

No. 618,827.

Patented Feb. 7, 1899.

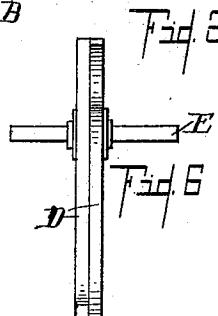
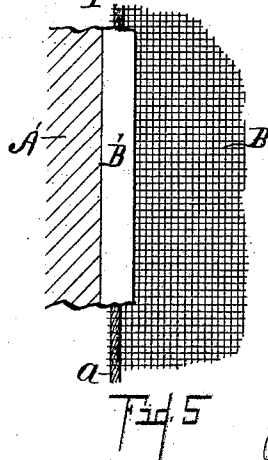
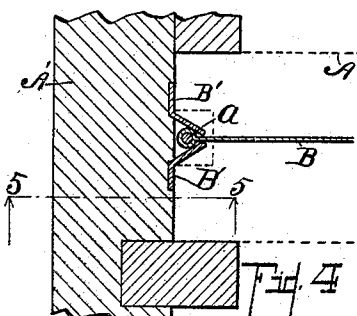
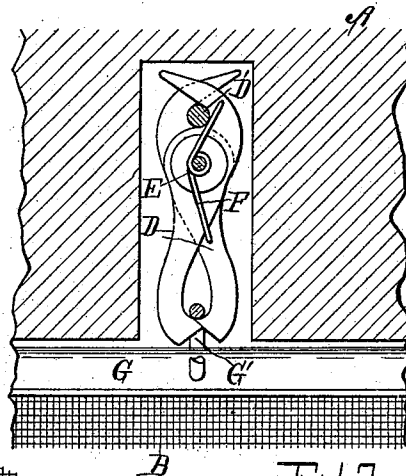
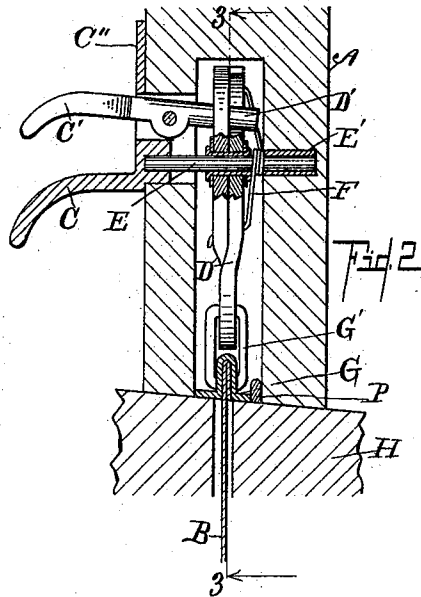
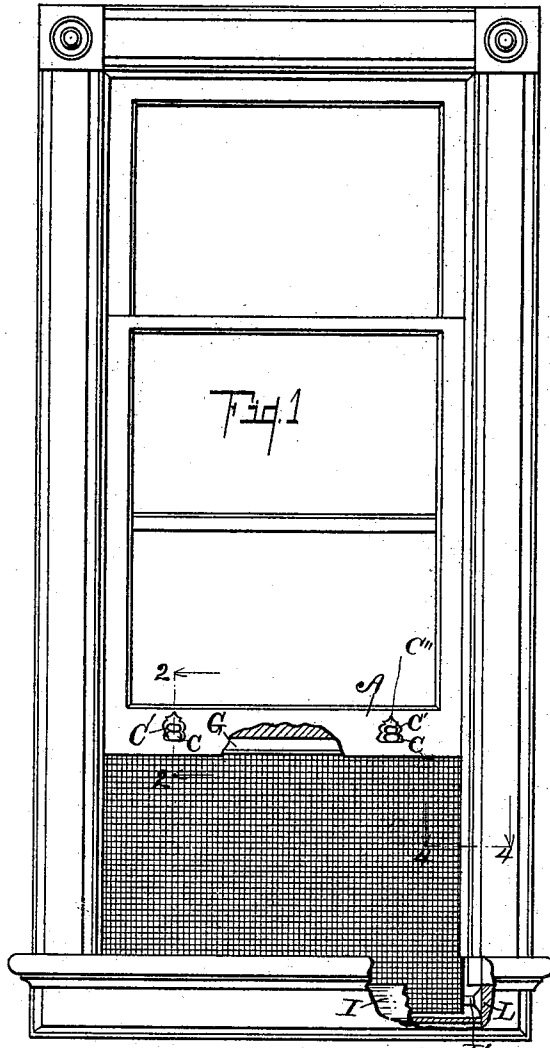
T. E. BARR.

ROLLER WINDOW SCREEN.

(Application filed July 21, 1897. Renewed June 18, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
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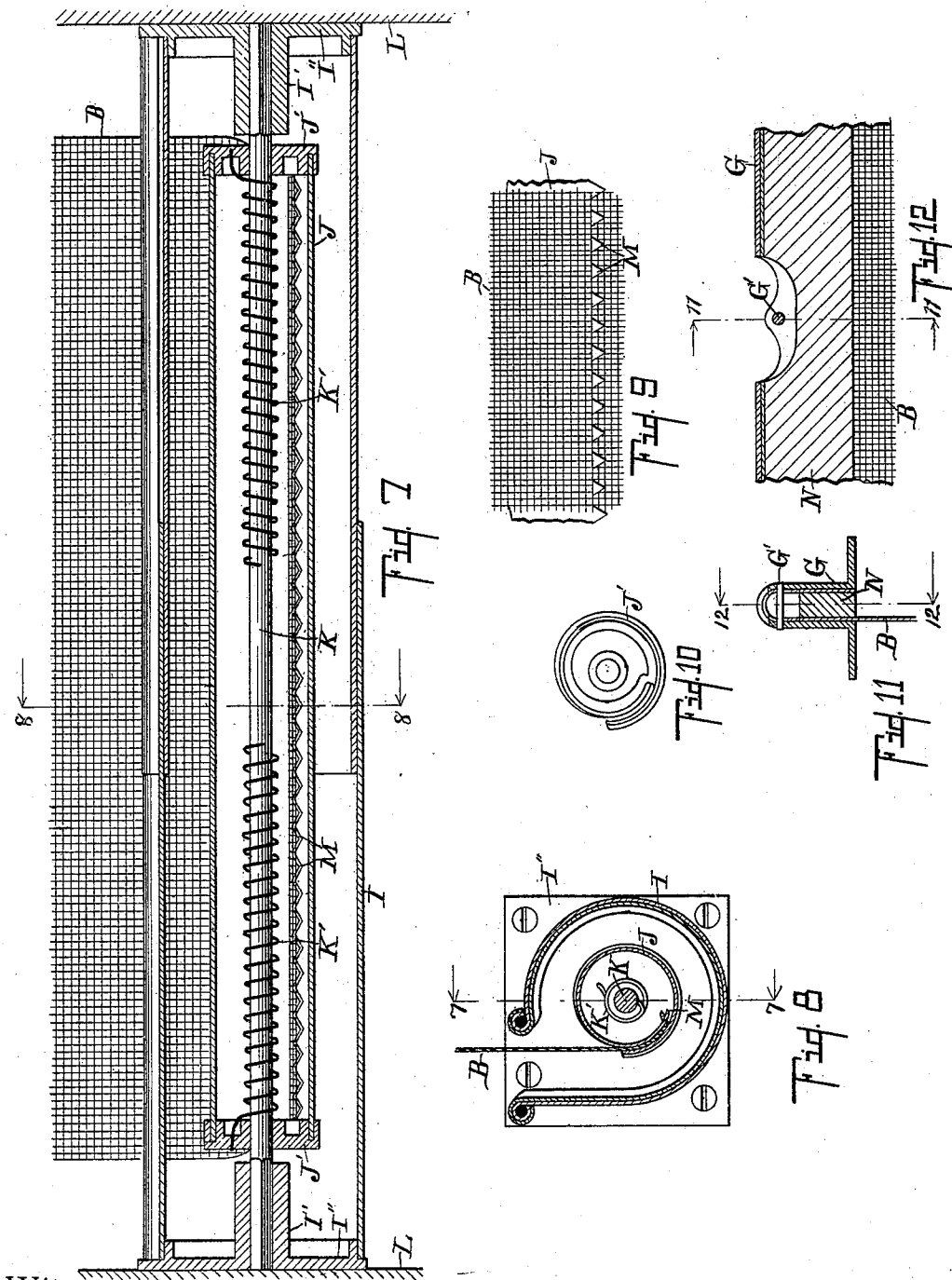
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UNITED STATES PATENT OFFICE.

THOMAS E. BARR, OF KALAMAZOO, MICHIGAN.

ROLLER WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 618,827, dated February 7, 1899.

Application filed July 21, 1897. Renewed June 18, 1898. Serial No. 683,872. (No model.)

To all whom it may concern:

Be it known that I, THOMAS E. BARR, a citizen of the United States, residing at the city of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Roller Window-Screens, of which the following is a specification.

My invention relates to improvements in roller window-screens.

The objects of my invention are to provide various improvements in the combination and arrangement of the parts of a roller window-screen apparatus, which will definitely appear in the description to follow. I accomplish these objects of my invention by the devices and means described in the following specification and illustrated in the accompanying drawings, in which—

Figure 1 is an inside elevation of a window with one of my improved screens in position, portions of the casing and sash being broken away to show details of construction. Fig. 2 is an enlarged vertical detail sectional view through one of the gripping devices on line 2 2 of Fig. 1. Fig. 3 is a detail sectional view on line 3 3 of Fig. 2. Fig. 4 is an enlarged detail sectional view on line 4 4 of Fig. 1. Fig. 5 is a detail sectional view on line 5 5 of Fig. 4. Fig. 6 is an enlarged detail view of a pair of the grippers. Fig. 7 is an enlarged detail longitudinal sectional view through the spring-roller and its casing on line 7 7 of Fig. 8, showing the central shaft in full lines. Fig. 8 is a detail sectional view on line 8 8 of Fig. 7. Fig. 9 is an enlarged detail sectional view showing the method of securing the screen to the rollers. Fig. 10 is a detail view of one of the end caps of the roller. Fig. 11 is an enlarged detail sectional view of a modified construction of the binding and loops G', taken on line 11 11 of Fig. 12. Fig. 12 is a detail sectional view on line 12 12 of Fig. 11.

In the drawings all of the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A is the bottom rail of the window-sash, which is grooved out on its edge to receive the edge of the window-screen.

B is the window-screen, which extends through an opening in the window-casing to the roller. The roller is supported in a suitable case I, which is open along one side, as indicated in the end view in Fig. 8, the sides of the opening being rolled up into beads. The case is made up of two sections which telescope together, which makes the length of the frame adjustable. The ends are supported by suitable brackets I'', which are screwed to the studding or to part of the window-frame, as the case may be, on each side. Extending in from the central part of these brackets I'' are sockets I', which are fitted to the square end of the shaft K, which supports the roller, and are consequently adjustably upon the same, and thus make a conveniently-adjustable support for the roller with a suitable case for the same. The roller is made up of the end pieces J', which are freely revoluble on the shaft K. The roller is made of a simple piece of sheet metal turned into a scroll, with its edges lapping, which are fitted into suitable grooves in the ends J'. The inner lapping edge of the roll is formed into teeth M, and there is space enough left between the lapping edges for the insertion of the edge of the screen, so that it can be conveniently and safely inserted therein, where it will be engaged by the teeth M, which will hold it securely and permit of its being wound securely upon the roller. Toward each end of the roller are coiled springs K, which are coiled in opposite directions. The inner ends of these springs are secured to the shaft, and the outer ends are secured to the heads of the roller. This construction puts tension upon the roller when it is rotated and overcomes any oscillating or vibratory movement when the screen is wound upon it. The screen B passes from the roller through a slot in the casing. In the edge of the screen is a cord a, preferably a textile cord. This expands the loops of the filling where they form the selvage edge. This enlarged edge is engaged by strips of angled metal, which project from opposite sides and form a suitable groove for retaining the edge of the same. This permits the window-sash, with very slight grooving, to pass over the same. On the upper edge of the screen B a sheet-metal cap G is folded,

having laterally-projecting flanges to protect and conceal the sides of the slot in the window-sill. A projecting rib P, of wooden molding or other suitable material, is placed upon the window-sill outside the slot, so that it will be covered over by the groove in the edge of the sash and afford a perfect protection against the beating of the rain. In the cap G at suitable intervals are placed transverse wire loops G', which in my preferred construction project a little above the top of the cap. In the bottom rail of the sash are placed my improved gripping devices for engaging the loops G'. A suitable mortise or hole is made in the bottom of the sash to receive the jaws of the same. On the inside of the sash are suitable escutcheons or plates, with sash-lifts C thereon. A pin E projects therefrom into a little bushing E' on the opposite side of the opening. On this pin E are supported double levers D D, with oppositely-facing hook-shaped jaws at the bottom, which are cut away on the under side and which engage the loop G' on the top of the binding of the screen. The jaws being cut away on the under side to form a V allows the loop to press into the jaws automatically when the window is lowered. A spring F, coiled on pin E and connected at its opposite ends to the levers, holds them normally in the closed position. The upper ends of the levers D cross each other, forming a small opening between them above the pin E. A lever is pivoted to the escutcheon or plate C'', which carries the sash-lift. The inner end of the lever is round and projects between the levers D of the gripper through the little opening above the pin E. The outer end C' is formed to correspond to the said lift and is situated above it, so that it can be easily actuated by the thumb of the user when manipulating the window. By depressing the lever C' its inner end D' will be raised, which will spread the jaws and cause the same to be disengaged from the screen below, so that the window can be raised without the screen. Raising the window without depressing the lever C' will of course carry the window-screen up with it.

In Figs. 11 and 12 I show a modified construction of the binding or cap for the upper end of the screen. In this instance a strip N of wood or other material is folded within the cap and the screen lapped around it. Apertures are cut in the top, and the loop G' is changed to a pin, which projects through the binding at a point to be readily engaged by the gripping-levers G.

Having thus described my improved roller window-screen, I desire to state that it can be considerably varied in its details without departing from my invention and for different styles and makes of windows will require various modifications and changes in the parts to adapt them to the various uses. The casing I, with its end brackets, and the roller are adapted for outside use, especially so where the roller is located at the top of a

window. The jaws of the gripping devices could be shaped in various forms, though the form shown is most satisfactory. The sash-lifts can be varied in their form, and it is only necessary that they should be in proximity with the jaw-operating lever. These special matters of variation are mentioned specifically, but there are numerous others which will occur to those skilled in the art to which my invention pertains.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a window-screen apparatus, the combination of a shaft K, with square ends thereon; sockets secured to the casing for each end thereof to serve as adjustable supports for the same; and pieces J', J', revolvably mounted on said shaft K; a barrel for the roller made up of a scroll of sheet metal with the edges thereof lapping, the inner edge of which is toothed at M; oppositely-coiled springs K', K' each connected at one end to the roller and at the opposite end to the shaft; and a netting or screen inserted between the lapping edges of the roller and secured by its opposite end to the window-sash; coacting for the purpose specified.

2. In a roller window-screen, the combination of the screening B, a cord a, woven into the edges thereof to enlarge the same by expanding the loops of the filling and a suitable groove or guideway at the inside of the window-frame engaging around said corded edge to retain the same as specified.

3. In a window-screen apparatus, the combination of a slotted window-casing; the rail of the sash grooved on its edge next to the slotted casing; a screen projecting through the window-casing with a sheet-metal binding thereon folded into a cap over the top with extending flanges to each side; a strip of molding on the window-casing outside of the slot; suitable means of connecting the said screen to the window-sash, as specified.

4. In a window-screen apparatus, the combination of a slotted window-casing; a screen projecting therethrough; suitable transverse loops G' on the free edges thereof; the rail of the sash grooved on its edge next the slotted casing to receive the free edge of the window-screen; pairs of oppositely-facing hook-levers D, D, supported on transverse pivots E, in the rail of the sash crossed at their inner ends, a spring F, to hold said levers in the closed position; a sash-hold C, a lever pivoted in proximity to the sash-hold with one end D', projecting between the inner ends of the levers D, D, and the end C' projecting into proximity to the sash-hold, all coacting as specified.

5. In a window-screen apparatus, the combination of a slotted window-casing H; a screen projecting therethrough; suitable loops on the free edge thereof; a sash-rail grooved on the edge next the slotted casing to receive the edge of the screen; pairs of op-

positely-facing hook-levers pivoted in the edge of said sash; a sash-hold; a lever pivoted in proximity to said sash-hold and projecting between the levers to afford a means 5 of actuating the same, as specified.

6. In a window-screen apparatus, the combination of the window-screen; suitable means of storing the same; a grooved sash-rail; pairs of oppositely-facing gripping-levers on said sash-rail; a sash-hold; a lever 10 pivoted in proximity thereto and extending between the gripping-levers to actuate the same as specified.

7. In a window-screen apparatus, the combination of a window-casing slotted on one of its sides, a window-sash grooved on its edge next to the slotted window-casing; a screen 15 housed in the window-casing and projecting through the slot therein, a binding on said screen adapted to enter the groove in the sash, means for detachably securing the screen and sash together, and a molding-strip arranged on the window-casing outside of the slot and also adapted to be received in the groove of 20 the window-sash when the same is in its closed position.

8. In a window-screen apparatus, the combination of a slotted window-casing, a screen

housed in the window-casing and projecting through the slot therein, a window-sash provided with an external hold, means housed 30 in the sash for automatically attaching the screen and sash, and means arranged outside the sash and in proximity to the hold whereby the sash may be detached from the screen and 35 moved at the same time.

9. In a window-screen apparatus, the combination of a screen, a flexible cord woven into the loops of the texture composing the screen along its edge, and a grooved guideway adapted 40 to receive and guide the corded edge of the screen.

10. In a window-screen apparatus, the combination of a screen, flexible cords woven into the loops of the texture composing the screen 45 along two of its parallel edges and a window-frame provided with grooved guideways along two of its parallel sides adapted to receive and guide the corded edges of the screen.

In witness whereof I have hereunto set my 50 hand and seal in the presence of two witnesses.

THOMAS E. BARR. [L. s.]

Witnesses:

A. V. BALCH,
C. W. ORNER.