

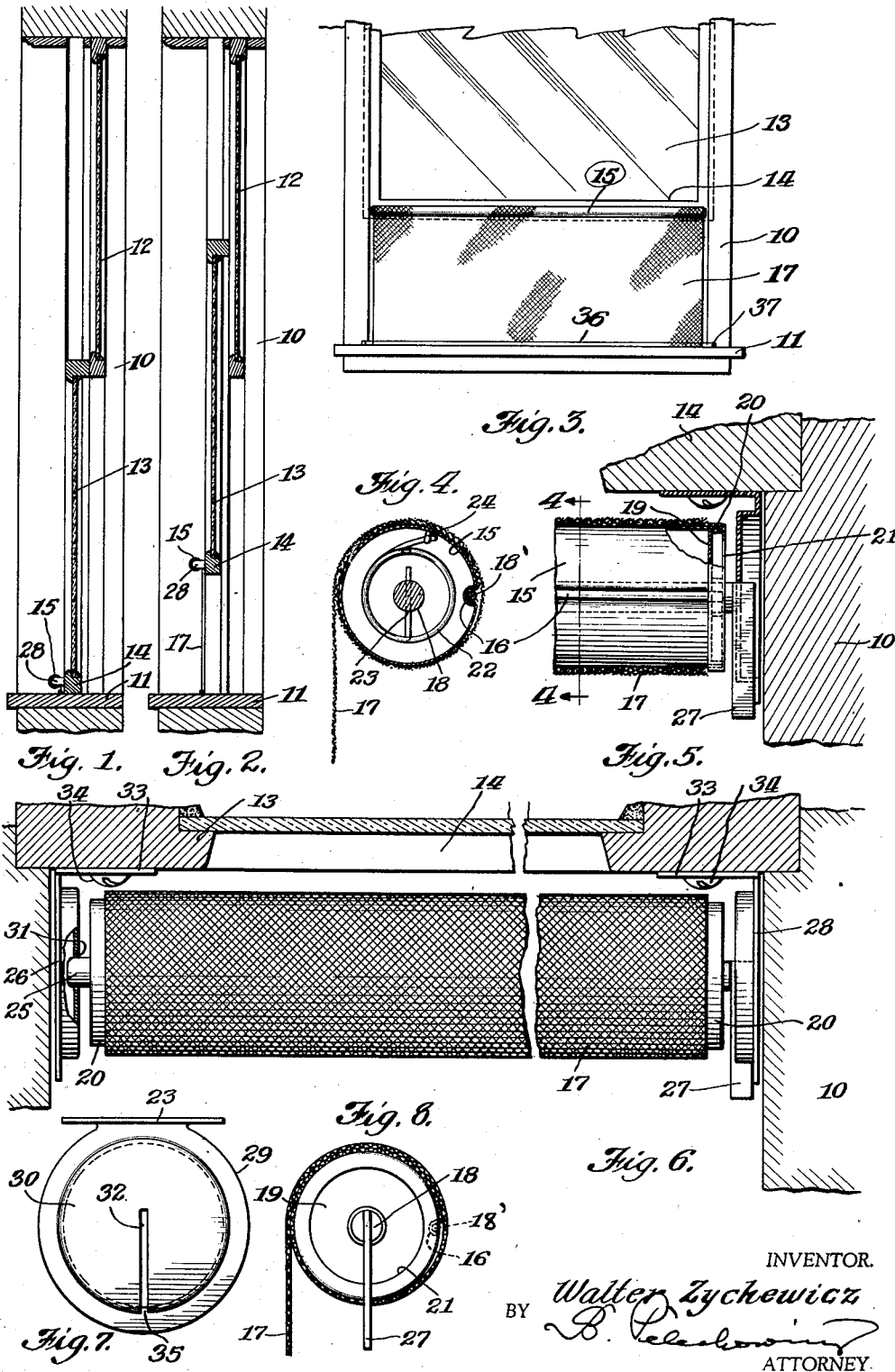
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W. ZYCHEWICZ

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AUTOMATIC WINDOW SCREEN

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AUTOMATIC WINDOW SCREEN

Walter Zychewicz, Chicago, Ill., assignor of one-half to John Brandys, Chicago, Ill.

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2 Claims. (Cl. 156—39)

The present invention relates to window screens and has for its main object the provision of a screen adapted to simultaneously and automatically operate with the raising or lowering of a window sash with which the window screen is adapted to co-operate.

A still further object of the present invention is the provision of a window screen of the type indicated operable in conjunction with a spring wound roller to which one end of the screen may be attached and which roller may be mounted upon suitable brackets affixed to the window sash, and wherein the other end of the screen may be affixed to the frame.

A still further object of the present invention is the provision of an efficient means for attaching the screen to the window whereby the same may be easily affixed to or removed from the window.

A still further object of the present invention is the provision of a suitable bracket in connection with a window screen of the type indicated which will facilitate prompt and easy attachment of the screen to the window and a removal of the screen therefrom.

With the above general objects in view and others that will appear as the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawing and pointed out in the appended claims.

In the drawing forming a part of this application, and in which like designating characters refer to corresponding parts throughout the several views;

Fig. 1 is a cross-sectional view longitudinally of the window showing the position of the screen when the window sash is closed;

Fig. 2 is a similar view indicating the position of the screen when the window sash is in a raised condition;

Fig. 3 is a fragmentary elevational plan view of the window with the lower sash raised, showing the operation of the screen;

Fig. 4 is a cross-sectional view through the roller and screen, the view having been taken on line 4—4 of Fig. 5;

Fig. 5 is a fragmentary cross-sectional view through the window sash, window frame and the roller;

Fig. 6 is a horizontal cross-sectional view through the window with the top plan view from above of the brackets, roller and the screen;

Fig. 7 is an elevational face view of one of the brackets; and

Fig. 8 is the end elevational view of the roller with the screen wound around it.

Referring to the drawing there is shown therein a window including frame 10 and sill 11. Positioned within the frame for vertical sliding movement is an upper window sash 12 and lower window sash 13, which latter includes a lower horizontal sash bar 14.

The present invention includes a spring wound roller 15 made of metal or any other suitable rigid material. Longitudinally of said roller 15 runs an inwardly depressed groove 16 for receiving therewithin one end of screen 17 which is held in position within said groove 16 by means of rod 18' frictionally insertable within said groove 16 for the purpose of clinching therewithin said end of screen 17.

Positioned within said roller 15 and concentrically with its axis is rod 18 which passes centrally of caps 19 positioned adjacent each end of said roller 15 and wherein they are frictionally held. For strengthening the ends of said roller 15 collar 20 is passed over each end of roller 15 with which it frictionally contacts. Said collars 20 also hold rod 18' in position. Each of said collars 20 has an integrally formed flange 21 angularly disposed relative to the collar 20, which prevents the outward creeping or sliding movement of caps 19 and of rod 18'.

A coil spring 22 set within roller 15 and around rod 18 is rigidly attached by one of its ends to said rod 18 as at 23, while the other end of said spring 22 is rigidly affixed to roller 15 as at 24.

One end of rod 18 extends beyond roller 15 as at 25 which is adapted for engagement by bracket generally indicated on Fig. 6 by numeral 26, while the opposite end of said rod 18 likewise extends beyond the adjacent end of roller 15 and has an integrally formed arm 27 which fits within bracket, generally indicated on Fig. 6 by numeral 28.

Each of said brackets 26 and 28 includes an annular flange 29 from which raised and struck out body portion 30, of cup-like appearance, outwardly projects. Bracket 26 has an aperture 31 made centrally in its body portion 30, while bracket 28 has a radial slot 32 made in its raised body portion, as clearly seen on Fig. 7, for receiving therewithin arm 27 of rod 18.

Each of said brackets 26 and 28 is further provided with a leaf 33, integrally formed therewith and angularly projecting therefrom through which screws 34 may be passed for the purpose of mounting the brackets upon the lower horizontal sash bar 14 of the lower window sash.

Part of the raised body portion of bracket 28, 55

which immediately projects from flange 29 at a point in alignment with slot 32 is slit as at 35 for the purpose of providing an unimpeded communication with said slot 32 for inserting or removing arm 27 when roller 15 is either placed within brackets 26 and 28 or removed therefrom.

The opposite end of screen 17 is attached to bar 36 which extends beyond the edges of said screen 17 and is affixed to frame 10 by means of pins 37.

It is observed that when brackets 26 and 28 are mounted upon the lower horizontal sash bar 14, flanges 29 thereof remain in the proximity of the adjacent faces of the window frame 10, while the raised central body portions 30 thereof are disposed inwardly of the window.

Prior to mounting roller 15 with its screen 17 upon the window sash within brackets 26 and 28, screen 17 is first wound around said roller 15, thereupon by means of arm 27, which constitutes a lever for that purpose, rod 18 is rotated for winding up spring 22.

While manually maintaining said arm 27 against revolving due to the tension of spring 22, end 25 of rod 18 is inserted within aperture 31 of bracket 26, and thereupon said arm 27 is inserted within radial slot 32 forcing the same to slide within said slot as far as it will go. Thereupon bar 36 is suspended upon pins 37. When the device remains in the described operative position in the window the screen is ready for operation. When the lower window sash is raised the roller 15 is caused to revolve around rod 18 which remains in a fixed position within brackets 26 and 28, which causes the unwinding of screen 17 for spreading the same within the open space cleared by the window sash. When the lower window sash is being lowered, spring 22, due to its torsion, causes the rotation of roller 15 in the opposite direction which operation causes the winding of screen 17 around said roller 15, so that when the window sash is entirely closed screen 17 is almost

entirely wound upon said roller 15, which two operations and respective positions of said screen 17 are illustrated on Figs. 1 and 2. Due to torsion of spring 22 roller 15 remains at all times under tension by virtue of which fact screen 17 remains almost completely wound around roller 15 when the window sash remains in a closed position within the window frame, and remains in an even stretched condition when the window sash is in an open position.

Screen 17 may be made of wire or fabric. If the latter is used, stiff, glued organdie is preferable.

While there is described herein a preferred embodiment of the present invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What I claim as new is:

1. In combination, a screen roller, a rod in an axial and longitudinal relation with said roller, a coil spring positioned around said rod, said coil spring being rigidly affixed by one of its ends to said rod, and by the other end to said roller, both ends of said rod extending beyond the adjacent ends of said roller, an arm rigidly formed with one end of said rod and laterally projecting therefrom and in transverse relation with said roller, and a bracket having a raised body portion provided with a radial slot receiving therewithin said arm for maintaining said rod in rigid position.

2. In combination, a screen roller, a rod in axial and longitudinal relation with said roller, tensioning means within said roller, an arm laterally projecting from one end of said rod and in a radial transverse relation with respect to said roller, and a bracket having a raised body portion provided with a radial slot, said arm constituting means for rotating said rod for operating said tensioning means, said arm being received within said slot.

WALTER ZYCHEWICZ.