

March 20, 1928.

1,663,164

A. E. HELMAN

SCREEN FASTENER

Filed Jan. 9, 1924

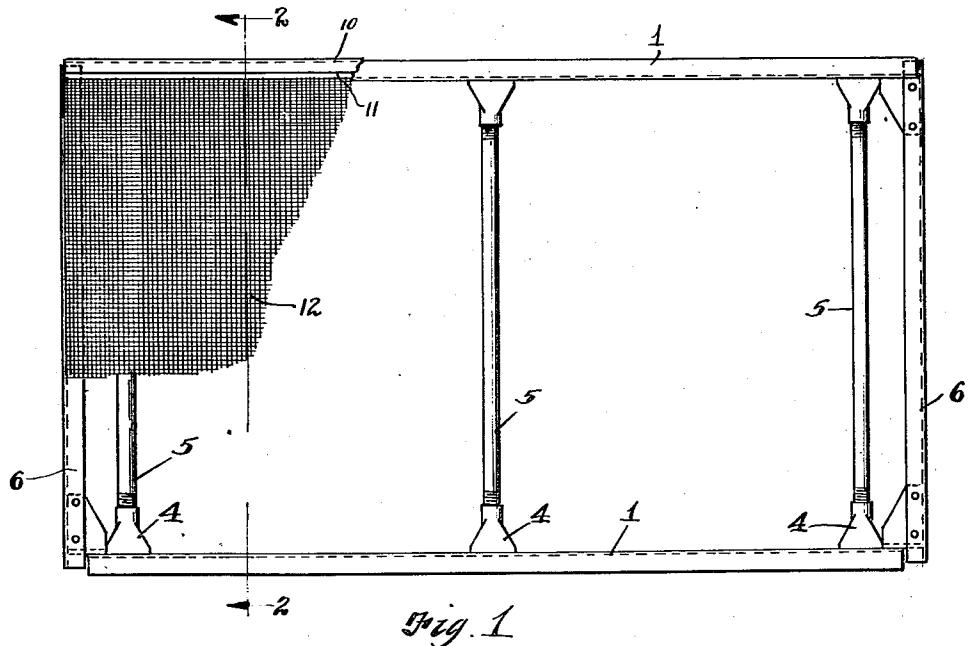


Fig. 1

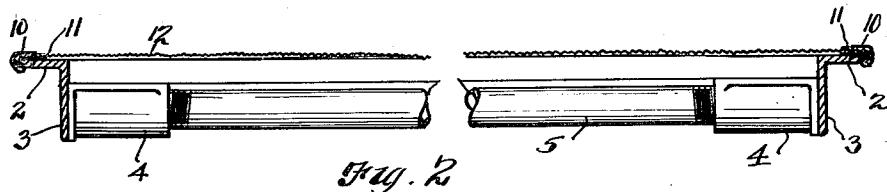


Fig. 2

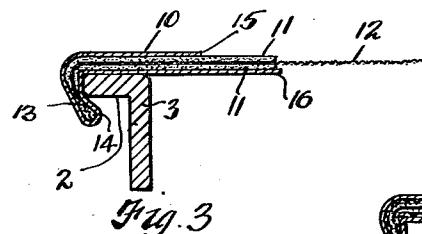


Fig. 3

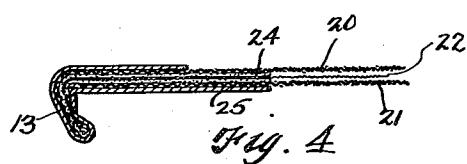


Fig. 4

INVENTOR.

August E. Helman

BY

Day, Oberlin & Day

ATTORNEYS

UNITED STATES PATENT OFFICE.

AUGUST E. HELMAN, OF CLEVELAND, OHIO, ASSIGNOR TO THE W. S. TYLER COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

SCREEN FASTENER.

Application filed January 9, 1924. Serial No. 685,082.

The present invention, relating, as indicated to screen fasteners, is particularly directed to improved means for securing the edges of woven wire screens employed in screening machines in such a way that all of the wires in one direction of the screen are permanently and uniformly held. In such machines it has been found that an effective vibration can be imparted to the screen only when the screen is maintained at a uniformly high tension, and in order to so tension the screen it is essential that all of one series of wires, either those extending longitudinally or transversely, be held and tensioned, and the present invention is directed to means for that purpose. To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—

Fig. 1 is a plan view of a frame employed in a screening machine for holding a strip of screen cloth thereon with my improved means; Fig. 2 is a section on the line 2—2 in Fig. 1; Fig. 3 is an enlarged view of one end of the frame as shown in Fig. 2; and Fig. 4 is a similar view, but showing two screens secured by the present means.

In Fig. 1 there is shown a rectangular frame consisting of side members in the form of angle plates 1, each of which consists of a horizontal portion 2 and a vertical portion 3. These side members are provided with sockets 4, in which are adjustably mounted rods 5, which are oppositely threaded at their ends so that rotation of the rods will expand or contract the frame as to its width. End members 6 are mounted upon the side members 1 and 2 in such a way as to allow for contraction and expansion between the side members.

My improved screen holding means consists of a strip of metal 10 bent upon itself and over two strips of yielding material 11, such as felt, canvas or the like, between which a woven wire screen 12 is first positioned. After the screen has been mounted between

the packing strips 11, and both the screen and strips have been mounted in the metallic strip 10, the latter is bent into the form shown in Fig. 3, in which it is provided with a downwardly extending portion 13 adapted to engage against the end of the horizontal portion 2 of the angle plate 1. The metallic strip 10, together with the enclosed screen and packing strips are thus bent to form an engaging hook, the bend consisting of a soft round curve of more than 90 degrees, that is, the plane of the portion adjacent to the inner or lower edge of the strip and the plane of the screen proper form an angle of less than 90 degrees, since the strip has been bent through a greater angle than 90 degrees. The form of the bent portion of the metallic strip and enclosed parts is shown in Figs. 3 and 4, the inner or lower portion of the strip lying at an acute angle to the plane of the screen proper. As shown in Figs. 3 and 4, the angular or hooked portion 13 of the U-shaped strip is crimped intermediate its ends along a longitudinal line to more firmly grip the screen material within the hooked strip.

The present fastening means have been found to very effectively engage all of the transverse wires of the screen 12, while at the same time these wires are sufficiently cushioned in the yielding or absorbent means 11, so that the vibration of the screen does not cause breakage of the wires. The wires are not secured at any one point, but are frictionally gripped between the overlapping portions of the strip 10 through the medium of the yielding felt or other lining.

A further important feature of the present fastening means is shown in Fig. 3. The upper portion of the strip 10 does not extend as far as the lower portion 16, which avoids any bending of the screen 12 at any given point and distributes the bending of the screen throughout the entire fastening means.

In Fig. 4 I have shown the same construction, except that here two coarse screens 20 and 21 are mounted in spaced relation to a central screen 22, and all are held in the securing strip 10 by means of lining strips 24 and 25, these lining strips being interposed between the lower surface of the upper coarse screen and the central screen, and between the upper surface of the lower

coarse screen and the central screen. In this construction the coarser screens may be secured directly against the retaining strip 10.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the means and the steps herein disclosed, provided those stated by any one of the following claims or their equivalent be employed.

I therefore particularly point out and distinctly claim as my invention:

1. Screen fastening means comprising a U-shaped metal strip enclosing the edge portion of a woven wire screen, and the legs of said strip being arranged parallel with the screen and having the connecting end bent on a soft, round curve through more than 90 degrees to form a hook portion.
2. Screen fastening means comprising a U-shaped metal strip, a woven wire screen disposed in said strip, a strip of yieldable material enclosing said screen and interposed between the same and said metal strip, and said metal strip being clamped into engagement with said yieldable strip and said screen and being rebent upon itself on a soft,

round curve through more than 90 degrees at the connecting end to form a hook.

3. Screen fastening means comprising a metallic fastening strip bent upon itself into U-shape with sides of unequal length, a woven wire screen, strips of yieldable material interposed between said screen and the sides of said metallic U-shaped strip, and the strips and screen being bent on a soft, round curve through more than 90 degrees to form an engaging hook, and said metallic strip firmly clamping said screen and said yieldable material.

4. Screen fastening means comprising a metallic fastening strip bent upon itself into U-shape, a woven wire screen clamped between the sides of said U-shaped strip, and said strip being bent on a soft, round curve through more than 90 degrees to form an engaging hook, such hook portion of said U-shaped strip being also crimped intermediate its ends to cause the walls of said metallic strip to firmly grip said screen.

Signed by me, this 31st day of December, 1923.

AUGUST E. HELMAN.