H. L. VAN VALKENBURG.

SCREEN.

APPLICATION FILED APR. 15, 1909.

972,299.

Patented Oct. 11, 1910.

Fig. 1.

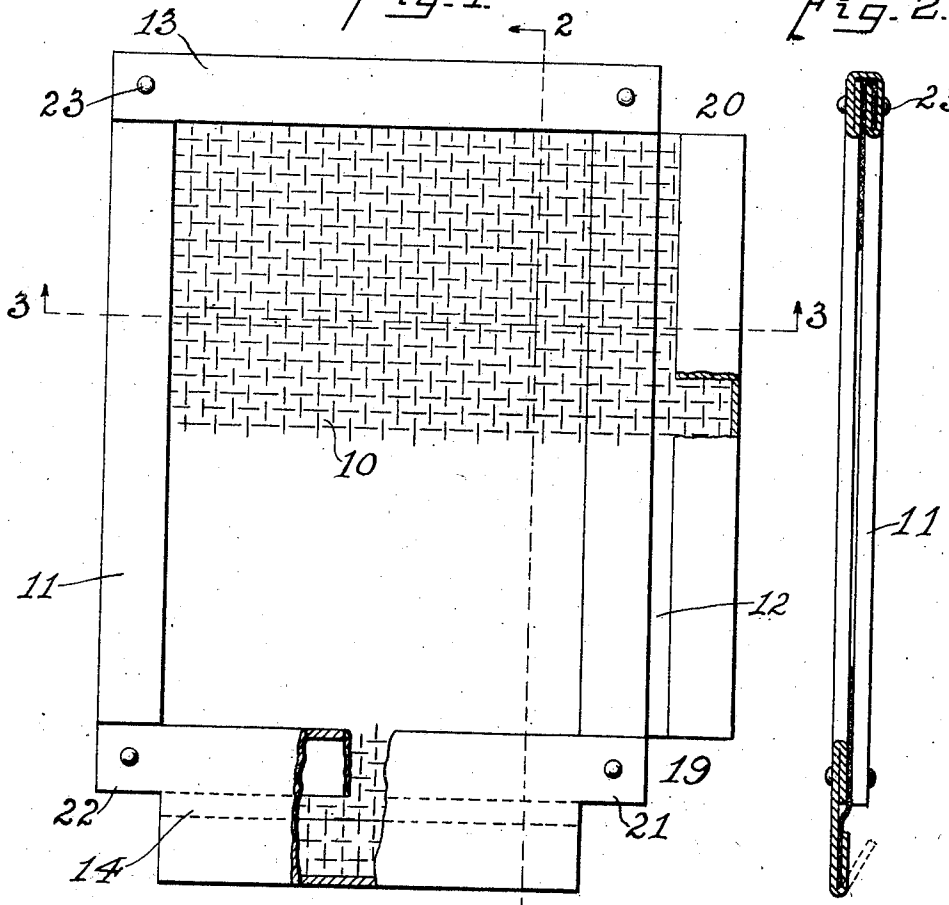


Fig. 2.

Fig. 3.

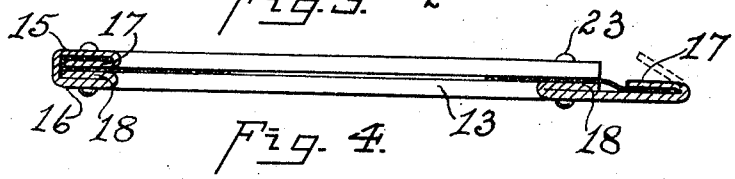
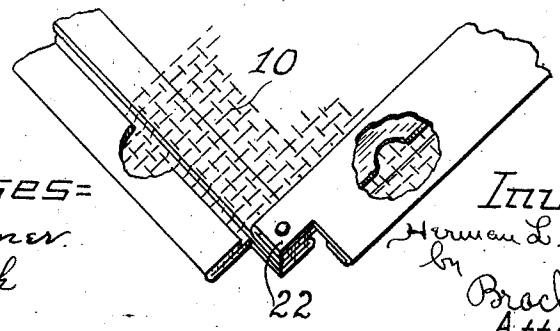


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SCREEN.

972,299. Specification of Letters Patent. Patented Oct. 11, 1910.

Application filed April 15, 1909. Serial No. 490,061.

To all whom it may concern:

Be it known that I, HERMON L. VAN VALKENBURG, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Screens, of which the following is a specification.

This invention relates to screens such as window, door and transom screens.

The object of the invention is the provision of a screen having a frame which is strong and durable, which will hold the netting securely at all points, which is simple in construction and inexpensive and easy to manufacture.

The invention may be briefly summarized as consisting in certain novel details of construction and combinations and arrangements of parts which will be described in the specification and set forth in the appended claims.

Reference is had to the accompanying sheets of drawings in which—

Figure 1 is a face or plan view of a partially formed screen embodying my invention, two sides of the frame being completed, and the other two sides being partially formed so as to show clearly the manner in which the parts of the frame are assembled and folded, parts being broken away for the sake of clearness. Fig. 2 is a section taken through the screen substantially along the line 2—2 of Fig. 1 looking in the direction indicated by the arrow. Fig. 3 is a section taken through the screen substantially along the line 3—3 of Fig. 1 looking in the direction indicated by the arrow. Fig. 4 is a partial perspective view of one corner of the screen, parts being broken away for the sake of clearness.

In the figures of the drawing, I have shown my invention applied to a screen having a netting 10 which is secured at its edges to a metal frame having sides or side rails 11 and 12 and ends or end rails 13 and 14, each of which is formed from a metal strip which is folded and bent in a manner to be described presently. The rails, all of which have the same shape and are similarly constructed, are each, in the preferred embodiment of my invention, formed of four thicknesses of metal including two substantially parallel outer sides or face portions 15 and 16, formed by folding or doubling the strip, and two inner portions 17 and 18 which are substantially parallel with each other and with the outer portions 15 and 16 and which are formed by folding inwardly the edges or side portions of the strip. The netting is securely clamped between the inner folded portions and also between one of the latter and the corresponding outer side portions of each of the rails, the edges or side and end portions of the screen being folded or doubled with the strips as will be explained.

Taking up now in detail the construction of the frame and the manner of forming the parts of the screen, it will be seen that the inner portions 17 and 18 of each section of the frame are formed by doubling or folding inward toward each other the side portions of the flat strip from which the rail or section is formed, the portion 18 being preferably folded flat against the face of the strip but the portion 17 being at first preferably inclined with reference to the face of the strip as shown by dotted lines in Figs. 2 and 3 until after the screen is inserted in place. When the strip is punched from the sheet of metal it is notched or cut away at two opposite corners as shown at 19 and 20 leaving on each strip two corner projecting portions 21 and 22 which, when the portion 18 is folded over on the strip, are of two thicknesses of metal. In assembling the frame, two opposite strips will be placed on the other two with the projecting corner portions overlapping, and two opposite strips being inverted or in reversed position relatively to the other two strips. The netting which will be cut to the proper size, is inserted in the partially formed frame with the edges or side and end portions received between the parts of the outer doubled or folded portions as shown in Fig. 1. The strips may then be secured at their corners by suitable means such as rivets 23, holes for the latter being provided in the overlapping corner projections 21 and 22 preferably when the strips are stamped. The outer folded portion 17 may then be flattened so as to grip the edges of the screen, and to complete the screen the outer doubled portions of the strips together with the portions of the netting received therein are folded over on the inner doubled portions or upon the netting which extends across the latter, the outer doubled portions of two opposite strips being folded inwardly between the ends or the inner edges of the other two strips and against one face of the netting,

and the outer doubled portions of the latter strips being folded inwardly between the ends or the inner edges of the first mentioned pair of strips and against the opposite face of the netting. As shown in Fig. 1, the outer portions of the strips forming the side rails 11 and 12 will be folded upwardly while the outer portions of the strips forming the end rails 13 and 14 will be folded downwardly. When the parts are thus folded and flattened the screen is completed. It is to be noted that with this construction the frame is of uniform thickness at all points, being no thicker at the corners than at any point between the corners, and also that no separate corner pieces are required. Although the frame consists of very few parts, the construction and arrangement are such that the frame is very strong and durable, and holds the netting very securely, particularly as the edges of the inner portions 17 and 18 will tend to grip or bite the netting. The frame is also inexpensive on account of the simplicity of construction and for the reason that the assembling and bending can be easily accomplished.

I do not desire to be confined to the exact details shown but aim in my claims to cover all modifications which do not involve a departure from the spirit and scope of my invention.

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

1. In a screen, a netting and a frame having sides and ends formed from metal strips, each strip having a portion which is secured at its ends to adjacent strips and a portion which is twice folded inwardly over the netting.

2. A screen consisting of a wire netting and a metal frame having side and end rails secured together at their ends, each rail being formed from a strip of metal having its outer side portion folded or doubled inwardly upon the corresponding edge of the netting, and the doubled portion together with the portion of the netting received therein being folded inwardly.

3. A screen consisting of a netting and a metal frame formed of side and end rails secured together at their ends, each rail being formed from a metal strip having side portions doubled or folded over toward each other, the outer doubled portion receiving the corresponding edge of the netting and together with the portion of the netting which is received therein being folded inward upon the inner folded portion of the strip.

4. A screen consisting of a netting and a metal frame formed from metal strips, each strip having at its ends portions which overlap the portions of the adjacent strips and are secured thereto, and having an outer side portion which is doubled or folded inwardly and receives the corresponding edge of the netting, and said doubled portion together with the portion of the netting received therein being folded inwardly between the ends of the adjacent side rails.

5. In a screen, a wire netting and a metal frame having side and end rails, formed from metal strips, the adjacent rails having at their ends overlapping portions which are secured together, the strips forming the side rails having the outer portions folded inwardly upon one face of the netting between the ends of the strips forming the end rails and the latter strips having their outer portions folded inwardly upon the other face of the netting and between the strips forming the side rails.

6. In a screen, a netting and a metal frame consisting of side and end rails formed from metal strips, the adjacent strips having at their ends overlapping portions which are secured together, and two strips forming the side rails having their outer portions doubled or folded inwardly and receiving the side edges of the netting, and these doubled portions being folded inwardly upon one face of the netting between the ends of the strips forming the end rails, and the last mentioned strips having their outer portions doubled or folded inwardly and receiving the end edges of the netting, and these doubled portions together with the portions of the netting received therein being folded over on the other face of the netting between the ends of the strips forming the side rails.

7. In a screen, a netting and a metal frame consisting of side and end rails formed from metal strips, each strip having its side portions doubled or folded over toward each other, the ends of the inner doubled portions overlapping the ends of the inner doubled portions of the adjacent strips and being secured thereto, and the outer doubled portion receiving the corresponding edge of the netting and being folded inwardly between the ends of the adjacent strips.

8. In a metal screen, a netting and a metal frame having side and end rails formed from metal strips, each strip having its side portions doubled inward toward each other, the ends of the inner doubled portions overlapping the corresponding portions of the adjacent strips and being secured thereto, and the outer doubled portions of the strips receiving the edges of the netting, and the outer doubled portions of the strips forming the side rails together with the portions of the netting received therein, being folded inwardly upon a face of the netting between the ends of the strips forming the end rails while the outer doubled portions of the latter strips together with the portions of the netting received therein being folded inward upon the opposite face of the netting

and between the strips forming the side rails.

9. In a screen, a netting and a metal frame having side and end rails formed from metal strips, each strip having its side portions doubled or folded inwardly toward each other, one pair of opposite or parallel strips being inverted with respect to the other pair, the ends of the inner doubled portions of adjacent strips overlapping and being secured together, the outer doubled portions of the strips receiving the corresponding edges of the netting, and the outer doubled portions of the strips forming the side rails being notched or cut away at their ends and being folded inwardly upon one face of the netting and between the ends of the strips forming the end rails, and the outer doubled portions of the latter strips being notched or cut away at their ends and being folded inwardly upon the opposite face of the netting and between the ends of the strips forming the side rails.

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

HERMON L. VAN VALKENBURG.

Witnesses:
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