(No Model.)

G. B. PULLINGER.

Insect Screen.

No. 235,811. Patented Dec. 21, 1880.

Fig. 1.

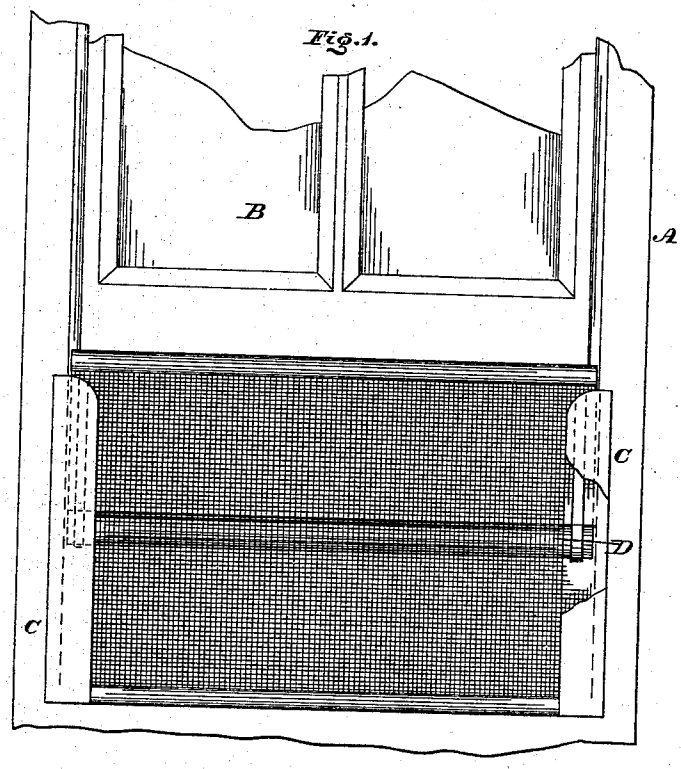


Fig. 2.

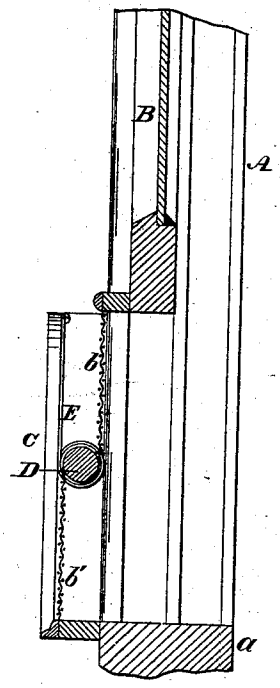


Fig. 3.

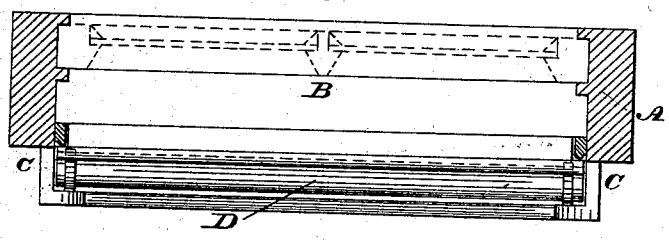
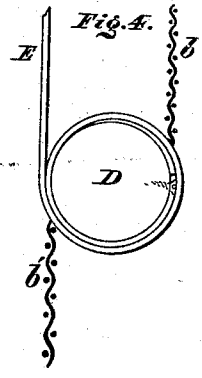


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE B. PULLINGER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO M. MILLER OWENS, OF SAME PLACE.

INSECT-SCREEN.

SPECIFICATION forming part of Letters Patent No. 235,811, dated December 21, 1880.

Application filed June 12, 1880. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. PULLINGER, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Mosquito or Insect Screens, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a face view of the screen embodying my invention. Fig. 2 is a vertical section thereof. Fig. 3 is a top or plan view thereof. Fig. 4 is an enlarged end view of the screen and attachments.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of two lengths of netting or gauze attached to a window casing and sash, in combination with a single roller and connected straps or cords, whereby the raising and lowering of the sash will unroll and roll the netting, and when the window or sash is open to full or partial extent the space thereof is fully closed by the netting, all as will be hereinafter set forth.

Referring to the drawings, A represents a window frame or casing, and B the lower sash thereof.

C represents two upright boxes connected to the sill *a* of the frame A, and forming guides for a horizontally-arranged roller, D, to which are connected, respectively, the lower and upper ends of two pieces, *b b'*, of netting, so secured to the roller that the pieces may be simultaneously wound on and unwound from said roller D. The upper end of the piece *b* is attached to the bottom rail of the sash B, and the lower end of the piece *b'* to the sill *a* or base of the boxes C, or otherwise fastened to the sill.

E represents straps or cords attached to the ends or journals of the roller D and tops of the boxes C, and adapted to wind on and unwind from said roller.

It will be seen that when the sash B is lowered the roller D also lowers. Owing to the straps E, which, being wound on the roller, begin to unwind, the roller is caused to rotate, and both pieces, *b b'*, of netting are wound in contact on the roller. When the sash is lowered or closed to full extent the two pieces *b b'* are entirely wound on the roller without interfering with the full lowering or closing of the sash. When the window is to be opened the sash is raised, and as the piece *b* is carried with the sash the roller is rotated thereby. The straps E, however, exert such action on the roller that as the roller rotates the straps are wound on the roller and cause the roller to rise, thus occasioning the unwinding of the two pieces *b b'*. It will be noticed that the open space between the sash B and sill *a* is entirely guarded by the netting *b b'*, so that insects are prevented entering the apartment, the result being the same whether the sash is partly or entirely raised.

It will also be seen that the netting is stretched taut at all times, and as the side edges of the piece *b* are in close contact with the window frame or casing, and those of the pieces *b'* with the front pieces of the boxes C, a reliable insect screen or guard is produced.

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

1. The two pieces *b b'* of netting, single roller D, and straps or cords E, combined and arranged as described, for operation with the frame and sash of a window, substantially as and for the purpose set forth.

2. The guiding-boxes C, pieces *b b'*, roller D, and straps or cords E, combined and arranged as described, for operation with the frame and sash of a window, substantially in the manner and for the purpose set forth.

GEORGE B. PULLINGER.

Witnesses:
JOHN A. WIEDERSHEIM,
F. COOPER.