Feb. 14, 1933. G. W. CARLSON 1,897,418

SCREEN

Filed July 9, 1932

Fig. 1.

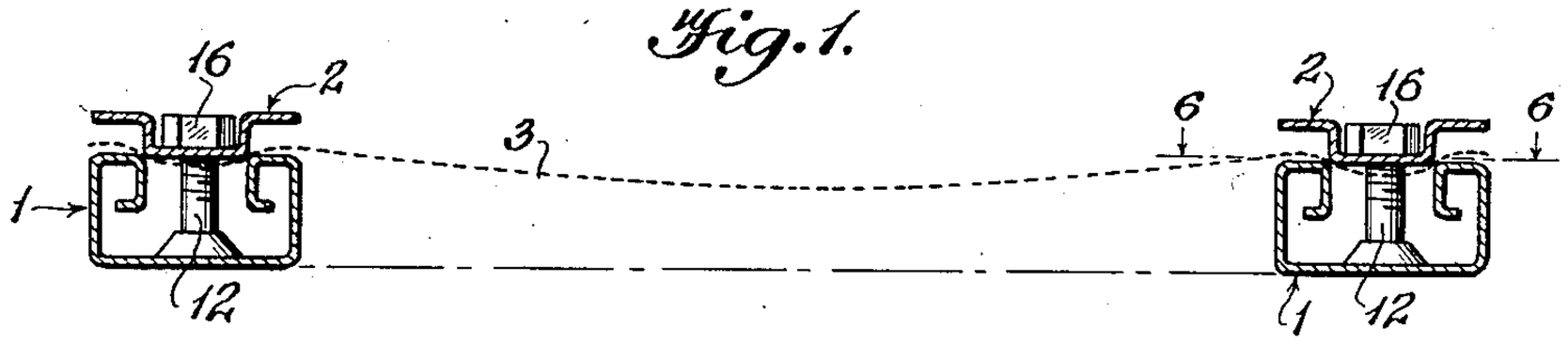


Fig. 2.

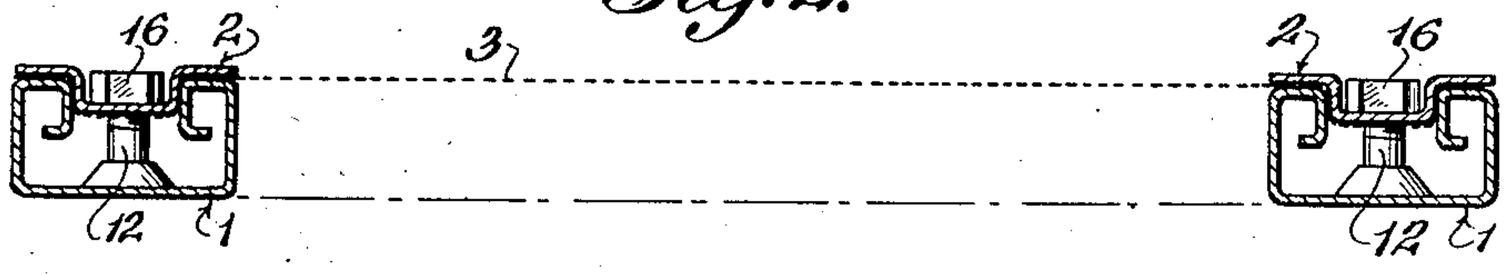


Fig. 4.

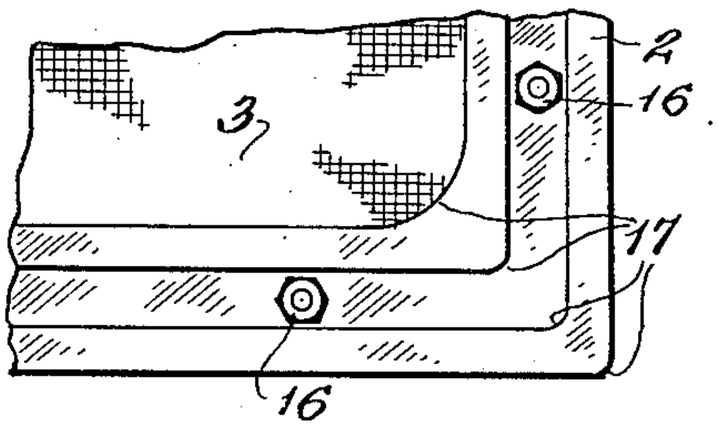
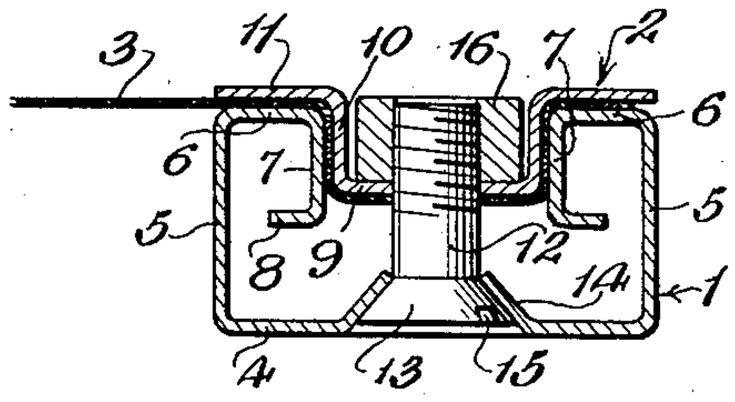


Fig. 3.



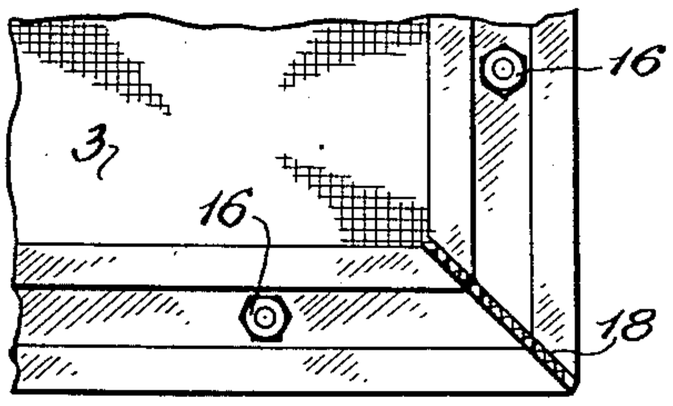


Fig. 5.

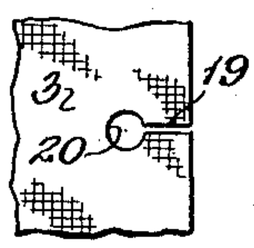


Fig. 6.

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Patented Feb. 14, 1933

1,897,418

UNITED STATES PATENT OFFICE

GUY W. CARLSON, OF VAN DYKE, MICHIGAN

SCREEN

Application filed July 9, 1932. Serial No. 621,724.

The present invention relates to screens and more particularly to an improved screen molding or frame, having for one of its main objects, to provide a simple but efficient and strong construction capable, when used, to automatically stretch the screening or netting positioned in engagement therewith.

Another important object of the invention resides in the provision of a screen molding or frame which will simplify the removal and replacement of the screening or netting even without the necessity of completely disassociating the composite parts of the device.

It is also among the desired features of the invention to provide a screen construction wherein is associated a pair of cooperating frame members adapted to be drawn towards each other for causing the self-stretching of the screening or netting, while at the same time, affording means to rigidly clamp the screening in its stretched position, when said cooperating members are drawn together.

A further object of the invention resides in the provision of a screen frame constituted of a female molding and a male molding capable of being drawn together by means of fastening elements for stretching and clamping the screening, said moldings being so constructed that they will slightly give when drawn together to adapt themselves to one another, thereby preventing accidental tearing of the screening or netting while being stretched and clamped between said moldings.

The invention also contemplates the provision of a screen made entirely of metal and embodying relatively few parts whereby the cost of production and upkeep will be materially reduced, thus rendering the device more commercially desirable.

Other important objects and advantages of the invention will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by those persons skilled in the art, I have in the accompanying drawing and in the detailed description based thereupon set out a possible embodiment of the same.

In the drawing:

Figure 1 is a section taken through my improved construction showing the parts in their relative position while being assembled;

Figure 2 is a similar view illustrating the parts in their operative position;

Figure 3 is an enlarged cross sectional detail of the associated parts of the device;

Figure 4 is a detail of one form of construction of the screen frame;

Figure 5 is likewise a detail of another form of construction of the screen frame; and

Figure 6 is a section taken on line 6—6 of Fig. 1.

Having more particular reference to the drawing, wherein like characters of reference will designate corresponding parts throughout, my improved device may be stated to comprise a female molding 1 and a male molding 2, each being preferably rolled out of sheet metal and made to cooperate for providing a supporting frame for the screening or netting 3.

The female molding 1 is formed to provide a base 4 and diametrically opposed side walls 5 having a relatively large width and extending at substantially right angles to said base 4. The end portions of the walls 5 are bent upon themselves and present a pair of outer exposed surfaces 6 paralleling the base 4 and a pair of re-entrant surfaces 7 paralleling the side walls 5. The free inner edges of surfaces 7 may be advantageously bent as indicated at 8 towards their respective opposite walls 5, thus making said surface smooth and uniform throughout their areas.

The male molding 2 consists of a channeled body having a depressed central portion constituting a base 9, opposed side walls 10 and flanges 11. The depressed portion of the molding 2 is adapted to be introduced between the re-entrant surfaces 7 of the female molding 1, with the walls 10 closely adjacent and paralleling said surface, and the flanges 11 paralleling the outer exposed surfaces 6 of the molding 1.

The female molding 1 and male molding 2

are drawn and maintained together by means of bolts 12 or the like passing through suitably formed apertures in said moldings. The head 13 of the bolt 12 is preferably of the countersinking type and is adapted to engage the truncated surface 14 of the countersunk aperture punched in the base 9 of the female molding 1. The bolt head 13 further is provided with a transversal slot 15 engageable with an appropriate tool such as a screw driver, to cause the screw threaded engagement of the bolt 12 with a nut 16 adapted to rest within the channel of the male molding 2 between the walls 10 thereof.

The moldings 1 and 2, as shown in Figure 4 of the drawing, may be bodily stamped out, that is, formed to provide a continuous frame. In this construction, the frame corners are preferably rounded as indicated at 17, thereby giving to the assembled device, a finished attractive appearance. The moldings 1 and 2 may also be formed in strips of definite lengths, as represented in Figure 5, in which instance, the ends of the strips to be associated are bevelled as at 18 for proper fitting in building up the screen frame.

To facilitate the removal and replacement of the screening or netting 3, the marginal edges thereof may be advantageously cut with a slit 19 terminating in an enlarged opening 20. In this manner, it will be understood that the edges of the screening or netting 3 may be inserted or withdrawn from between the moldings 1 and 2 without completely disassociating the same, that is, without necessity of removing the bolts 12 from their engagement with said moldings. It is sufficient to loosen the bolts 12 in the manner shown in Figure 1, and work the screening or netting 3 until it becomes seated in position between the moldings. The slit 19 will obviously permit the screening to pass the bolts 12 and the enlarged opening 20 will accommodate said bolts and allow a free movement for drawing the moldings 1 and 2 in their clamping position.

From the foregoing, it will appear that I have devised a frame construction which provides for a quick and simple way of changing the screen, requiring the use of but a single tool, such as a screw driver. The device also acts as a self-stretcher for the screening or netting. It will be appreciated that it is practically impossible in commonly known screens to lay the screening without the same having a certain slack therein, so that the screening assumes a bulging formation, such as illustrated in Figure 1 of the drawing. With my improved construction, this inconvenience is eliminated due to the characteristic configuration of the male molding 2 wherein the depressed portion of said molding with the base 9 thereof in engagement with the screening or netting 3, will cause the latter to stretch evenly and uniformly in the manner shown in Figure 2, by tightening the bolts 12 causing said depressed portion of the male molding 2 to be drawn inwardly of the female molding 1 carrying the engaged portion of the screening or netting 3 therewith.

Further, because of the adjacent paralleling surfaces 6 and 11 and, 5 and 7, a positive clamping and holding of the screening in stretched position is assured, and accidental loosening of the parts is obviated, since the depressed portion of the male molding 2, wherein the nut 16 rests, serves as a lock for said nut.

It will also be appreciated that by reason of the relatively large width of the side walls 5 of the female molding 1, a certain resiliency will be imparted to the latter so that the same will slightly give when tightening the bolts 12, thus preventing the accidental tearing of the screening or netting 3 while being stretched and clamped between the moldings.

Manifestly, the construction shown and described is capable of considerable modifications, and those modifications which come within the scope of my claims, I consider within the spirit of the invention.

I claim:

1. A screen comprising a female molding, a male molding having a depressed portion adapted for insertion in said female molding to stretch and clamp the screening therebetween, and a fastening element between said moldings and engaged within the depressed portion of the male molding for drawing the same with relation to the female molding.

2. A screen comprising a female molding having a base and side walls, a male molding having a depressed portion adapted for insertion within said female molding intermediate the side walls thereof, and a fastening element passing through the base of the female molding and the depressed portion of the male molding for bodily drawing the same together.

3. A screen comprising a female molding having a base and side walls, said side walls bent upon themselves to provide an outer exposed surface paralleling said base and a re-entrant surface paralleling said side walls, a male molding adapted for insertion within said female molding, said male molding having a base paralleling the base of the female molding, side walls paralleling the re-entrant surfaces and flanges paralleling the outer exposed surfaces on said female molding, and a fastening element passing through the base of the female molding and the base of the male molding for bodily drawing the same towards each other.

4. A screen comprising a female molding, a male molding having a depressed portion adapted for insertion in said female molding to stretch and clamp the screening therebetween, a fastening element between said

moldings and extending therethrough, and a member in screw threaded engagement with said fastening element and resting within the depressed portion of the male molding to be locked thereby.

5. In combination with a screen frame including a pair of cooperating clamping moldings and a fastening element therebetween, a screening having its marginal edges slitted for introduction between said molding past the fastening element thereof.

6. In combination with a screen frame including a pair of cooperating clamping moldings and a fastening element therebetween, a screening adapted to be clamped between said moldings, the marginal edges of said screening having a slot for introduction of the screening between the moldings past the fastening element thereof, and terminating in an enlarged opening for accommodating said fastening element.

In witness whereof I have hereunto set my hand.

GUY W. CARLSON.