

Oct. 20, 1970

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3,534,519

CONSTRUCTIONAL KIT

Filed Jan. 29, 1968

3 Sheets-Sheet 1

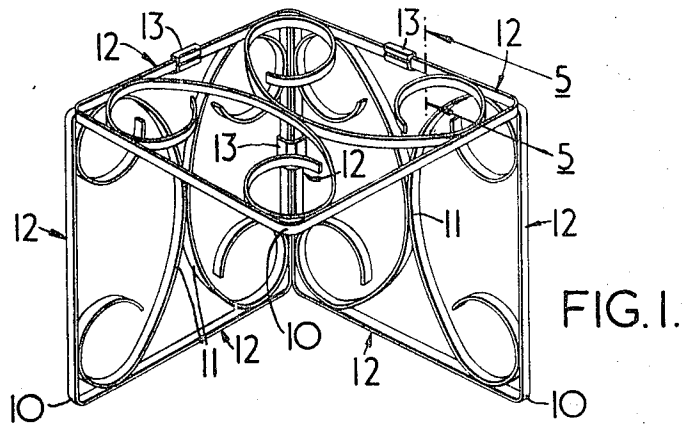


FIG. 1.

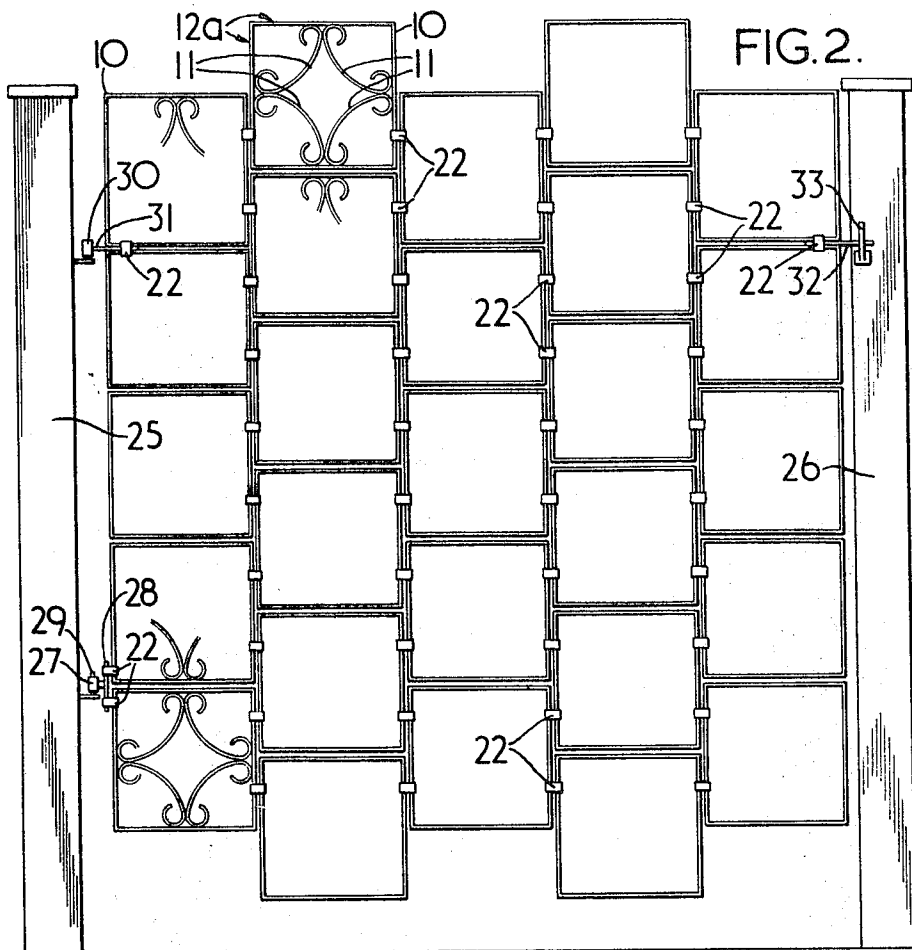


FIG. 2.

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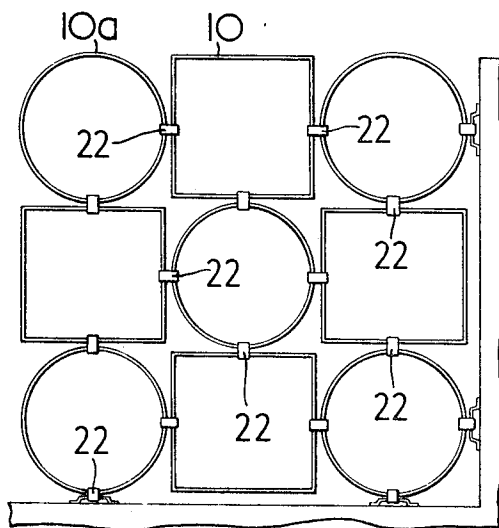


FIG. 3.

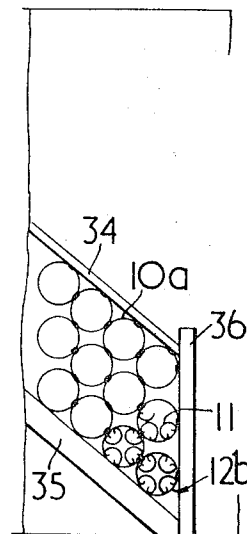


FIG.4.

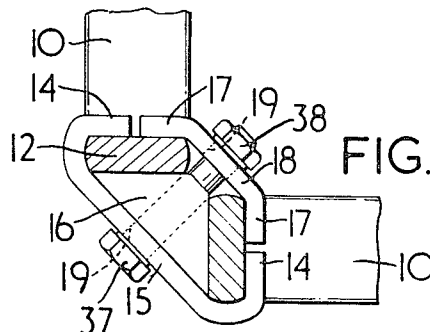


FIG. 5.

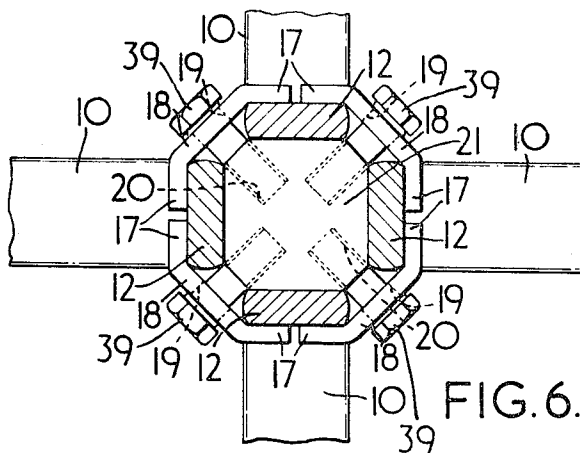


FIG. 6.

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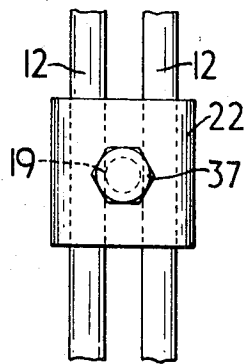


FIG. 7.

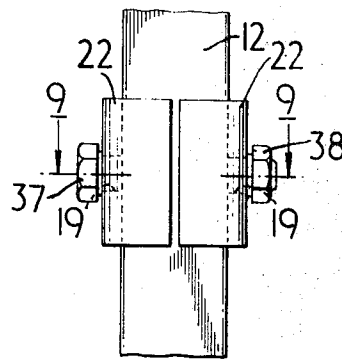


FIG. 8.

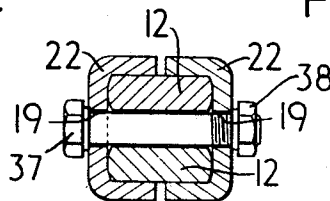


FIG. 9.

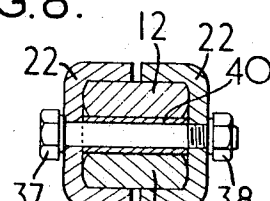


FIG. 13.

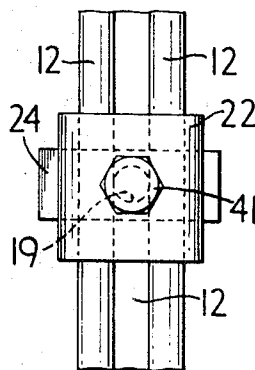


FIG. 10.

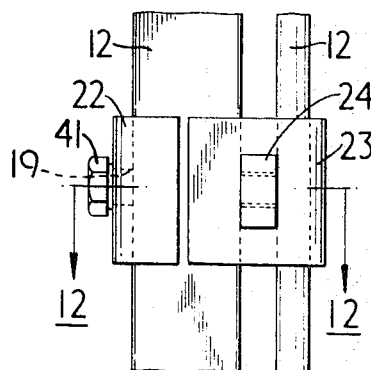


FIG. 11.

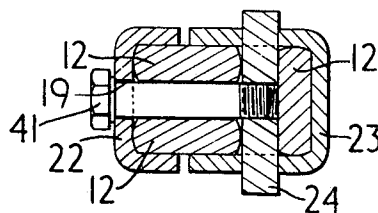


FIG. 12.

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CONSTRUCTIONAL KIT

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11,807/67

Int. Cl. E04c 2/42

U.S. Cl. 52—581

2 Claims

ABSTRACT OF THE DISCLOSURE

A constructional kit for making an object, such as a gate or a shelf, by interconnecting open panels formed from strip material and containing within their boundaries ornamentation also formed from strip material.

The invention relates to a constructional kit from which ornamental gates, screens, shelves, brackets, and other items of household or garden furniture can be built up and, in some instances, dismantled for re-assembly in different forms.

The constructional kit, according to the invention, includes at least two panels each having a strip-like frame, of which the major width is directed transversely of the panel, surrounding and supporting strip-like ornamentation which is spaced from the frame in significant positions, and screw-operated clamp means for interengaging the frames, in the said significant positions, of two adjacent panels so as to draw the adjacent edges of the panels into firm engagement with at least one intervening distance piece.

According to a feature of the invention each panel is built up from a frame and ornamentation strip which are formed separately and then connected to each other; while according to an alternative feature each panel is formed from a moulding or casting incorporating the frame and ornamentation strip as an integral unit.

According to a further feature each screw-operated clamp includes a pair of facing plates having end flanges which face each other and are adapted to engage over the edge portions, in the said significant positions, of the frames of two adjacent panels to be interconnected, and screw means which interconnect the two plates and serve as the intervening distance piece.

In such a case, and according to another feature, the screw means can extend through a sleeve which constitutes the distance piece.

According to a still further feature, and in the case where two panels are to be interconnected with an included angle between their median planes, the clamp plate at the convex side of the said included angle is centrally provided with an abutment having two surfaces which include the supplementary angle to be abutted by the outer sides of the two frames.

In the case where more than two of the panels are to be interconnected in a radiating array, the screw-operated clamping means, according to yet another feature, includes for each adjacent pair of panels a plate having end flanges to engage over the adjacent edge portions, in the said significant positions, of the pair of frames, and the separate plates are secured by screw-means to the respective sides of a polygonal block, having a number of surfaces equal to the number of panels, against which the outer sides of the panel frames abut.

The invention is exemplified by the accompanying drawings, in which:

FIG. 1 is a perspective view of an ornamental corner bracket;

FIG. 2 is a front view of a garden gate;

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FIG. 3 illustrates how panels of different regular shapes can be interconnected, for example, to form a screen;

FIG. 4 illustrates how circular panels can be interconnected to form an open side of a staircase;

FIG. 5 is an enlarged, inverted section on the line 5—5 through one of the screw-operated clamps shown in FIG. 1;

FIG. 6 is a view which is similar to FIG. 5 but illustrating a form of screw-operated clamp suitable for interconnecting four panels radiating at right-angles to their neighbours;

FIGS. 7, 8 and 9 illustrate one form of screw-operated clamp for interconnecting two panels edge to edge, FIG. 7 being a view in the plane of the two panels, FIG. 8 being a view in a plane at right-angles thereto, and FIG. 9 being a cross-section on the line 9—9 of FIG. 8;

FIGS. 10, 11 and 12 are respectively similar to FIG. 7, 8 and 9 but show a screw-operated clamp which simultaneously holds a third panel at right-angles to the other two, and FIG. 13 is a view similar to FIG. 9 showing a screw and sleeve arranged in a screw operated clamp.

Referring firstly to FIGS. 1 to 4, each of the constructions shown is built up from panels formed from metal strip bent across its width and interconnected by screw-operated clamps. The panels of FIGS. 1 and 2 are formed with rectangular frames 10, those of FIG. 4 with circular frames 10a, and those of FIG. 3 with a combination of rectangular and circular frames. Each frame is shown as being interiorly provided with flat strips 11 bent to form ornamentation.

The strips 11 are conveniently of the same width as the frames, but could be narrower, and they are secured in the frames such as to leave the frames free of contact with the ornamental strips in significant positions for the reception of the screw-operated clamps as hereinafter described. Thus, in FIG. 1 one of these significant positions occurs centrally of each of the four sides of the rectangular frames as indicated at 12, while in FIG. 2 the significant positions 12a occur at each side of the centre of each of the four sides of the frame, although the ornamental strips could be arranged so as also to provide a central position. In FIG. 4 the particular ornamentation shown provides four of those positions indicated at 12b.

Although only rectangular and circular panels are shown it is obvious that they could be of other regular shapes, such, for example, as triangular, or polygonal, and that the number and arrangement of the positions 12 will be controlled by the ornamentation used.

The three panels of FIG. 1 are held in position by three screw-operated clamps 13 which are shown in greater detail in FIG. 5. In the latter, two of the panel frames 10, 10 have their portions 12 engaged in hook-like extremities 14 of an outer plate 15 provided with an integral, triangular abutment 16, and the two portions 12 are engaged by the extremities 17 of an inner plate 18. The respective extremities 14 and 17 are in alignment, and the plates 15 and 18 and the abutment are provided with aligned holes 19 to receive a bolt 37 provided with a nut 38. Alternatively the hole 19 in one of the plates could be screw-threaded instead of providing the bolt with a nut. The bolt heads and nuts can be provided with ornamental covers (e.g., of plastic) suitably secured in position.

In FIG. 6 the four frames shown are held by four of the plates 18, but instead of using plates like 15, each of the plates 18 are secured by bolts 39 inserted into screw-threaded bores 20 in the chamfered edges of a central, rectangular block 21.

FIGS. 7 to 9 show how two panels can be connected together with their planes aligned. The portions 12 only of each panel frame are shown, and it will be seen that

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they are interconnected by a pair of U-shaped brackets 22 held together by a bolt 37 which engages a nut 38 and also acts as a spacer for the frames of the two panels. The bolt 37 may also extend through a sleeve 40 which constitutes a spacer for the frames of the two panels as shown in FIG. 13.

The three panel portions 12 in FIGS. 10 to 12 are held together by one U-shaped plate 22 embracing two of them, and a third and deeper U-shaped plate 23 between which, and the edges of the other two, is a distance piece 24 which extends through windows in the arms of plate 23. The two plates are urged towards each other by a bolt 41 which is inserted through the hole 19 of plate 22 and engages in a screw-threaded bore in distance piece 24 to clamp the bight of plate 23 against the frame portion 12 it embraces. The action of distance piece 24 in the windows causes it to clamp the other two portions 12 against the bight of plate 22.

Screw-operated clamps of the kinds just described, or of an equivalent functional form are adapted for use in attaching fixing brackets or hinges to the panels. Thus, the staggered vertical rows of panels which form the gate shown in FIG. 2 are not only interconnected by screw-operated clamps of the kind described with reference to FIGS. 7 to 9 but the same form of clamp can be used for the supporting of the gate relatively to the gate posts 25 and 26. The lower hinge interconnecting the gate to post 25 includes a hinge barrel 27 parallelly fast with a strip 28 which is of the same cross-section as a portion 12 and is clamped to the gate by the FIGS. 7 to 9 construction, the hinge barrel being for coaction with a hinge pin 29 made fast to the gate post. The barrel 30 of the upper hinge is fast with a plate 31 which is at right-angles to it and secured by another of the clamps in the space, shown in FIG. 7, between the portions 12 of the two panels. The latch pin 32 for coaction with the swinging catch plate 33 attached to gate post 26 is held in position in the same way as is hinge barrel 30.

In much the same way the assembly of circular panels of FIG. 4 are held to the hand rail 34, tread support 35 and newel post 36 of the stairway shown.

When panels of the invention are used to form a shelf or table top intended to support a glass pane the screws or bolts used in selected positions can have their heads provided with rubber caps for the pane to rest upon.

It will be appreciated that if one should dismantle, say, the garden gate above described, the various panels and clamps could be re-assembled to form another kind of article, for example, one or more of the corner brackets shown in FIG. 1.

It will also be appreciated that a sufficient number of the panels and clamps can be supplied as a kit for the assembly of one or more articles in accordance with instructions supplied with the kits.

What I claim as my invention and desire to secure by Letters Patent of the United States is:

1. A construction kit including at least two panels each having a strip-like frame of which the major width is directed transversely of the panel, strip-like ornamentation which is secured within each frame but is spaced from the frame in significant positions, an intervening distance piece for arrangement between the frames of two adjacent panels, and screw-operated clamp means for interengaging the frames of the two adjacent panels in the said significant positions so as to draw the adjacent edges of the panels into firm engagement with said intervening distance piece, each screw-operated clamp includes a pair of facing plates having end flanges which face each other and are adapted to engage over the edge portions of the frames of the two adjacent panels in the said significant positions, and screw means which interconnect the two plates and serve as the intervening distance piece the two panels are interconnected with an included angle between their median planes, and in which the clamp plate at the convex side of the said included angle is centrally provided with an abutment having two surfaces which include the supplementary angle to be abutted by the outer sides of the two frames.

2. A construction kit including at least two panels each having a strip-like frame of which the major width is directed transversely of the panel, strip-like ornamentation which is secured within each frame but is spaced from the frame in significant positions, an intervening distance piece for arrangement between the frames of two adjacent panels, and screw-operated clamp means for interengaging the frames of the two adjacent panels in the said significant positions so as to draw the adjacent edges of the panels into firm engagement with said intervening distance piece more than two of the panels are interconnected in a radiating array, and the screw-operated clamping means includes for each adjacent pair of panels a plate having end flanges to engage over the adjacent edge portions, in the said significant positions, of the pair of frames, and the separate plates being secured by screw means to the respective sides of a polygonal block, having a number of surfaces equal to the number of panels, against which the outer sides of the panel frames abut.

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U.S. Cl. X.R.

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