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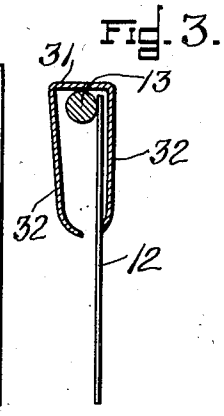
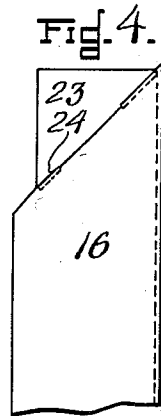
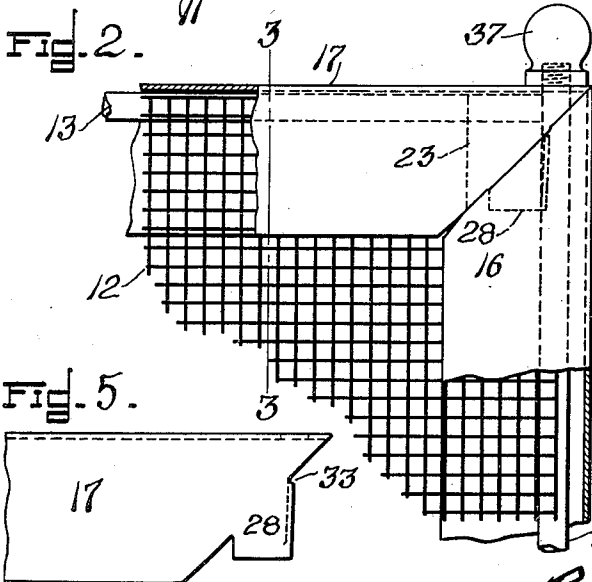
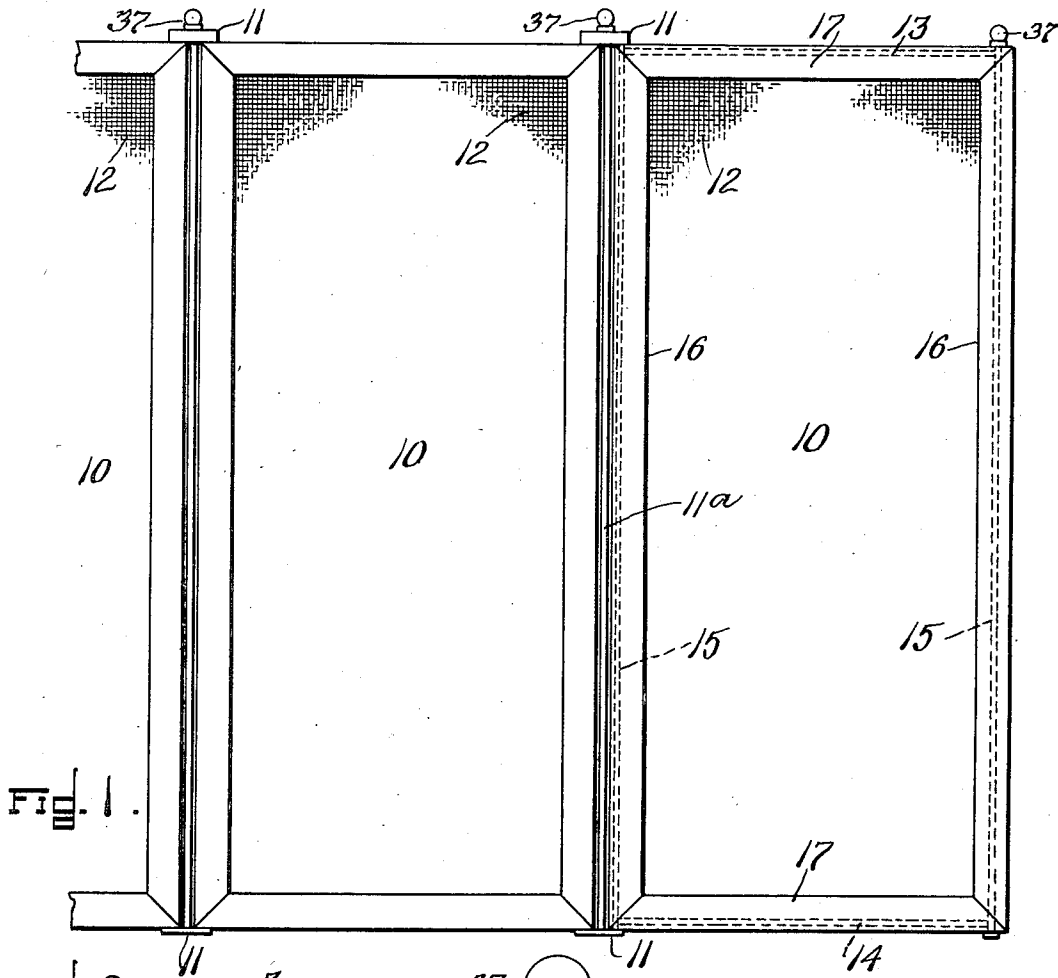
A. G. LOVEJOY, JR

2,023,604

FIREPLACE SCREEN

Filed Oct. 25, 1932

2 Sheets-Sheet 1



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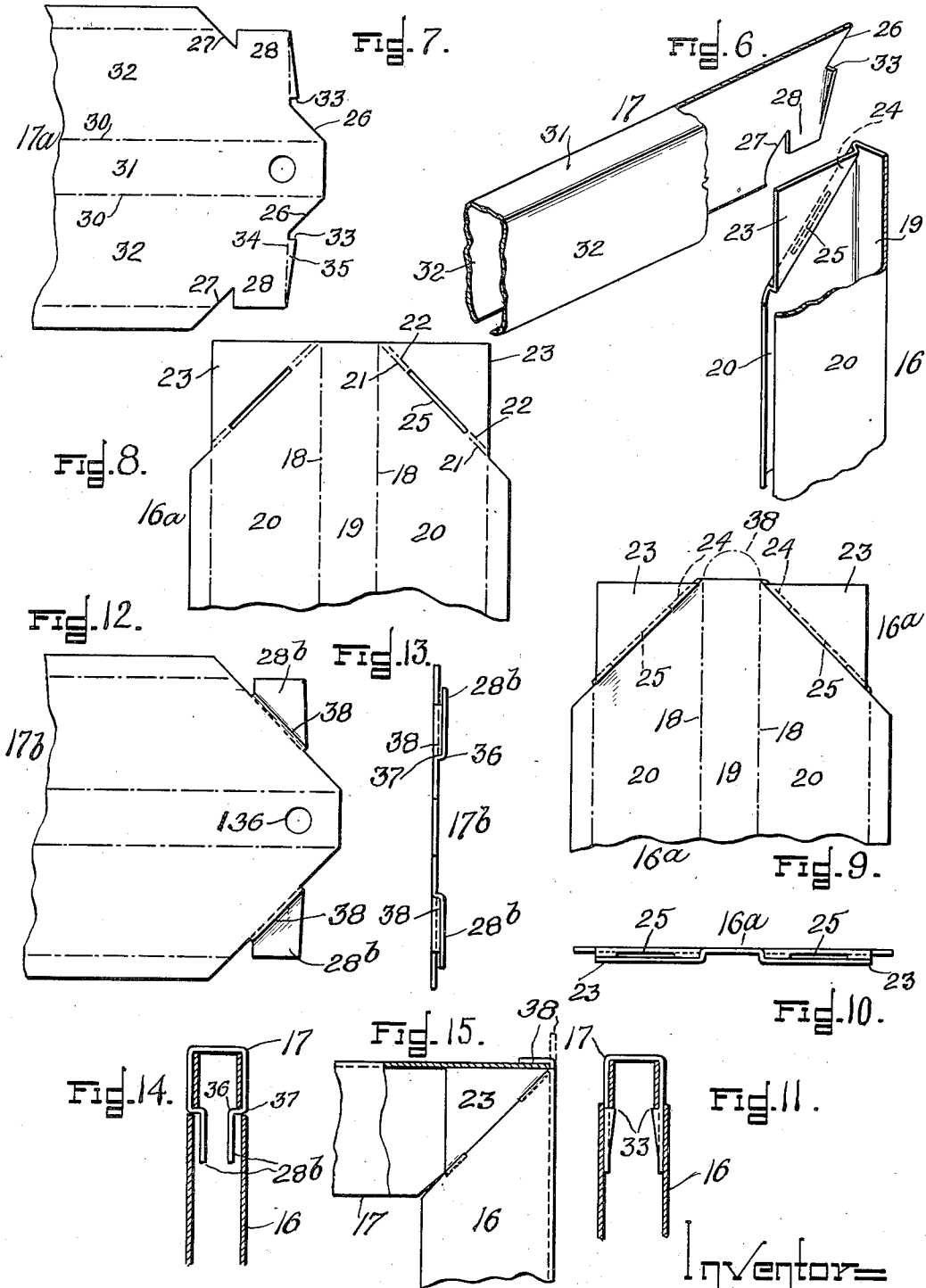
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,023,604

FIREPLACE SCREEN

Arthur G. Lovejoy, Jr., Malden, Mass.

Application October 25, 1932, Serial No. 639,400

3 Claims. (Cl. 189—36)

My invention relates to fireplace screens such as are placed in front of a fireplace to serve as a barrier to arrest flying sparks projected from the fire within the fireplace, and it has for its object to improve the construction of screens of the class indicated, and especially to provide an improved miter joint for connecting the frame members of the screen. It is also an object of this invention to provide a joint of the character described which will not be injuriously affected by heat radiating from the fire in front of which the screen is used, or by heat to which the parts of the frame may be subjected during the process of manufacturing.

Fireplace screens of the class to which my invention relates are made from metal and include sheet metal frame members which are of channel iron shape in cross section, said members being connected end to end to form a marginal housing frame, usually more or less ornamental, for a panel of wire netting.

Also it has heretofore been the practice to secure each pair of abutting ends of the frame members together by means of solder, said ends being usually matched and united upon a line bisecting the angle of junction of the two frame members.

It has also been common to provide the opposite side walls of one of said members with a pair of inwardly offset tangs at its end to overlap and fit against the inner faces of the opposite side walls of the other member.

A screen of this sort having soldered joints cannot be successfully enameled for the reason that during the enameling process it is subjected to a degree of heat which greatly exceeds the melting point of the solder with the result that the soldered joints of the screen would be destroyed. Also, these soldered joints were objectionable for the reason that they would sometimes be destroyed by the heat from the fire in front of which the screen was placed. My invention is designed to obviate these objectionable features and it provides an improved screen of the class described wherein the housing frame members are positively interlocked and fastened together end to end when brought together in assembled relationship thus avoiding the use of solder so that the frame cannot be injuriously affected either by heat radiating from the fire or by the heat to which the frame is subjected during enameling operations.

Other features of my invention are hereinafter pointed out.

In the accompanying drawings:

Figure 1 is an elevation of an end portion of an articulated fireplace screen whereof each section is constructed in accordance with my invention.

Figure 2 is a fragmentary enlarged elevation of a corner portion of the screen shown in Figure 1.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a side elevation of the upper end portion of one of the vertical frame members hereinafter described.

Figure 5 is a side elevation of one end of one of the horizontal frame members hereinafter described.

Figure 6 is a perspective view of a corner portion of the frame with the parts thereof occupying separated relationship and partly broken away for purposes of illustration.

Figure 7 is a plan view of one end portion of the sheet metal blank from which each horizontal frame member is formed.

Figure 8 is a plan view of one end portion of the sheet metal blank from which each vertical frame member is formed.

Figure 9 shows the blank of Figure 8 after it has been partially formed.

Figure 10 is an end view of the blank shown in Figure 9.

Figure 11 is a sectional detail, hereinafter described, of a structure embodying frame members made from the blanks of Figs. 7, 8, 9 and 10.

Figure 12 is a plan view of one end of a partially formed blank of alternative construction.

Figure 13 is an end view of the blank shown in Figure 12.

Figure 14 is a sectional detail hereinafter described, of a structure comprising frame members made from the blanks shown in Figs. 9, 12 and 13.

Figure 15 illustrates a modification.

The screen illustrated in Fig. 1 is made up of several sections which are connected in series by hinge links and bolts, the opposite ends of each of said links being pivotally connected with the adjacent two sections as usual so as to provide a flexible articulated screen structure adapted to be placed upright in position upon the floor in front of a fireplace.

Each section comprises the usual panel of wire netting whose marginal portion is welded or otherwise secured to an inner rectangular panel frame comprising a horizontal top bar, a horizontal bottom bar and two vertical side bars. These bars may be made from heavy wire and are fastened together by welding or

otherwise to form a stiff rectangular frame for the panel of wire netting 12, all as usual.

To each panel 12 with its heavy wire frame is applied an ornamental marginal housing frame 5 which incloses the wire frame of the panel and the marginal portion of the latter, said ornamental frame consisting of strips or members of sheet metal molded into channel iron form and fastened together end to end.

10 Each ornamental frame comprises two vertical side members 16 whose opposite ends are fastened to the ends of two horizontal members 17.

Each vertical member 16 is made from a flat sheet metal blank 16a having its opposite ends 15 formed as shown in Fig. 8 and said blank is folded longitudinally on the dotted lines 18 into the cross-sectional channel iron shape illustrated in Fig. 6 so as to provide an outer intermediate wall 19 and two perpendicular side walls 20.

20 Each side wall 20 has its opposite end portions each bent transversely inwardly on the oblique dotted line 21, Fig. 8, and then reversely on the parallel oblique dotted line 22 so as to provide each end of each side wall 20 with a triangular inwardly offset tang portion 23 that is parallel 25 with its side wall 20, and so as to provide an oblique shoulder or ledge 24, Fig. 6, whose outer end coincides, approximately, with the end of the adjacent fold line 18. The shoulder or ledge 24 is cut away to provide a slot 25 at or near its middle 30 which is parallel with the folds 21 and 22.

Each horizontal member 17 is made from a flat sheet metal blank 17a having each end thereof 35 formed, as shown in Fig. 7, with two pairs of oblique and aligned beveled edges 26 and 27, the edges of each pair being disposed at opposite sides of a latch tang 28, and one of said pairs and its latch tang being disposed at one side of the blank 17a and the other pair and its latch tang 40 being disposed at the opposite side thereof.

The blank 17a shown in Fig. 7 is folded longitudinally on the parallel dotted lines 30 into the cross sectional channel iron shape illustrated in Fig. 3 which provides an outer intermediate wall 45 31 and two perpendicular side walls 32. The member thus formed is sprung into position upon the marginal portion of the panel 12 as illustrated in Figs. 2 and 3.

In the illustrated embodiments of my invention 50 the proximate abutting end portions of the outer frame are disposed at right angles and for this reason the edges 26 and 27 of each blank 17a are disposed at 45 degrees with respect to the longitudinal median line of the latter, and for the same reason the folds 21 and 22 of blank 16a are 55 made on lines which are disposed at 45 degrees with respect to the median line of that blank.

It will therefore be clear that when the proximate ends of two frame members are brought 60 together into abutting relationship as illustrated in Figs. 1 and 2 and as presently to be described, both edges 26 and 27 of each pair fit against the shelf or ledge 24 upon their side of the frame and the joint between said edges and shelf is a miter joint that bisects the angle of junction of 65 the two frame members.

Each latch tang 28 is made, adjacent to its junction with its wall 32 with a locking shoulder 33 which is one end of a small triangular panel 70 or section 35 of the blank 17a that is defined by said shoulder, the outermost edge of tang 28 and a transverse dotted line 34, Fig. 7. In one form of my invention the frame member that is produced from blank 17a is completed with the 75 small triangular panel 35, Fig. 7, perpendicularly

disposed relatively to its tang 28 and wall 32 as shown in Fig. 6. When the proximate complementary ends of two frame members are brought together during the assembling operation, the latch tangs 28 are inserted in the slots 25 of the 5 other member with the result that when the two members have been brought fully together into abutting relationship the shoulder 33, Fig. 7, is sprung into position behind the inner side of shelf or ledge 24 thereby positively locking the two 10 members in assembled relationship. In another form of my invention the triangular panel 35 is folded on the dotted line 34, Fig. 7, into a position where it is at right angles with respect to the plane of its tang 28 as shown in Figs. 6 and 11. 15 When this construction is employed and the two members are fitted together end to end the shoulder 33 is sprung into position behind the inner oblique edge of tang 23, which borders the slot 25 thereby positively locking the two mem- 20 bers together as shown in Fig. 11. The latter construction is preferred by me.

In another form of my invention the horizontal or male members 17 are produced from a flat sheet metal blank 17b, having its opposite ends con- 25 structed as illustrated in Figs. 12 and 13. In this case the blank 17b is made with latch tangs 28b which are not formed with shoulders 33 but which are bent reversely as shown at 36 and 37, Fig. 13, to provide locking shoulders 38 adjacent 30 to the junction of the tang with its side wall 32. The member formed from the blank 17b is, when completed, of channel iron form in cross section and when either end thereof is engaged with the proximate end of a vertical member 16 the tangs 35 28b are entered in the slots 25 so that when the two members are forced together the locking shoulders 38 are sprung into position behind the inner edges of the tangs 23 of the member 16 as shown in Fig. 14. 40

The ends of the horizontal bars 13 of the inner frame abut the vertical side bars 15, as shown in Fig. 2, and are welded thereto, while the opposite end of each vertical side bar 15 extends through an aperture 136, Fig. 12, formed in horizontal 45 members 17. Nuts 37, Figs. 1 and 2, are screwed on to the upper threaded ends of the two bars 15 that are at opposite ends of the screen and also on to the upper ends of the intermediate long bolts 11a, all as usual except that in the present 50 instance they serve also to clamp the housing frame members snugly together in abutting relationship.

It is to be understood that the housing frame constructed as above described may be employed 55 otherwise than as part of a fireplace screen, for example, as the frame for a picture. Therefore, when not associated with an inner frame 13-14-15 I may construct the member 16 with tabs or lugs 38, Fig. 15, one at each end thereof. 60 After assembling and interlocking the parts of the frame as above described the lugs or tabs 38 are bent downwardly and inwardly against the horizontal members 17 as illustrated in Fig. 15 so 65 that the two members 16 and 17 are securely held together in abutting relationship and against any relative movement. One of these tabs or tangs 38 is indicated by a dot and dash line in Fig. 9.

What I claim is:— 70

1. A housing frame comprising a pair of angularly and endwise abutting sheet metal frame members each of which is of channel-iron shape in cross section, one of said members having its 75

opposite side walls each formed upon its outer side with a transversely oblique slotted shoulder and having an inwardly offset end tang portion adjoining one side of said shoulder that is parallel
5 with the portion of said side wall that adjoins the opposite side of said shoulder and is adapted to be fitted within the channel of the other member, and said other member having its opposite side walls beveled at their ends to fit edgewise against
10 said transversely oblique shoulders, and also formed each with a latch tang adapted to project through the slot of one of said shoulders and interlock with the adjacent side wall of said first mentioned member thereby to positively fasten

the two members together as the latter are assembled.

2. A frame constructed in accordance with claim 1 and wherein each transversely oblique shoulder is disposed in a plane which is perpendicular to its side wall and bisects the angle
5 of junction of said members.

3. A housing frame constructed in accordance with claim 1 wherein said first mentioned member is made at its end with a tang adapted to be
10 folded inwardly against the outer portion of said other member thereby to hold the two members in abutting relationship.

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