Sept. 22, 1925. 1,554,858

L. A. KOPP

SCREEN FRAME

Filed May 10, 1922

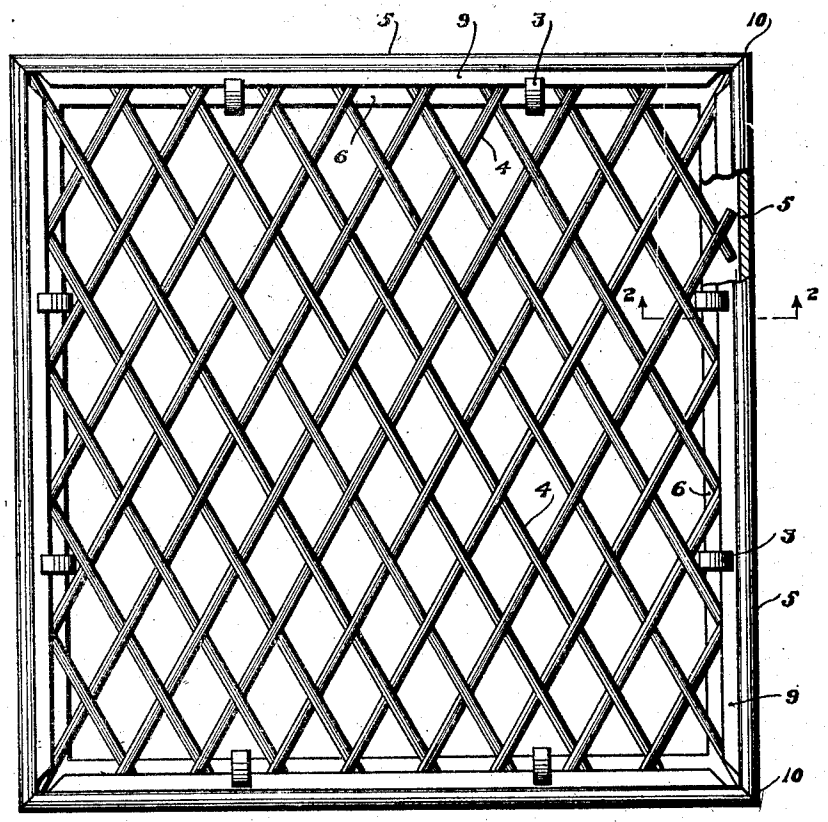

Fig. 1.

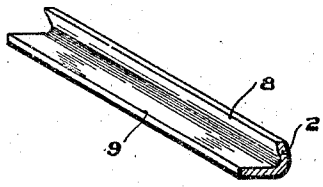

Fig. 2.

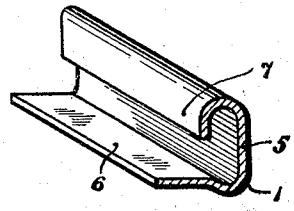

Fig. 3.

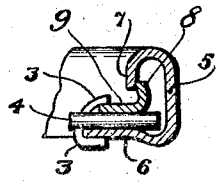

Fig. 4.

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WITNESS:

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UNITED STATES PATENT OFFICE.

LEWIS A. KOPP, OF PHILADELPHIA, PENNSYLVANIA.

SCREEN FRAME.

Application filed May 10, 1922. Serial No. 559,850.

To all whom it may concern:

Be it known that I, LEWIS A. KOPP, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Screen Frames, of which the following is a specification.

This invention relates to metal screens and frames therefor and it has more particular reference to that type of frame for containing a screen of the usual diamond shape mesh to be applied to doors, windows, or other similar openings. The primary object of my invention is to provide a frame of the foregoing type composed of separate parts or members which when the screen is inserted in proper relation thereto may be inseparably brought together and to the screen thereby forming a complete, strong, and unitary screen and frame structure that cannot be readily disassembled.

With the foregoing and other objects in view this invention consists essentially in the novel features of construction, combination and arrangement of parts hereinafter fully described and more specifically defined by the appended claims.

In the further disclosure of the invention reference is to be had to the accompanying sheet of explanatory drawings constituting a part of this specification and in which like characters of reference designate the same or corresponding parts in all the views.

Figure 1 is a front elevation of my device with the screen and frame assembled, a portion of the frame being broken away and showing the relation of the frame to the screen.

Figure 2 is a perspective view of a portion of the auxiliary flange or locking member which co-operates with the main member.

Figure 3 is a perspective view of a portion of the case or main frame member and illustrating its peculiar formation; and,

Figure 4 is a cross sectional view taken approximately on the line 2—2 in Figure 1 and showing the relation of the parts as assembled with the clip strap or clamp member for binding the parts together.

Referring more particularly to the views the main frame member is designated by the numeral 1 and it is formed from a blank of sheet metal or other suitable material and it is bent when viewed in cross section of appropriately the shape of the letter C with a flattened back and an exaggerated extended base.

The secondary frame member 2 is also formed from a blank of sheet metal or other suitable material and it is bent when viewed in cross section to appropriately the shape of the letter L.

A third member 3 is also formed from a blank of sheet metal or other suitable material and it is bent when viewed in cross section to appropriately the shape of the letter U. This member 3 is substantially a clip strap or clamp member which is provided to bridge over the extended adjacent edges of the angular members 1 and 2 at spaced intervals or when the frame is assembled and fixed thereto to hold the parts rigidly together and form a unitary structure of the frame and screen.

The screen 4 as shown in the drawing is a wire screen of the diamond shape mesh or any other suitable screen may be employed which is of such construction that it may be held in clamped relation with the two frame portions 1 and 2 when the screen and frame are assembled.

The main frame member 1 is more particularly formed with a substantially flat side or wall portion 5 and a laterally extended angularly disposed flange or lip 6 which projects from one side of said side or wall portion with said lip portion 6 in a plane substantially at right angles to the said wall portion 5. From the opposite edge of the base portion 5 there is formed another laterally extended angularly disposed longitudinal flange portion 7, the upper portion of which extends toward the opposite flange portions 6 and it lies in a plane substantially parallel to the plane of the side or wall portion 5, thus making the frame member 1 a more or less channel-like configuration.

The secondary frame member 2 is more particularly formed with a substantially flat base portion 8 and a laterally extended angularly disposed longitudinal flange portion 9 projecting from one side thereof substantially at right angles to the aforesaid portion 8.

The secondary frame member 2 is of such dimensions and the base and flange portions are so disposed in relation to each other that when the parts of the frame are assembled in operative relation the upper face of the base 8 of the frame member 2 will lie ad-

jacent to and abut against the inner face of the flange portion 7 of the main frame member 1; and it will be held firmly against said flange portion 7 while at the same time the flange portion 9 of the member 2 will extend laterally adjacent to the flange or lip member 6 of the main frame member 1 in a plane substantially parallel to the plane of the flange member 6 by being spaced slightly apart from said flange member 6. The flange members 9 and 6 are spaced apart to permit the insertion between them of the screen 4 and as can be readily seen they are easy adjustable toward or from each other so that screens of different thickness can be accommodated by my style of frame and firmly held therebetween with equal facility.

The members 1 and 2 are made or cut in any suitable lengths to conform to the opening to be screened and the abutting ends of the outer main frame member 1 where they are needed to be joined as in the case of the corner joints in the screen shown in Figure 1 they may be rigidly connected by brazing or spot-welding or in any other manner that will ensure unitary structure of the main portion of the screen frame.

The main frame members which having been assembled and rigidly joined together as described to make the main portion of the frame a suitable screen 4 is inserted into said frame with a margin adjacent its edges resting on and supported by a lip portion 6 of the main frame body 1. The secondary frame members 2 are then inserted into the frame body 1 taking a position above and engaging the marginal portions of the screen and also engaging the main frame body 1. The upper face of the base 8 of the secondary frame member 2 when in position will engage and draw against the inner face of the flange member 7 of the main frame member 1, while the flange member 9 of the secondary frame member 2 will engage and rest against the marginal portions of the screen 4 which is of course of such dimensions in reference to the main frame body as to substantially fill said frame body and provide suitable marginal portions for the secondary member to grip.

The secondary frame member 2 being placed as described, I then bind the structure of frame members 1 and 2 and screen 4 carried thereby into fixed rigid relation making a practically unitary structure by means of the U-shaped clip straps or clamp members 3. These clip straps or clamp members 3 bridge over the extended adjacent edges of the flange members 6 and 9 of the main frame member 1 and secondary member 2 and engage the opposite outer faces of these flange members 6 and 9, the spaced points around the length of said frame members thereby drawing the frame members 1 and 2 into firm gripping engagement with the screen 4 in order to hold the parts in rigid relation. The clip straps or clamp members 3 after being placed as described, are held in their desired position to clamp the whole assembled device in one unitary structure by being brazed, spot-welded, or otherwise suitably secured to the main and secondary frames.

From the foregoing description it will be apparent to those acquainted with the art that the main advantages of my device are its durability and strength due to its unitary construction, also the ease of assembling the parts together, while it will screen any size or shape of openings by adapting the frame member lengths to the dimensions of the opening to be screened. Still further it is to be noted that while I have described and shown the best form of my invention at present known to me the same is susceptible of minor detail changes and the right is hereby accordingly reserved to make such changes and variations as fairly lie within the scope of the appended claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a screen frame the combination of a main frame member having a cross sectional base substantially corresponding to the letter C with an extended lower lip portion, a secondary substantially L-shaped frame member engaging inside the flange at the inner portion of the main frame, and binding or clamping means engaging the lip portion of said main frame member and main body of the secondary frame member to bind said members in rigid operative relation as a unitary structure.

2. In a screen frame the combination of a main frame member having a cross sectional base substantially corresponding to the letter C with an extended lower lip portion, a secondary substantially L-shaped frame member engaging and interlocking portion of the main frame, and a screen mounted on said main frame member and clamped in rigid relation thereto by and between said lip portion of said main frame member and the main body of the interlocking secondary frame member.

3. In a screen the combination of a main frame member having a cross sectional base substantially corresponding to the letter C with an extended lower lip portion, a secondary substantially L-shaped frame member engaging and interlocking with a flange portion of said main frame, a screen mounted on said main frame member between said lip portion of said member and the interlocking secondary L-shaped frame member, and substantially U-shaped clamping means engaging the lip portion of said main frame member and the main body of said secondary frame member for locking said members

and screen in rigid operative relation as a unitary structure.

4. In a screen, a main frame of substantially C-shape in cross section and provided with an outer lip disposed substantially at right angles to the body of the frame, a securing member of substantially L-shape in cross section and having its base portion engaging inside of the flange at the inner portion of the main frame and co-operating therewith to provide a fulcrum for the securing member, a piece of fabric having its edge portions secured between the lip of the main frame and the main body of the securing member, and means for securing said main body and the said lip together.

5. In a screen, a main frame of substantially C-shape in cross section and provided with an outer lip disposed substantially at right angles to the body of the frame, a securing member of substantially L-shape in cross section and having its base portion engaging inside of the flange at the inner portion of the main frame and co-operating therewith to provide a fulcrum for the securing member, a piece of fabric having its edge portions secured between the lip of the main frame and the main body of the securing member, and retaining lips secured about said main body and the lip for securing the same together.

In testimony whereof I affix my signature.

LEWIS A. KOPP.