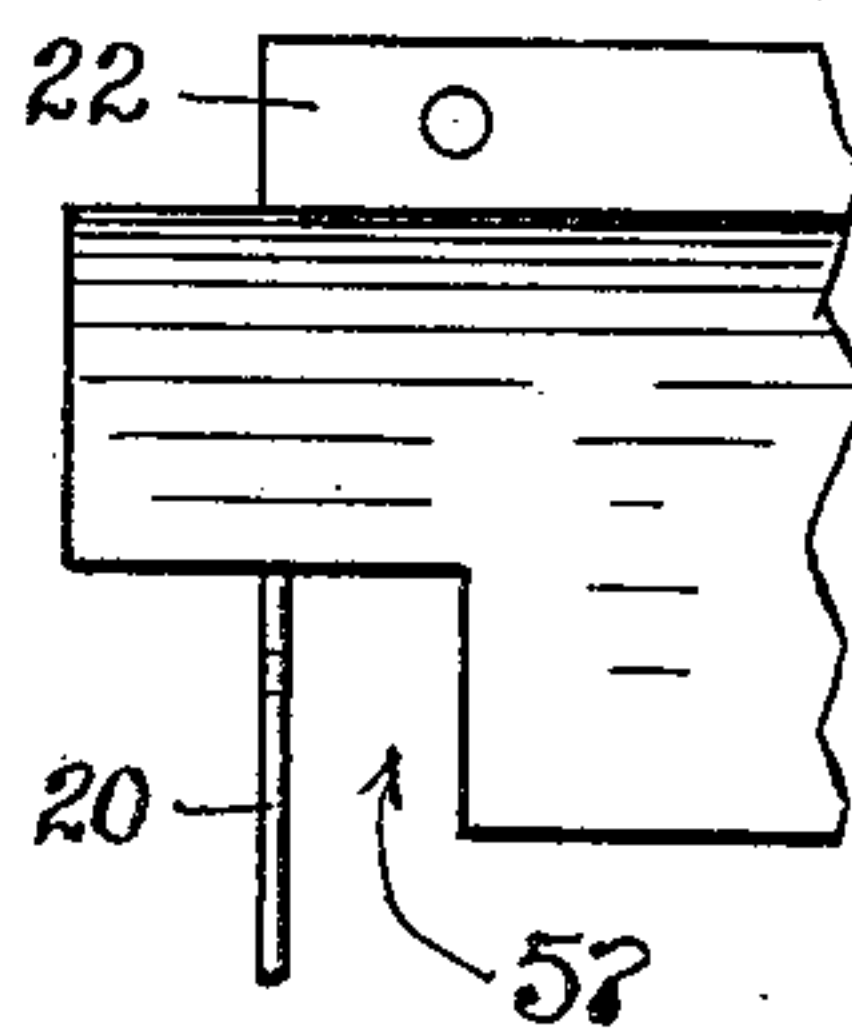


Fig. 10.

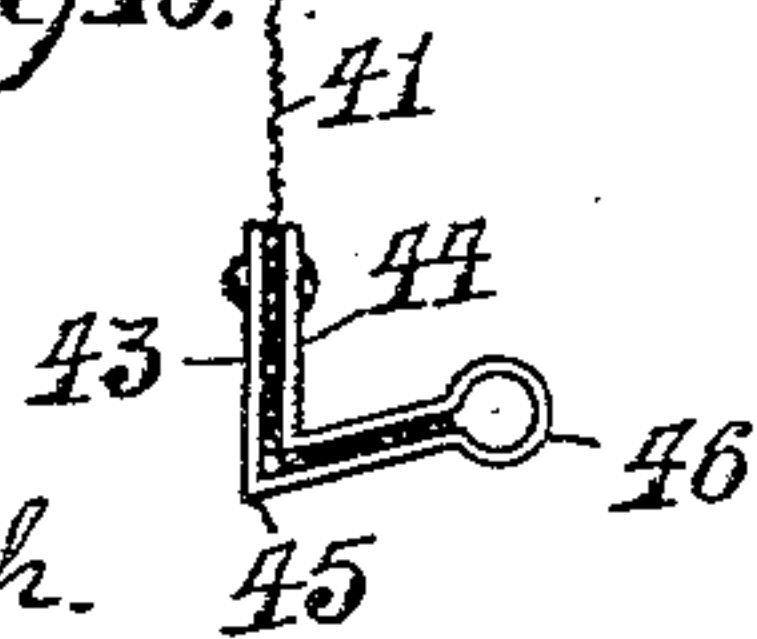
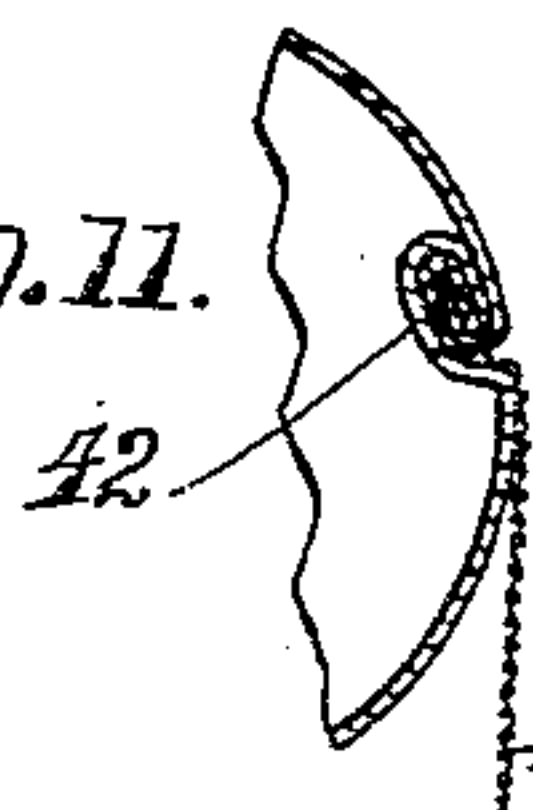


Fig. 11.



Witnesses:

George Oltsch.
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 By *[Signature]* Inventor
[Signature] Att'y

UNITED STATES PATENT OFFICE.

CLARENCE P. FLORA, OF SOUTH BEND, INDIANA, ASSIGNOR TO SOUTH BEND UNIVERSAL ROLLER SCREEN COMPANY, OF SOUTH BEND, INDIANA, A CORPORATION.

ROLLER WINDOW-SCREEN.

No. 912,104.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed January 8, 1908. Serial No. 409,851.

To all whom it may concern:

Be it known that I, CLARENCE P. FLORA, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Roller Window-Screens, of which the following is a specification.

This invention relates to improvements in rolling window screens of the class wherein a sheet of screen material is connected at one end to one of the sashes of the window and at the other end to the window frame, and has for its object to improve the construction and increase the efficiency and utility of devices of this character.

With these and other objects in view the invention consists in certain novel features of construction as hereinafter shown and described and specifically pointed out in the claims, and in the drawings employed to illustrate the preferred embodiment of the invention, Figure 1 is a sectional view of a portion of a window including portions of the frame, the stool or sill, and the upper and lower sash. Fig. 2 is a view of the lower portion of the parts shown in Fig. 1 viewed from the outside of the window with the lower sash in closed position. Fig. 3 is a perspective view of a portion of one of the guide elements. Fig. 4 is a longitudinal sectional view of the spring roller employed in the improved apparatus. Fig. 5 is a view of the holding wire of the screen sheet. Fig. 6 is a side view of the binder element of the screen sheet. Fig. 7 is an enlarged end view of the holding wire shown in Fig. 5. Fig. 8 is an end view of one section of the spring roller hood. Fig. 9 is a side view of a portion of the hood shown in Fig. 8. Fig. 10 is an end view of the binder element of the screen sheet. Fig. 11 is an enlarged detail view of a portion of the spring roller illustrating the manner in which the screen material is connected thereto.

In the drawings 10 represents the window frame, 11 the outside casing, 12 the inside casing, 13 the outside strip, 14 the inside strip, 15 the parting strip, 16 the lower member of the outer sash, 17 the lower member of the inner sash, 18 the sill, and 19 the stool, all these parts being of the usual construction of an ordinary window.

The improved attachment comprises two brackets, one of which is shown at 20 and

connected by a hood 21, the rear portion of the hood turned upwardly at 22 in the form of a flange which is utilized to receive the holding screws or other fastening means 23 by which the hood and its connecting brackets are attached to the sash member 17 as shown. The brackets 20 are designed to support a spring roller represented in detail in Fig. 4. This roller comprises an outer shell or casing 24 having cup shaped closures 25—26 at the ends with flanges 27—28 extending therefrom. Intermediate the ends of the shell 24 are blocks 29—30 having central bores 31—32 opposite corresponding apertures in the closures 25—26, and extending slidably through the block bores and the closure apertures are rods 33—34, the outer ends of the rods being flattened or otherwise of irregular shape and adapted to fit corresponding flat apertures in the brackets 20, one of these apertures being shown at 34 in Fig. 8, so that the rods are held from rotation, while the shell 24 is free to be oscillated around the rods. A spring 35 is connected at one end at 36 to the rod 33 and with its other end extending through the block 29, as shown at 37, while a spring 38 is likewise arranged relative to the rod 34, with one end connected to the rod 39 and the other end extending through the block 30, as shown at 40. By this arrangement it will be obvious that a simply constructed and easily actuated and efficient spring roller is produced.

The shell 24 is formed by bending a sheet of metal into a tube with the edges turned inwardly, and between which the end of the screen material indicated at 41 is inserted, and the intumed edges of the shell with the screen material between them rolled together, as indicated at 42 in Fig. 11, thereby firmly securing the upper edge of the screen material to the roller.

The lower edge of the screen material 41 is provided with a suitable binding element formed from a single strip of sheet metal folded upon itself and between the sides 43—44 of which the lower edge of the screen material is disposed, and the folded strip again bent intermediate its side edges, as shown at 45 in Fig. 10 with the "bight" portion in tubular form, the intermediate part of the tubular portions 46—47 being cut away as shown at 48 in Fig. 6. The tubular portions 46—47 are utilized to support a holding de-

vice formed from a single strip of wire with bearing portions 49—50 adapted to engage the tubular portions 46—47 and a central offset 51 extending from the cut away portion 48, while the ends 52—53 of the holding wire are bent at right angles to the bearing portions 49—50, with the terminals of the portions 52—53 pointed, as illustrated at 54 in Figs. 1 and 7.

Attached to the inner faces of the outside stops 13 are L-shaped metal strips 55 with one web of each extending inwardly and with an offset near the lower ends of the inwardly projecting webs, one of these offsets being shown at 56, the lower edges of the offsets being spaced from the sill 18. The hood 21 is notched at its ends where its outer portion crosses the inwardly extending webs of the members 55, as indicated at 57 in Fig. 9, so that as the sash member 17 is raised and lowered the hood 21 will be guided by the inwardly extending webs of the members 55. By this arrangement the lower edge of the screen material is readily and quickly connected in place by inserting the binder members 43—44 against the lower portions of the inwardly extending webs of the portions 55 with the outer ends of the tubular portions 46—47 beneath the offsets 56 and with the pointed terminals 54 of the ends 52—53 of the holding wire engaging against the outer face of the parting strip 15, as represented in Fig. 1, the resiliency of the holding rod being thus utilized to firmly connect the lower edge of the screen material to the sill, while at the same time enabling the screen material to be readily detached by simply releasing the ends 52—53 of the holding wire, as will be obvious.

By this simple arrangement it will be obvious that a very simply constructed, easily applied, and inexpensive rolling screen is produced, which will be automatically wound up by the spring roller when the inner sash is closed, or disposed in the position shown in Fig. 2, and will unroll automatically as the inner sash is opened, and thus form an efficient screen covering the opening in the window formed by raising the inner sash.

The hood 21 is formed in two portions with their adjacent ends overlapping as shown in Fig. 2, so that the hood may be readily adapted to windows of varying widths.

Having thus described the invention, what is claimed as new is:—

1 In a device of the class described, a roller adapted to be connected to a window sash, screen material connected at one edge to said roller, a binding element connected to the opposite edge of said screen material, stops adapted to be connected to a window frame, an element connected for oscillation to said binding element and having portions

to engage said stops to hold one edge of the screen material against displacement, and also having an offset portion for engagement with a window sill.

2. In a device of the class described, a spring roller adapted to be connected to a window sash, screen material connected at one edge to said roller, a binding element connected to the other edge of said screen material, stops adapted to be connected to a window frame, a holding rod connected for oscillation to said binding element and with an intermediate offset adapted to bear upon a window sill and with laterally extending ends adapted to bear beneath said stops, the terminals of said lateral ends adapted to engage a window frame.

3. In a device of the class described, a spring roller adapted to be connected to a window sash, screen material connected at one edge to said roller, a binding element connected to the other edge of said screen material, guide elements adapted to be connected to a window frame and against which said binding element bears and with stops near their lower ends, a holding rod connected for oscillation to said binding element with an intermediate offset adapted to bear upon a window sill with laterally extending ends adapted to bear beneath said stops, the terminals of said lateral ends adapted to engage a window frame.

4. In a device of the class described, a spring roller adapted to be connected to a window sash, screen material connected at one edge to said roller, a binding element connected to the other edge of said screen material and formed from a strip of sheet metal folded upon itself longitudinally with the screen material between the folds and the folded portion and the screen material therebetween bent substantially at right angles, with an intermediate portion of the bight of the strip cut away, a holding rod having bearing portions disposed within the bight portions of said binding element and with an intermediate offset within said cut away portion and adapted to bear upon the window sill and with the ends of the rods extending laterally and adapted to engage the window frame, and stops adapted to be connected to a window frame and beneath which the lateral ends of said rod bear.

5. In a device of the class described, a spring roller adapted to be connected to a window sash, screen material connected at one edge to said roller, a binding element connected to the other edge of said screen material and formed from a strip of sheet metal folded upon itself longitudinally with the screen material between the folds and the folded portion and the screen material therebetween bent substantially at right angles, with an intermediate portion of the bight of the strip cut away, and a holding rod having

bearing portions disposed within the bight portions of said binding element and with an intermediate offset within said cut away portion and adapted to bear upon the window sill and with the ends of the rod extending laterally and adapted to engage the window frame.

6. The combination with a window frame including the parting strip, sill and the sashes, of a spring roller, means for connecting said spring roller to one of said sashes, screen material connected at one edge to said roller, a binding element connected to the other edge of said screen material, stops adapted to be connected to a window frame, a holding rod connected for oscillation to said binding element and with an intermediate offset adapted to bear upon said window sill and with laterally extending ends bearing

beneath said stops, the terminals of said lateral ends engaging said parting strips.

7. In a device of the class described, a spring roller adapted to be connected to a window sash, screen material connected at one edge to said roller, a binding element connected to the other edge of said screen material, stops adapted to be connected to a window frame, a holding rod connected to the binding element and having a projecting portion for engagement with a window sill and also having laterally extending ends adapted to engage the window frame.

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

CLARENCE P. FLORA.

Witnesses:

GEORGE OLTSCH,
G. M. COLE.