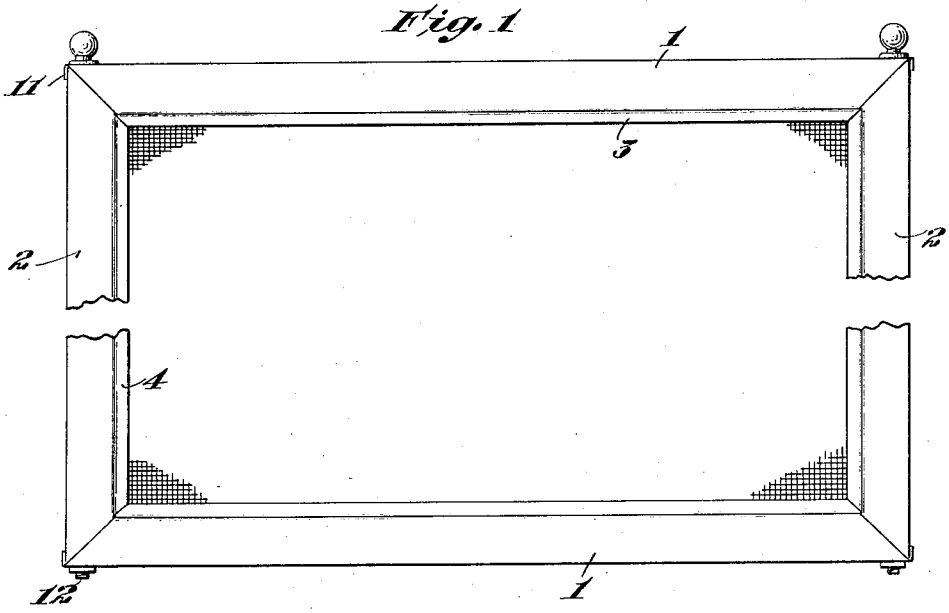
March 12, 1935. E. G. HUFF 1,994,022

SCREEN FRAME

Filed May 18, 1933

Fig. 1



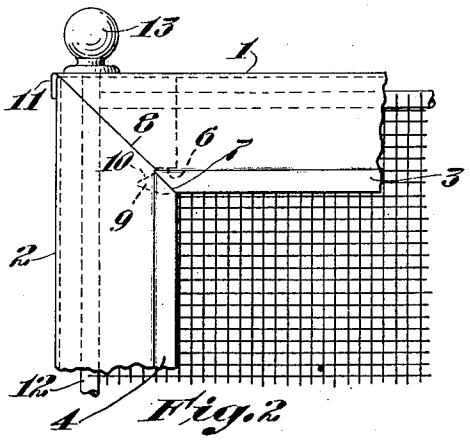


Fig. 2

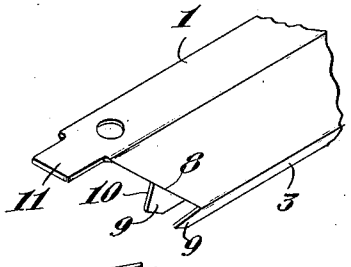
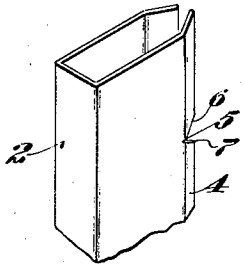


Fig. 3



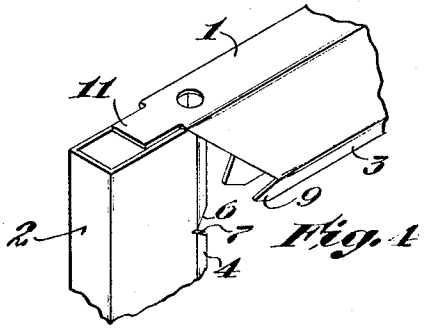


Fig. 4

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SCREEN FRAME

Elbridge G. Huff, Malden, Mass., assignor to Cutter Manufacturing Company, Everett, Mass., a corporation of Massachusetts

Application May 18, 1933, Serial No. 671,606

13 Claims. (Cl. 189—36)

In my copending application Serial No. 641,427, filed November 5, 1932, I have disclosed and claimed a frame construction for fire screens and other purposes in which the side and end members are interlocked to prevent certain relative movements relative to each other. Objects of the present invention are to provide an improved construction in which the frame is interlocked against additional movements relative to each other, namely outward angular movement of the members meeting at each corner relative to each other and also lengthwise movement of one of each such members away from the other, and in which this interlocking is effected by integral parts of the members as they are fitted together in the process of assembling the frame. Whereas these members are hereinafter referred to as end and side members it will of course be understood that this is merely for the purpose of convenience, that the end members may be either shorter or longer than the side members or equal in length, and that the side members may extend either vertically or horizontally or in any other direction when in normal use.

In one aspect the invention involves side and end members meeting at a corner with the side member having a shoulder near its inner edge facing away from the corner and the end member having a shoulder near its inner edge facing toward the corner, the shoulders interengaging to restrain separation of the members lengthwise of the side member. Preferably a hook is provided on the end member, preferably near its outer edge, for interengagement with the side member, preferably over the end of the side members, to restrain separation of the members longitudinally of the end member.

In another aspect the invention involves a frame comprising an outer member (either side or end) telescoping over an inner member (end or side) with fixed abutments near their inner edges to interlock them against relative angular outward movement about the corner while permitting them to be telescoped together lengthwise of one of the members, the fixed abutments also preferably interlocking one member against endwise movement away from the other member. The latter member is preferably held against endwise movement away from the former member by suitable means such as a hook in the form of an integral tab on the outer member which may be bent into engagement with the inner member after the two members are telescoped together. To interlock the members against relative angular outward movement about the corner any suitable means may be provided; in the case of a fire-screen this interlocking may be effected by a rod or pin projecting from the end of one member through the other member with a decorative nut threaded on the end of the rod or pin.

In a still further aspect this improved frame is characterized in that the inner and outer members comprise channels having the inner margins of their flanges converging and in that the aforesaid interlocking abutments are in the form of shoulders made by cutting away portions of said inclined margins as by cutting notches or other recesses in the margins of one member and shaping the ends of the margins of the other member to project into said recesses in interlocking relationship when the parts are telescoped together.

For the purpose of illustrating the genus of the invention a typical concrete embodiment is shown in the accompanying drawing, in which:—

Fig. 1 is a side elevation of a fire-screen with parts broken away;

Fig. 2 is a similar view on an enlarged scale of the upper left-hand corner of the fire-screen;

Fig. 3 is a perspective view of the end portions of the frame members before they are interfitted together; and

Fig. 4 is a similar view showing the frame members in the positions which they occupy as they are being moved into telescoping relationship.

The particular embodiment of the invention chosen for the purpose of illustration comprises end or outer members 1 and side or inner members 2. As shown in Figs. 3 and 4 each of these members is channel-shaped in cross section with the inner margins of their flanges inclined inwardly as shown at 3 and 4. The space between the edges of the inclined margins 3 and 4 may be varied to suit the purpose for which the frame is intended; in the case of fire-screens, for example, the space is preferably made substantially equal to the thickness of the screen material.

As shown in Figs. 3 and 4 the inclined margins of the side members 4 are provided with recesses in the form of notches 5 having a depth substantially equal to the width of the margins. The upper edges 6 of these notches or recesses, which constitute the aforesaid fixed abutments of the side members, are preferably perpendicular to the longitudinal dimension of the side members as shown in Fig. 2. The lower edges 7 of these notches are preferably disposed in a

plane which bisects the corners of the frame when the parts are fitted together.

The ends of the end or outer members 1 are cut at an angle so that the edges 8 are disposed in the aforesaid plane when the parts are telescoped together. However, the inclined margins 3 of the members 1 are permitted to extend beyond this plane so that their ends constitute projecting tongues 9, the upper edges 10 of which constitute fixed abutments which interengage with the abutment 6 of the notches 5 to interlock the parts together when they are moved into telescopic relationship lengthwise of the end members 1. While the edges 10 are disposed in a plane approximately parallel to the longitudinal dimension of the end members 1 they are preferably inclined somewhat with respect to this dimension, as shown in Fig. 2, to facilitate their insertion into the notches 5. Thus the outer members 1 are recessed at 8—10 to receive portions of the inner members 2. The end members 1 are also provided with projecting tabs 11 which are bent over the ends of the side members 2 after the parts are fitted together as shown in Figs. 1 and 2.

In assembling the parts the side and end members are preferably moved into interfitting relationship lengthwise of the end members, as shown in Fig. 4, with the end members telescoping over the side members 2. Thus the end portions of the flanges of the side members are disposed along the inner faces of the end portions of the flanges of the end members 1 and the inclined margins 3 of the end members are disposed in intersecting relationship with the inclined margins 4 of the side members 2. After the parts are telescoped together the tabs 11 are bent down as shown in Figs. 1 and 2. At this stage the parts are interlocked against separation endwise of the side members 2 and against outward angular movement about the corners by the interengagement between the abutments 6 and 10; and they are held against separation endwise of the end members 1 and against inward angular movement by means of the bent-over tabs 11. In this way the parts are held against all relative movement; and the inward angular movement about the corners is of course further resisted by interengagement between the members at the other corners. However, if it is desired further to reinforce the frame, this may be accomplished in any suitable manner as, for example, by providing the usual rods 12 and ornamental nuts 13.

It should be understood that the present disclosure is for the purpose of illustration only, and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

I claim:

1. A frame comprising side and end members meeting at a corner, the side member having a shoulder near its inner edge facing away from said corner, the end member having a shoulder near its inner edge facing toward said corner and interengaging with said first shoulder to restrain separation of the members lengthwise of the side member, and a hook on the end member interengaging with the side member to restrain separation of the members longitudinally of the end member, said shoulders being shaped for interengagement by endwise movement of the end member toward the side member.

2. A frame comprising side and end members meeting at a corner, the side member having a shoulder near its inner edge facing away from said corner, the end member having a shoulder near its inner edge facing toward said corner and intergengaging with said first shoulder to restrain separation of the members lengthwise of the side member, and a hook on the end member near its outer edge interengaging over the end of the side member to restrain separation of the members longitudinally of the end member, said shoulders being shaped for interengagement by endwise movement of the end member toward the side member.

3. A frame comprising separate inner and outer channel members meeting at a corner with the open sides of the channels directed inwardly, the outer member telescoping over the end of the inner member, fixed abutments near the inner edges of the two members for interlocking the members against relative angular movement outwardly about said corner while permitting them to be telescoped together lengthwise of one of the members, and means at the juxtaposed ends of the bottom portions of the separate channel members for interlocking the members against relative angular movement inwardly about said corner.

4. A frame comprising separate inner and outer channel members meeting at a corner with the open sides of the channels directed inwardly, the outer member telescoping over the end of the inner member, fixed abutments near the inner edges of the two members for interlocking the members against relative angular movement outwardly about said corner and also interlocking one member against endwise movement away from the other member, while permitting the members to be telescoped together endwise of the other member, and means at the juxtaposed ends of the bottom portions of the separate channel members for interlocking said latter member against endwise movement away from the former member and also interlocking the two members against relative angular movement inwardly about said corner.

5. A frame comprising inner and outer members meeting at a corner, the outer member telescoping over the end of the inner member, fixed abutments near the inner edges of the two members for interlocking the members against relative angular movement outwardly about said corner while permitting them to be telescoped together endwise of the end member, and a tab on the end member bent over the end of the side member to interlock the end member against endwise movement away from the side member.

6. A frame comprising inner and outer channel members having the inner margins of their flanges converging, the outer member telescoping over the inner member with said inclined margins of the two members in intersecting relationship, the margins of one member being notched and the inclined margins of the other member interengaging said notches to interlock the members against outward angular movement relatively to each other, and means to interlock the members against inward angular movement relatively to each other.

7. A frame comprising inner and outer channel members having the inner margins of their flanges converging, the inner member having recesses in its converging margins, the outer member telescoping over the inner member with its inclined margins extending through said recesses in the inclined margins of the inner member and

the flanges of the outer member being recessed to receive the flanges of the inner member.

8. A frame comprising inner and outer channel members having the inner margins of their flanges converging, the inner member having recesses in its converging margins, the outer member telescoping over the inner member with its inclined margins extending through said recesses in the inclined margins of the inner member and the flanges of the outer member being recessed to receive the flanges of the inner member, and a tab on the outer member bent over the end of the inner member to hold the two members in interlocking relationship.

9. A frame comprising channel shaped members having outer web portions, inwardly extending sides, and inturned flanges at their longitudinal edges, the members meeting at each corner being telescoped together with the sides of one member overlapping the sides of the other member, the flanges of the second member having recesses in line with the flanges of the first member and the latter flanges extending into said recesses to interlock the first member against movement in both directions longitudinally of the second member.

10. A frame comprising channel shaped members having outer web portions, inwardly extending sides, and inturned flanges at their longitudinal edges, the members meeting at each corner being telescoped together with the sides of one member overlapping the sides of the other member, the flanges of one member having notches in line with the flanges of the other member and the latter flanges extending into said notches to interlock the latter member against movement in both directions longitudinally of the other member, the end of the web of one member seating against the inner face of the web of the other member and the web of the latter member extending past the plane of the web of the other member and thence bending at right angles along the outer face of the web of the latter member.

11. A frame comprising channel shaped members having outer web portions, inwardly extending sides, and inturned flanges at their longitudinal edges, the members meeting at each corner being telescoped together with the sides of the outer member overlapping the sides of the inner member, the flanges of one member having notches in line with the flanges of the other member and the latter flanges extending into said notches to interlock the latter member against movement in both directions longitudinally of the other member, the end of the web of the inner member seating against the inner face of the web of the outer member and the web of the outer member extending past the plane of the web of the inner member and thence bending at right angles along the outer face of the web of the inner member, and the sides of the outer member terminating in end edges which extend obliquely from the junction of the webs to the junction of the flanges of the two members.

12. A frame comprising channel shaped members having outer web portions, inwardly extending sides, and inturned flanges at their longitudinal edges, the members meeting at each corner being telescoped together with the sides of one member overlapping the sides of the other member, the flanges of one member having notches in line with the flanges of the other member and the latter flanges extending into said notches, the end of the web of one member seating against the inner face of the web of the other member and the web of the latter member extending past the plane of the web of the other member and thence bending at right angles along the outer face of the web of the latter member, the flanges of each member being inturned at an oblique angle and the edges of said notches on the side away from the corner being inclined at a corresponding angle so that the edges seat against the flanges of the other member throughout substantially the full width of the flanges.

13. A frame comprising channel shaped members having outer web portions, inwardly extending sides, and inturned flanges at their longitudinal edges, the members meeting at each corner being telescoped together with the sides of the outer member overlapping the sides of the inner member, the flanges of one member having notches in line with the flanges of the other member and the latter flanges extending into said notches, the end of the web of the inner member seating against the inner face of the web of the outer member and the web of the outer member extending past the plane of the web of the inner member and thence bending at right angles along the outer face of the web of the inner member, the sides of the outer member terminating in end edges lying in a plane substantially bisecting the corner, the flanges of each member being inturned at an oblique angle and edges of said notches being inclined at a corresponding angle so as to seat against the flanges of the other member substantially in said plane.

ELBRIDGE G. HUFF.