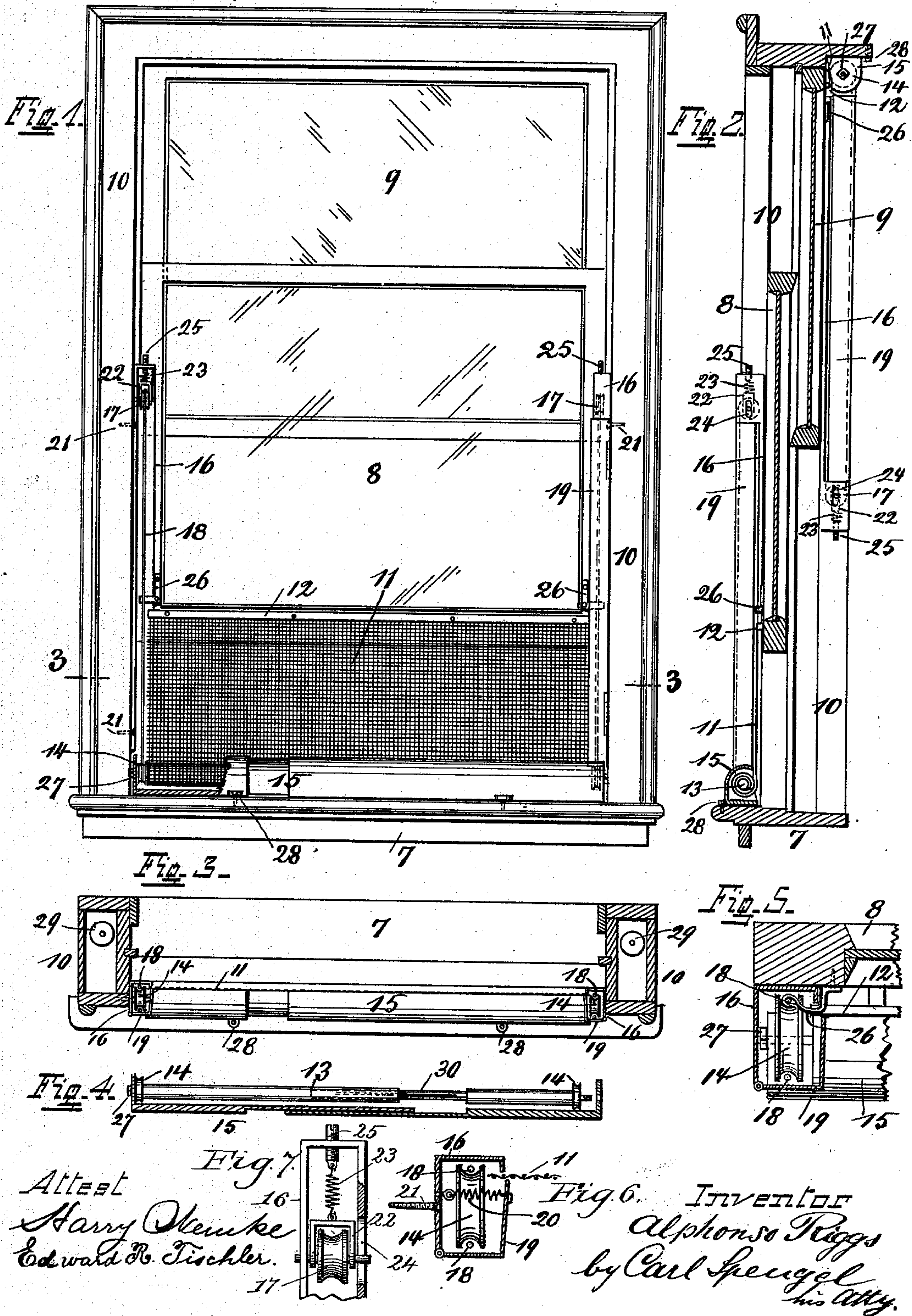


(No Model.)

A. RIGGS.  
WINDOW SCREEN.

No. 413,966.

Patented Oct. 29, 1889.



Attest  
Harry Steukke  
Edward R. Tischler.

Fig. 6. Inventor  
Alphonso Riggs  
by Carl Speigel  
his Atty.



# UNITED STATES PATENT OFFICE.

ALPHONSO RIGGS, OF CINCINNATI, OHIO.

## WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 413,966, dated October 29, 1889.

Application filed February 15, 1889. Serial No. 300,021. (No model.)

*To all whom it may concern:*

Be it known that I, ALPHONSO RIGGS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Window-Screens; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to window-screens used for the purpose of excluding insects from the interior of houses; and it consists in the novel arrangement and combination of the different parts, as described and pointed out in the specification and claims, and as illustrated in the accompanying drawings, in which—

Figure 1 is an inside view of a window, the lower sash partly raised. Fig. 2 is an upright cross-section of the same. Fig. 3 is a horizontal section of the same on line 3 3. Fig. 4 is a vertical longitudinal section of the roller-box. Figs. 5 and 6 are enlarged cross-sections of the guide-casing. Fig. 7 is an enlarged view of the adjustable bearing 22, parts of casing 16 broken away to show slot 24.

7 is the sill, 8 the lower and 9 the upper sash, and 10 the box-frame.

11 is the screen connected to the sash by a strip 12.

13 are the rollers, 14 grooved pulleys secured to their ends, and 15 are the roller-boxes.

16 are casings—two to each sash.

17 are pulleys—one to each casing, and secured therein at their upper and remote ends from where pulleys 14 on rollers 13 are located; and 18 are endless chains or cords passing over pulleys 17 and 14.

The larger portion of casings 16 consists of two parts—that is, one part 19 is capable of being opened and is hinged to the stationary parts of the casings 16. In Fig. 1, to the left, part 19 is omitted to show inside of casing. This hinged part is ordinarily kept closed toward the stationary part by springs 20. (See Fig. 6.) 21 are screws by which the casings are secured to the wood-work. The journals

of the pulleys 17 are secured in a sliding bearing 22, which in turn connects to a spiral spring 23, by means of which the endless chains or cords may be kept taut. The journals also extend beyond their bearings into slots 24 (see Figs. 2 and 7) in the casings, in which they slide, and whereby the pulleys are kept in their proper position.

25 is a screw passing through the upper end of the casing, to which the spiral spring 23 connects, and by means of which the tension of the latter may be properly regulated.

26 is a connection—one secured to each sash—passing between the stationary and yielding parts of the casing to the cord 18, (see Fig. 5,) to which it is rigidly connected.

In order to make roller 13 and its box or casing 15 adjustable lengthwise, they are made each in two sections, one section being partly reduced near its end and sliding within the other like in a telescope, as clearly shown in Figs. 1, 3, and 4. To prevent the sections of roller 13 from turning within each other, I use a well-known device, which consists in providing one section with a groove and the other with a feather which slides in the groove of the former section, as shown at 30 in Fig. 4. To remove the roller, nut 27 is unscrewed and the roller pushed together till one journal clears its bearing, when it may be readily taken out. To put it in position again after the box is adjusted, it is extended in the latter until its journals have entered their respective bearings, when they are secured therein by means of nuts 27.

28 are lugs by means of which box 15 is secured to the sill.

29, in Fig. 3, are the sash-weights.

The operation of the parts is as follows: One of the sashes being opened, the screen, being connected thereto, of course follows and closes the opening. The sash being closed and connection 26 secured to it, the endless chain or cord 18 revolves the roller 13 by means of its pulleys 14, around which the cord 18 passes, and thereby winds the screen up and around the roller. The screen is so wide as to reach into the casings 16, which, in conjunction with hinged part 19, form a guide for the screen. This hinged part is yielding and adjusts itself to the thickness of the screen, being kept bearing against it by



springs 20, (see Figs. 5 and 6,) and thereby prevents the screen from flapping.

If a chain is used in place of a cord 18, sprocket-wheels may be substituted for the pulleys 14 and 17. For the upper sash the attachments may be secured on the outside of the same.

I claim as new and of my invention—

1. The combination of a sash, a screen connected thereto, a roller 13, to which the other end of the screen is connected, pulleys 14, secured to the ends of roller 13, pulleys 17, secured in a vertical plane with the former but a distance remote therefrom equal to a little more than the movement of the sash, as shown, an endless chain or cord passing around pulleys 14 and 17, an adjustable spring-actuated bearing 22 23 25, in which roller 17 revolves and whereby the endless cord or chain is kept taut, and a connection from sash to the cord, whereby cord, pulleys, and roller 13 are operated, as shown and described.

2. The combination of a sash, a screen connected thereto, an adjustable telescoping roller 13, to which the other end of the screen connects, pulleys 14, secured to the ends of roller 13, pulleys 17, secured in a vertical plane with the former but a distance remote therefrom equal to a little more than the movement of the sash, as shown, an endless chain or cord passing around pulleys 14 and

17, an adjustable spring-actuated bearing 22 23 25, in which roller 17 revolves and whereby the endless cord or chain is kept taut, a connection from sash to cord, whereby cord, pulleys, and roller 13 are operated, and guides to either side of the screen to keep the latter straight, as shown and described.

3. The combination of a sash, a screen connected thereto, an adjustable telescoping roller 13, to which the other end of the screen connects, an adjustable roller-box 15, pulleys 14, secured to the ends of roller 13, pulleys 17, secured in a vertical plane with the former but a distance remote therefrom equal to a little more than the movement of the sash, as shown, an endless chain or cord passing around pulleys 14 and 17, an adjustable spring-actuated bearing 22 23 25, in which roller 17 revolves and whereby the endless cord or chain is kept taut, a connection from sash to the cord, whereby cord, pulleys, and roller 13 are operated, and yielding guides to either side of the screen to keep the latter straight, as shown and described.

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

ALPHONSO RIGGS.

Witnesses:

CARL SPENGEL,  
L. C. BLOCK.