Oct. 4, 1949. F. ALBACH ET AL 2,483,606

KNOCK-DOWN UTILITY CABINET

Filed Oct. 25, 1946 3 Sheets-Sheet 1

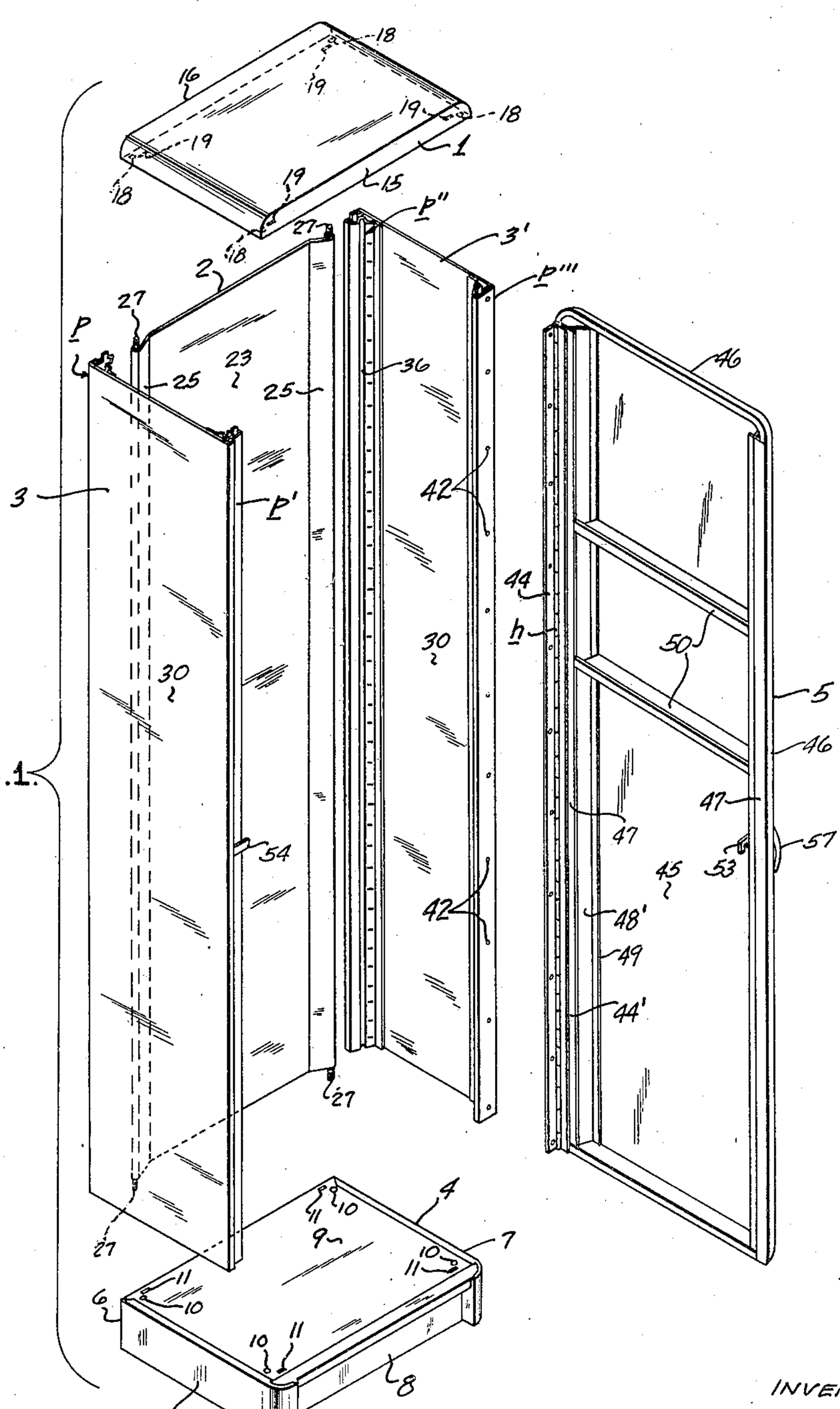

FIG. 1.

INVENTORS
FRANK ALBACH
GEORGE R. CHERVENKA

BY Alfred W. Peschke

ATTORNEY

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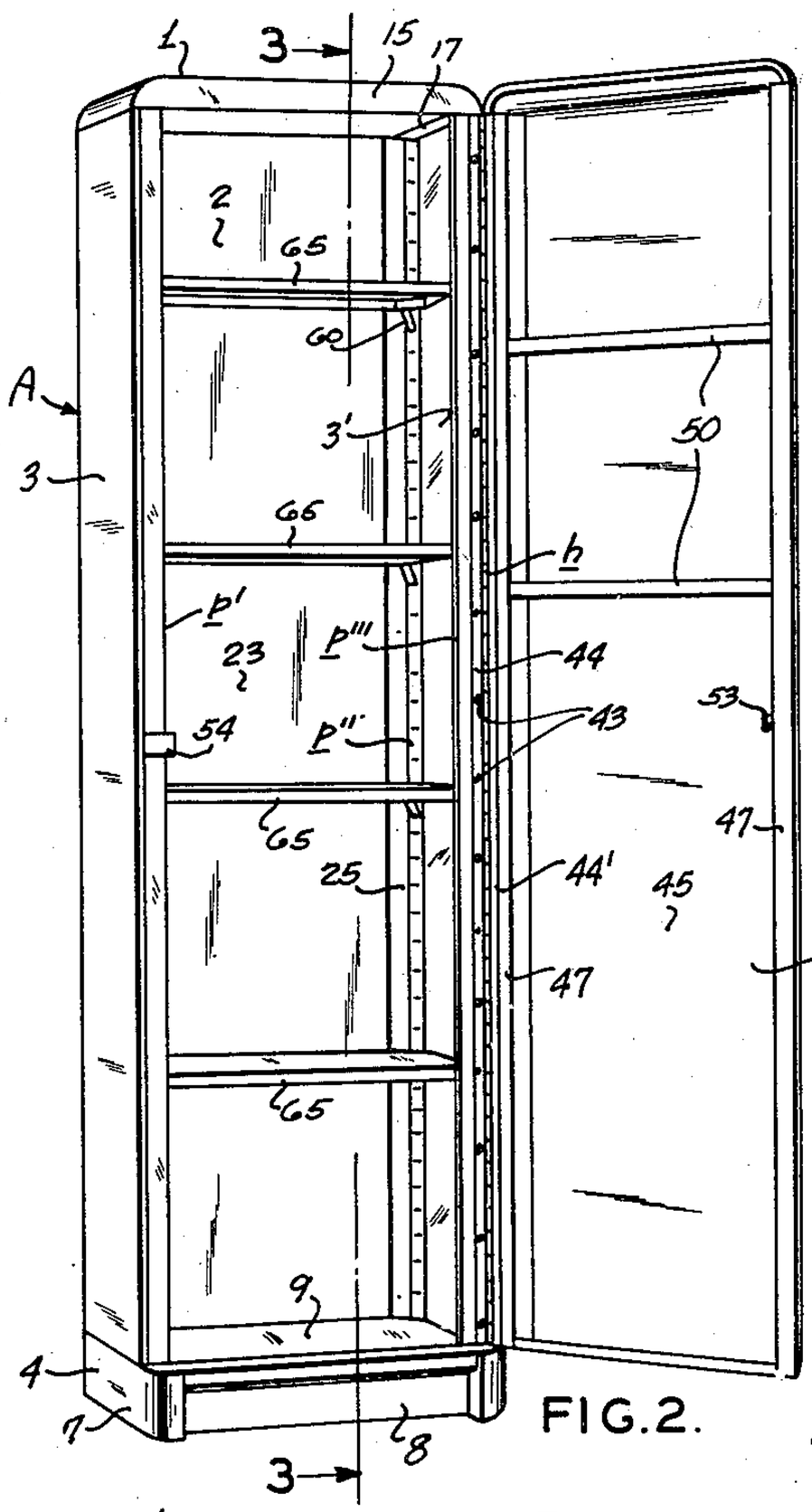

FIG. 2.

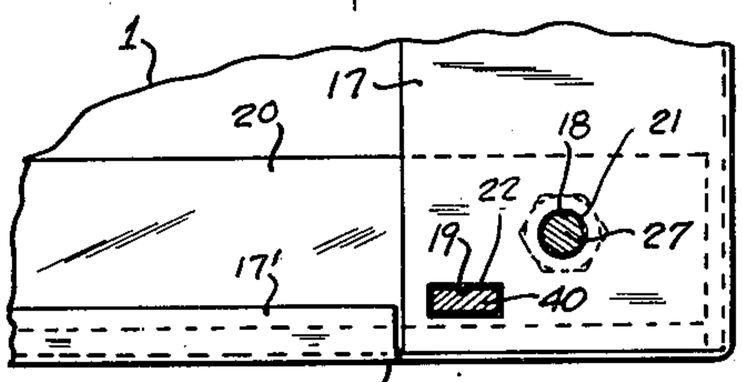

FIG. 4.

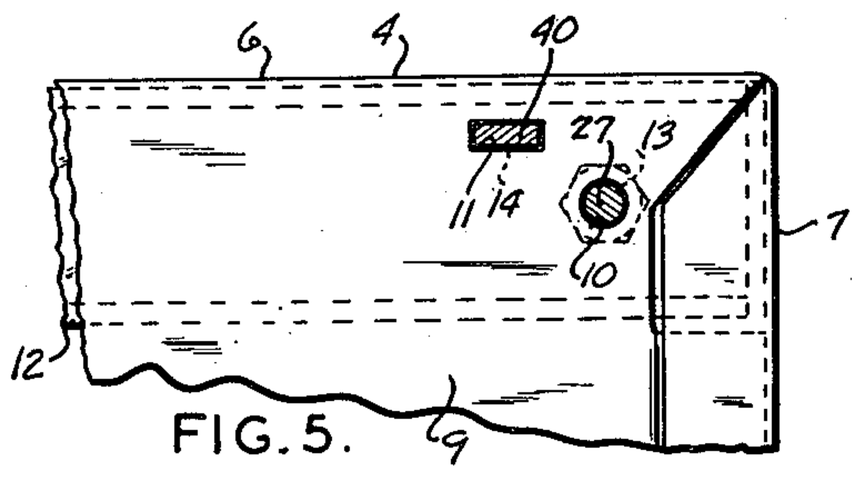

FIG. 5.

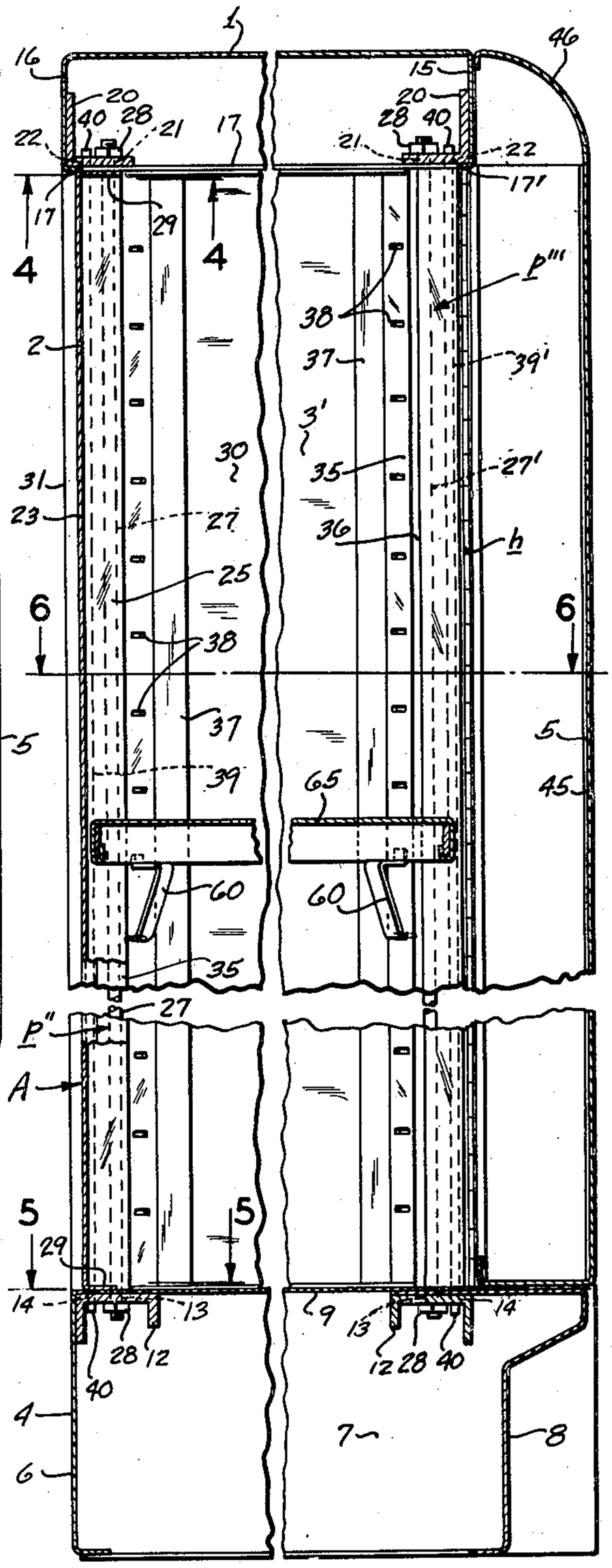

FIG. 3.

INVENTORS
FRANK ALBACH
GEORGE R. CHERVENKA
By Alfred Peterhoff
ATTORNEY

Oct. 4, 1949. F. ALBACH ET AL 2,483,606

KNOCK-DOWN UTILITY CABINET

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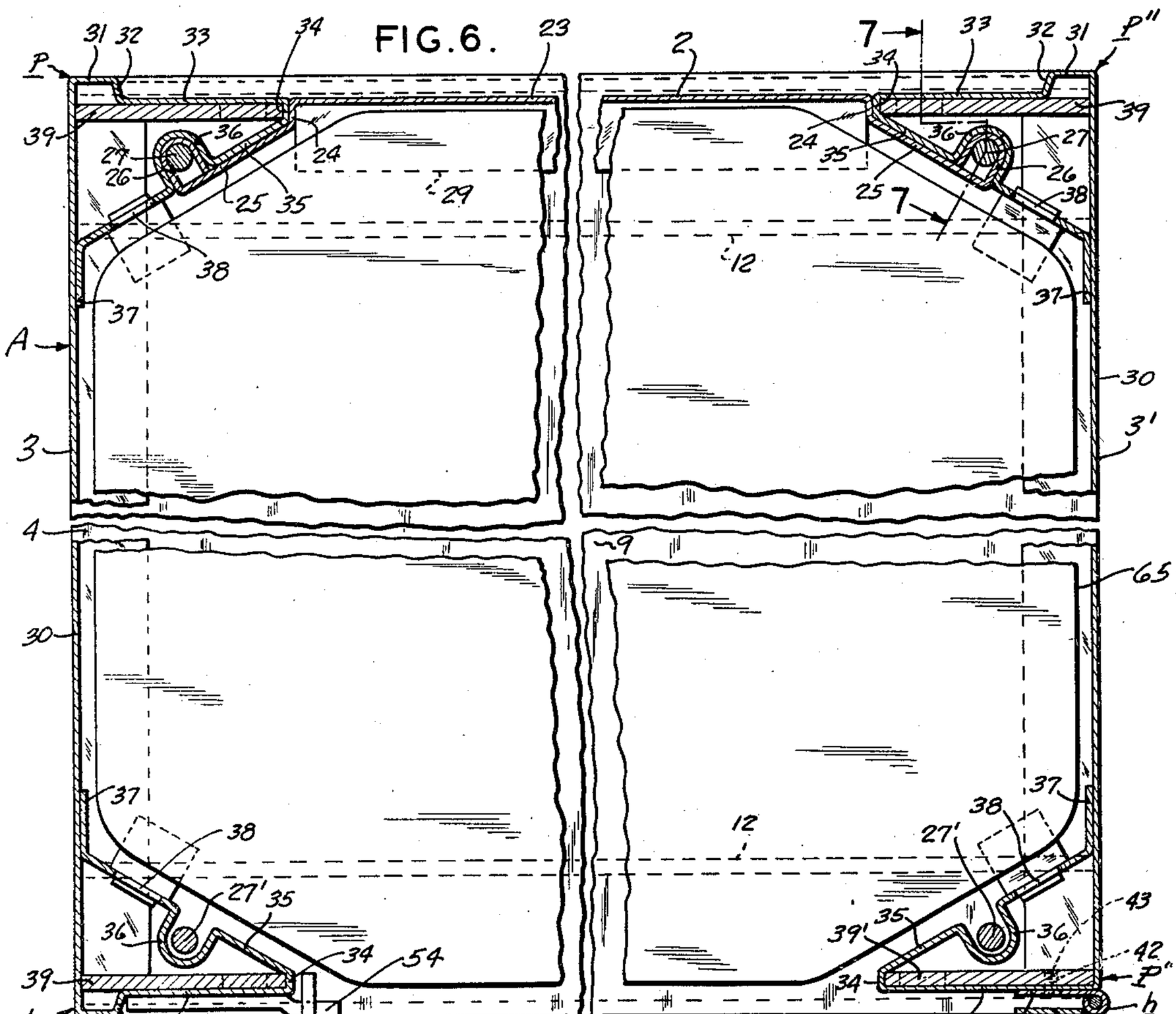
FIG.6.



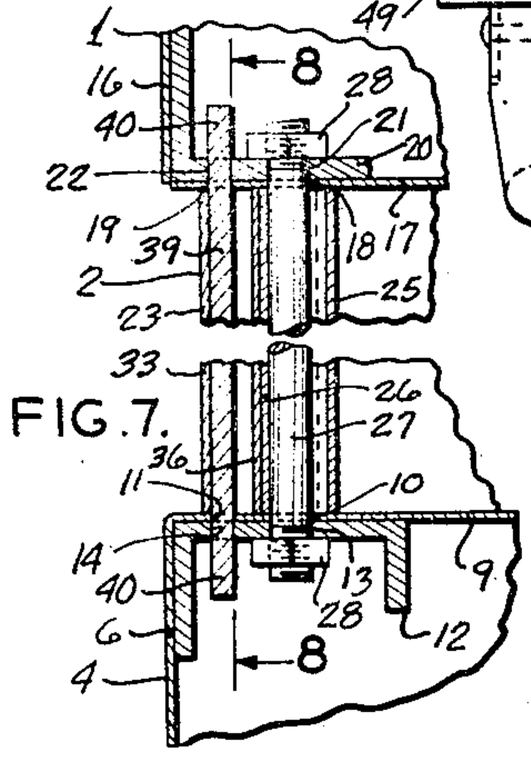


FIG.7.

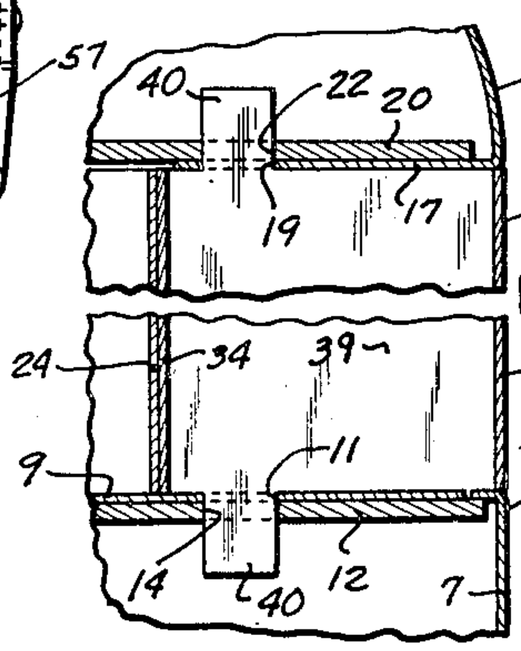


FIG.8.

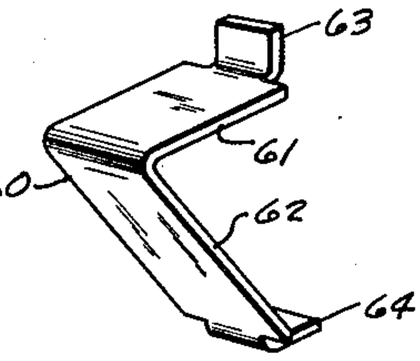


FIG.9.

INVENTORS
FRANK ALBACH
GEORGE R. CHERVENKA
By Alfred W. Peterhoff
ATTORNEY

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KNOCKDOWN UTILITY CABINET

Frank Albach and George R. Chervenka, St. Louis, Mo., assignors to The Medart Company, St. Louis, Mo., a corporation of Missouri

Application October 25, 1946, Serial No. 705,596

11 Claims. (Cl. 312—141)

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This invention relates to certain new and useful improvements in utility cabinets and, more particularly, to a utility cabinet which can be quickly and conveniently assembled and disassembled, of the so-called "knock-down" type.

The present invention has for its primary object the provision of a utility cabinet which may be economically and conveniently constructed from sheet metal stampings and which, from the simplicity and small number of its constituent parts, may be readily and easily assembled and disassembled.

It is a further object of the present invention to provide a cabinet of the type stated which, when set up or assembled, is extremely rigid and sturdy and is held together by simple but concealed securing means located so as to be out of the way and not form unsightly or inconvenient obstructions within the interior of the cabinet.

And with the above and other objects in view, our invention resides in the novel features of form, construction, arrangement, and combination of parts presently described and pointed out in the claims.

In the accompanying drawings:

Figure 1 is an "exploded" perspective view of a utility cabinet constructed in accordance with, and embodying the present invention, showing the component parts in juxtaposed relation for assembly each with the other;

Figure 2 is a perspective view of a fully assembled utility cabinet;

Figure 3 is a broken sectional view of the utility cabinet taken along line 3—3 of Figure 2;

Figures 4 and 5 are fragmental horizontal sectional views taken along line 4—4 and 5—5, respectively, of Figure 3;

Figure 6 is a horizontal sectional view taken along line 6—6 of Figure 3;

Figure 7 is a fragmentary vertical sectional view taken along line 7—7 of Figure 6;

Figure 8 is a fragmentary vertical sectional view taken along line 8—8 of Figure 7; and

Figure 9 is a perspective view of the shelf-holding clip forming a part of the present invention.

Referring now in more detail, and by reference characters to the drawings which illustrate a preferred embodiment of the present invention, A designates a sheet metal utility cabinet, including an upper or top member 1, a rear wall member 2, a pair of complementary side wall members 3, 3', a hollow base or bottom member 4, and a sheet metal door member 5.

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The base or bottom member 4 is fabricated from sheet metal of suitable gauge and integrally comprises a rear wall 6, side walls 7, a decoratively recessed front wall 8, and a rectangular floor-section 9 provided in its four corners with circular apertures 10 and rectangular apertures 11. Spot welded upon the under face of the floor-section 9, adjacent and parallel to the forward and rearward margins thereof, are two inverted U channels 12 having circular apertures 13 and rectangular apertures 14, respectively registering with the apertures 10, 11.

The top member 1 is similarly fabricated from sheet metal in the form of a more or less shallow dome-like structure of rectangular horizontal cross-section having flat vertical front and back walls 15, 16. The top member 1 is further bent inwardly along its lower side margins in the formation of a wide horizontal flange 17 and along its lower front and rear margins in a narrow horizontal flange 17' provided at its four corners with circular apertures 18 and rectangular apertures 19 so positioned that, when the top member 1 and base member 2 are superposed in marginal alignment, apertures 10, 11 and 18, 19, respectively, of each corner, will be in vertically aligned registration. Spot welded upon the upper faces of the flange 17, and extending along the front and back walls, 15, 16, are L-shaped angle sections 20 provided with circular apertures 21 and rectangular apertures 22 positioned for registration, respectively, with the apertures 18, 19.

The rear wall 2, also fabricated of sheet metal, consists of a back-forming section 23 integrally provided at its vertical margins with offset bends 24 which extend forwardly perpendicular to the plane of the back-forming section 23 and are, in turn, at their outer margins integrally formed with flanges 25 extending at an angle of approximately 30° to the plane of the back-forming section 23. The outer margins of the flanges 25 are reversely bent in the provision of tubular channels 26 for receiving tie rods 27 which extend therethrough and project at opposite ends therefrom for insertion, respectively, into the apertures 10, 18, such projecting ends being threaded for receiving retention nuts 28, and along its upper and lower horizontal margins the back-forming section 23 is finally provided with narrow inturned horizontal seating-flanges 29, all for purposes presently more fully appearing.

The side wall member 3 is likewise fabricated of sheet metal and comprises a wall-forming section 30 bent inwardly at 90° along both of its vertical margins in the provision of facing flanges

31 which are each in turn bent inwardly and laterally in the formation of an offset-bend 32 and a back-flange 33, the latter being parallel to the facing flanges 31 and being, along its outer margin bent back upon itself, as at 34, in the provision of an abutment flange 35 disposed at an angle of approximately 30° to the back-flange 33, having an inwardly depressed U-shaped recess 36 extending vertically from top to bottom thereof for snug-fitting retentive engagement with the channel 26 of the back or rear wall 2. The abutment flange 35 is bent outwardly along its outer margin in the provision of a narrow securement lip 37 which is spot welded against the inner face of the wall-forming section 30 to complete the formation of hollow corner posts or pilasters *p*, *p'*, of somewhat triangular cross-sectional shape, and the abutment flange 35 is finally provided, in the area between the lip 37 and the recess 36, with a uniformly spaced series of shelf-bracket slots 38.

Spot welded upon the inner faces of each of the back-flanges 33, and disposed tightly between the inner faces of the wall-forming section 30 and the reverse bend 34, is a re-inforcing bar 39 extending vertically through the corner posts *p*, *p'*, flush with the upper and lower ends thereof and being integrally provided at its ends with rectangular tongues 40 sized for snug-fitting engagement in the rectangular apertures 11, 19. It should be noted in this connection that the corner posts *p* and the flanges 25 are so shaped as to fit snugly together with the reverse bend 34 and offset-bend 24 nested in such a manner that the back flange 33 will lie in the same plane as the back-forming section 23, as shown in Figure 6. It should also be noted that the tongues 40 of the re-inforcing bars 39 lie "behind" the tie rods 27 to create a so-called "interlocked" effect at all eight corners of the finally assembled cabinet, as shown in Figures 7 and 8.

The other or companion side wall member 3' is substantially similar in construction to the side wall member 3, being provided along its rear margin with a corner post *p''* which is the "mirror image," so to speak, of the corner post *p*, including a facing flange 31, and offset-bend 32, a back-flange 33, a reverse bend 34, and an abutment flange 35 having a recess 36, securement lip 37 and a re-inforcing bar 39. Along its forward margin the side wall member 3' is provided with a hollow triangular corner post *p'''* which is similar to the corner post *p'* except that it does not have a facing flange 31 and offset-bend 32, but instead has a flat or continuous front flange 41, a reverse bend 34, and an abutment flange 35 having a recess 36, and a securement lip 37. The corner post *p'''* is further provided interiorly with a re-inforcing bar 39' substantially identical to the re-inforcing bars 39 except that re-inforcing bar 39' is provided with a series of tapped apertures 42 in registration with counter-sunk apertures formed in the front flange 41 for receiving screws 43 by which one leaf 44 of a long piano-type hinge *h* is secured to the corner post *p'''*. It should be noted that the side wall section 3' is slightly narrower than the side wall section 3 so that the outer face of the front flange 41 lies in the same plane as the outer face of the back flange 33 of the corner post *p'* as shown in Figure 6.

The door member 5 includes a rectangular front panel 45 arcuately formed along its four peripheral margins, as at 46, and bent inwardly and mitered in the formation of a continuous

inturned flat flange 47. Crimped around, and spot welded to, the two vertical margins of the flange 47 are re-inforcing channels 48, 48', extending obliquely inwardly and being provided with a securement lip 49 which is, in turn, spot welded to the inner face of the front panel 45. Welded or otherwise suitably secured to, and extending horizontally between, the channels 48, 48', are narrow auxiliary shelves 50, and welded across the channel 48 approximately midway of its height, is a latch support 51 for pivotally supporting an L-shaped latch-bar 52, one leg 53 of which extends inwardly for door-latching engagement with a keeper 54 welded to the back flange 33 of the corner post *p'*. The other leg 55 of the latch-bar 52 extends outwardly along the inner face of the front panel 45 beneath a tongue 56 formed on the inner end of a latch-actuator or handle 57 which is, in turn, suitably pivoted upon the outer face of the front panel 45 and projects through a slot 58 formed therein, the latch-bar 52 being normally held in latching position by a small tension spring 59 secured at one end to the latch support 51 and at its other end to the latch-bar leg 55. Finally, the hinge leaf 44' of the hinge *h* is spot welded or otherwise suitably secured to the outwardly presented face of the marginal door-flange 47 whereby the door member 5 is mounted for closure-wise swinging movement upon the assembled cabinet A.

Provided for removable disposition in the slots 38 are shelf-supporting brackets 60 formed of relatively heavy gauge strap metal and integrally including a horizontal leg 61, an oblique leg 62, the leg 61 being provided with an upturned tongue 63 and the leg 62 having a projecting tongue 64, the distance between the leg 61 and the tongue 63 being equal to the distance between two adjacent slots 38. Four such brackets 60 are hooked into slots 38 at the same height level for adjustably supporting a flat shelf member 65 marginally contoured to fit loosely within the interior of the cabinet A.

The utility cabinet A may be packaged and shipped in so-called "knock-down" condition, thereby saving a substantial amount of packaging and shipping costs. Upon reaching its ultimate destination, the utility cabinet A may be quickly and conveniently assembled by inserting the lower ends of the tie rods 27 and the downwardly projecting tongues 40 of the re-inforcing bars 39, respectively, of the corner posts, *p*, *p''*, into the rearward pairs of apertures 10, 11, in the base member 1. Similarly, the downwardly projecting tongues 40 of the re-inforcing bars 39, 39', of the corner posts *p'*, *p'''* will be inserted into the forwardly positioned rectangular apertures 11 of the base member 1. The rear wall 2 and the side walls 3, 3', will thereupon assume their respective upright relation and the top member 4 may be set in place, the upwardly projecting ends of the tie rods 27 and the upwardly projecting tongues 40 of the re-inforcing bars 39, of the corner posts *p*, *p''*, will be inserted, respectively, into the rearward pairs of apertures 18, 19. Similarly, the upwardly projecting tongues of the re-inforcing bars 39, 39', of the said corner posts *p'*, *p'''*, will be inserted into the forwardly located rectangular apertures 19. The tie rods 27 are provided for insertion, at their opposite ends, in the apertures 10, 18, respectively, and are adapted to lie loosely within the channels 36 of the corner posts *p'*, *p'''*. The entire cabinet is secured tightly in assembled relationship by threading retentive nuts

28 tightly down upon the threaded ends of the tie rods 27, 27'. It will thus be evident that the utility cabinet A is actually held together simply by eight nuts and may thus be quickly and simply put together without the use of complicated tools or skilled labor. Finally, the door member 5 may be mounted upon the face of the cabinet by means of the screws 43, completing the entire assembly operation.

It should be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the utility cabinet may be made and substituted for those herein shown and described without departing from the nature and principle of our invention.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. A knock-down sheet metal utility cabinet comprising a base member provided with recesses in its corners, a top member similarly provided with recesses in its corners, a pair of side walls formed with corner posts having recesses and upwardly and downwardly projecting members for engagement respectively in selected ones of the recesses in the base and top wall, and a back wall provided with projections for engagement with the recesses of the corner posts of the side walls and having upwardly and downwardly projecting means for engagement in others of the recesses in the base and top members.

2. A knock-down sheet metal utility cabinet comprising a base member provided with recesses in its corners, a top member similarly provided with recesses in its corners, a pair of side walls formed with corner posts of triangular cross-sectional shape having recesses and being provided with upwardly and downwardly projecting members for engagement respectively in selected ones of the recesses in the base and top wall, and a back wall provided with projections for interlocking engagement with the recesses of the corner posts of the side walls and having upwardly and downwardly projecting means for engagement in others of the recesses in the base and top members.

3. A knock-down sheet metal utility cabinet comprising a base member provided with recesses in its corners, a top member similarly provided with recesses in its corners, a pair of side walls formed with hollow triangular corner posts having upwardly and downwardly projecting members for engagement respectively in selected ones of the recesses in the base and top members, said corner posts being provided with a vertical recess, and a back wall having marginal bead-like channels for interlocking engagement with the recesses of the triangular corner posts of the side walls and having upwardly and downwardly projecting means for engagement in others of the recesses in the base and top members.

4. A knock-down sheet metal utility cabinet comprising a base member provided with recesses in its corners, a top member similarly provided with recesses in its corners, a pair of side walls formed with hollow triangular corner posts each having a reinforcing bar extending therethrough and being provided at its ends with upwardly and downwardly projecting tongues for engagement respectively in selected ones of the recesses in the base and top members, said triangular corner posts being provided with recesses, and a back wall provided with projections for interlocking engagement with the recesses of the triangular corner posts of the side walls and having upwardly and downwardly projecting means for engagement in others of the recesses in the base and top members.

5. A knock-down sheet metal utility cabinet comprising a rectangular base member provided in each of its four corners with a circular recess and a rectangular recess, a rectangular top member similarly provided in each of its four corners with a circular recess and a rectangular recess, a pair of side walls formed with hollow triangular corner posts each having a reinforcing bar extending therethrough and provided at its ends with upwardly and downwardly projecting rectangular tongues for engagement respectively in the rectangular recesses of the base and top members, said triangular corner posts being provided with recesses, and a back wall having marginal tubular channels adapted for interlocking engagement with the recesses of the triangular corner posts of the side walls and having upwardly and downwardly projecting means for engagement in the circular recesses in the base and top members.

6. A knock-down sheet metal utility cabinet comprising a rectangular base member provided in each of its four corners with a circular recess and a rectangular recess, a rectangular top member similarly provided in each of its four corners with a circular recess and a rectangular recess, a pair of side walls formed with hollow triangular corner posts each having a reinforcing bar extending therethrough and provided at its ends with upwardly and downwardly projecting rectangular tongues for engagement respectively in the rectangular recesses of the base and top members, each of said triangular corner posts having a vertical recess, a back wall having marginal tubular channels adapted for interlocking engagement with said vertical recesses of the triangular corner posts of the side walls and having upwardly and downwardly projecting threaded rods for engagement in the circular recesses in the base and top members, and nuts for securing the rods in place.

7. A knock-down sheet metal utility cabinet comprising a base member provided with recesses in its corners, a top member similarly provided with recesses in its corners, a pair of side walls formed with corner posts having upwardly and downwardly projecting members for engagement respectively in selected ones of the recesses in the base and top wall, said corner posts having recesses, a back wall provided with channels for engagement with the recesses of the corner posts of the side walls and having upwardly and downwardly projecting means for engagement in others of the recesses in the base and top members, and a door hingedly mounted upon one of the corner posts.

8. A knock-down sheet metal utility cabinet comprising a rectangular base member provided in each of its four corners with a circular recess and a rectangular recess, a rectangular top member similarly provided in each of its four corners with a circular recess and a rectangular recess, a pair of side walls formed with hollow triangular corner posts each having a reinforcing bar extending therethrough and provided at its ends with upwardly and downwardly projecting rectangular tongues for engagement respectively in the rectangular recesses of the base and top members, each of said triangular corner posts having a longitudinal recess provided on its inwardly presented face, a back wall having marginal tubular channels adapted for interlocking

engagement with the recesses of the triangular corner posts of the side walls and having upwardly and downwardly projecting means for engagement in the circular recesses in the base and top members, and a door hingedly mounted upon one of the corner posts.

9. A knock-down sheet metal utility cabinet comprising a rectangular base member provided in each of its four corners with a circular recess and a rectangular recess, a rectangular top member similarly provided in each of its four corners with a circular recess and a rectangular recess, a pair of side walls formed with hollow triangular corner posts each having a reinforcing bar extending therethrough and provided at its ends with upwardly and downwardly projecting rectangular tongues for engagement respectively in the rectangular recesses of the base and top members, each of said triangular corner posts having a longitudinal recess on its inwardly presented face, a back wall having marginal tubular channels adapted for interlocking engagement with the recesses of the triangular corner posts of the side walls and having upwardly and downwardly projecting threaded rods for engagement in the circular recesses in the base and top members, nuts for securing the rods in place, and a door hingedly mounted upon one of the corner posts.

10. A knock-down sheet metal utility cabinet comprising a base member provided with recesses in its corners, a top member similarly provided with recesses in its corners, a pair of side walls formed with corner posts having upwardly and downwardly projecting members for engagement respectively in selected ones of the recesses in the base and top wall, said corner posts having recesses, a back wall provided with channels for engagement with the recesses of the corner posts of the side walls and having upwardly and downwardly projecting means for engagement in others of the recesses in the base and top members, said corner posts being provided with a uniformly spaced series of slots, and adjustable shelf means mounted in said slots.

11. A knock-down rectangular sheet metal utility cabinet comprising a base member provided with recesses in its corners, a top member similarly provided with recesses in its corners, a pair of side walls formed with hollow triangular corner posts having upwardly and downwardly projecting members for engagement respectively in selected ones of the recesses in the base and top members, said corner posts being provided with a vertical recess, a back wall having marginal bead-like channels for interlocking engagement with the vertical recesses of the triangular corner posts of the side walls and having upwardly and downwardly projecting means for engagement in others of the recesses in the base and top members, said corner posts each being provided in the area between the recess thereof and its main wall-forming section with a uniformly spaced series of slots, shelf brackets removably engaged in the slots of each corner post, and shelf members adjustably carried by the brackets.

FRANK ALBACH.
GEORGE R. CHERVENKA.

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