No. 780,390. PATENTED JAN. 17, 1905.

D. W. WADSWORTH.

ROLLER SCREEN.

APPLICATION FILED MAY 14, 1904.

2 SHEETS—SHEET 1.

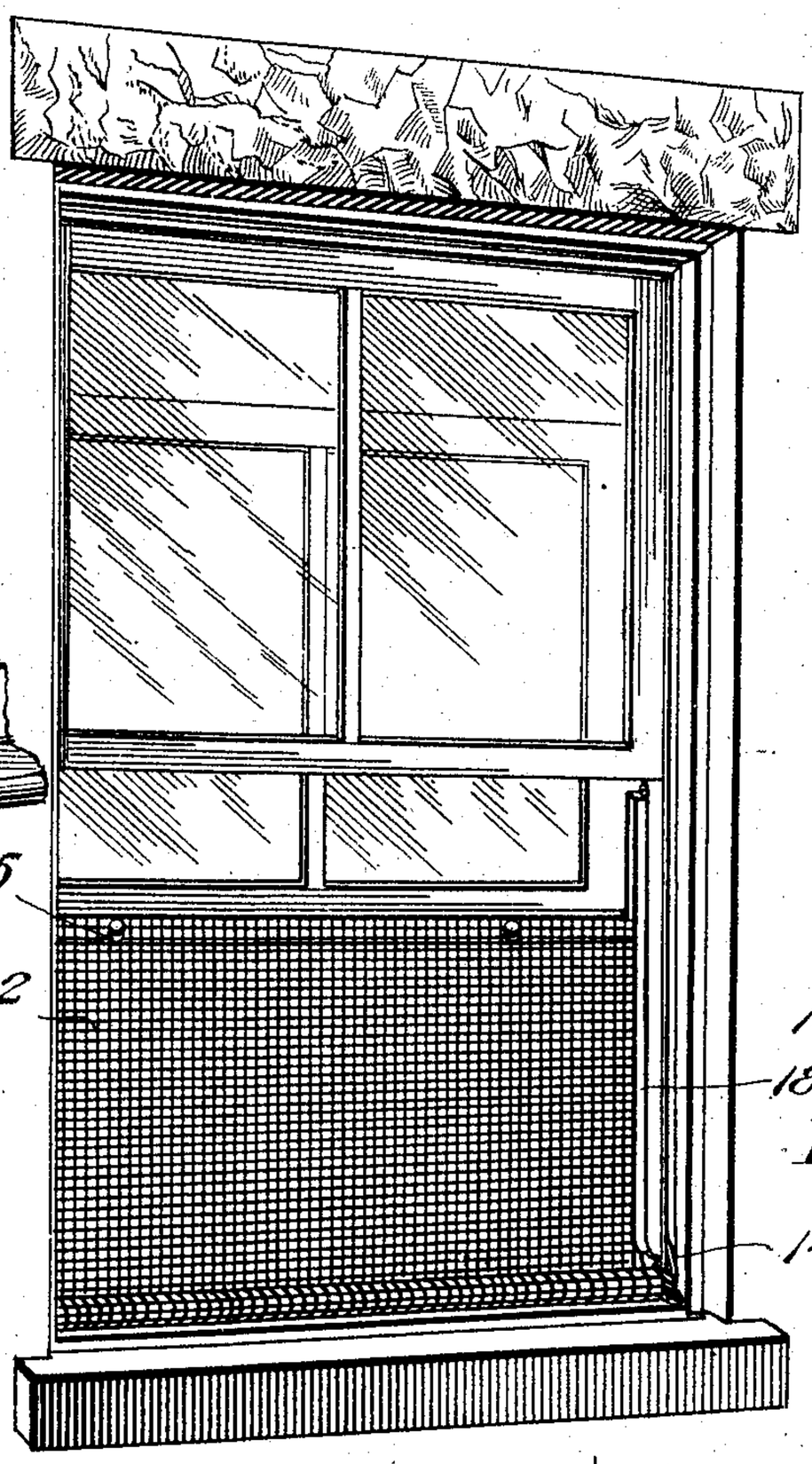


Fig. 1.

Fig. 12.

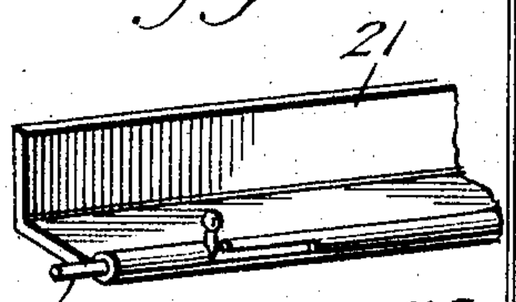
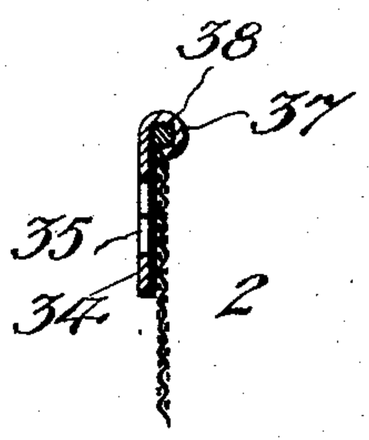


Fig. 11.



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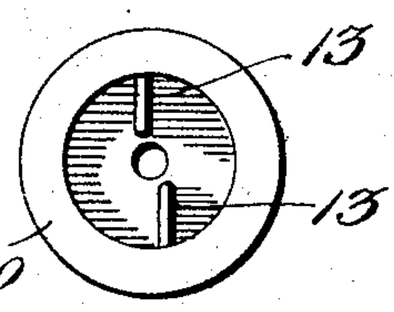


Fig. 8.

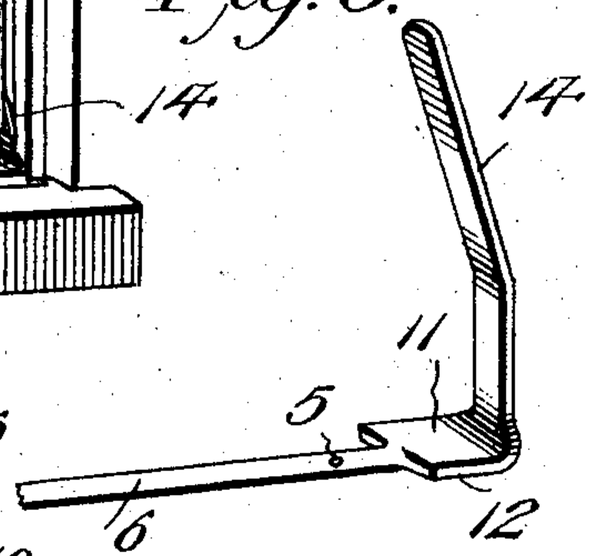


Fig. 9.

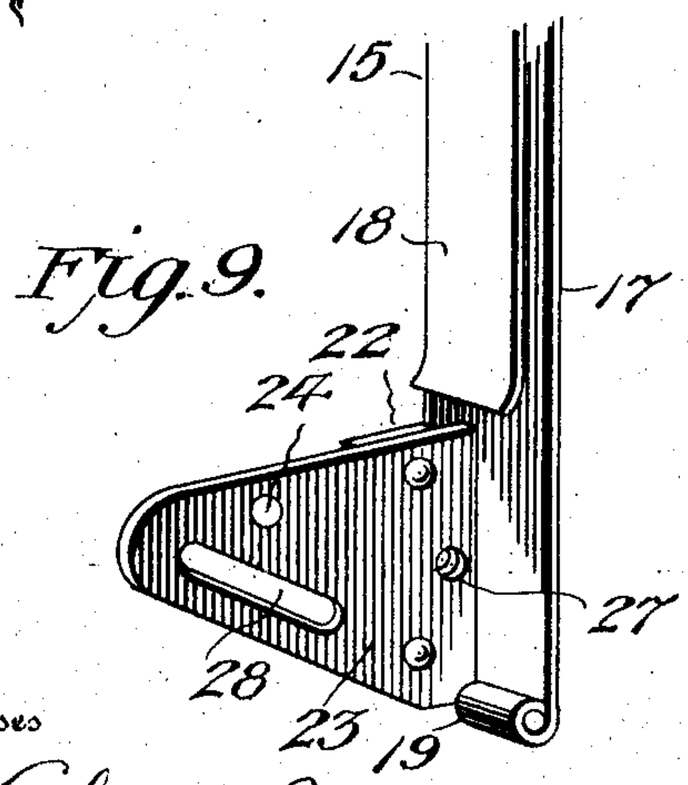
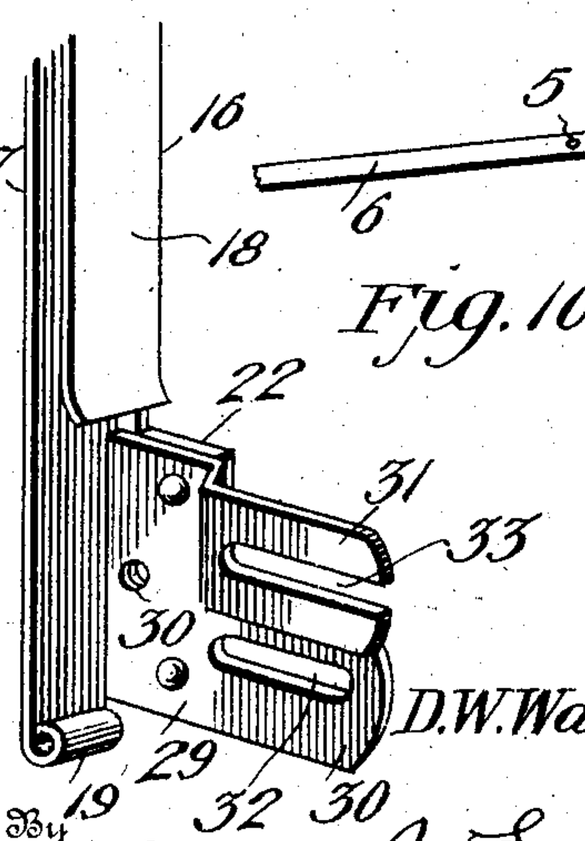


Fig. 10.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

Fig. 3

Fig. 4.

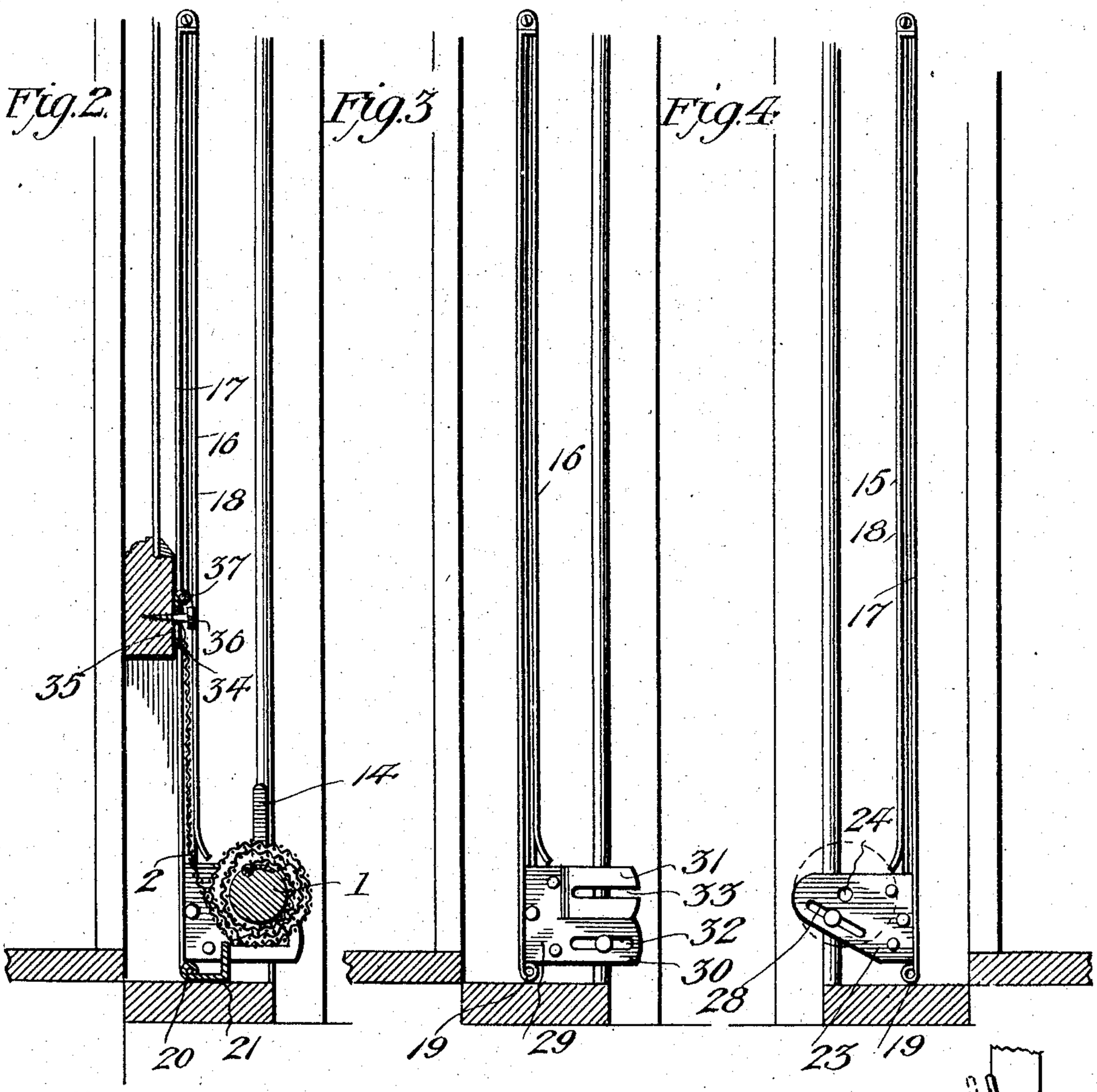

Fig. 5.

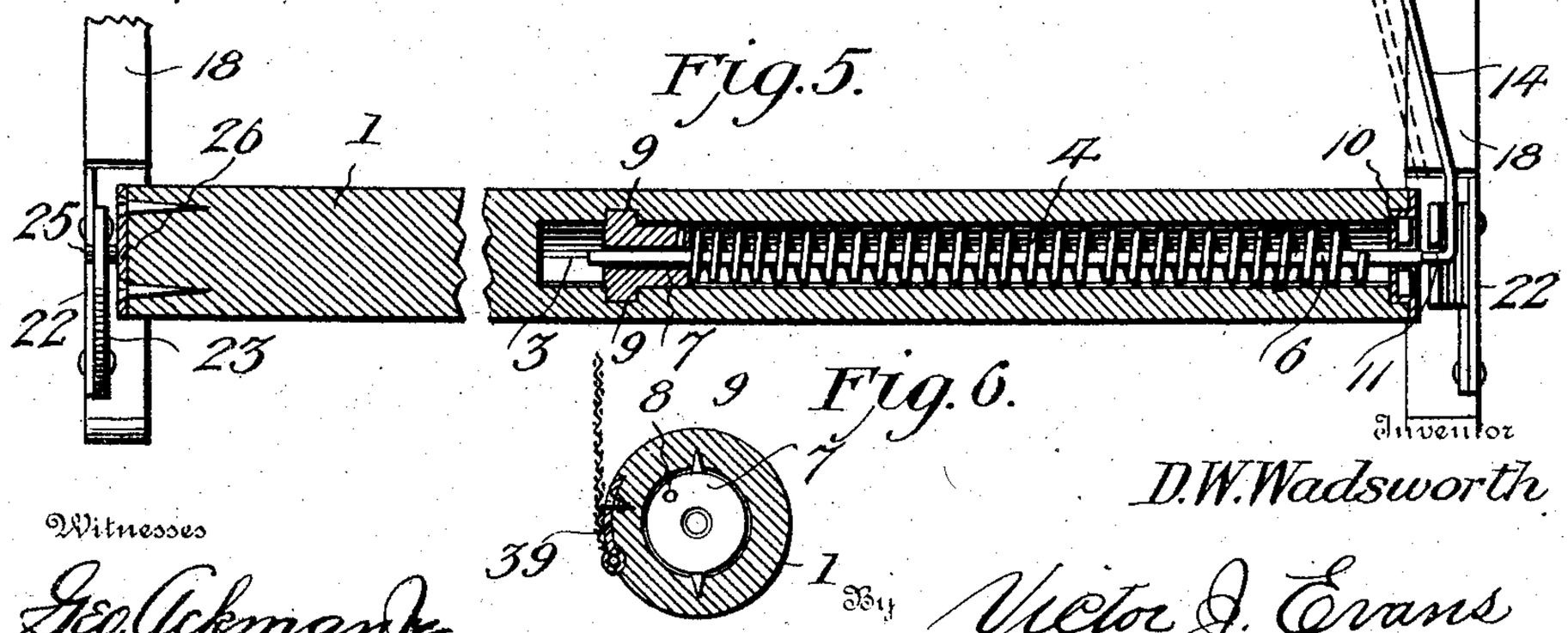

Fig. 6.

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No. 780,390. Patented January 17, 1905.

UNITED STATES PATENT OFFICE.

DWIGHT W. WADSWORTH, OF FENNVILLE, MICHIGAN.

ROLLER-SCREEN.

SPECIFICATION forming part of Letters Patent No. 780,390, dated January 17, 1905.

Application filed May 14, 1904. Serial No. 207,970.

To all whom it may concern:

Be it known that I, DWIGHT W. WADSWORTH, a citizen of the United States, residing at Fennville, in the county of Allegan and State of Michigan, have invented new and useful Improvements in Roller-Screens, of which the following is a specification.

This invention relates to roller-screens, the object of the invention being to provide a roller-screen of novel construction and arrangement adapted for use in connection with the sliding sashes of windows, the construction of the roller-screen and its mountings being such that the screen is automatically wrapped around a roller located outside of the path of the sashes instead of being arranged at the inner side of the window, as is the case with the ordinary roller-screens now in use.

The invention has special reference to the manner of mounting the roller-screen, the brackets in which the roller is journaled, and the means for controlling the spring which winds up the roller and also the means for holding the roller in position in the brackets, the object being to simplify and improve the construction of the roller and the brackets for the purpose stated.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts, as hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a perspective view showing the improved roller-screen applied to a window. Fig. 2 is a vertical section through the screen and its roller, showing the relation of said parts to the window sash and frame. Fig. 3 is a similar view, omitting the roller and sash. Fig. 4 is a similar view looking in the opposite direction. Fig. 5 is a longitudinal section through the spring-roller, also showing the relation of the roller to the brackets. Fig. 6 is a cross-section through the roller, showing the combined shaft-bearing and spring-retainer. Fig. 7 is an end view of the roller. Fig. 8 is an enlarged detail perspective view of the end portion of the roller-shaft, the key, and the handle. Fig. 9 is a perspective view of a portion of one of the guides and roller-brackets. Fig. 10 is a similar view of the other guide and bracket. Fig. 11 is a detail sectional view showing the manner of securing the screen to a sash. Fig. 12 is a detail perspective view of a portion of the guard, showing the sliding pintle thereon.

Like reference-numerals designate corresponding parts in all figures of the drawings.

Referring to the drawings, 1 designates a spring-roller upon which the screen 2 is wound, the screen being preferably of flexible mesh-wire fabric. The roller is provided with a central longitudinal bore 3, in which is arranged a winding-spring 4, one end of which is bent inward and inserted through an opening 5 in the roller-shaft 6, which extends centrally and lengthwise of the bore 3 and has its inner end journaled in a shaft-bearing 7, arranged in the bore 3, the inner end of the spring 4 being inserted through an opening 8 therein, so that one end of the spring is connected to a fixed part 7, while the other end of the spring is connected to the shaft 6. As the shaft 6 is held stationary the spring exerts its tension to revolve the roller 1 and wind the screen 2 thereon. The part 7 thus forms a combined shaft-bearing and spring-retainer, and said parts are provided with one or more radially-projected cutting-splines 9, which as the bearing 7 is pushed inward along the bore 3 cuts grooves in the body of the roller 1, which is ordinarily composed of wood, and thereby prevents the bearing 7 from rotating within the roller 1.

The shaft 6 extends outward through a cap 10, fitted to the end of the roller 1, and outside of the extremity of the roller the shaft is provided with a key 11, having oppositely-projected bits or portions 12, which are adapted to engage oppositely-arranged lugs or shoulders 13, carried by the cap 10, so that when the key 11 is in engagement with said lug or shoulder the shaft is prevented from rotating and allowing the spring to unwind, the said expedient being useful in order to enable the roller to be detached from the bearing-brackets whenever occasion requires. Extending laterally from the key 11 is a han-

dle 14, which also constitutes a spring-winder or crank by means of which when the roller is detached from the brackets the spring may be wound up and given any desired tension. The spring 4 has a natural tendency to contract in length, and thus operates to draw the key 11 toward and into engagement with the lugs or shoulders 13. When the roller is in place, however, the bracket at the handle end of the roller serves to hold the key out of engagement with the lugs or shoulders 13, and thereby permits the roller to turn in winding and unwinding the screen 2.

Extending upward along the jambs of the window-casing at opposite sides are guides 15 and 16, each of which comprises oppositely-arranged parallel portions or flanges 17 and 18, between which the opposite edges of the screen move in raising and lowering the sash, the upper edge of the screen being attached to the bottom rail of one of the sashes, as shown in Figs. 1 and 2. The lower ends of the flanges 18 are deflected outward to insure the ready entrance of the opposite edges of the screen, and the lower extremities of the flanges 17 are rolled up to form seats or sleeves 19, in which are received fixed and sliding pintles 20, projecting from the opposite ends of a guard 21, which lies beneath the roller 1 and prevents flies and insects from entering the window beneath the roller. Each of the guides 15 and 16 is also provided with an outwardly-extending wing 22, to one of which is secured a triangularly-shaped bracket 23, provided with a bearing-opening 24 for the pintle 25 at one end of the roller 1, which pintle by preference is secured to a cap-plate 26, attached to the end of the roller, as shown in Fig. 5. The bracket 24 is provided with a hole 27 to receive a fastening device which is driven into the window-casing, and said bracket is further provided with an elongated slot 28, through which any suitable fastening device, such as a screw, may be driven into the window-casing for further holding the bracket firm, the length of the slot permitting considerable latitude in selecting the place to place the screw. Secured to the wing 22 of the other guide is another roller-bracket 29, which is provided with a hole 30 to receive a screw or other suitable fastening. This bracket is bifurcated to form two portions or members 30 and 31, one of which is provided with an elongated slot 32 to receive a fastening device, such as a screw, which may be inserted at any point along the length of the slot, the other member, 31, being provided with an open slot 33, which is adapted to receive the flat key 11 at the end of the roller-shaft 6, above referred to, in placing the roller in position in the supporting-brackets.

The outer edge of the screen 2 is connected to the bottom rail of the sash by means of a plate or clip 34, provided with keyhole-slots 35 to receive suitable fastenings 36, driven into the sash, the upper edge of said clip or plate being rolled, as shown at 37, and bent over a rod 38, around which the extreme edge portion of the wire screen is wrapped before rolling the plate or clip in the manner shown, the wire being thus firmly clamped around the wire or rod 38. In like manner the inner edge of the screen 2 is secured, by means of a curved plate or clip 39, to the roller 1, the said plate being preferably set into a recess in the surface of the roller, so as to lie substantially flush therewith.

It will be observed that the spring 4 performs several functions, as follows: Said spring serves to wind up the roller and the screen thereon, it acts to draw the key into engagement with the lugs or shoulders on the end of the roller when the roller is detached, thus preventing the unwinding of the spring, and said spring also tends to revolve the key, thereby causing it to bind in the slot 33 and retain the shaft and that end of the roller in place. The arrangement described also enables the roller and the brackets to be placed upon the outside of the path of movement of the sashes, thus leaving the inner portion of the window frame and sill free from obstruction. To remove the screen, the upper edge thereof is unbuttoned, and after the screen is fully wound upon the roller the handle 14 is pushed inward as the key 11 is withdrawn from the slot 33, whereupon the spring 4 acts to draw the key 11 into engagement with the lugs or shoulders 13, thus locking the spring and shaft until the roller is again placed in position in the brackets.

Having thus described the invention, what is claimed as new is—

1. A roller-screen comprising a roller provided with a central longitudinal bore, a shaft mounted therein, a key on the shaft having portions extending on opposite sides of said shaft, a lever connected with the key and extending at an angle thereto, a spring surrounding the shaft and having one end connected thereto and the other end connected with the roller, and roller-supporting brackets, one of which is provided with a slot to receive the key.

2. A roller-screen comprising a roller provided with a central longitudinal bore, a shaft mounted therein, a flat key on one end of said shaft, said key having portions extending on opposite sides of the shaft, a lever integral with the key and extending at an angle thereto, a spring surrounding the shaft and having one end connected thereto, and the other end connected with the roller, and roller-supporting brackets, one of said brackets being formed with a slot to receive the key.

3. The combination with a window-casing, a sash, a roller, a screen wound on the roller and connected with the sash, a screen-guide

on each side of the casing, each guide having two parallel flanges, and one of the flanges of each guide being curled to form a bearing, an angular guard beneath the roller, and sliding pintles on the guard adapted to engage the bearings formed by the curled flanges of the guides.

In testimony whereof I affix my signature in presence of two witnesses.

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Witnesses:
C. E. BARRETT,
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