

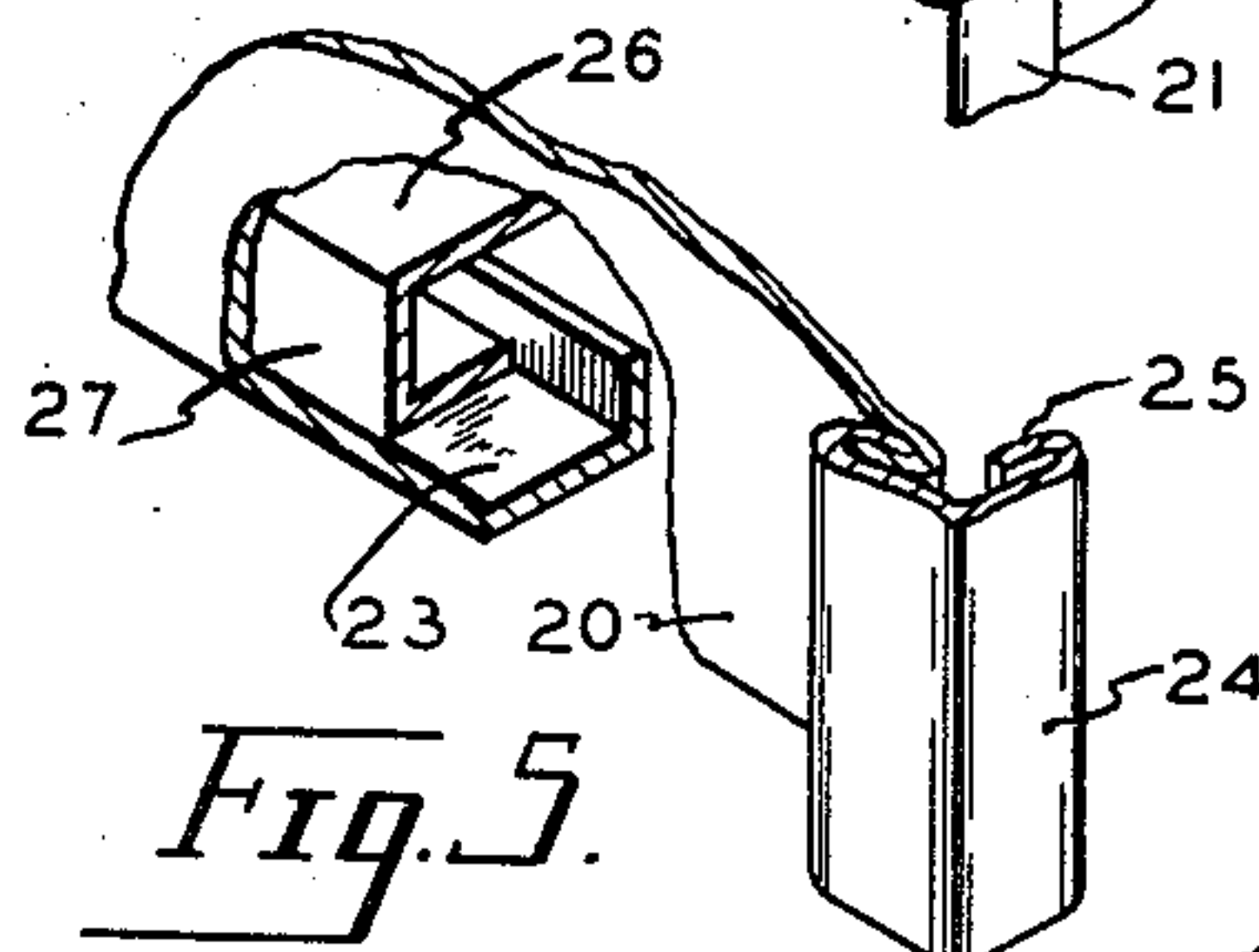
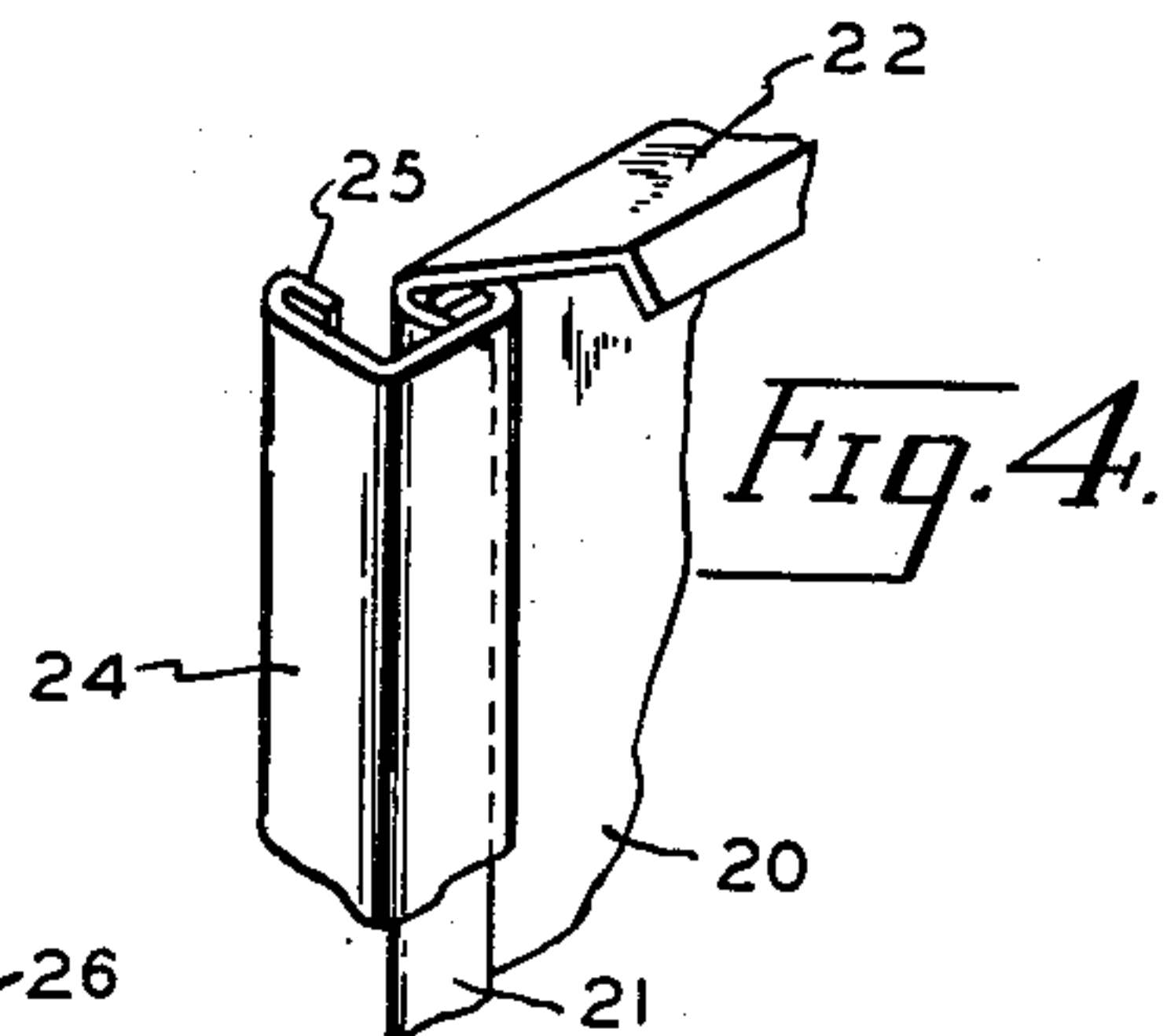
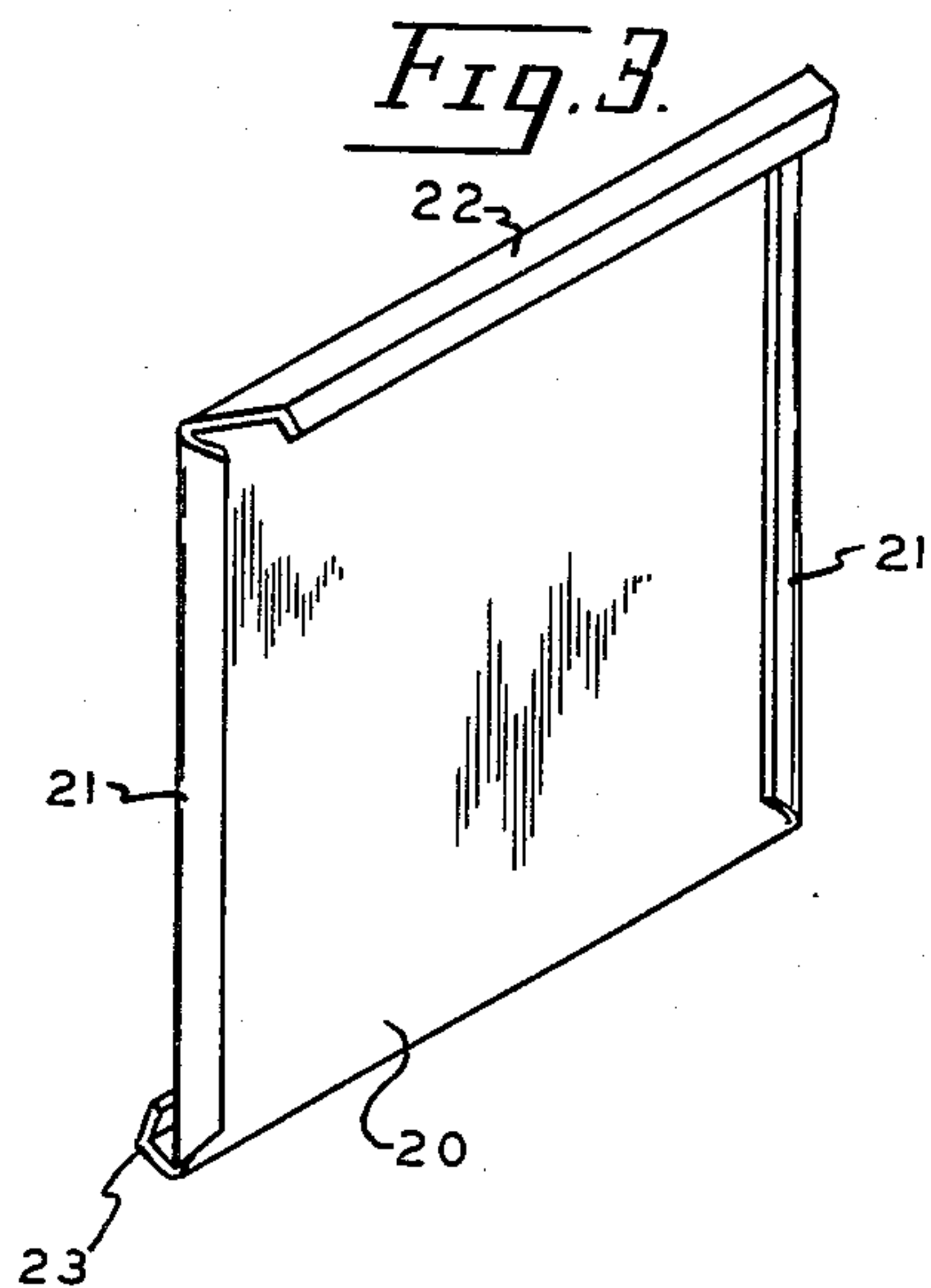
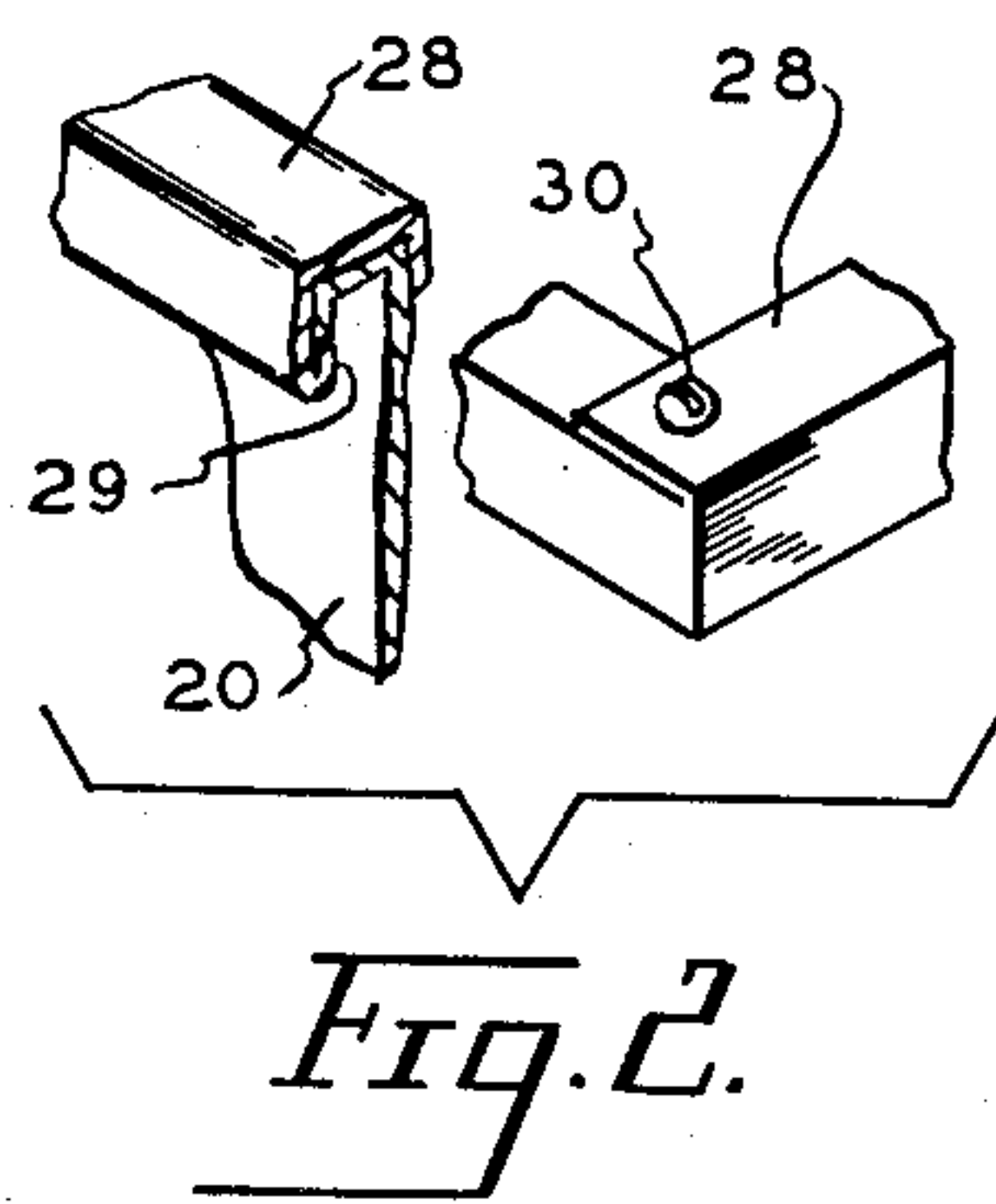
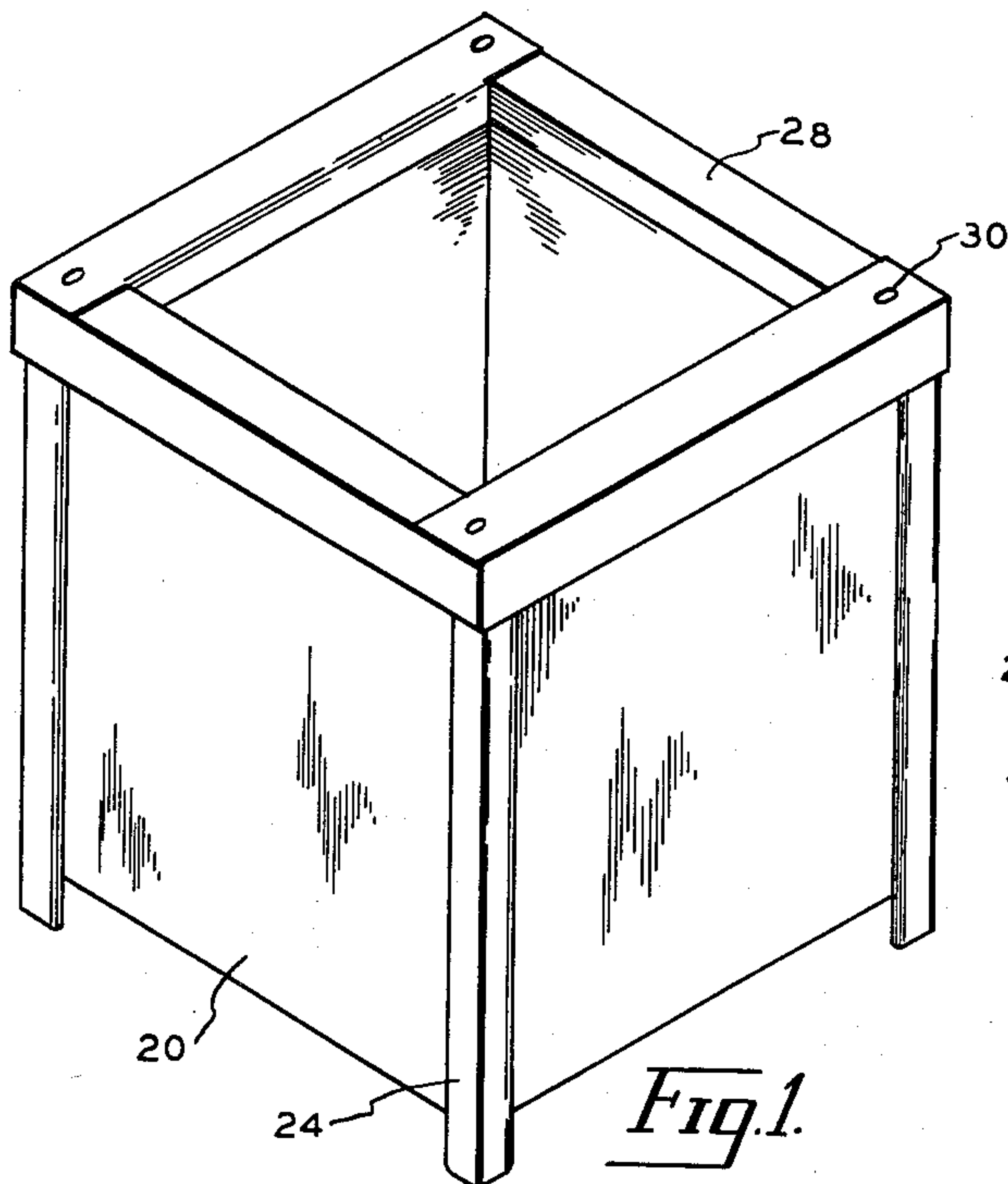
Nov. 17, 1953

J. MILLER  
CONTAINER

2,659,515

Filed April 4, 1950

2 Sheets-Sheet 1



INVENTOR  
*Jules Miller*

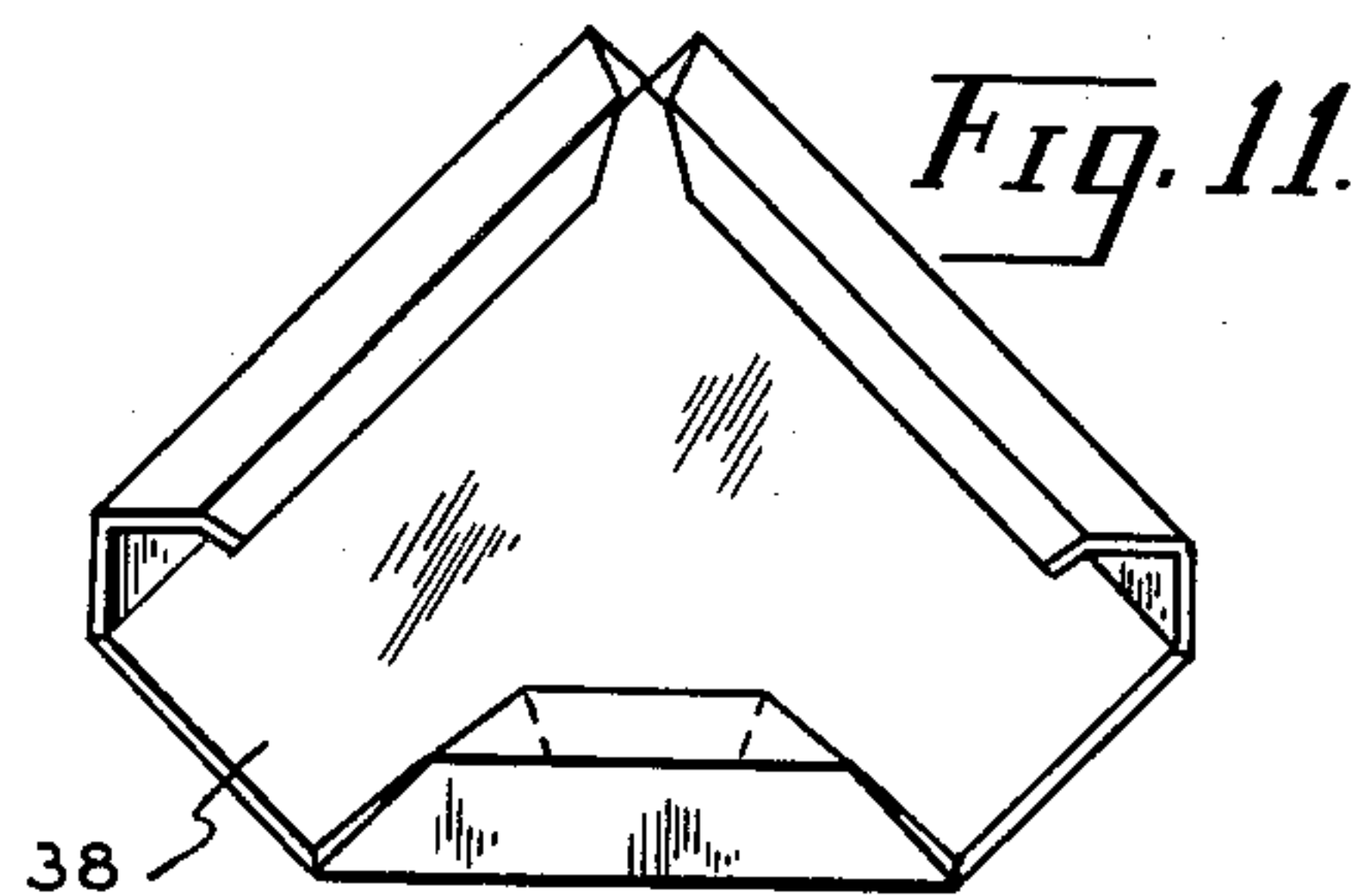
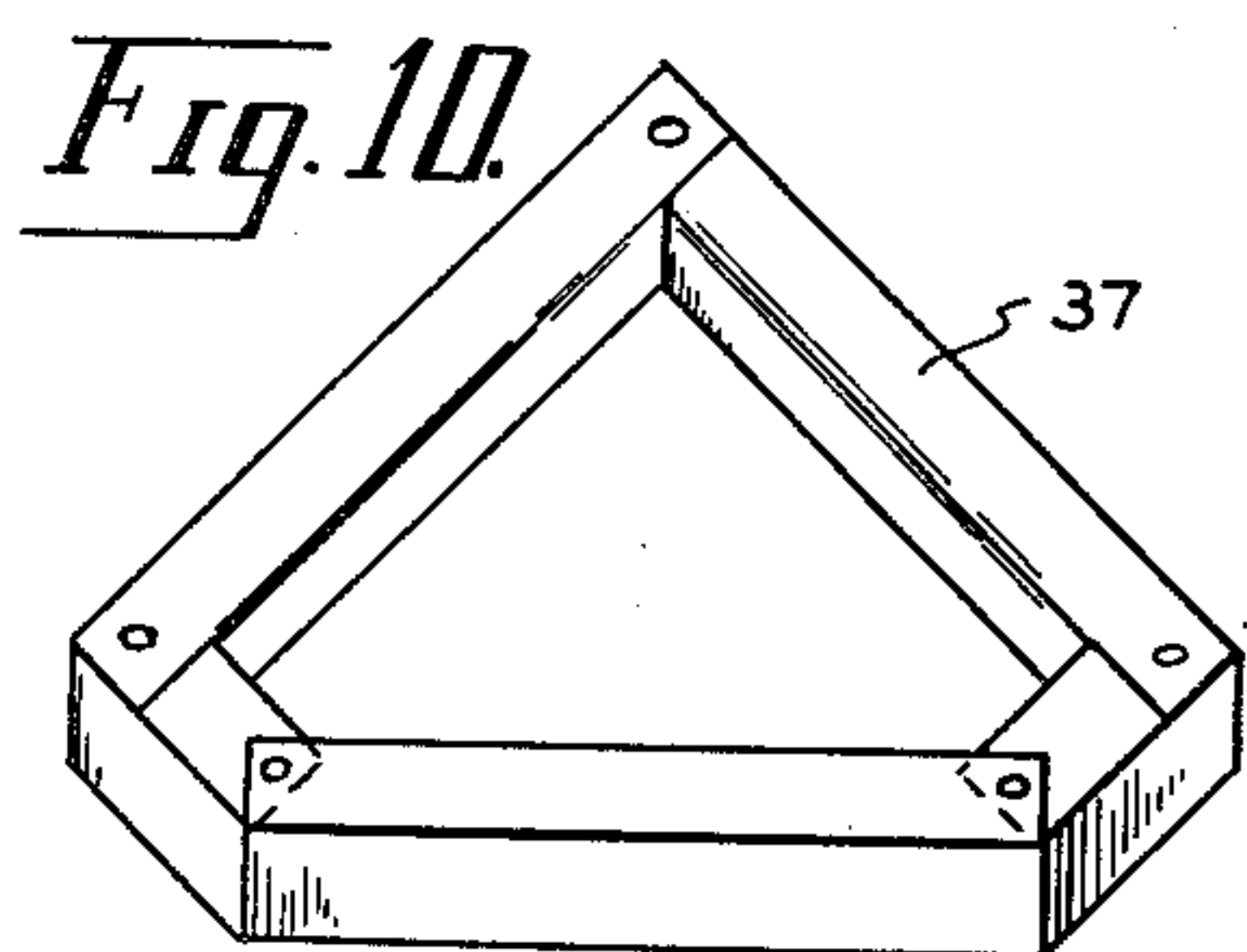
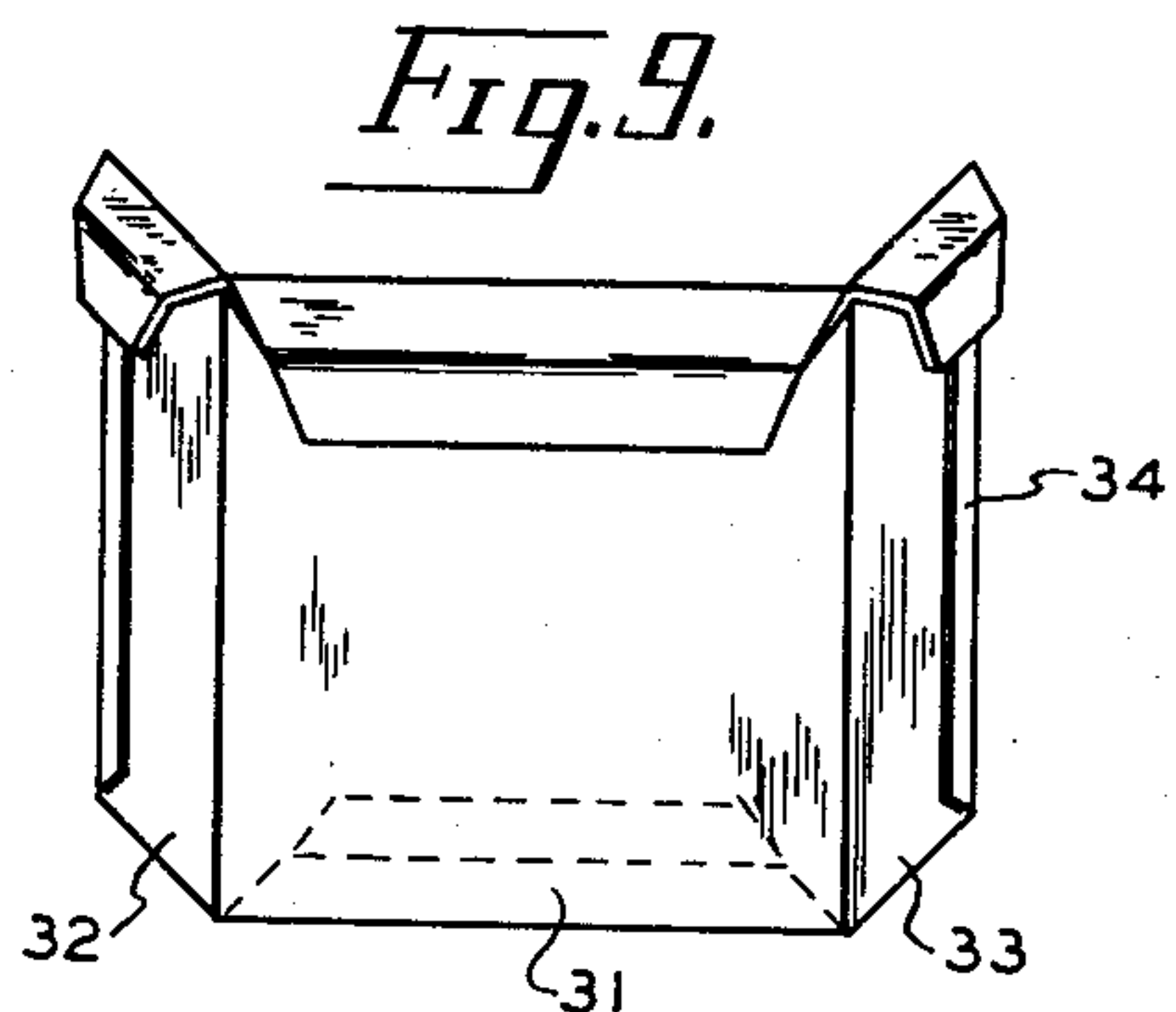
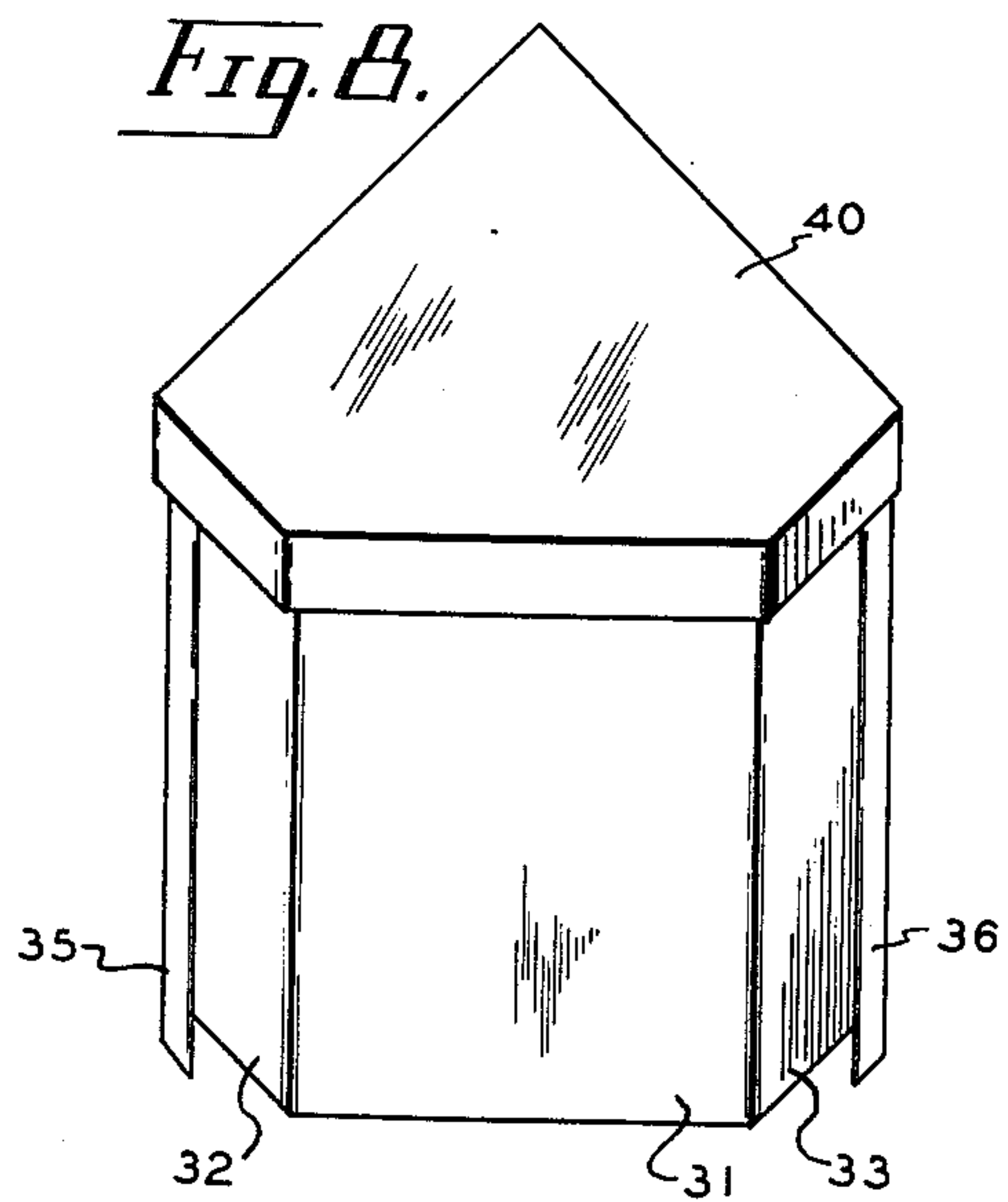
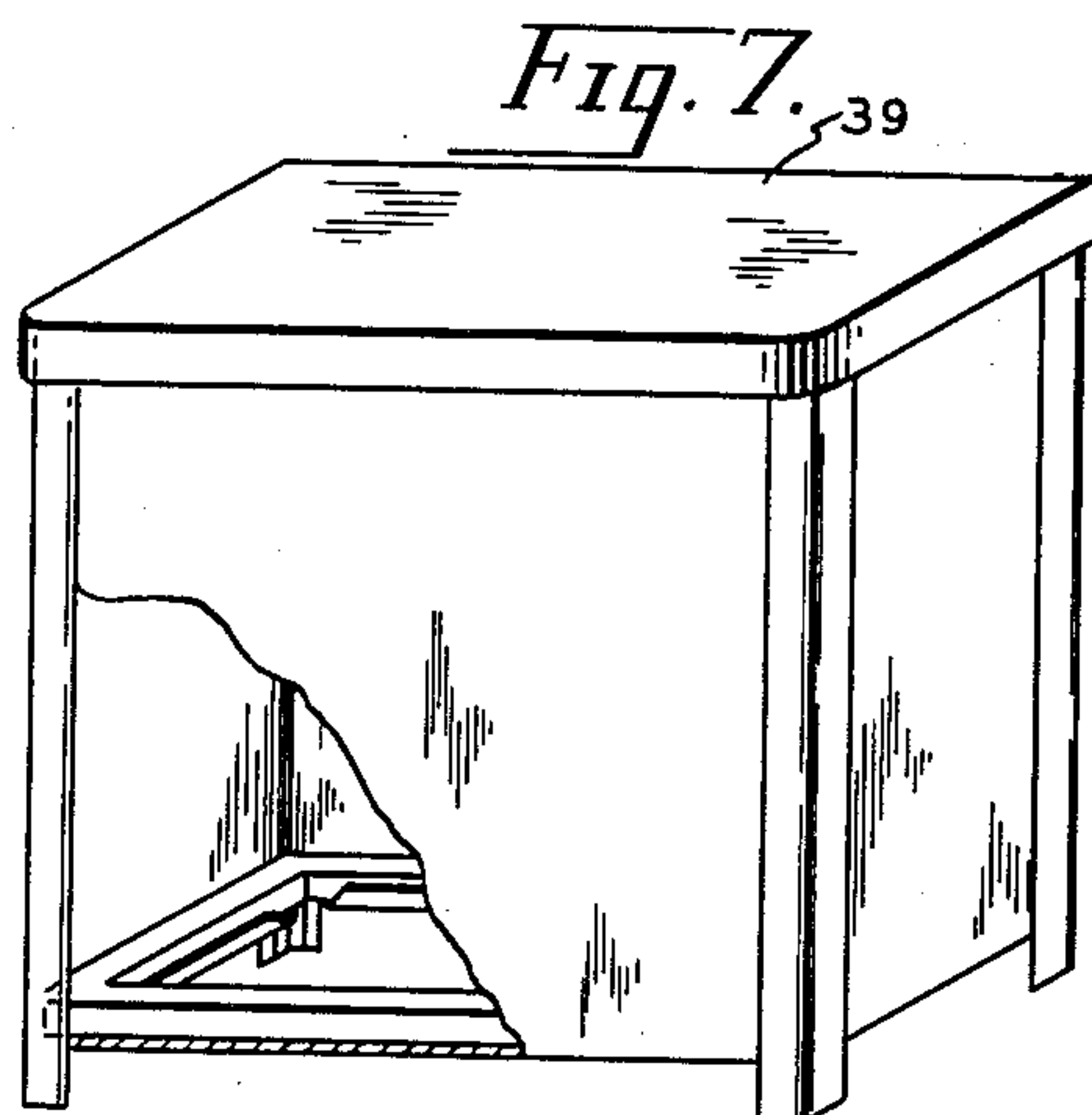
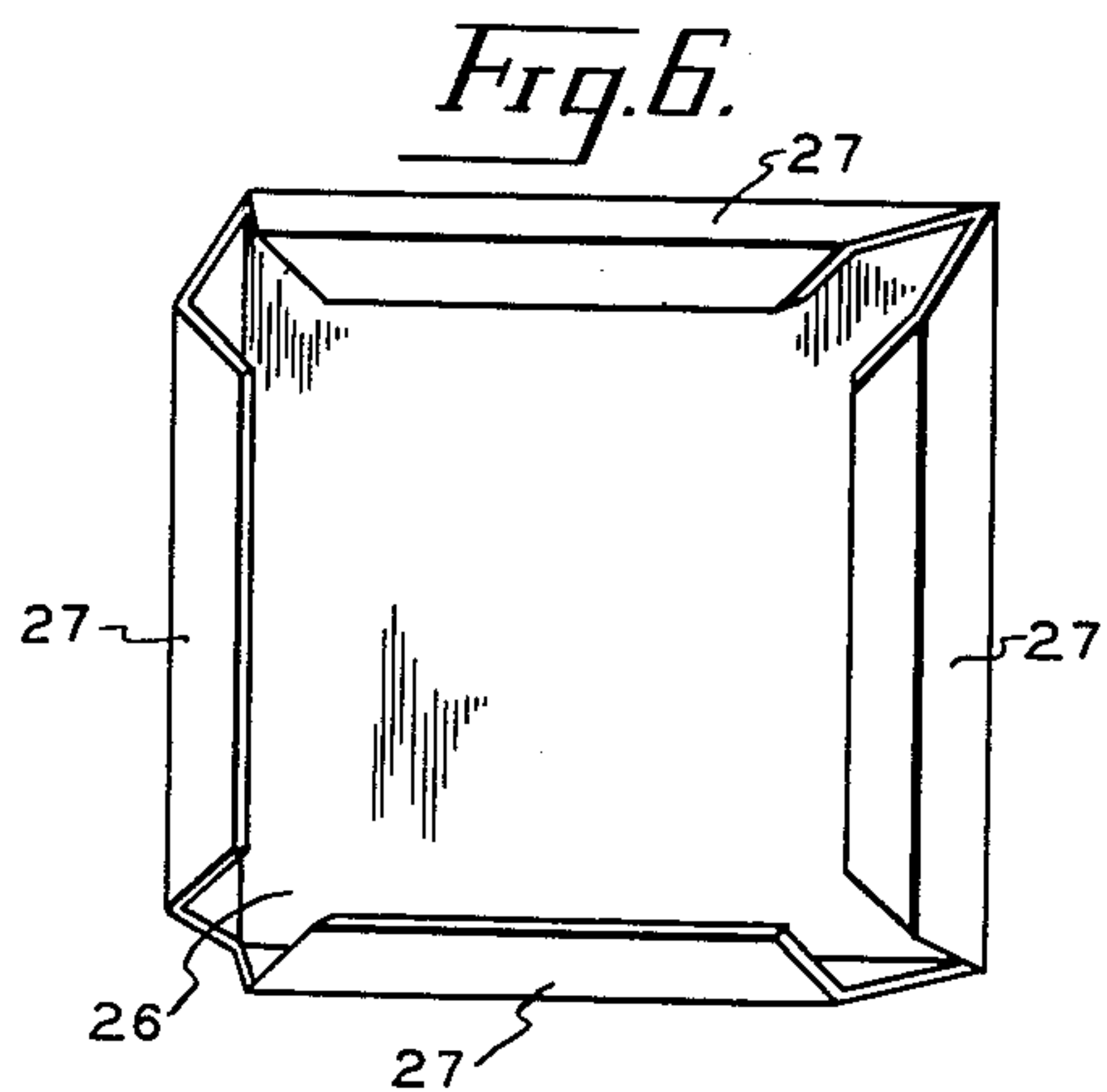
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2 Sheets-Sheet 2



INVENTOR  
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## UNITED STATES PATENT OFFICE

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## CONTAINER

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2 Claims. (Cl. 220—80)

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This invention relates to containers, more particularly to what are called "knocked down flats" or "K. D. F." in trade terminology.

Knocked down flats which are to be assembled by the ultimate consumer present several desirable features to the manufacturer thereof, and the middlemen. For example, since these articles take up but a small fraction of their assembled volume, there is a great saving in the cost of shipping by freight or by any other means. For the same reason, there is a great reduction in the amount of storage space required. The cost of the labor involved in assembling the container before sale to the ultimate consumer, whether by manufacturer or middleman, is eliminated and this saving may, at least in part, be passed on to the consumer, resulting in increased sales and consumer satisfaction. However, despite these and other advantages, previously made knocked down flats have up to the present been subject to various objections which have prevented their more widespread use. Thus, previously employed knocked down flats have been capable of assembly by the consumer only after the expenditure of an inordinate amount of time and effort. In most instances, the use of tools and auxiliary hardware such as screws, bolts, nuts, clips, and the like were necessary, and in many instances specially made tools and hardware were required. Once assembled, the container could not be disassembled to permit cleaning, disinfecting, repainting, or the like, or if it could be disassembled the consumer was deterred therefrom by the thought of the time and effort involved in the disassembly and subsequent assembly. Parts were of heavy, bulky, complex construction, whereby the consumer could not easily take the knocked down flat with him at the time of sale, thereby resulting in loss of a sale or in increased shipping costs. Since the knocked down flat could not be disassembled, damage to any part thereof could not be remedied by simply replacing the damaged part, and the damaged container either had to be repaired in situ at comparatively great expense or entirely discarded.

One object of this invention is to provide a container which may be readily and quickly assembled and disassembled by the consumer with the sole use of his hands and without the aid of tools and auxiliary hardware such as screws, bolts, nuts, clips and the like.

Another object is to provide an off-the-floor container of the "K. D. F." type which is economical to manufacture, sturdy, durable, practical and pleasing to the eye but which is composed of a minimum number of parts of light weight and simple construction.

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Still another object is to provide a container which is so versatile that it may be adapted to numerous diverse uses by merely supplying therewith a lid adapted to the particular use desired, and/or an open bottom so that it may be employed as a radiator enclosure or the like.

Other objects and advantages will appear from the following detailed description of a preferred embodiment of the invention illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of an assembled container, without a lid, embodying features of my invention;

Fig. 2 is a perspective view, partially in section, showing structural details of the upper part of the container;

Fig. 3 is a perspective view of the side panel of my container;

Fig. 4 is a perspective view of an upper corner of the container with the upper inverted U-shaped frame member removed;

Fig. 5 is a cutaway perspective view, partially in section, showing structural details of the bottom part of the container;

Fig. 6 is a perspective view from below of the bottom member of the container;

Fig. 7 is a perspective view, partially cutaway, of a modification of the container as a radiator enclosure or the like;

Fig. 8 is a perspective view of a modification of the invention as a three-legged container suitable for corners and the like;

Fig. 9 is a perspective view of the front panel in the modification shown in Fig. 8;

Fig. 10 is a perspective view of the upper inverted U-shaped frame member employed in the modification shown in Fig. 8;

Fig. 11 is a perspective view, from below, of the bottom member employed in the modification shown in Fig. 8.

Referring now to the drawings, numeral 20 indicates the side panels. Each of these side panels, as shown in Fig. 3 has outward return bend flanges 21 along the vertical edges thereof, an outward return bend flange 11 along the upper edge thereof, and an inward return bend flange 23 along the lower edge thereof. The corner angle posts 24 are of greater length than the side panels, and have inward return bend flanges 25 along the vertical edges thereof, as shown in Fig. 4. In this manner, an off-the-floor effect is attained since the side panels will rest by means of their flanges 22 upon the upper ends of the posts. Of course, side panels flanges 21 and post flanges 25 are so bent as to interengage tightly enough to eliminate looseness and rattling but not enough to offer undue resistance in assembling and disassembling. Likewise, flanges



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23 have their ends adjacent the vertical edges of the side panels preferably cut at a 45 degree angle to provide a tight mitered joint at the bottom when assembled.

Bottom member 26, as shown in Fig. 6, has downwardly turned flanges 27 along the outer edges thereof so as to interengage with flanges 23 of the side panels in the manner shown in Fig. 5. Of course, it will be understood that where a bottom is not desired, as in a radiator enclosure for example, the bottom member may either be dispensed with or made in the shape of a frame, of a tubular, channeled or solid cross-section adapted to rest within flanges 23 to thereby provide the container with greater rigidity, as shown in Fig. 7. The top frame member 28 has an inverted U-shaped cross-section so as to fit snugly over side panel flanges 22, as shown in Fig. 2, thereby covering any sharp edges and providing the container with greater rigidity. The outer arm of the inverted U may be provided with an inward return bend flange 29 in order to maintain the frame in position. As shown, the frame is bent from one straight channeled piece with the overlapping portions at the corners screwed, bolted, riveted, spot welded or the like at 30, but it will be understood that any other suitable manner of forming or shaping frame 28 may be employed.

In the three-legged modification shown in Fig. 3, which is adapted for corners and the like, the front panel 31 has each of its end sections 32 and 33 bent inwardly at a 45 degree angle, as shown in Fig. 9 so that its flanges 34 may securely interengage the flanges of the 90-degree corner angle posts 35 and 36. In this manner, the same type posts may be used as in the embodiment shown in Fig. 1. This Fig. 8 modification is shown covered with a lid 40. Upper frame member 37 and bottom member 38 must be shaped accordingly as shown respectively in Figs. 10 and 11. However, it will be understood that by merely changing the angles of the corner posts to 60 degrees, front panel 31 could be made identical with the other two panels in the embodiment shown in Fig. 8, with no bent end sections at all. In a similar fashion, by suitably changing the angles of the corner posts and making other minor adjustments, the container could be constructed with any number of sides. Likewise, by making other minor adjustments in the various bend angles and the like, the container may be made with side panels converging or diverging upwards. As indicated in Fig. 8, the side panels may be shaped in any desired manner so long as the flanges along the vertical edges thereof interengage with the flanges of the corner posts at the proper angle.

In the above description of the drawings, the term "outward" is intended to mean that the flange is bent towards the outside of the container. The term "inward" is intended to mean that the part is bent towards the inside of the container. The term "return bend" is intended to mean that the flange is bent backwards in a position substantially parallel with the plane of the member of which the flange is a part.

In assembling the container, the consumer slides each corner post upwards with its flanges 25 interlocking with flanges 21 of the abutting side panels. The bottom member is then inserted so that its flanges 27 interengage with flanges 23 of the side panels. The upper frame member is then snapped over the upper edges of the side panels, thus producing a finished open

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topped container if the bottom member is a solid sheet. If the bottom member is an open frame, as for a radiator enclosure, a lid 39, as shown in Fig. 7, is provided for producing a finished container. Similarly, the container may be adapted for any other desired use by supplying the proper lid therefor either as a separate item to be fitted over the upper opening or as an integral part of the upper frame member. Thus, the lid may be provided with a porthole or swinging or hinged closure adapted for passing material there-through for use as a commercial waste container. To disassemble the container, the consumer merely turns the container over, pulls out the corner posts, knocks out the bottom member, and takes off the top frame member.

It is thus apparent that I have devised a container which will accomplish all of the objects hereinbefore set forth. Preferably, the parts thereof are made of sheet metal of a gauge adapted for the particular use to which it is intended. However, other suitable material may be used, such as solid plastic or other natural or synthetic material, laminated layers, and the like, shaped by any suitable means such as molding, bending, pressing or the like with or without the use of heat, solvents, and the like. The material of course must have the required tensile and compressive strengths, though it need not be too rigid, as a modicum of elasticity enhances the facility of assembly and disassembly. The parts may be decorated as by the use of paint, decalcomanias, etching, or the like, or they may be fabricated from lithographed metal, inlaid material or the like.

While I have shown and described a preferred embodiment of my invention, it will be understood that it is not to be limited to all of the details shown, since certain changes and modifications readily apparent to those skilled in the art may be made therein without departing from the essence of my invention. Such changes and modifications are to be regarded as within the purview of this application and the spirit and scope of the appended claims.

I claim:

1. In a device of the character described, in combination, side panels having outward return bend flanges along the vertical and upper edges thereof, corner angle posts of greater length than said panels having inward return bend flanges along the vertical edges thereof interlocking with the flanges along the vertical edges of said panels, and a top frame member having an inverted U-shaped cross section fitting snugly over the upper edges and flanges of said panels, said panels resting, by means of the flanges along their upper edges, upon the upper ends of said posts.

2. The device of claim 1, in which the outer arm of said inverted U-shaped cross section is longer than the outer arms of the return bend flanges along the upper edges of the side panels and is provided with an inward return bend flange.

JULIUS MILLER.

#### References Cited in the file of this patent

#### UNITED STATES PATENTS

Number	Name	Date
1,627,282	Gran	May 3, 1927
1,656,497	Paulson et al.	Jan. 17, 1928
1,749,581	Hauser	Mar. 4, 1930
1,876,303	Knaggs	Sept. 6, 1932
2,051,006	Marcus	Aug. 11, 1936