

# *E. Spaulding.*

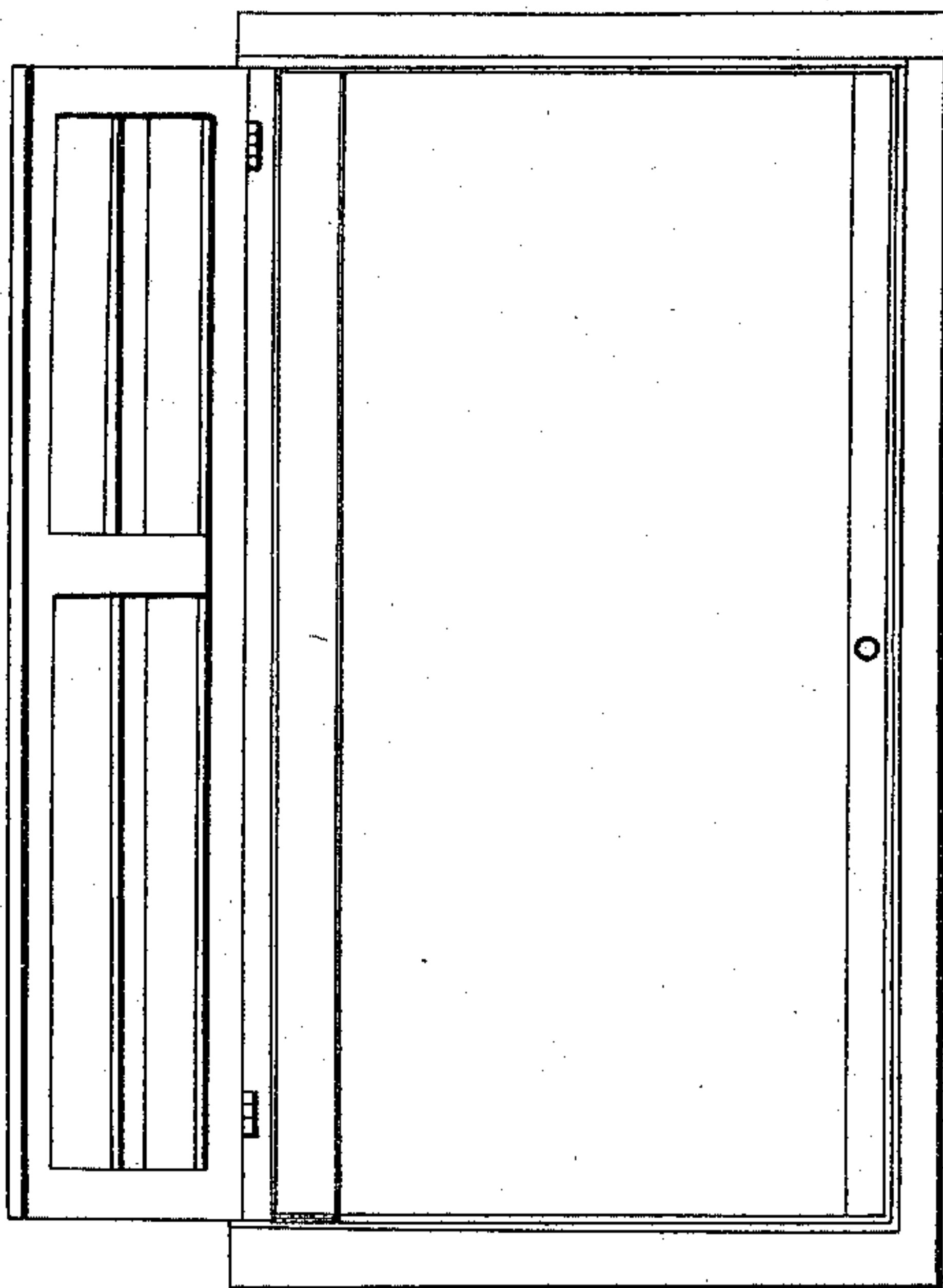
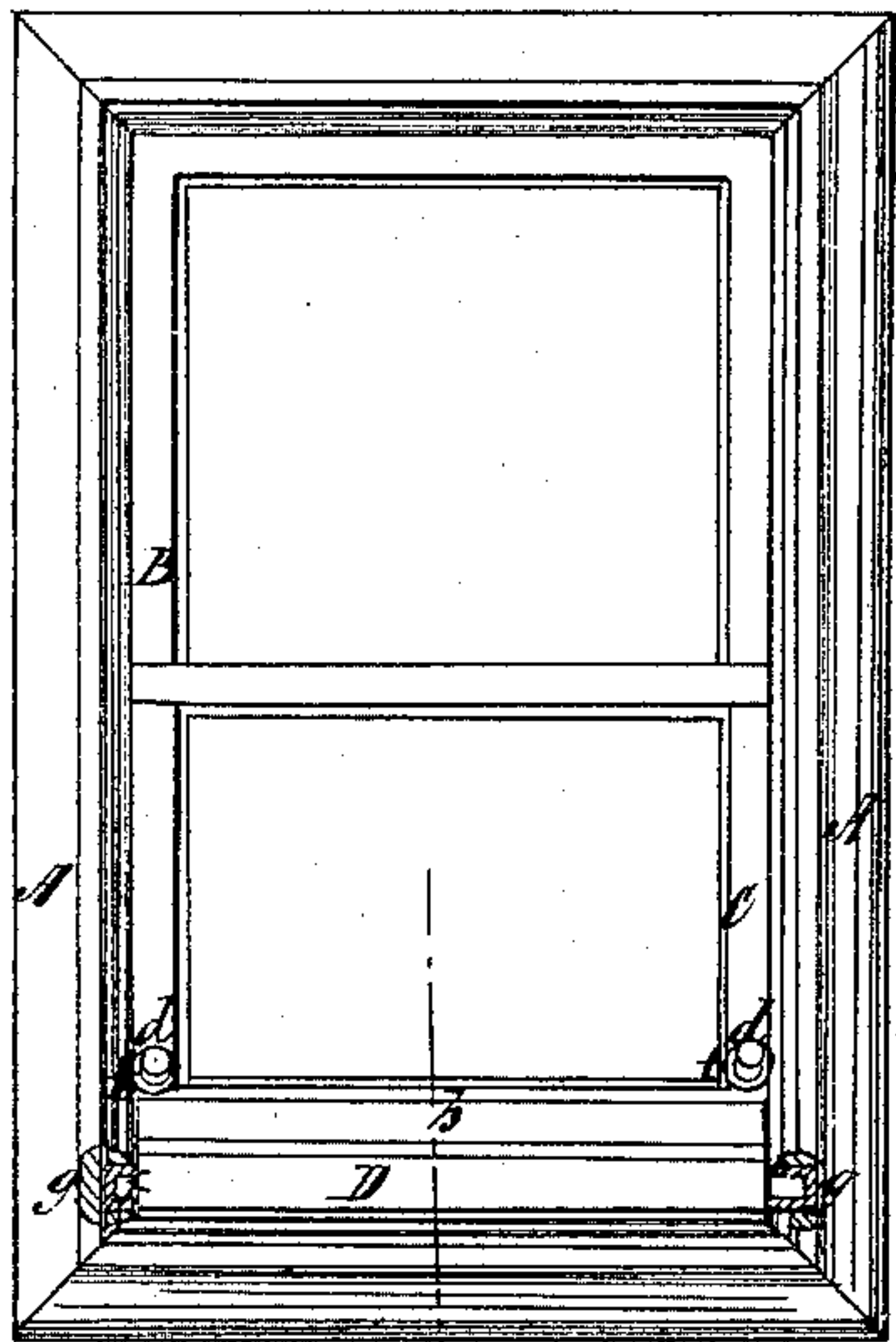
## *Window Screen.*

*N<sup>o</sup> 48,767.*

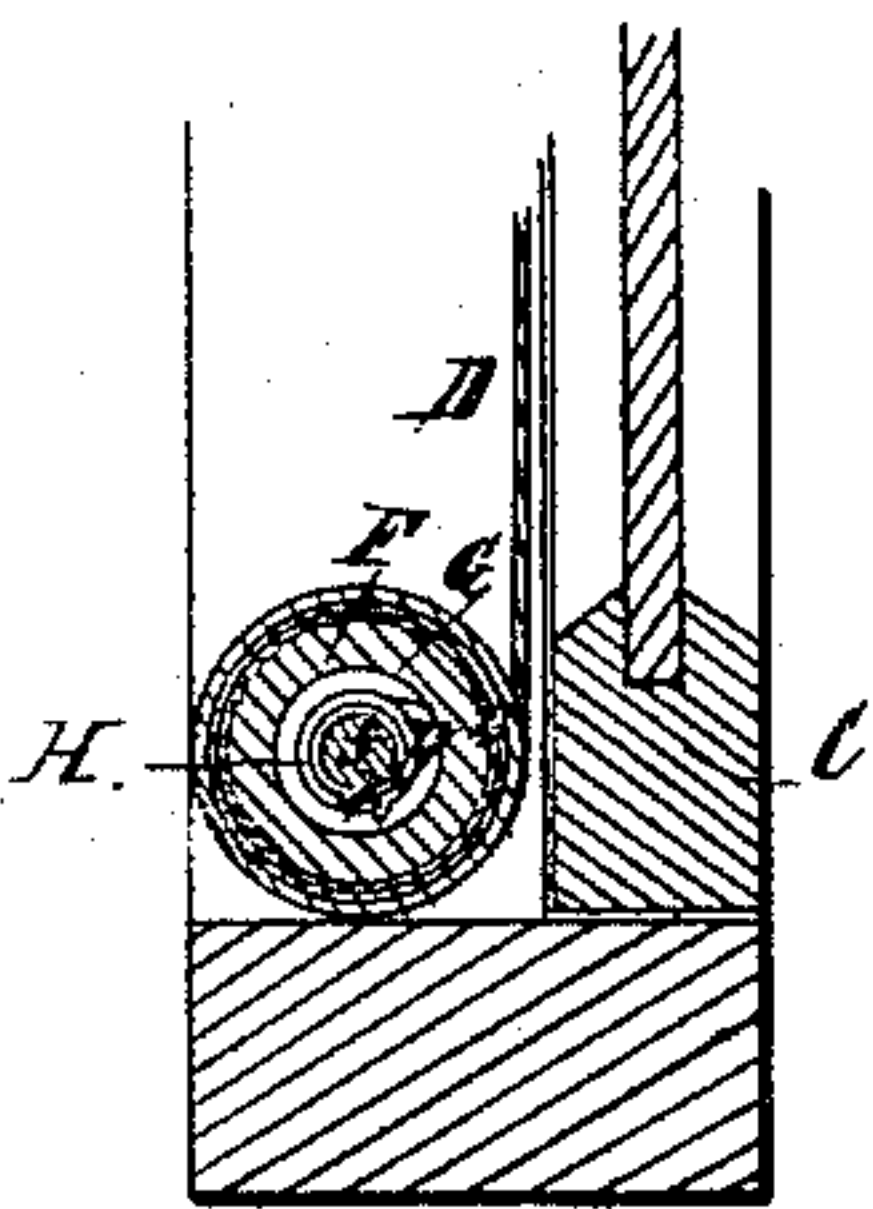
*Patented Jun. 9, 1868.*

*Fig: 4.*

*Fig: 1.*



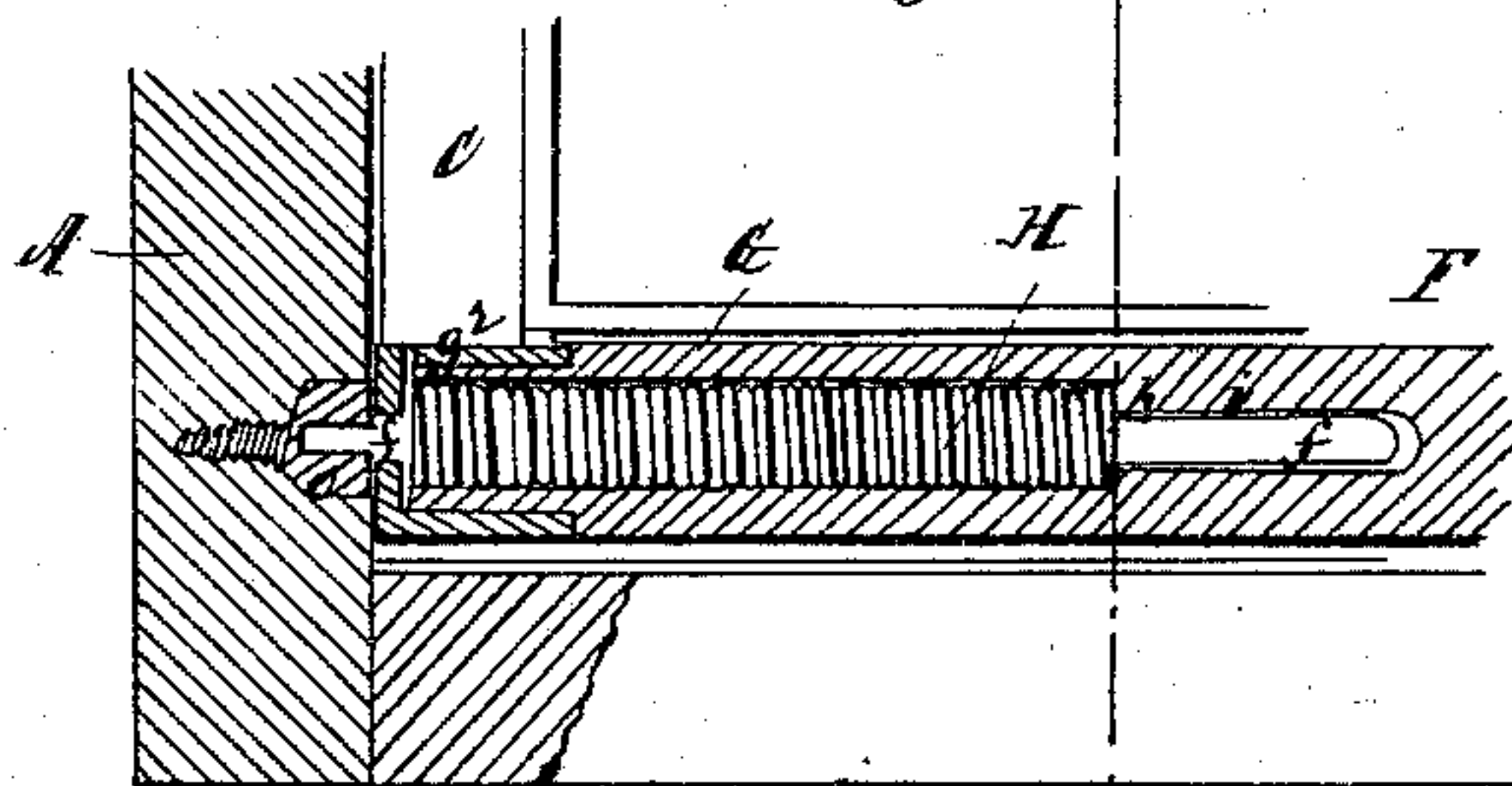
*Fig: 2.*



*Fig: 5.*



*Fig: 3.*



*Witnesses:*

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# United States Patent Office.

EDWARD SPAULDING, OF BROOKLYN, NEW YORK.

*Letters Patent No. 78,767, dated June 9, 1868.*

## IMPROVED MOSQUITO-SCREEN.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, EDWARD SPAULDING, of the city of Brooklyn, Kings county, and State of New York, have invented new and useful Improvements in "Hanging of Mosquito-Screens;" and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to the hanging of self-acting screens or mosquito-nettings, or such as are used to close a door or window-opening, and when not so required are wound upon a roller by the force of a coiled spring; and it consists—

First, in making the tension of the coiled-up spring serve the purpose of keeping the journal-bearing of the roller in place, and preventing its becoming loose by use.

Second, in so arranging the coiled spring in relation to the roller and its bearings that the coils are distended to prevent friction against each other, and, by the greater freedom of action thus obtained, enable a lighter spring, and one of fewer coils, to serve the purpose, while at the same time the force acquired by this distension accomplishes another result, that of retaining the roller in its proper position within the window or door-frame, and, by yielding, allows it to be removed and inserted with ease.

Third, it also consists in the mode of connecting the free end of the screen with the rail of the sash or door-casing, whereby a close joint is formed, and it is connected and disconnected with the greatest facility.

In accompanying plate of drawings my improvements in the hanging of mosquito-nettings are illustrated—

Figure 1 being an inside view of a window with a mosquito-netting so hung therein.

Figure 2, a transverse vertical section, taken in the plane of the line *xx* in fig. 1.

Figure 3, a partial section, taken in the direction of the length of the netting-roller.

Figure 4, an elevation of a door and its frame, showing a mosquito-netting applied to it.

Figure 5 is a detached view of the screw-bearing *o*.

Similar letters of reference indicate like parts.

A, in the drawings, represents a window-frame, having sliding sashes B and C, arranged as ordinary, to the lower rail, *a*, of the lower one, C, of which one end, *b*, of the mosquito-netting D is hung, by hooking it over fixed pins *d d* of the sash, which netting is wound upon a roller, F, extending across the entire width of the window, and hung at each end by its projecting journal-shafts or pins *ff* in the side strips *g g* of the same, so as to freely turn, from which roller, as the sash is raised, the mosquito-netting unwinds. One end of the roller F is bored out for a portion of its length, as seen at G in fig. 3, and within such bore is placed a spiral or coiled spring, H, secured by its outer end, *g*<sup>2</sup>, to the inside of the bore, and at its inner end, *h*, to the journal shaft *f* of such end of the roller, which shaft extends through the centre of the spiral spring H, and into the smaller portion, *i*, of the bore G, in which it can freely turn. The outer end of this shaft is made of a square or other equivalent shape, so that when inserted in its seat of the window-strip *g* it will not turn.

As the power of the spring is constantly exerted on its seat or bearing, and with considerable force when it is suddenly wound up by raising of the sash to its full extent, it is liable to become loosened by use, and this has necessitated the use of a larger piece of metal than can be used with convenience, in order to enable a stronger fastening to be effected, either by mortising into the wood, or by duplicating the screws or pins. As the mortising in a bearing is objectionable, and as the projection of the metal far outside of the surface of the wood prevents the screen or netting from fitting closely enough to exclude mosquitoes, I obviate both objections and secure the requisite strength by making the bearing-piece in the form of a screw, *o*, fig. 5, having a recess to receive the end of the rod *f* in its head, which also serves to enable it to be inserted by turning with a screw-driver or other suitable instrument. The piece, being formed substantially like a wood-screw, is inserted by simply pricking a hole with any sharp point, and by turning it in until the head or bearing-portion is even with the surface of the casing, or sunk below it, if desired. The coiled spring is arranged on the rod, so that when wound up, the force exerted to uncoil itself acts in a direction that tends to screw the bearing in, and hence it can never become loose by use.



By securing the coiled or spiral spring H at one end to the roller, the other being attached to the shaft *f*, it is obvious that as the mosquito-netting is unwound from the roller the spring will be correspondingly more tightly coiled about the shaft *f*, so that, lowering the window, the netting will be automatically wound upon the roller by the then unwinding of the said spring; or, if the netting is released from the sash, a similar result will take place, the same spring, H, by securing it to the shaft *f*, retaining the roller in position within the window-frame by the contractile force exerted in the direction of its length, and also enabling the roller to be readily inserted in or detached from the window at pleasure, as is obvious without further explanation.

To insure this effect to its fullest extent, the spring requires to be elongated, so that the coils will not be in contact when in the window, which prevents the usual friction of one coil against another, and enables a spring of less power and extent to be used.

As it is frequently necessary to detach the netting from the sash in order to get access through the window, or to pass through in case of its application to a door, a mode of connection which is at once simple and easily made fast or unfastened, and one which is close enough to exclude insects, is of great importance, and this I accomplish by means of one or more eyes, *t t*, attached to, or, what would be equivalent thereto, made through the light strip to which the netting is attached, which eyes engage with a fixed pin or pins, *d d*, in the sash, or equivalent. This enables the screen to be attached and detached with the utmost facility.

In fig. 4 my improvement is shown as applied to a door-casing, substantially the same principle or mode of hanging for the netting-roller being employed, and therefore needing no particular explanation herein.

What I claim as new, and desire to secure by Letters Patent, is—

So constructing and arranging the spring H with the roller F and screw-bearing *o*, that the uncoiling force of said spring is exerted to tighten the bearings, and the contractile force to keep the screen in place, and permit its removal when required, substantially as described.

EDW'D SPAULDING.

Witnesses:

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