D. R. COOLEY.

WINDOW, DOOR, OR PORCH SCREEN.

APPLICATION FILED APR. 6, 1920.

1,388,801.

Patented Aug. 23, 1921.

2 SHEETS—SHEET 1.

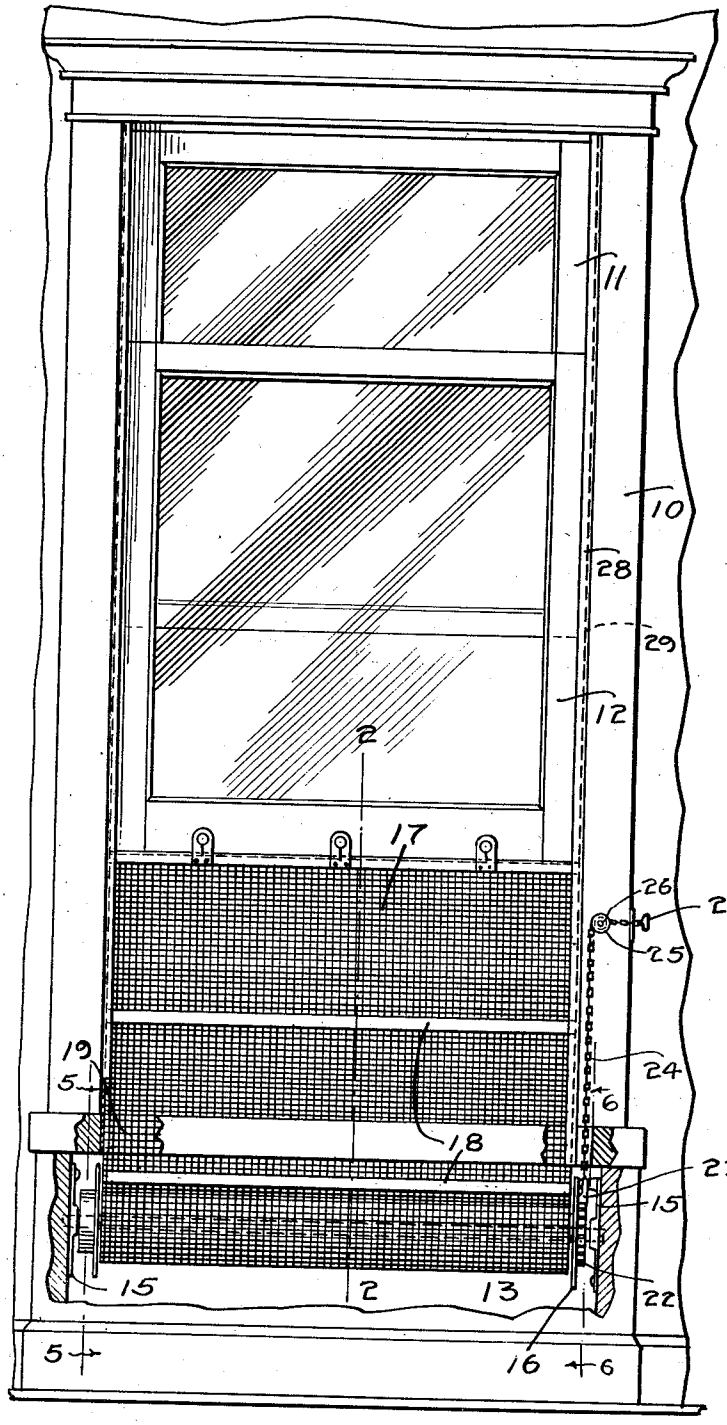
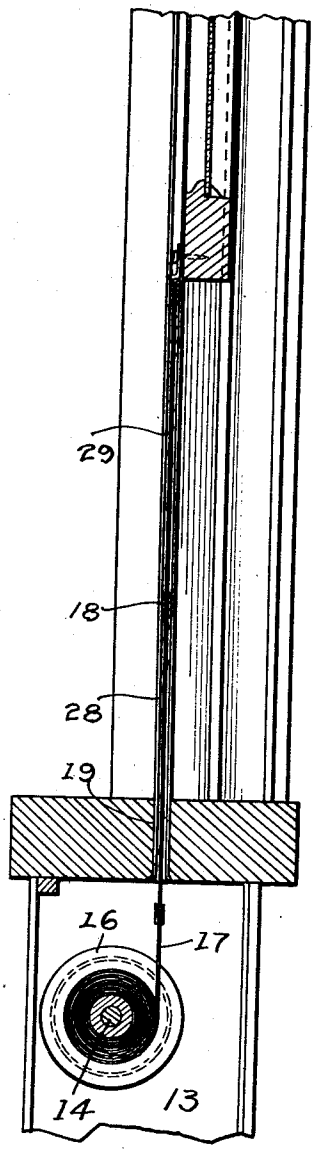


Fig. 1.

WITNESS:

Fig. 2.



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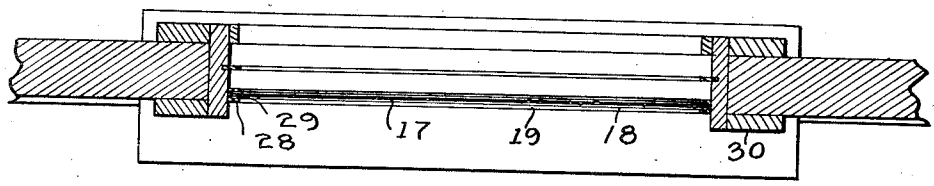

Fig. 3.

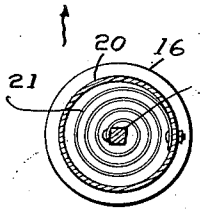

Fig. 5.

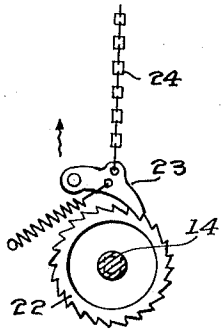

Fig. 4.

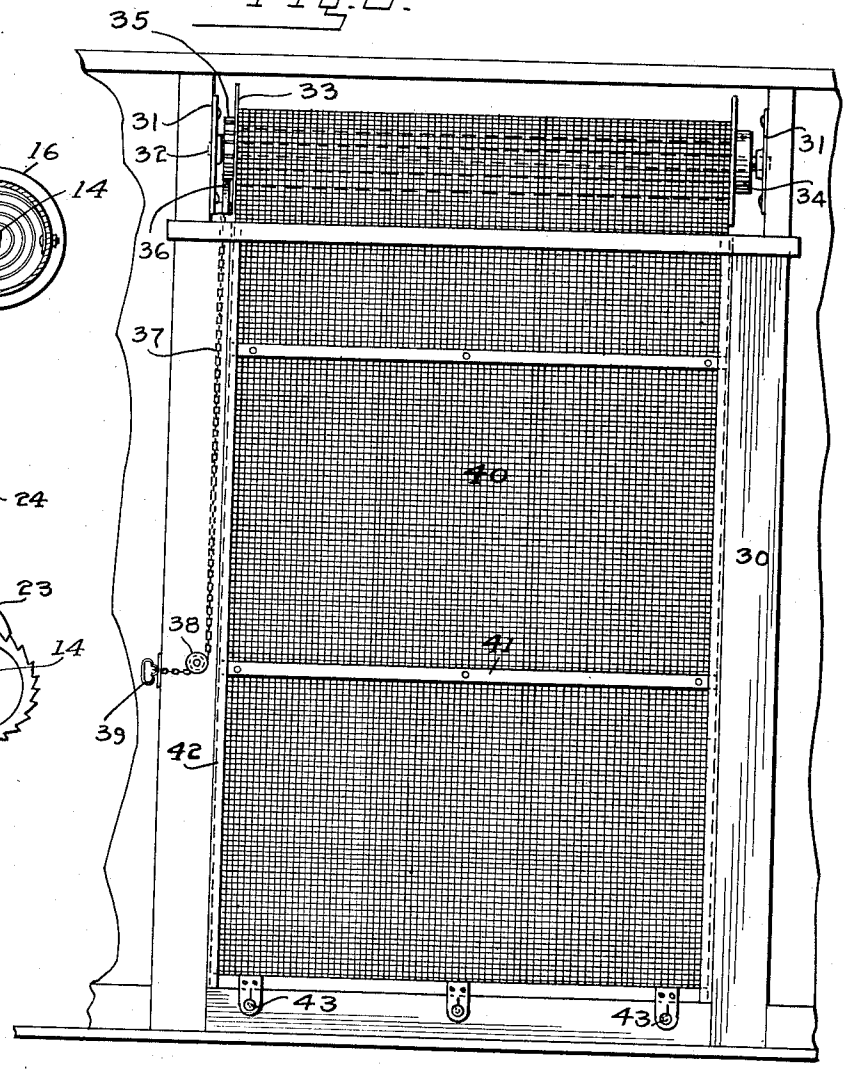

Fig. 6.

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WITNESS:

UNITED STATES PATENT OFFICE.

DANIEL R. COOLEY, OF SMITHERS, BRITISH COLUMBIA, CANADA.

WINDOW, DOOR, OR PORCH SCREEN.

1,388,801. Specification of Letters Patent. Patented Aug. 23, 1921.

Application filed April 6, 1920. Serial No. 371,762.

To all whom it may concern:

Be it known that I, DANIEL R. COOLEY, a subject of the King of Great Britain, residing at Smithers, in the Province of British Columbia and Dominion of Canada, have invented new and useful Improvements in Window, Door, or Porch Screens, of which the following is a specification.

This invention relates to improvements in window, door or porch screens, the primary object being the provision of a screen, which will be automatically opened to cover the space provided by opening a window, either from the bottom or top of the window frame.

Another object is the provision of a spring actuated roller screen, in which the parts are housed either below or above the window and having means extending to within convenient reach for releasing a spring actuated screen roller holding dog, when it is desired to roll the screen.

Another object is the provision of means, whereby screens of the above character may be used to inclose the porch, so that the screens may be quickly and easily rolled to an out-of-the-way position when desired, instead of having to remove and store them away when not in use.

Other objects and advantages of the invention will appear as the following description is read in connection with the accompanying drawings.

In the drawings:

Figure 1 is a view in elevation showing a window with the invention applied thereto, the portion of the wall or casing located directly beneath the window being broken away or shown in section to more clearly illustrate the invention.

Fig. 2 is an enlarged sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a transverse sectional view through the window and screen.

Fig. 4 is a sectional view on the line 6—6 of Fig. 1.

Fig. 5 is a similar view on the line 5—5 of Fig. 1.

Fig. 6 is a view in elevation showing the manner of arranging the screen for use as a porch screen.

Referring in detail to the drawings, wherein like characters of reference denote corresponding parts, the frame of the window is indicated at 10, the upper sash at 11 and the lower sash at 12. The invention is illustrated as being applied to the lower window sash 12, but it is equally as well adapted for application to the upper sash, or both.

For this purpose, there is provided a compartment or pocket 13, which, in the present instance is located beneath the window frame in the wall of the building. Mounted within this pocket or compartment is a shaft 14, which is rotatable in bearings 15, suitably secured in position. Secured upon the shaft 14 is a drum 16, which may be formed in any desired manner, such as by securing disks near each end of the shaft to provide guards or flanges for guiding the screen as it is being rolled upon the drum. The screen is indicated at 17 and is formed of wire mesh and is provided with spaced transverse stiffening strips or braces 18. One end of the screen is secured to and wound upon the drum and the screen then extends upwardly through a slot 19 provided in the window sill. The opposite end of the screen is then detachably secured to the lower end of the lower sash 12 as indicated at 19′.

The drum is spring operated and for this purpose, there is provided at one end of the drum a housing 20, which incloses a coiled spring 21, one end of which is secured to the shaft 14 and the opposite end to the drum or to the housing 20 which is carried by the drum. The opposite end of the drum is provided with a ratchet wheel 22, which is engaged by a spring actuated dog 23, preferably pivoted upon the adjacent wall of the pocket or housing 13.

Secured to this dog is one end of an operating member herein shown in the form of a flexible element or chain 24 which extends upwardly through the window sill and frame and passes over a roller or pulley 25, which is mounted upon a short shaft 26. The flexible element 24 then passes through an opening in the face of the window frame and is provided with a handle or button 27, by means of which it may be pulled to release the dog 23 from engagement with the ratchet wheel 22.

In the use of the invention, when the sash is raised, the screen will be carried therewith and will be unrolled only a sufficient length to cover the space provided by the raising of the lower sash and will remain in a taut condition. When it is desired to close the window, the handle 27 of the flexible element 24 is pulled to release the dog from the ratchet wheel, whereupon the window may be lowered. If desired the spring 21 may be

made sufficiently strong to overcome the balance of the sash weight, so that upon release of the dog the sash will be lowered under the influence of the spring and by releasing the tension on the flexible element 24 the sash may be stopped at any desired point.

For the purpose of guiding the screen in its upward and downward movement, there is provided at each side of the window frame, a preferably metallic strip 28, which is provided with a longitudinal groove 29 within which the screen operates. This strip 28 is substituted for the usual window strip provided for the purpose of guiding the lower sash, so that it performs the two-fold function of guiding both the screen and the sash.

In Fig. 6 of the drawings, the screen is shown as used for inclosing a porch and for this purpose, there is provided a frame 30, to which is secured bearings 31, for a shaft 32, the latter carrying a drum 33, which rotates in one direction under the influence of a spring inclosed in a housing 34. The drum is further provided with a ratchet wheel 35 and a spring actuated dog 36, which, like the dog 23 of the previously described form of the invention is controlled by a flexible element 37, which passes over a pulley 38 journaled on the frame 30 and is provided with an operating handle 39. The screen 40 is of similar construction to the screen 17 previously described, being provided with the braces or stiffening strips 41 and rolled upon the drum and having its side edges guarded in grooved strips 42 secured along each side of the frame. The free edge may be provided with buttons 43, to enable it to be securely fastened in closed position, although it will be held against winding movement by means of the dog 36.

The invention is susceptible of various other changes in its form, proportions and minor details of construction, and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention what is claimed is:—

1. The combination with a window frame, of a spring actuated drum mounted in bearings located beyond one end of the frame, a screen or curtain wound upon said drum and extending through a slot in the adjacent end of the frame, means for removably securing the free end of the screen or curtain to the window sash, a ratchet wheel secured to the drum, a spring actuated dog pivotally secured to the window frame, and means secured to the dog and extending through the frame for moving the dog out of engagement with the ratchet wheel to regulate the position of the window sash.

2. The combination with a window frame, of a spring actuated drum mounted in bearings located beyond one end of the frame, a screen or curtain wound upon said drum and extending through a slot in the adjacent end of the frame, means for removably securing the free end of the screen or curtain to the window sash, a ratchet mechanism for holding the drum against movement in one direction, and means whereby the drum may be released to regulate the position of the window sash.

In testimony whereof I affix my signature.

DANIEL R. COOLEY.