

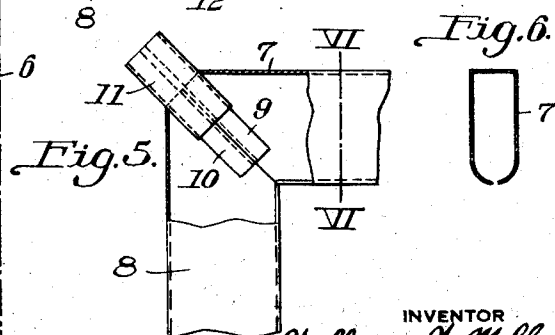
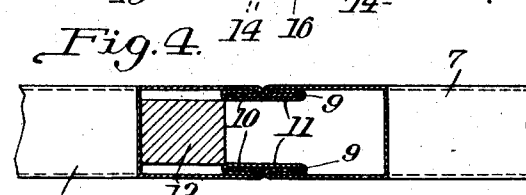
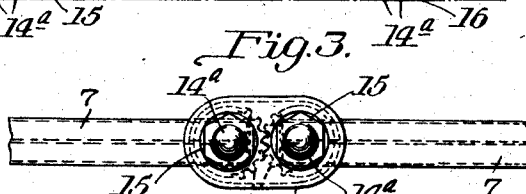
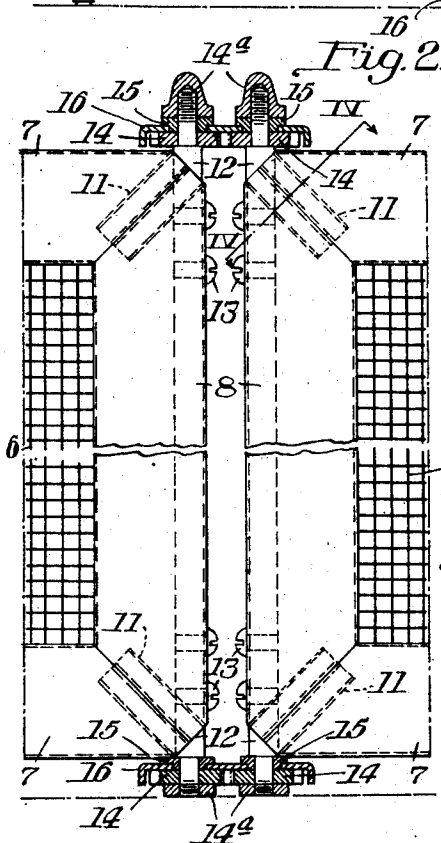
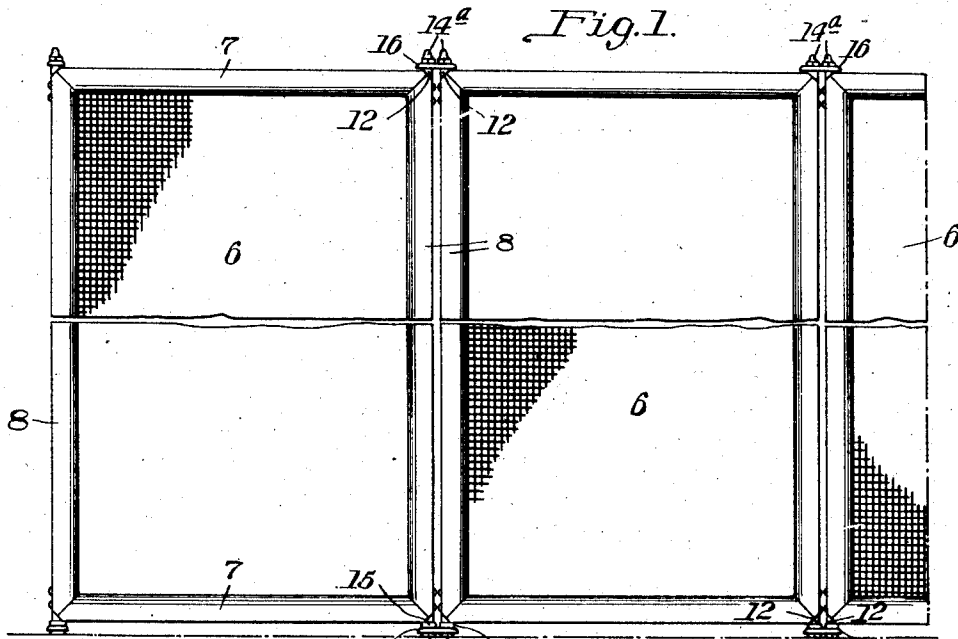
Feb. 28, 1928.

1,661,003

W. W. MILLER

SCREEN STRUCTURE

Filed Feb. 9, 1927



INVENTOR
Wallace W. Miller
By *Archworth Martin,*
Attorney.

UNITED STATES PATENT OFFICE.

WALLACE W. MILLER, OF STEUBENVILLE, OHIO, ASSIGNOR TO THE OHIO FOUNDRY AND MANUFACTURING CO., OF STEUBENVILLE, OHIO, A CORPORATION OF OHIO.

SCREEN STRUCTURE.

Application filed February 9, 1927. Serial No. 167,001.

My invention relates to screen structures, such as fire screens of the folding type, that are employed in front of fire places or open front gas stoves, although the invention is also applicable to various other types of folding or paneled structures.

Heretofore, in the case of screens composed of panels, it has been customary to join said panels by pivots of various forms so that they can be swung relatively to one another to permit folding thereof or to extend the same across the front of a fire place. The pivotal connections have been of various forms and in some cases a long rod, extending from the top edge to the lower edge of the screen has been employed as part of the connecting means for two panels. In these older structures, there is oftentimes excessive friction or resistance to pivotal movement of the screen panels, and the pivot members may become bent or sprung, so that the panels are not freely operable.

In the case of screens having metal frames or borders for the body of the panel, it has been customary to weld or solder the frame members at the corners of the panels, with consequent discoloration of the metal at the points of weld. This discoloration is objectionable, particularly in those types of screens, wherein the natural color of the metal employed is relied upon to present a decorative effect.

One object of my invention is to provide a screen structure wherein the pivotal connecting members are of such form as to have rolling movement upon one another, to thereby reduce the friction, and wherein the long connecting rods may be dispensed with.

Another object of my invention is to provide an improved form of fastening for the frame members at the corners of the screen panels.

Still another object of my invention is to simplify and improve generally the structure and operation of folding screens.

One form which my invention may take is shown in the accompanying drawing, wherein Figure 1 is an elevational view of a portion of a screen; Fig. 2 is an elevational sectional view, on an enlarged scale, of a portion of the apparatus of Fig. 1; Fig. 3 is a plan view of a portion of the apparatus of Fig. 2; Fig. 4 is a view, taken on the line IV—IV of Fig. 2; Fig. 5 is a

view, on an enlarged scale, of a portion of the apparatus of Fig. 2, and showing the manner in which the frame members of a panel are fastened together, and Fig. 6 is a view taken on the line VI—VI of Fig. 5.

The structure comprises panels 6, that are connected together at adjacent edges, for relative pivotal movement, in a manner to be hereinafter described. The panels 6 are provided with horizontally extending frame members 7 and vertical frame members 8. Each member 7 is shown as formed of sheet metal that, for the major portion of its length, is bent to channel or tubular form, as shown in Fig. 6. The vertical walls of the frame members 7 are bent backwardly at their ends to form inclined flanges 9, as indicated in Figs. 4 and 5. The frame members 8 are of substantially the same form as the members 7, being provided with flanges 10, so that the adjacent ends of the members 7 and 8 have abutting relation and present the appearance of a mitered joint. The wire screen is held in place in the frame members by clamping action of the edges of the intumed sides of the panels. (See Fig. 6).

The adjacent ends of the frame members 7 and 8 are firmly bound together by clips 11, each of which has flanges that extend behind flanges 9 and 10, as shown more clearly in Fig. 4 and which may be slid into position in the manner shown in Fig. 5, through openings in the corners of the frame members 7 and 8.

A stud 12 is secured within the panel of each frame member 8, at the upper and lower ends thereof, by means of screws 13, the studs projecting through the openings at the ends of such panels. A gear wheel 14 is secured to each of the studs 12, by means of a nut 14^a that acts, through a bushing 15, to clamp the gear wheel against the shoulder portion of the stud 12. A connecting plate 16 is provided with perforations that lie within the annular recesses of the bushings 15, so that such plate will not be clamped against movement relative to the studs 12 when the nuts 14 are screwed down. The plates 16 are flanged at their edges, to serve as housings for the gear wheels 13, and they also serve as connecting plates for the panels.

It will be seen that when one panel is swung relatively to another, its gear wheels

13 will roll upon the gear wheels of the adjacent panel and that there is consequently a minimum frictional resistance to such movement. It will be further apparent that the holding clips 11 are concealed within the frames and that a smooth joint is presented on the faces of the frames.

I claim as my invention:—

1. A screen structure comprising a pair of panels, a toothed stud carried by each panel, the teeth of one stud meshing with the teeth of the other stud, and a connecting plate for maintaining the teeth of said studs in cooperative relation, the said plate extending across and having a flange disposed circumferentially of said teeth.

2. A screen structure comprising a panel having longitudinally and vertically disposed frame members that are mitered at adjacent ends and provided with inwardly turned flanges, and a clip having oppositely disposed flange portions for engaging said flanges to hold the frame members in assembled relation, the outer corners of the said ends being cut away to permit insertion of the clip.

3. A screen structure comprising a panel having longitudinally and vertically disposed frame members that are mitered at adjacent ends and provided with inwardly turned flanges and cut away at their outer corners, a clip having oppositely disposed flange portions for engaging said flanges to hold the frame members in assembled rela-

tion, and a stud-like flange member secured within the vertically disposed frame member and protruding through said cut-out portion.

4. A screen structure comprising a panel having longitudinally and vertically disposed frame members that are mitered at adjacent ends and provided with inwardly turned flanges and cut away at their outer corners, a clip having oppositely disposed flange portions for engaging said flanges to hold the frame members in assembled relation, and a stud-like flange member secured within the vertically-disposed frame member and protruding through said cut-out portion, the protruding portion of said stud being provided with a toothed member arranged to intermesh with a similarly-formed panel, and provided with means for supporting the toothed members in cooperative relation.

5. A screen structure comprising a pair of panels, studs protruding from the upper and lower ends of each panel, toothed members carried by said studs, a flange plate fitting over each pair of inter-engaging toothed members so as to conceal one of the side faces and peripheries thereof, and means for holding said plates in operative relation, the said plates serving also as connecting links for the panels.

In testimony whereof I, the said WALLACE W. MILLER, have hereunto set my hand.

WALLACE W. MILLER.