No. 618,831. Patented Feb. 7, 1899.

T. E. BARR.

WINDOW SCREEN.

(Application filed July 14, 1898.)

(No Model.)

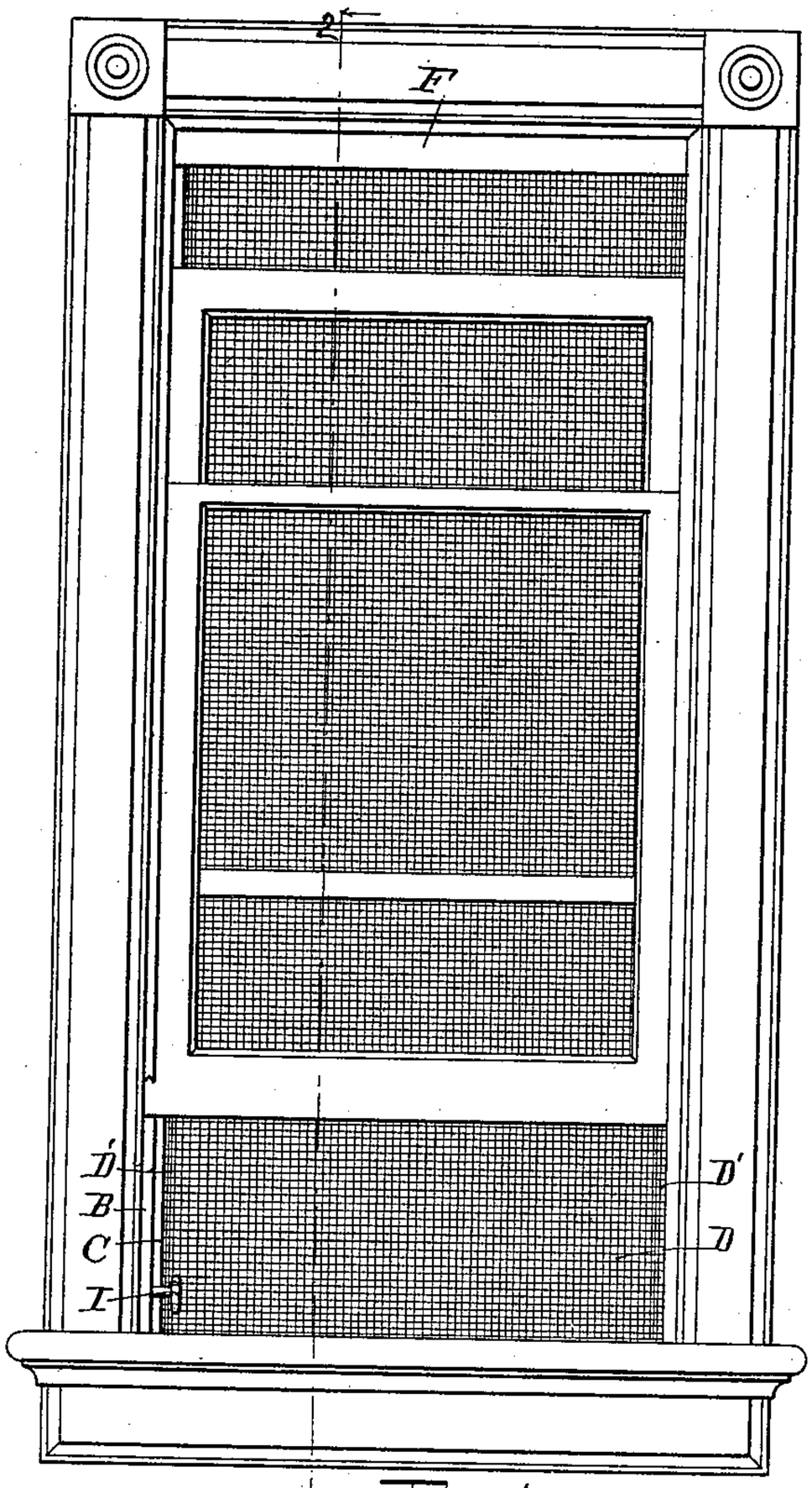

Fig. 1

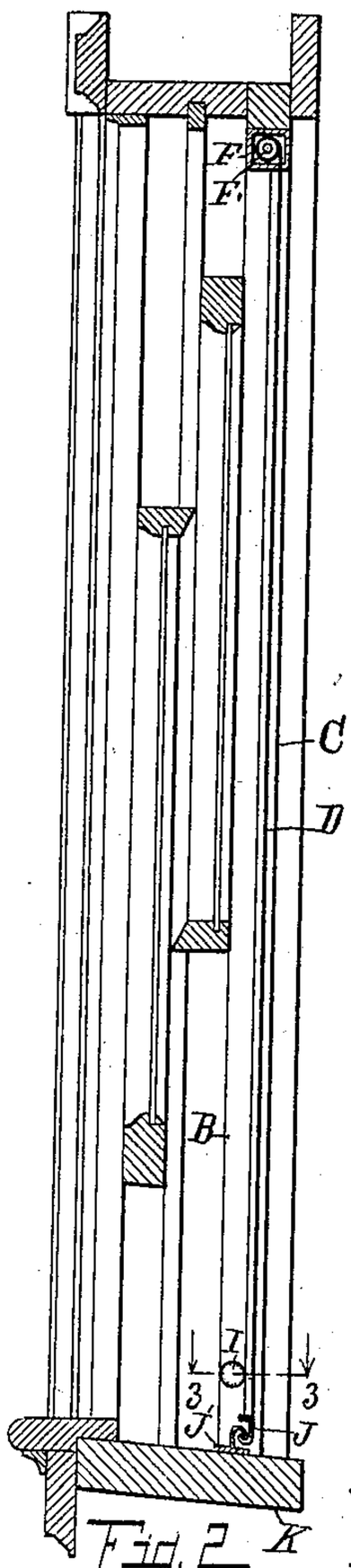

Fig. 2

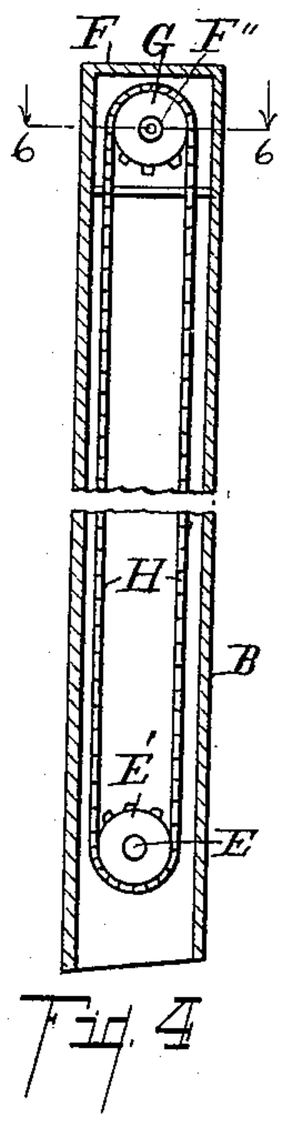

Fig. 4

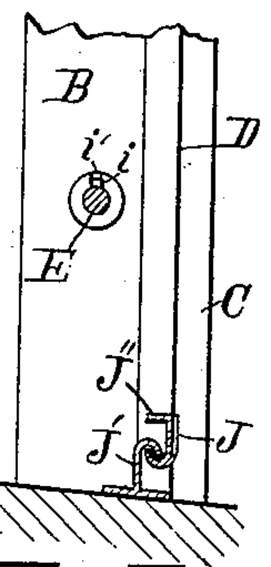

Fig. 5

Fig. 3

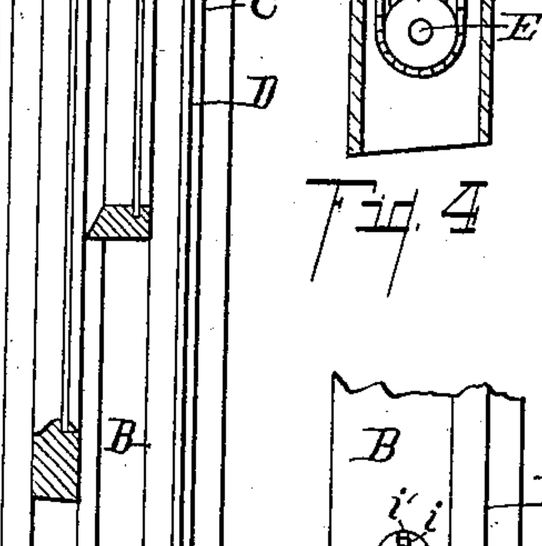

Fig. 7

Fig. 6

Fig. 8

Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS E. BARR, OF KALAMAZOO, MICHIGAN.

WINDOW-SCREEN.

SPECIFICATION forming part of Letters Patent No. 618,831, dated February 7, 1899.

Application filed July 14, 1898. Serial No. 685,959. (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 Window-Screens, of which the following is a specification.

My invention relates to improvements in roller window-screens, and particularly to a roller window-screen which shall cover the entire window-frame.

The objects of my invention are, first, to provide a convenient means of operating a roller at the top of the window for the purpose of rolling up the screen; second, to provide an improved means of attaching the end of a roller window-screen when it is drawn out, and, third, to provide an improved means of attaching a roller-screen and operating mechanism to a window. I accomplish these objects of my invention by the devices and means described in the following specification and shown in the accompanying drawings, in which—

Figure 1 is an inside elevation of a window with one of my improved screens in position. Fig. 2 is a vertical sectional view on line 2 2 of Fig. 1. Fig. 3 is a horizontal sectional view on line 3 3 of Fig. 2, showing the screen broken. Fig. 4 is a vertical sectional view through the operating mechanism on line 4 4 of Fig. 3. Fig. 5 is an enlarged detail sectional view taken on line 5 5 of Fig. 3. Fig. 6 is an enlarged detail sectional view on line 6 6 of Fig. 4. Fig. 7 is an enlarged inverted perspective view of one end of the screen-roller with a portion of the screen attached. Fig. 8 is an enlarged detail perspective view of the edge of the screen, showing the retaining devices at that point.

In the drawings all of the sectional views are taken looking in the direction of the little arrows at the end 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, F is a suitable casing or box which is supported, preferably, on the blind-stop to the outside of the window at the top. B is a similar casing put upon the blind-stop to one side of the window. On the outer edge of the casing B is a tube C, opened at one side, with the edges slightly turned in. A similar tube is located on the outer edge of the opposite blind-stop. A hollow roller F′ is supported on a suitable spindle within the casing F at the top and has at one end a small sprocket-wheel G. A coiled spring F″ is within the roller, with one end secured thereto and one end to the rigid spindle within. Through the lower part of the casing B extends a little shaft E, with a thumb-nut or hand-wheel I on its outer end. On this shaft is supported a small sprocket-wheel E′, which is actuated by a thumb-nut or hand-wheel I. A sprocket-chain H passes over the sprocket-wheel G and sprocket-wheel E′ for actuating the roller above from the hand-wheel I. The little shaft E has a slight longitudinal movement. A pin *i* is placed on the outer portion and a small notch *i′* is cut in the bearing to be engaged by the pin *i*, as clearly appears in Figs. 3 and 5. The upper edge of the screen D is secured to the roller F′ above. The screen is provided with a binding below formed into a hook J, which engages in a suitable hook J′, projecting upwardly from the window-sill K. Projecting finger grip-pieces J″ are on the inside of the lower edge of the binding to afford a convenient means of operating the hook J in hooking or unhooking the same.

To each edge of the screen D is inserted a brass ribbon D′ to give the screen strength and firmness at that point to prevent its kinking, so that it may be guided truly and accurately in the slotted tubes C C. Inserted through or around this binding D′ is a little strip of metal *a*, which is folded upon the same to the outer edge, the ends projected at substantially right angles to the screen, with slight outward curves at the outer ends. These form the attaching instruments for securing the screen at the edges and by their special formation and attachment pass through the tube C with great accuracy and ease. The roller F′ is made slightly shorter than the width of the screen, so that when the screen is rolled up the little projecting parts *a* project by the roller and allow the screen to roll evenly and smoothly over the same without danger of bending or injuring the edge of the screen. The instruments *a* are placed at a considerable distance from each other and

project a little distance beyond the edge of the screen, so that they will all have an independent space at the end of the roller.

From this description it will be readily understood that my improved screen may be raised or lowered by operating the little hand-wheel I or by taking hold of the bottom of the screen itself and drawing it down and hooking it below, the tension of the spring returning it to the top as it is released, and the screen can be secured in substantially any position desired by locking the little sprocket-wheel by the means I have provided on shaft E.

My improved means of strengthening the edge of the screen are adapted for use wherever a roller-screen is employed, and the hooks J at the bottom of the screen, with the means of operating the same, could be used in connection with a roller-screen without my special means of actuating the same.

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

1. In a window-screen, the combination of the casing F, at the top of the window; a spring-roller F′ therein, a sprocket-wheel G, at the end of said roller; a casing B extending along one side of the window-frame; tubes C supported to each side of the window slotted on their inner sides; a window-screen secured to the roller F′, above and projecting down through a slot in the casing F, with its edges extending through the slotted tubes C, C, at each side; a strip of metallic ribbon D′, in each edge of the screen D, the double-pointed metallic strips *a*, folded through the same to engage within the tubes C; the hook-shaped binding J, with grip-pieces J″ at the bottom; and a hook J‵ projecting up from the window-sill to engage the hook-shaped binding all coacting together for the purpose specified.

2. In a window-screen, the combination of a spring-actuated roller at the top of the window; a sprocket-wheel G, at the end of said roller; a casing B, extending along one side of the window-frame; a sprocket-wheel below with suitable means of actuating the same; a sprocket-chain connecting said wheels; a window-screen secured to the roller above projecting downwardly with its edges extending through the slotted tubes C, at each side; a strip of metallic ribbon, in each edge of the screen; and hook-shaped binding J, at the bottom to engage suitable hooks on the window-sill coacting as specified.

3. In a window-screen the combination of a spring-actuated roller at the top of the window; a window-screen attached thereto; a sprocket-wheel G, at the end of said roller; a casing extending along one side of the window-frame; a sprocket-wheel E′, below on the shaft E; a sprocket-chain H, in said casing connecting the sprocket-wheels together; a suitable hand-wheel I, for actuating the shaft E, for operating the screen; a pin *i*, on the shaft E, to engage the notch *i′*, in its bearing to lock the same as specified.

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

THOMAS E. BARR. [L. S.]

Witnesses:
OTIS A. EARL,
LELA M. BROWN.