Nov. 11, 1930. G. J. CORPORON 1,781,654

ADJUSTABLE WINDOW SCREEN

Filed Aug. 7, 1929 2 Sheets-Sheet 1

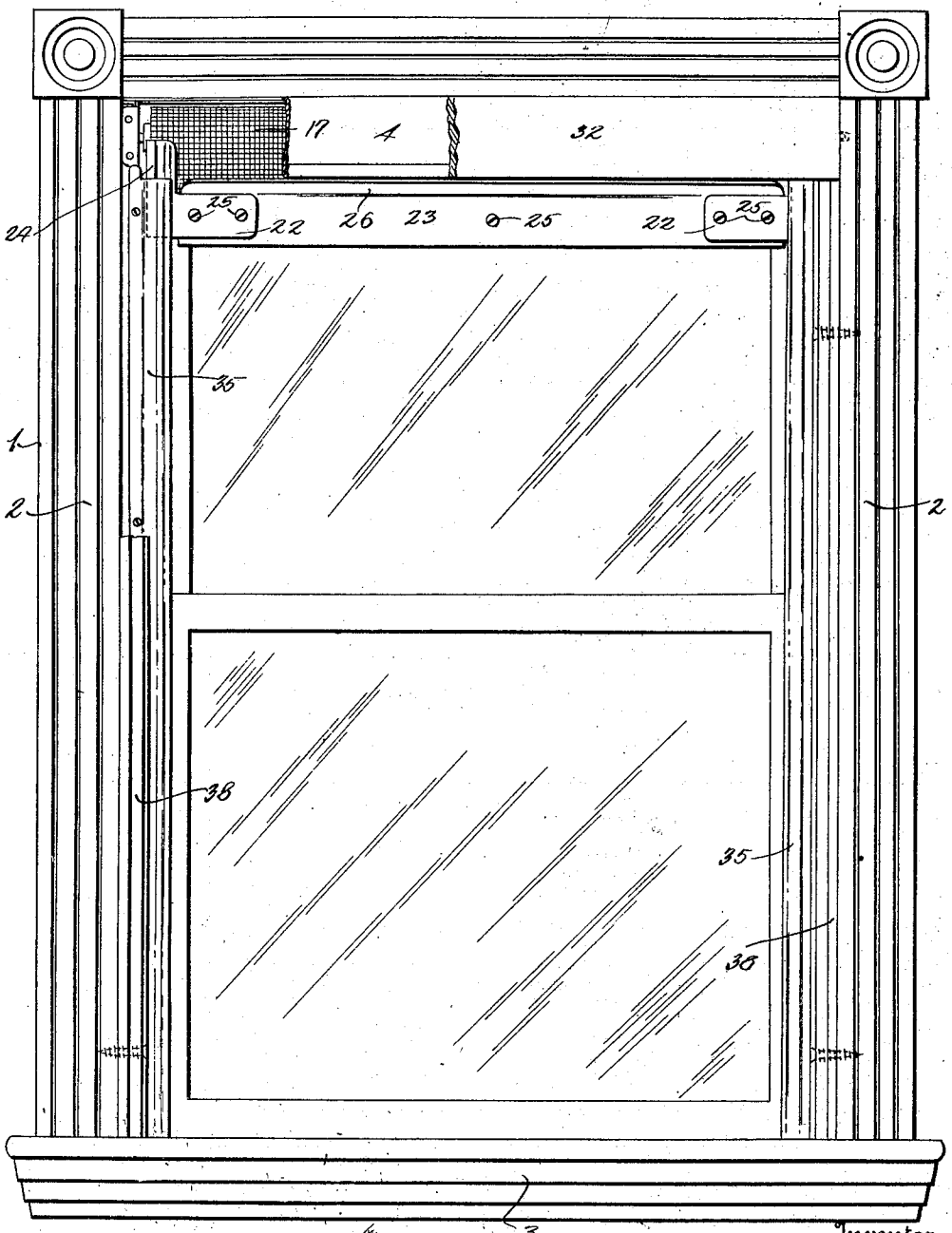


Fig. 1.

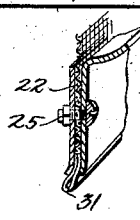


Fig. 2.

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ADJUSTABLE WINDOW SCREEN

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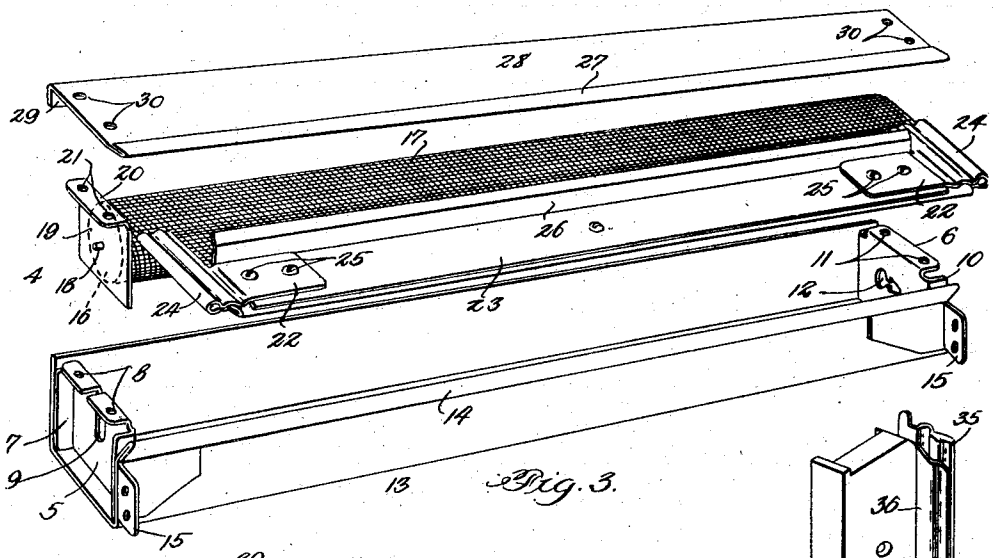


Fig. 3.

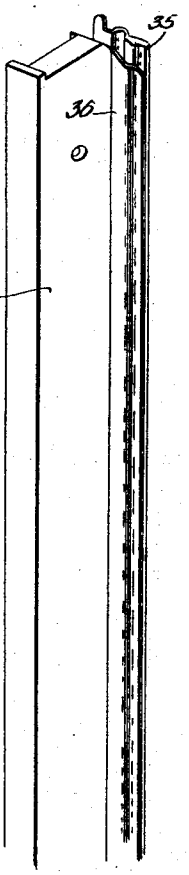


Fig. 6.

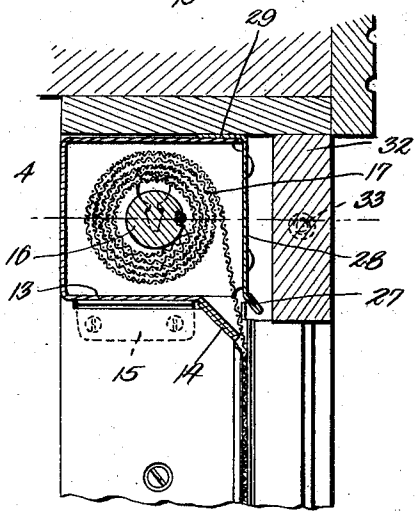
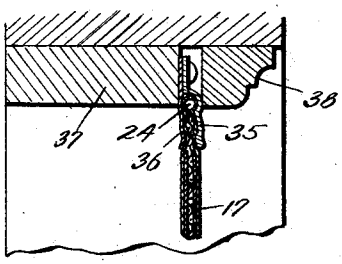


Fig. 4.

Fig. 5.



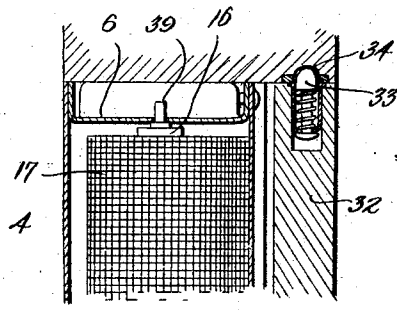


Fig. 7.

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Patented Nov. 11, 1930 1,781,654

UNITED STATES PATENT OFFICE

GEORGE J. CORPORON, OF PORTLAND, MAINE, ASSIGNOR TO THE E. T. BURROWES COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE

ADJUSTABLE WINDOW SCREEN

Application filed August 7, 1929. Serial No. 384,045.

This invention relates to adjustable window screens and roll boxes therefor, and belongs to that class or type of roll holders for screens of wire net or the like that are carried upon a roll of the so-called Hartshorn construction, wherein the screen is rolled up by the action of a coil spring in the roll or roller, and is drawn out by hand and automatically releasably latched to expose different lengths of the screen.

One of the objects of this invention is the provision of a box or roll holder having special construction and arrangement of parts, for housing the screen when rolled up on the roller, and permitting the roll to be readily taken out and replaced when desired.

It is also an object of this invention to so locate the box and the special features thereof that the screen may be drawn out to protect the entire window opening, so that no open spaces are left at the sides or bottom of the window frame for the entrance of insects.

A further object of this invention is to provide adequate upright devices at the sides of the window to suitably guide the screen as it is raised and lowered, and which also act to eliminate any side spaces as stated which would be otherwise open.

Another object of this invention is to afford full protection to the material of the screen when not in use, and to that end the box or housing hereinafter described is made of stout sheet metal which is unaffected by moisture or weather conditions, and when the screen has been rolled up into the box it is effectively stored for any desired time, and does not in any manner interfere with the area through which light is intended to pass.

Other objects and features of structure will appear from the subjoined description, and from the drawings accompanying and forming a part of this application.

Of the drawings,

Figure 1 represents the inside of a window frame showing the sill and trim thereof and to which this invention has been applied.

Figure 2 illustrates the clamping or edge plates attached to the lower edge of the net screen, and shows a binding strip sometimes advantageous to cover the extreme lower and otherwise raw edge of the net.

Figure 3 is a tripartite illustration in perspective showing the front plate of the box, the rolled screen removed from the box, and the box construction with the various features peculiar thereto fully delineated.

Figure 4 is a vertical section through the upper part of a window frame showing this invention applied thereto and also in section, and exhibiting also the removable front board which may be employed to hide the box from the sight of an observer in the room.

Figure 5 is a horizontal section of a part of a window frame showing the screen guide, the vertical wooden bar to which the guide is secured, and the molding attached to the window frame in front of the guide to hide the same.

Figure 6 is a perspective view of the upper portion of the guide supporting bar with the screen guide carried thereby.

Figure 7 is a horizontal section through the end of the front or apron board, showing the devices for removably keeping the board in place on the window frame, and setting forth also one end of the roller box or housing in its position with respect to the front board.

Throughout the drawings and description the same number is used to refer to the same part, and the terms employed to designate the various parts will be understood to be only for the purposes of this explanation.

The window frame 1 has the usual trim 2 and sill 3 all of customary pattern and arrangement.

At the top of the window is located and suitably fixed in position the oblong, and as a rule, rectangular roll box or housing referred to as a whole by numeral 4. The ends 5 and 6 of the box as shown in Figure 3 may be permanently attached in place by spot welding, soldering or otherwise. It will be noted that the end 5 is made with a right angle flange 7 by which it is joined to the box walls, and one portion of the flange is provided with the screw holes 8. It will further be observed that a slot 9 extends from the middle portion of the end 5 and opens through the portion of

the flange 7 which has the screw holes 8 mentioned.

The other end 6 of the box has the flange 10 by which it is fixed to the box walls, and a portion of the flange corresponding to the like flange portion of the end 5 is pierced by screw holes 11. The middle of the end 6 has also a centrally disposed slot 12 of substantially keyhole shape. It has a larger circular portion opening into a relatively smaller and wedge shaped aperture. That wall or side of the box 4 shown in Figure 3 and marked 13 is the bottom of the box, and it is extended into a downwardly inclined lip 14 running along the entire length of the box, and the bottom has at its ends externally the ears 15 by which the box is attached to the window frame as set out in Figure 4.

The roll or roller 16 upon which the screen netting 17 is wound as shown in Figure 3, and it will be seen that the round pintle 18 of the roller engages a central hole in an auxiliary end plate 19. Plate 19 has a right angle flange 20 provided with screw holes 21 sized and spaced as are the screw holes in the flange portions of the ends 5 and 6. Attached to the end of the screen are the terminal binding or pull plates 22 and 23, clamped together on opposite sides of the end of the wire net, and it will be noted that the ends of the plate 22 are turned over upon themselves and fashioned into rounded or cylindrical extremities such as the end 24, and those rounded ends constitute the crossheads which travel in the guides and hold the screen in place adjacent to the window opening. The turned over ends of the plate 22 as shown in Figure 3 are extended to lie above and upon the plate 23 and screws or rivets 25 are passed through the ends and through the two plates to hold the pull plates 22 and 23 on the end of the screen netting. In Figure 3 will also be seen the extension of the pull plate 22 for its entire length into a lip 26, the function of which is to make contact with the outer edge or inclined lip 27 of the front and removable wall 28 of the box 4 shown in Figure 3. The front wall 28 has a rear flange 29 which enables it to be conveniently positioned on the box 4, and the ends of the wall or front 28 are provided with screw holes 30 spaced and sized as are the like screw holes in the flanges of the ends of the box already described. The construction and mutual arrangement of the pull plates or edge binding plates 22 and 23 are also illustrated in Figure 2. A binding strip of leather or stout fabric may be introduced to cover the otherwise raw edge of the wire netting.

Considering Figure 7 there will be seen the front board 32, removably held in place upon the window frame 1 by means of the spring plugs 33 engaging the sockets 34. It will be understood that the front board or shield is arranged to hide the box 4 and to improve the appearance of the assembled members from the point of view of the person in the room. The front board 32 is easily removed and replaced by hand and as shown gives convenient access to the front and removable wall 28 of the box 4.

As exhibited in Figures 1, 5 and 6 the edge of the screen 17 is guided in its vertical movements between the strips 35 and 36, attached to vertical wooden supporting bars or boards 37, and more or less hidden by the moulding 38 secured in front thereof, as best illustrated in Figure 5. The guide strips 35 and 36 are so shaped as to receive movably and correspond in form with the crossheads or rounded extremities 24 of the pull plate 22 or its fellow. The crossheads 24 move up and down between the guide strips 35 and 36 as the screen is drawn out of the box 4 by hand, or permitted to return into the box under the force of the return spring in the roller 16. As the crossheads follow the track between the guide strips the edge of the screen on both sides thereof must do likewise, about which a minimum space is left, and that in a very circuitous path practically makes it impossible for an insect to follow or work through.

Preparatory to the operation of this invention the parts illustrated in Figure 3 are assembled by inserting the flattened pintle 39 in the box end 6 as shown in Figure 7. The pintle 39 is first inserted in the circular portion of the slot 12, permitting the round end pin or pintle 18 of the roller together with the auxiliary end piece 19 to be placed in the box 4, the round pintle 18 passing downwardly in the open ended slot 9 in the box end 5. At the same time the flattened pintle 39 is moved into the wedge shaped part of slot 12. Now, the screw holes in the flange of the auxiliary end plate 19 and those of the flange of the end 5 register with each other, and when the front wall or plate 28 is placed in position its screw holes coincide with the others, and screws may be passed through engaging the screw holes and securing all the parts together. Next, the box 4 is arranged in the top of the window frame as shown in Figure 4, and the ears 15 are secured to the window frame as indicated. As the box 4 is placed in position in the window frame the rounded or crosshead ends 24 are introduced between the upper ends of the two strips 35 and 36 forming the screen guide. If then a pull be exerted upon the plates 22 and 23 which have been described as clamped together on the end of the screen, the screen will be drawn from the roll and the edges of the screen will follow the guiding channel between the strips as explained. The screen may be drawn out so as to protect the entire window, and in the usual manner, when so desired the screen may be again rolled up

on the roller by the reaction of the roller spring not shown and in the well known mode of operation of such rollers for ordinary window shades. This invention is not, however, limited to the use of a spring operated roller, as other means could readily be devised to perform the re-rolling function. Variations may be made, it is believed, in the precise shapes or sizes of the combined elements of this invention without departing from the spirit or purview thereof.

Having now described this invention and explained the mode of its operation, I claim:—

1. In a roll box for adjustable window screens, the combination with a roller having at one end an axially projecting cylindrical terminal and at the other end a flattened projecting terminal, of a box having a removable wall, said box having one end provided with an orifice affording a bearing for one of said projecting terminals of the roller, the other end of the box comprising two members, one of said members being constructed with a slot extending to the edge of the member and the other member having a central opening formed to receive the other terminal of the roller, and means for securing said wall and the two end members to the box.

2. In a roll box for adjustable window screens, the combination with a roller having at one end an axially projecting cylindrical journal and at the other end a flattened projecting terminal, of a box having a removable wall, said box having one end provided with an orifice affording means for holding said flattened terminal against rotation, the other end of the box comprising two members the outermost of said members having a slot from its middle portion and opening to the edge of said member, and the innermost member having a bearing for the journal of the roller, and means for securing said wall and said two end members to the box.

3. A roll box for adjustable window screens, said box having permanently secured ends, a roller having projecting pintles at the ends, one of said permanent ends of the box having an aperture formed to engage one of said pintles, the other permanent box end having a slot open from its middle portion to its edge, and an auxiliary end having a bearing for one of the pintles of the roller and arranged on the inside of said slotted box end whereby the pintles of the roller travels said slot when the roller is introduced or removed.

4. In devices of the character described, a roll box having permanently secured ends, a roller having projecting pintles at the ends one of said pintles being round and one flattened, an auxiliary end having a central bearing for said round pintle, one of said permanent ends having a slot extending to its edge, said auxiliary end being arranged inside said slotted end, and the other permanent end of the box having an aperture with an enlarged portion opening into a portion formed to engage and hold said flattened pintle against rotation.

5. A roll box for adjustable window screens, comprising a box provided with an end permanently attached and having a slot extending to its edge, a roller having a projecting pintle at the end, an auxiliary end plate having a central bearing carrying said pintle and arranged against the inside of said permanent end with the pintle in said slot.

In testimony whereof I affix my signature.

GEORGE J. CORPORON.