

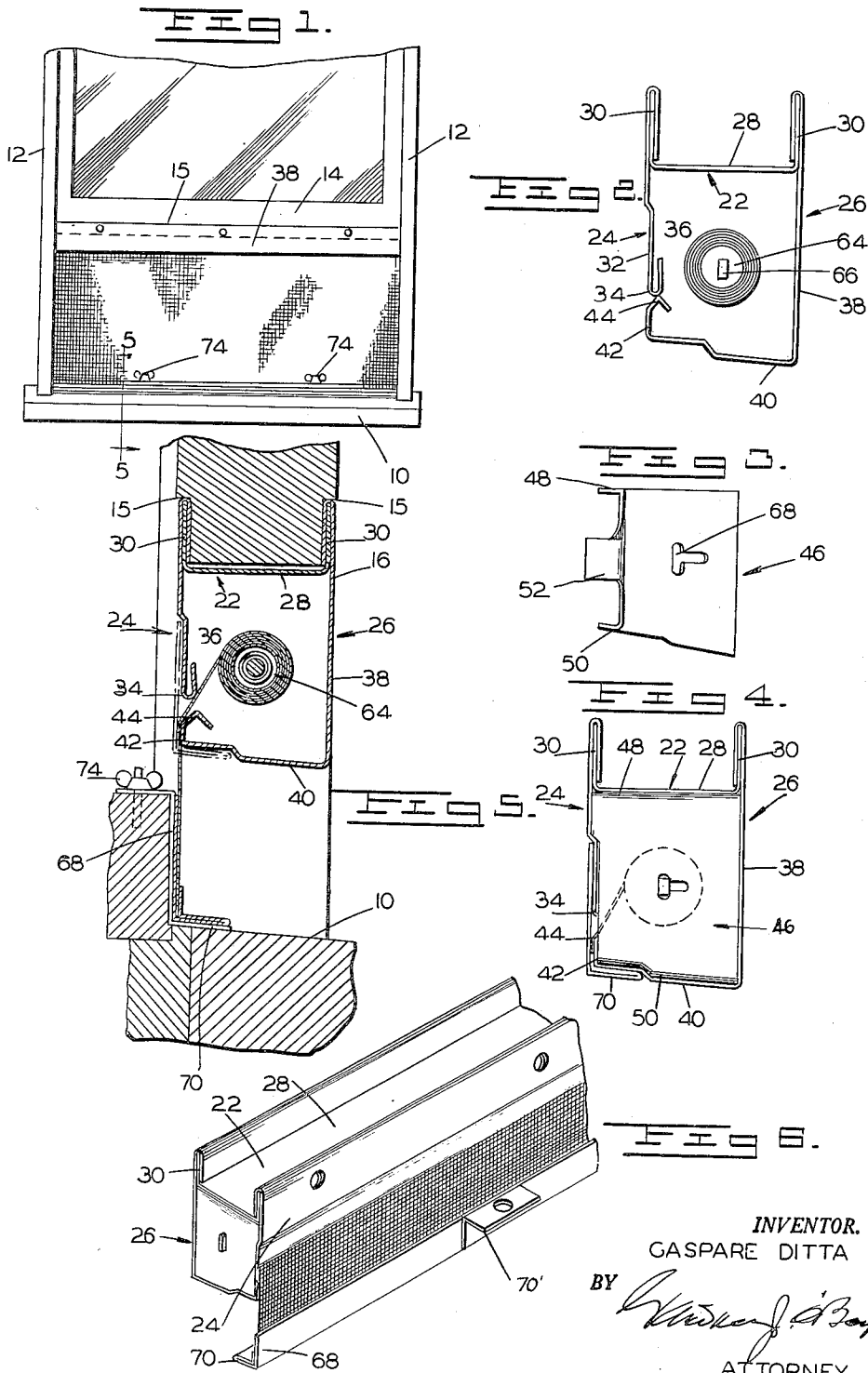
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G. DITTA

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AUTOMATIC SCREEN

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2,539,122

AUTOMATIC SCREEN

Gaspere Ditta, Brooklyn, N. Y.

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1

The present invention relates to automatically operated roller screens of the type having a housing enclosing the screen, the housing being attachable to a window sash and the screen to a sill whereby the screen will be withdrawn from the housing as the window is opened and automatically re-rolled into the housing as the window is closed.

It is appreciated that roller screens of the above indicated type are not new but they have heretofore been unnecessarily complicated and costly to manufacture. It is the object of the present invention to construct a roller screen wherein the housing is constructed of a plurality of metal stampings secured to one another by interlocking or tension requiring a minimum number of mechanical means to secure the parts in position.

A still further object is to accomplish the foregoing and simultaneously so construct the casing that it will be substantially dirtproof and further when the window is closed the casing and associated parts will form a tight closure.

The invention further resides in the combination and arrangement of parts which make up the construction hereof, the description here given being of the preferred embodiment illustrated in the accompanying drawings wherein:

Figure 1 is a front elevation of the roller screen as installed and with the window in partially open position;

Fig. 2 is an end view of the housing without the end closure;

Fig. 3 is a perspective view of an end closure;

Fig. 4 is an end view of the housing with the end closure inserted;

Fig. 5 is a sectional view taken on line 5—5 of Fig. 1; and

Fig. 6 is a perspective view of the screen and roller housing.

Referring to the drawings, there is shown the usual window having a sill 10, jambs 12 and bottom sash 14. The lower rail of the sash 14 is of reduced width to form spaced shoulders 15 extending entirely across same and forming abutments for positioning the roller screen as is hereafter apparent.

Herein the roller screen comprises an elongated substantially rectangular housing 16 comprising three metal stampings 22, 24, and 26 (Fig. 2). The stamping 22 forms the top wall 28 and the vertical parallel flanges 30 which extend longitudinally the full length of the housing.

The second stamping 24 forms the upper section 32 of the front wall, this wall depending from the top wall and being secured thereto by

2

reversing its upper portion thru 180° to form a U channel and then clamping the flange 30 therein. The lower edge of the front wall is also reversed upon itself to form a rounded lip 34 and also a channel 36 for a purpose hereafter described.

The third stamping 26 is of reversed L shape and forms the back wall 38, bottom wall 40 and the lower section 42 of the front wall. The back wall 38 depends from the top wall and is secured thereto in like manner by reversing its upper portion thru 180° to form a U channel and then clamping the flange 30 therein. The upper edge of the lower section 42 of the front wall is also reversed upon itself to form a rounded lip 44 which co-operates with the lip 34 to make a clear passage for the screen as hereafter becomes apparent.

It will be seen from Fig. 2, however, that the lips 34 and 44 are in contacting engagement. This is due to the fact that when the housing is constructed the rear wall is bent slightly forward at its intersection with the top wall, thus placing it under tension for assisting in holding the end wall or closure 46 in position.

As indicated, the end closure 46 is of similar cross sectional shape to the housing walls. The end closure includes a top flange 48 and a bottom flange 50 and intermediate the flanges and projecting inwardly from the front edge is a holding tab 52 receivable within the channel 36 of the front wall of the housing.

With the end closure so constructed, it may be forced into position between the walls of the housing by springing the rear wall 38 back to straight position and inserting the flanges inside the housing and the holding tab inside channel 36. When so positioned, the tension of the back wall in its tendency to spring forward will cause a firm gripping of the flanges 48 and 50 against the top and bottom walls respectively and the holding tab in the slot 36. Moreover the lips 34 and 44 are now spread apart sufficiently to permit passage of screen 60 therebetween the rounded lips also preventing any sharp bending of the screen.

As in screen rollers of this type, the screen 60 has its inner end secured to the common type of "spring roller" 64 provided with squared ends 66 carried in similar apertures 68 in the end closures. The outer end of the screen is secured to a drawbar comprising a right angle member having a vertical flange 68 and a horizontal flange 70, the latter being reversed upon itself to overly and then parallel the vertical

flange, the edge of the screen being firmly held under this reversed portion.

The upper edge of the vertical flange 68 is also provided with a plurality of horizontal tabs 70', provided with wing openings 72 for permitting the passage of wing nuts 74 secured to the sill, the nuts then being rotated to lock the screen drawbar in position.

In order that the screen will make a tight closure when the window is in closed position, the front wall of the housing is offset rearwardly and the bottom wall upwardly, the offsets corresponding to the size of the drawbar whereby it will nest in the offset when the screen is completely wound into the housing as indicated by the dotted lines Fig. 5.

With the housing so constructed it will be seen that the top wall with its vertical flanges also provides a channel for securing the screen to the rail 14, this being done by any suitable securing screws (not shown).

From the foregoing it will be seen that the screen roller is of extremely simple construction and does not require any fastening means to secure it together other than those which are incorporated within the structure. Because it is made of sheet metal the parts are readily stamped, folded and assembled. Being so made the device is extremely economical to manufacture yet incorporates all the features required in a device of this type.

Moreover, by interlocking the parts in the manner disclosed, the housing is substantially dirt proof, the slot forming the screen opening likewise being extremely narrow and completely closed by the drawbar when the window is in closed position.

While I have shown and described the preferred embodiment of my invention, I wish it to be understood that I do not confine myself to the precise details of construction herein set forth, by way of illustration, as it is apparent that many changes and variations may be made therein, by those skilled in the art, without departing from the spirit of the invention or exceeding the scope of the appended claims.

What is claimed is:

1. A substantially rectangular housing of the character described comprising a top wall member having vertical upstanding flanges on the longitudinal edges thereof, a partial upper front

wall member depending therefrom and having its upper edge reversed and clamped to one of the flanges, and its lower edge reversed to provide a slot, an L-sectioned member depending from the other flange and providing a rear wall, bottom wall, and partial lower front wall, the upper edge of the rear wall being reversed and clamped to said other flange of the top wall, and an end closure of the like shape as the cross-sectional shape of the housing, the closure having top and bottom flanges positioned in contact with the top and bottom wall members and having a holding tab positioned in the slot at the lower edge of the partial upper front wall member, the resiliency of the rear wall holding the end closure in position.

2. In a roller window screen construction of the character described, a substantially rectangular shaped housing comprising a top wall member having a pair of vertical upstanding flanges on the longitudinal edges thereof, a partial upper front wall member depending therefrom and having its upper edge reversed and clamped to one of the flanges of the top wall, and its lower edge reversed to provide a slot, an L-sectioned member depending from the other flange and providing a rear wall, bottom wall, and partial lower front wall, the upper edge of the rear wall being reversed and clamped to said other flange of the top wall, closures for the ends of the housing, each closure being of like shape as the cross-sectional shape of the housing, and having top and bottom flanges positioned in contact with the top and bottom wall members of the housing and having a holding tab positioned in the slot at the lower edge of the partial upper front wall member, the resiliency of the rear wall holding the closures in position, each of said end closures having an aperture centrally thereof adapted to receive one end of a window screen roller.

GASPARE DITTA.

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