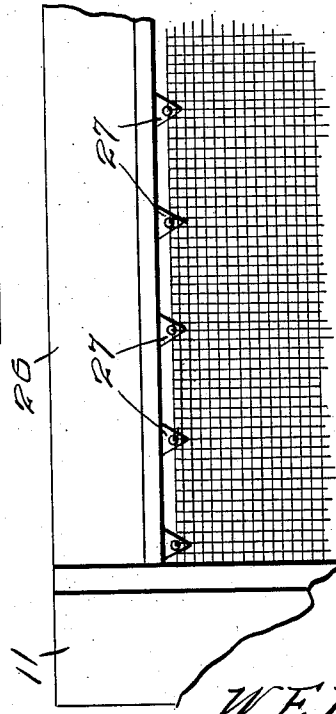
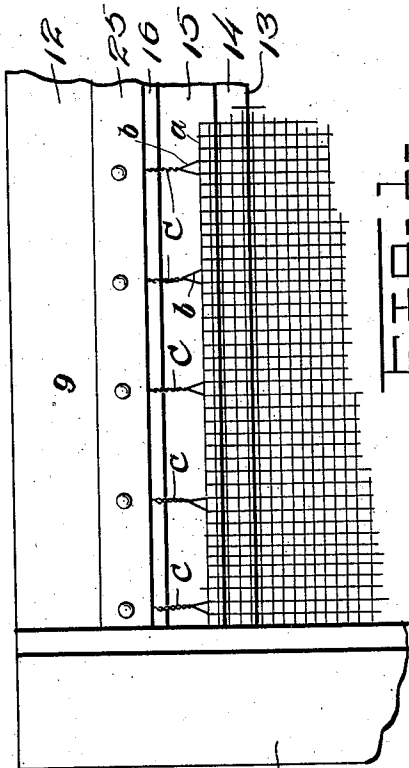
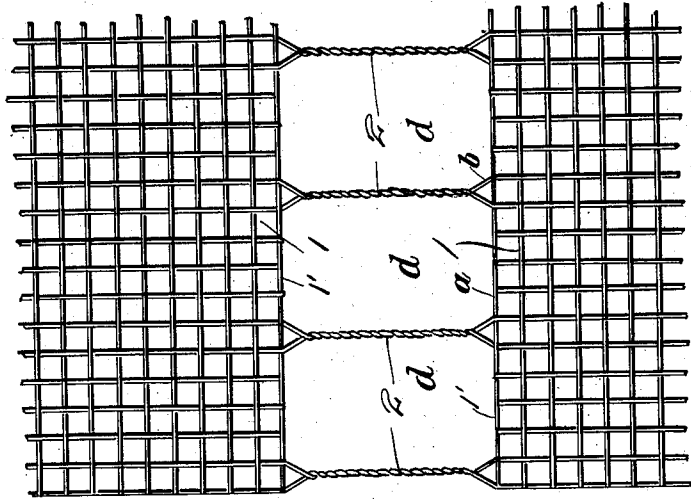


W. E. HARBOTTLE.  
 SCREEN AND SCREEN FABRIC.  
 APPLICATION FILED AUG. 5, 1909.

1,027,476.

Patented May 28, 1912.



Witnesses  
*E. E. Armstrong*  
*M. D. Ford*

Inventor  
*W. E. Harbottle*  
 By *Hoodman & Chandler*  
 Attorneys

# UNITED STATES PATENT OFFICE.

WILLIAM E. HARBOTTLE, OF SUNBURY, OHIO.

SCREEN AND SCREEN FABRIC.

1,027,476.

Specification of Letters Patent.

Patented May 28, 1912.

Application filed August 5, 1909. Serial No. 511,334.

*To all whom it may concern:*

Be it known that I, WILLIAM E. HARBOTTLE, a citizen of the United States, residing at Sunbury, in the county of Delaware and State of Ohio, have invented certain new and useful Improvements in Screens and Screen Fabric, of which the following is a specification.

This invention relates to that class of screens used to exclude insects, as well as to the fabric used in connection with these frames.

The primary object of my invention is to provide a woven wire fabric having a plurality of securing members projected beyond the edge of the fabric.

Another object is to provide a frame, supporting an insect excluding fabric which at the edge adjacent the top of the frame has certain of its strands continued beyond the edge and secured to the frame to provide a series of intervening escape openings between the upper edge of the fabric and the frame.

With these and other objects in view the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and particularly pointed out in the appended claims, it being understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a view of a portion of the screen frame showing a wire fabric therein woven according to one form of my invention, Fig. 2 is a fragmentary view of the screen frame showing the manner of attaching my screen, and Fig. 3 is an enlarged view of the modification of the screen, in which the wires are twisted in the middle portion of the screen.

In the use of fly screens in dwellings, it is found that the flies, after feeding, crowd and collect upon the inner surface of the screen, in an attempt to find an escape. It is further found that the flies invariably persistently travel upward toward the end of the screen. This trait of the insect is taken cognizance of in the construction of a certain class of screens, in that these screens at the upper ends are provided with cer-

tain escapeways permitting a ready passage of the fly from within the room but making an entry through the opening from without, difficult or impossible.

In the accompanying drawings, the numeral 12 designates the top member of a screen frame, 11 the vertical side member. This top member is of peculiar construction, being provided with the upper securing surface 9, from which is obliquely continued the face or edge 16 from which extends the approximately vertical face 15 from which is continued the preferably curved surface 14 as clearly disclosed in Fig. 1. As clearly shown the edges 15 and 16 form a rabbet of depth sufficient so that when the wire fabric is stretched over the frame, a fly may crawl upon the flat surface 15.

The screen fabric as used in my invention is of a peculiar weave, in that I provide the same with a plurality of projections at one edge, in that I continue certain strands beyond the edge at intervals, each group of these projecting ends being twisted together and held in spaced relation to the adjacent projections. The netting especially made for the purpose of excluding insects is a standard article of manufacture, made alike by all manufacturers, of a certain mesh, wire thickness and in standard widths.

In the fabrication of my netting, I employ the usual standard of mesh width, and size of wire, with the exception that I project the first and second woof strands a suitable distance beyond the border weave member *a*, and twist these two extending wires as shown in Fig. 1. Thereafter, every fifth and sixth member are twisted to provide the securing strands *c*. The space between the twist and the edge forms a V-shaped opening, as shown at 8.

While I have described the weft or woof strands as being projected, it should be understood that the warp strands could be projected in a suitable manner and united and twisted. In Fig. 3, I have shown a modification wherein netting sections 1, are separated by means of the intertwisted warp wires 2.

The wire is secured to the frame in the usual manner along the bottom, and the two sides. The upper edge however, is secured by the cleat 25 in such a manner that a suitable escapeway is permitted between the terminal warp wire *a* and the rabbet face 16, the upper face of the frame member 12 be-

ing provided with the pins or nails 21. The twisted ends *c* are then carried above the pins 21, which are finally driven into the frame.

5 In the use of my screen frames, they are so positioned, that the surfaces 14 and 15 face outward. The flies and other insects alighting upon the inner surface will instinctively travel upward, until they enter  
10 the rabbet, and there seeing the light through the escape openings will readily escape. The escape openings are masked however from the outside by means of the dark background formed by the rabbet sur-  
15 faces.

In Fig. 2 I disclose a further modification in which practically the same result is accomplished in that I provide the frame 26 with the inwardly directed V-shaped crenelations 27 to which the end of the wire  
20 screen is secured by means of suitable pins or nails.

It is of course understood that frames other than door and window frames may be  
25 constructed according to my invention, where it is desired to use the screens for the purpose of excluding insects.

From the foregoing it will be noted that

the projecting members *c* are extended in regular series.

What is claimed is:

1. A screen fabric comprising woven parts having a space therebetween from which the weft wires have been omitted, alternate groups of the warp wires terminating at the weft wires at the opposite  
30 sides of said space, and the other alternate groups of said warp wires extending across said space and being twisted therein. 35

2. A woven wire screen from which a group of weft wires have been omitted to form a transverse open space, pairs of the warp wires being twisted in the space left by the omitted weft wires, said pairs being arranged in alternating series with groups of the warp wires on the side of this space, said groups of the warp wires terminating  
40 at the weft wires at the edge of said space, whereby a plurality of exit openings are formed in the fabric of the screen. 45

In testimony whereof I affix my signature, 50 in presence of two witnesses.

WILLIAM E. HARBOTTLE.

Witnesses:

F. A. OWEN,  
E. S. OWEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."