No. 740,033. PATENTED SEPT. 29, 1903.

J. S. McNAMARA.

ROLLER SCREEN FOR WINDOWS.

APPLICATION FILED JAN. 31, 1903.

NO MODEL.

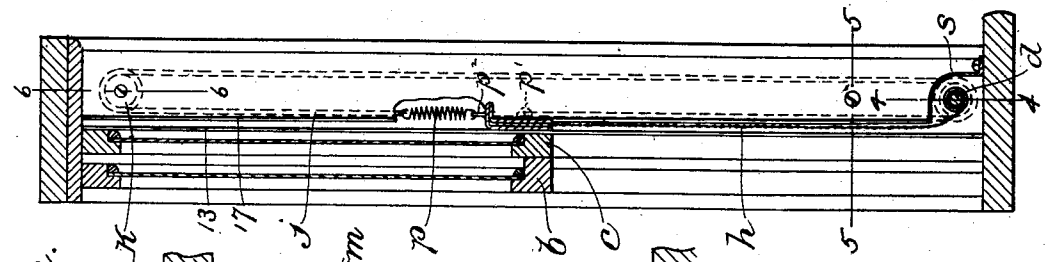


Fig. 2.

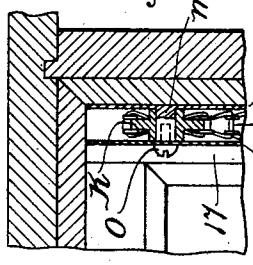


Fig. 6.

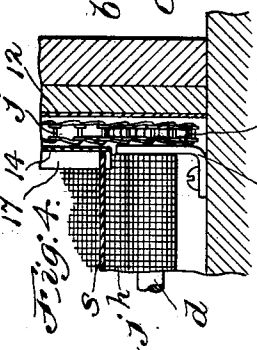


Fig. 4.

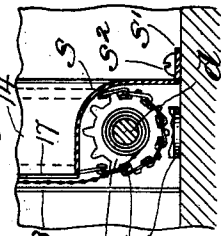
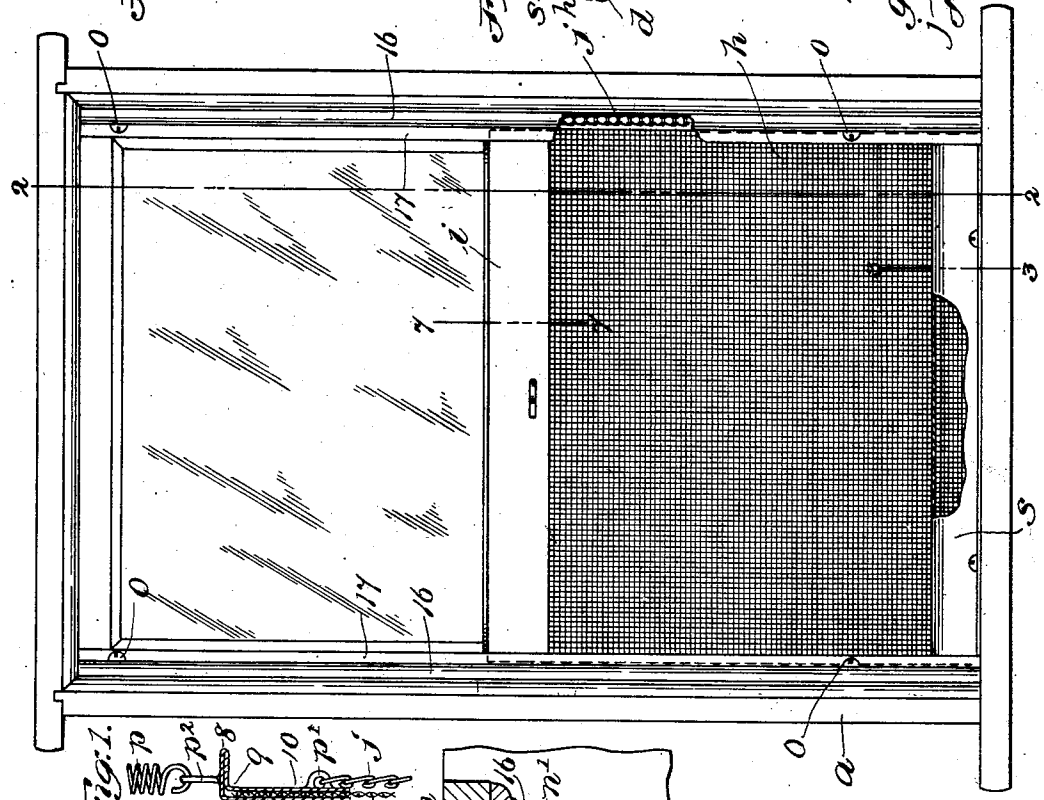


Fig. 3.



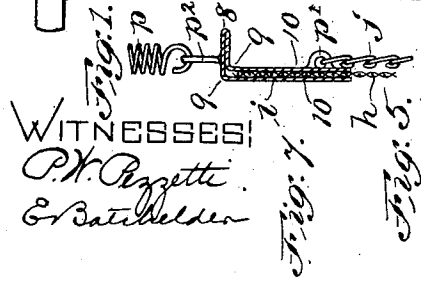


Fig. 1.

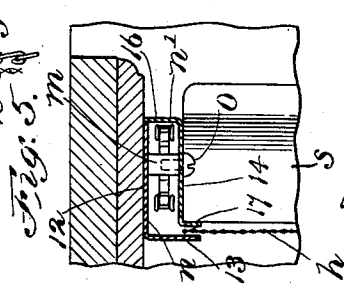


Fig. 5.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 740,033. Patented September 29, 1903.

UNITED STATES PATENT OFFICE.

JAMES S. McNAMARA, OF SOUTH EASTON, MASSACHUSETTS.

ROLLER-SCREEN FOR WINDOWS.

SPECIFICATION forming part of Letters Patent No. 740,033, dated September 29, 1903.

Application filed January 31, 1903. Serial No. 141,243. (No model.)

To all whom it may concern:

Be it known that I, JAMES SCOTT McNAMARA, of South Easton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Roller-Screens for Windows, of which the following is a specification.

This invention relates to flexible screens for windows adapted to be wound upon a roller when not in use and unwound and extended for use as required.

The invention has for its object to provide certain improvements in screens of this character looking to increased convenience and effectiveness.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side view taken from the inner side of a window equipped with a screen embodying my invention. Fig. 2 represents a section on line 2 2 of Fig. 1 looking toward the right. Fig. 3 represents a section on line 3 3 of Fig. 1. Fig. 4 represents a section on line 4 4 of Fig. 2. Fig. 5 represents a section on line 5 5 of Fig. 2. Fig. 6 represents a section on line 6 6 of Fig. 2. Fig. 7 represents a section on line 7 7 of Fig. 1.

The same reference characters indicate the same parts in all the figures.

In the drawings, *a* represents a window-casing, *b* represents the upper sash, and *c* the lower sash, the latter being shown in its raised position.

d represents a roller journaled in brackets *f*, affixed to the lower portion of the casing, said roller having sprocket-wheels *g* affixed to its ends. To the roller *d* is affixed one end of a sheet *h*, of flexible wire-screen material, said sheet being adapted to be wound on and unwound from the roller. To the opposite end of the sheet *h* is secured a stiffening-binder *i*, preferably composed of a strip of sheet metal folded centrally upon itself at 8 and bent at 9 9 to form flanges 10 10, which are separated sufficiently to receive between them the end portion of the sheet *h*, said flanges being soldered or otherwise suitably secured to the portion of the sheet between them. The horizontal portion between the fold 8 and the bends 9 9 constitutes an operating-flange projecting inwardly from the window and adapted to be grasped by the operator for the convenient raising and lowering of the screen.

j j represent sprocket-chains engaged with the sprocket-wheels *g* and with corresponding idle wheels *k k*, journaled on studs *m*, affixed to the upper portion of the window-casing. The sprocket-chains *j* are not continuous, one end of each chain being attached at *p'*, Fig. 7, to the stiffener *i* and the other end to a spring *p*, connected at p^2 with said stiffener. The function of the chains is to communicate motion from the stiffener *i* to the roller *d* to wind up the screen when the stiffener is being moved downwardly. The object of the springs *p* is to compensate for the increasing diameter of the roll of screen material upon the roller *d* as the stiffener *i* is moved downwardly. If both ends of the chain were connected rigidly or unyieldingly to the stiffener *i*, the apparatus would be practically inoperative, owing to the changes in the diameter of the accumulation of screen material upon the roll as the screen is being wound up. The progressive increase of the diameter of the accumulation of screen material on the roller *d* requires a progressive decrease of the speed of rotation of the roller relatively to the speed of the downward movement of the stiffener *i* as the screen descends. If the upper end of the chain were rigidly connected with the stiffener, the chain would prevent this variation between the rate of movement of the stiffener and roller. Hence the chain-and-sprocket connection between the roller and the stiffener would be inoperative. It will be seen, therefore, that the springs enable the sprockets and chains to be substituted for a roller-rotating spring as the means for imparting a winding-up rotation to the roller *d*. This sprocket-and-chain connection is much more durable and reliable than a spring associated with a roller and has the advantage of supporting the screen at any desired height or adjustment independently of the window-sash or of any other supporting means. The sash and the screen are therefore independent of each other, so that the sash may be raised when the screen is rolled up or depressed to permit access to the outside blinds or shut-

ters, and the screen may be raised when the sash is down to obscure the view from without. I do not limit myself to the form of spring here shown nor to the direct connection of the springs to the screen, it being obvious that the springs may be of any suitable form and may be arranged in any suitable way to permit the described operation. Each pair of sprocket-wheels and the accompanying chain are inclosed in a casing composed of two sheet-metal parts n and n'. The part n has a flat back piece 12, which is affixed to the inner side of the window-casing and a flange 13, projecting from the casing. The part n' has a central portion 14, parallel with the portion 12 and separated therefrom by studs m, interposed between the parts 12 and 14 and preferably affixed to the part 12. The part n' also has an inwardly-projecting flange 16 at one end and an upwardly-projecting flange 17 at the opposite end, the flange 16 bearing upon the window-casing, while the flange 17 is parallel with the flange 13 and is separated therefrom by a narrow space which receives one end of the screen h. The part n' is secured in place by screws o, which enter tapped orifices formed to receive them in the studs m. The roller d and the screen material wound thereon are concealed by a strip s of sheet metal having a flange s' formed to bear on the lower portion of the casing and attached thereto by screws s^2, the strip s being curved, as shown in Fig. 3, so as to extend inwardly over the roller d.

I claim—

1. The combination with a window-casing, of a roller journaled in bearings at one end of the casing and having sprocket-wheels at its ends, idle wheels journaled on the casing at points remote from the roller, a flexible screen-sheet attached at one end to the roller and having a stiffener at its opposite end, chains engaged with said wheels and connected at their ends with the stiffener, and vertical casings attached to the sides of the casing and formed to inclose the wheels and chains and the edges of the unrolled portion of the screen-sheet, each casing comprising, first, a flat strip 12 bearing on the casing and having outwardly-projecting spacing-studs m and a vertical flange overlapping the outer side of the screen, and secondly, a flat strip 14 having a vertical flange overlapping the inner side of the screen, and an oppositely-projecting flange bearing on the casing, the strip 14 being detachably secured to the spacing-studs.

2. The combination with a window-casing, of a roller journaled in bearings at one end of the casing, a flexible screen-sheet attached at one end of the roller and having a stiffener at its other end, and screen supporting and winding mechanism having provisions for supporting the stiffener at any desired height independently of the window-sash and for causing a movement of the stiffener in one direction to impart a winding-up rotation to the roller, said mechanism comprising a wheel fixed to rotate with the roller, an idler-wheel, and an endless flexible connection extending from the stiffener around both of said wheels, means being provided whereby said stiffener may be connected with the window-sash to secure a simultaneous movement of the sash and screen-sheet when desired.

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

JAMES S. McNAMARA.

Witnesses:
C. F. BROWN,
E. BATCHELDER.