

[72] Inventor **Howard A. Anderson**
 Franklin Township, Allegheny County, Pa.
 [21] Appl. No. **816,681**
 [22] Filed **Apr. 16, 1969**
 [45] Patented **Mar. 23, 1971**
 [73] Assignee **United States Steel Corporation**

2,620,906 12/1952 Ketchum, Jr. 52/459X
 2,855,871 10/1958 Huntington 52/461
 3,139,162 6/1964 Spangenberg 52/489X
 3,425,181 2/1969 Barainsky 52/489X

FOREIGN PATENTS

257,361 9/1961 Australia 52/588

Primary Examiner—Frank L. Abbott
Assistant Examiner—Sam D. Burke, III
Attorney—Martin J. Carroll

[54] **WALL PANELING AND MODULAR FURNITURE SYSTEM**
 6 Claims, 15 Drawing Figs.

[52] U.S. Cl. 52/27,
 52/464, 52/489, 312/245
 [51] Int. Cl. F04f 19/04
 [50] Field of Search 52/459,
 460, 461, 464, 468, 584, 27, 489; 312/245

[56] **References Cited**
 UNITED STATES PATENTS
 2,070,130 2/1937 Johnson 52/461

ABSTRACT: A system of wall paneling and room furniture including a plurality of panels of uniform width and thickness installed vertically upon an existing wall structure, hardware adapted to be received within a system of concealed holes in the paneling for supporting the furniture, and a modular furniture system constructed of basic furniture panels assembled through the use of special hardware to form tables, cabinets, shelving, desks and the like.

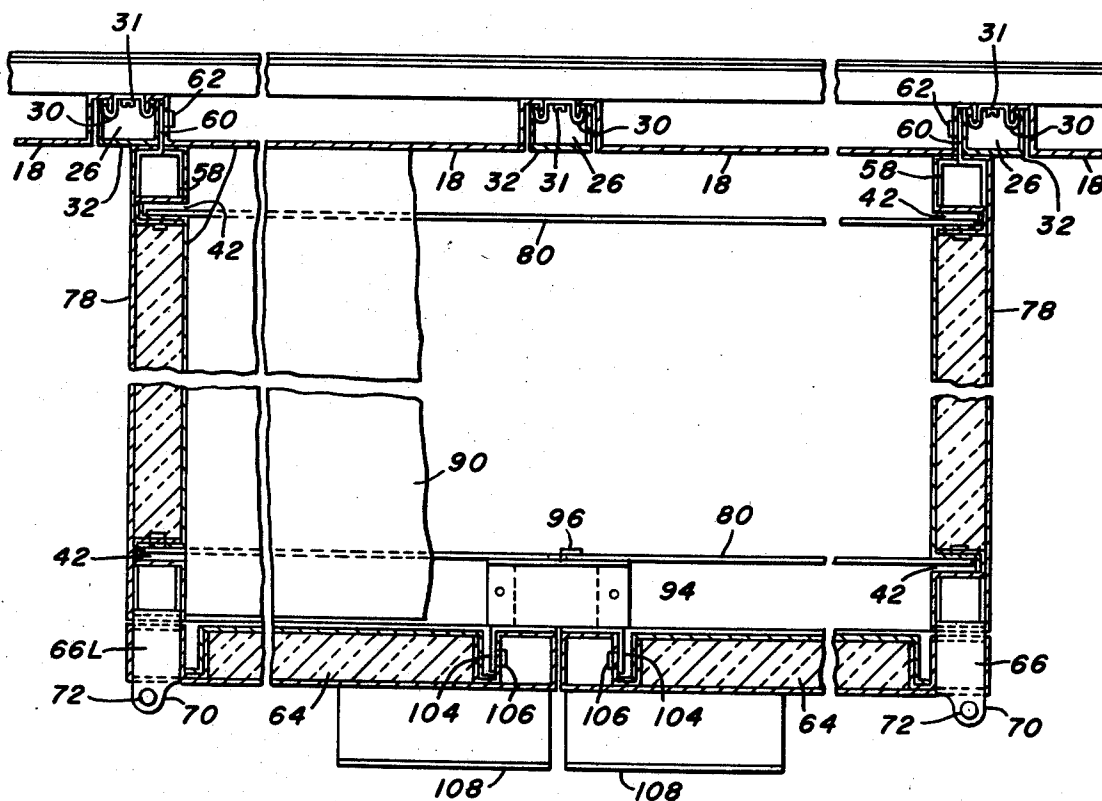
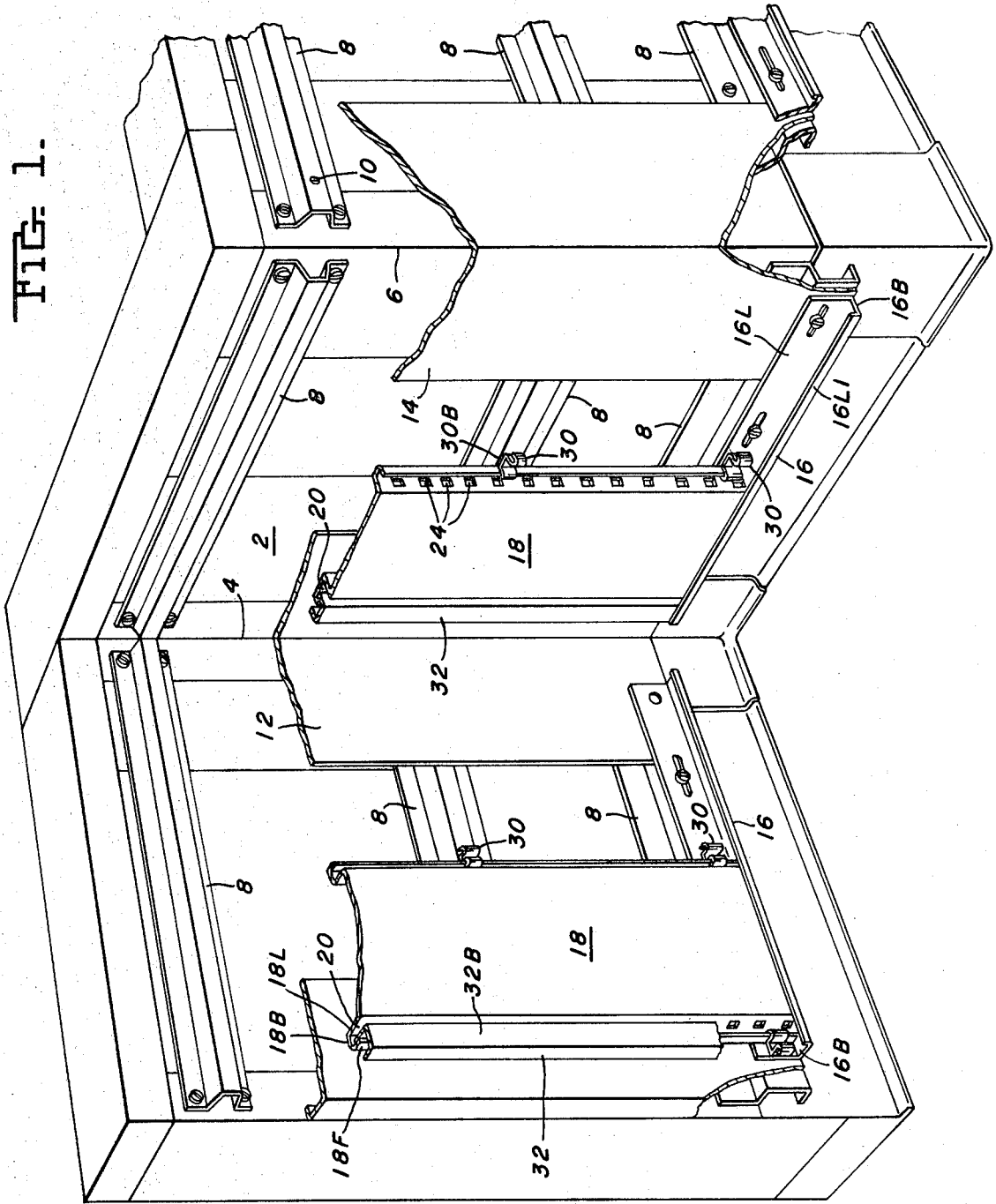


FIG. 1.



INVENTOR.
HOWARD A. ANDERSON
By *Martin J. Carroll*

Attorney

FIG. 4.

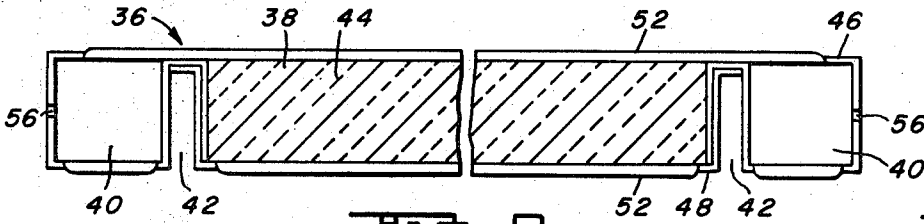


FIG. 2.

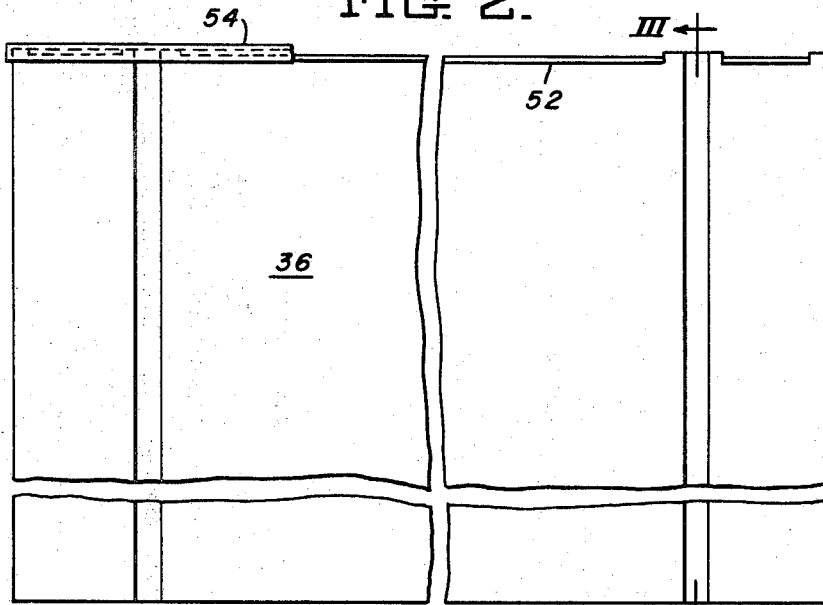


FIG. 3.

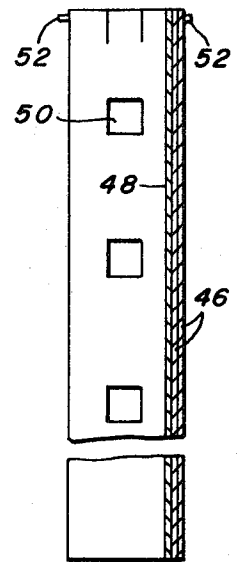


FIG. 5.

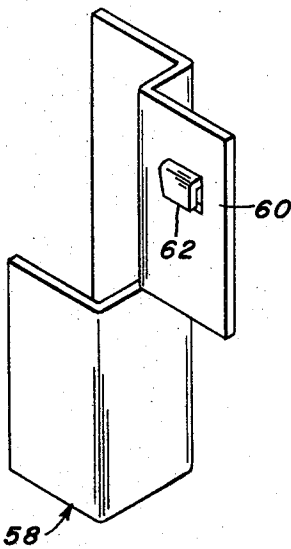
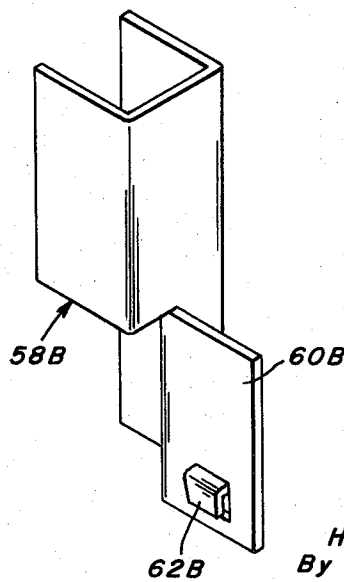


FIG. 6.



INVENTOR.
HOWARD A. ANDERSON
By *Martin J. Carroll*
Attorney

FIG. 10.

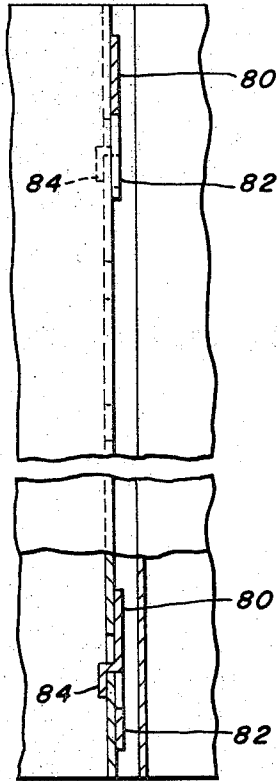


FIG. 9.

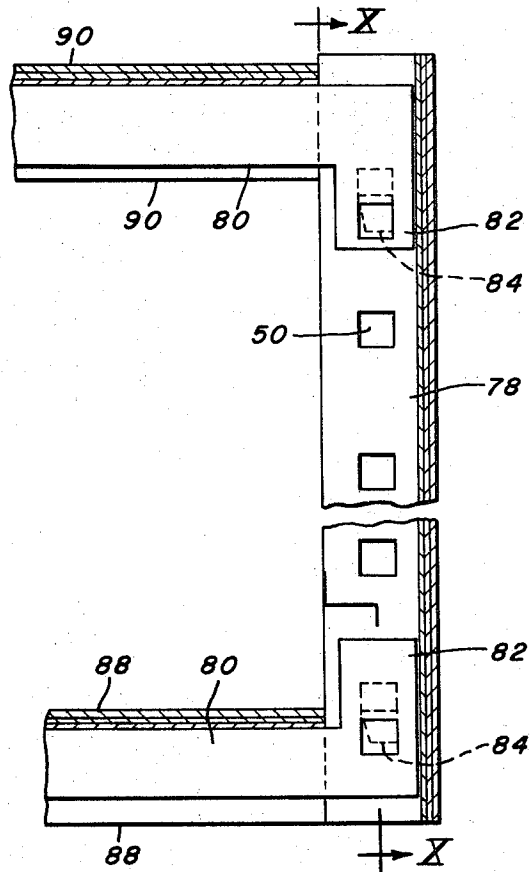


FIG. 11.

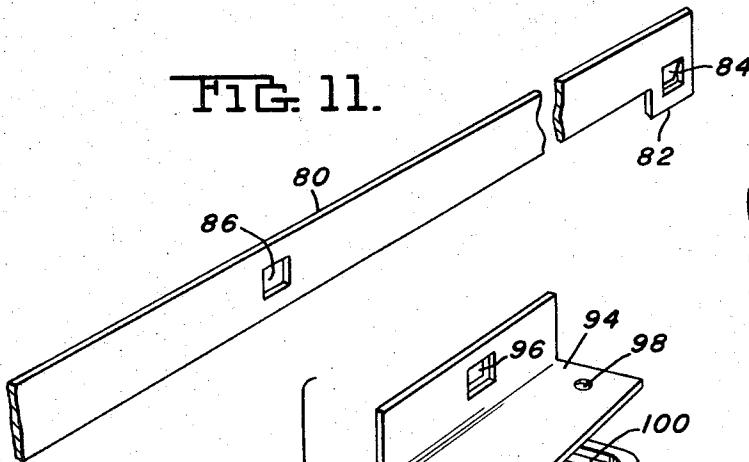


FIG. 13.

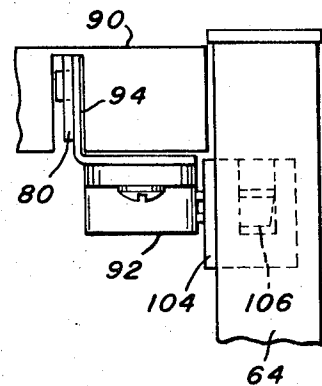
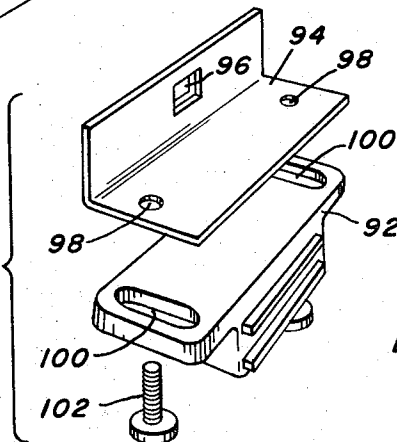


FIG. 12.



INVENTOR.
HOWARD A. ANDERSON
By *Martin J. Carroll*
Attorney

FIG. 14.

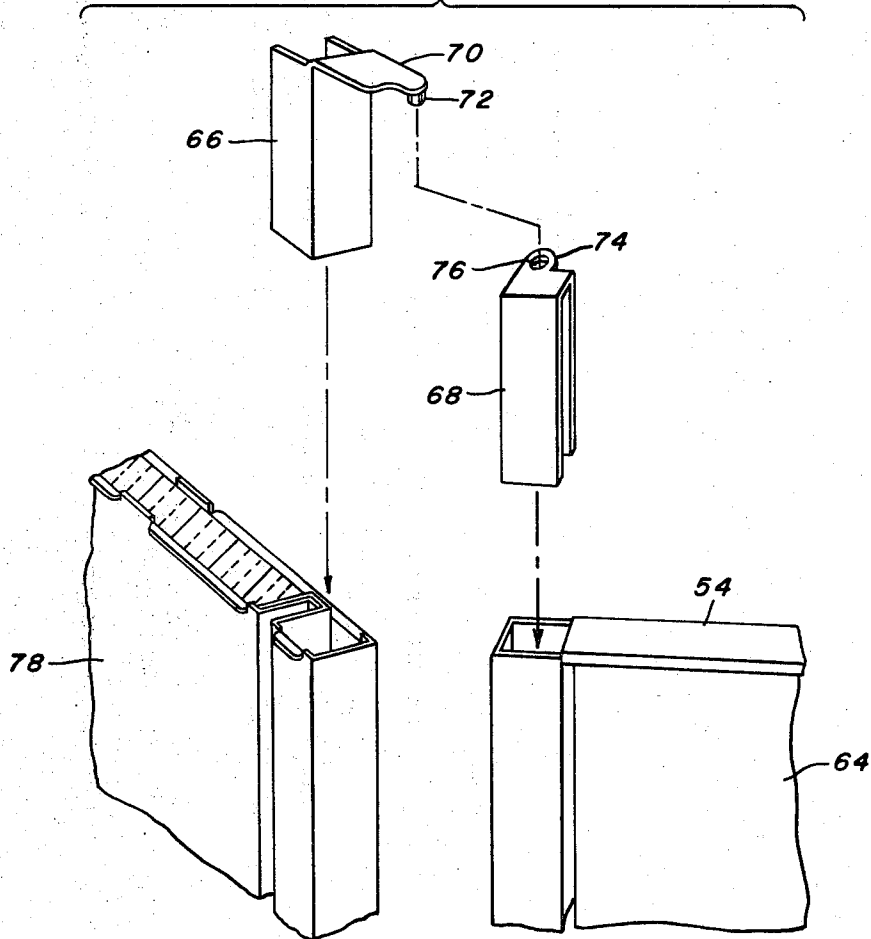
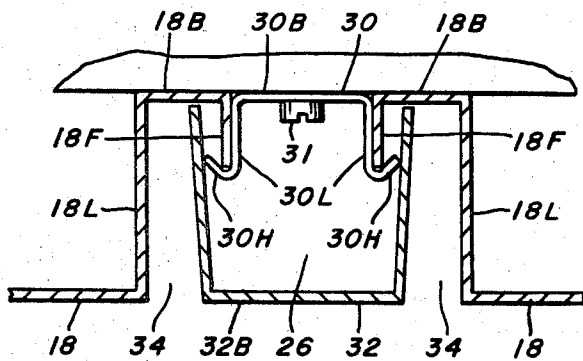


FIG. 15.



INVENTOR.
HOWARD A. ANDERSON
By *Martin J. Carroll*
Attorney

WALL PANELING AND MODULAR FURNITURE SYSTEM

This invention relates to a wall paneling and modular furniture system for installation on an existing wall structure, and more particularly to such a system made primarily of steel sheets. Wall panels are most commonly made of wood or plywood. This is rather expensive and requires a skilled workman for proper installation. Also, it does not lend itself to the use of modular furniture. While metal panels have been suggested, with or without the use of modular furniture, such construction has not proved successful for many reasons. It may be too costly to manufacture and/or install. Also, it may not have an attractive appearance.

It is therefore an object of my invention to provide wall paneling and a modular furniture system supported by the wall paneling.

Another object is to provide such a system in which individual panels may be replaced with a minimum of effort.

A further object of my invention is to provide such a system which will allow disassembling and reassembling of the furniture components to compensate for changing needs in furniture requirements.

A still further object is to provide such a system which is relatively inexpensive, easy to install, and has an attractive appearance.

These and other objects will be more apparent after referring to the following specification and attached drawings, in which:

FIG. 1 is a perspective view of the wall panel system of my invention;

FIG. 2 is a view of a cabinet panel of my invention;

FIG. 3 is a view taken on the line III-III of FIG. 2;

FIG. 4 is a plan view of the panel of FIG. 2;

FIG. 5 is a view of a top mounting bracket;

FIG. 6 is a view of a bottom mounting bracket;

FIG. 7 is a view in elevation of a cabinet of my invention;

FIG. 8 is a view taken on the line VIII-VIII of FIG. 6;

FIG. 9 is a fragmentary elevation, with parts in section, of a portion of the cabinet of FIGS. 8 and 9;

FIG. 10 is a view taken on line X-X of FIG. 9;

FIG. 11 is a perspective view of a portion of a supporting bracket;

FIG. 12 is a perspective unassembled view of the door latching mechanism;

FIG. 13 is a view of the assembled latch in place;

FIG. 14 is an enlarged unassembled view of the parts of a door hinge in position to be installed; and

FIG. 15 is an enlarged sectional view of wall panels, a facing strip, and a fastening clip in position on a wall.

Referring more particularly to FIG. 1 of the drawings, reference numeral 2 indicates the usual studding or supporting structure in a building. The studding is shown with an internal corner 4 and an external corner 6. Furring strips 8 are fastened to the studding 2 as required, the strips being shown at three different elevations. Holes 10 are provided in the furring strips 8 for a purpose which will appear later. It is preferred to have the corners 4 and 6 covered by L-shaped strips 12 and 14, respectively, which are fastened to the furring strips 8 in any suitable manner. J-shaped channel trim strips 16, each having a long leg 16L, a base 16B and a short leg 16L1, are preferably installed with their long legs 16L against the bottom furring strips 8 and strips 12 and 14. A plurality of generally U-shaped wall panels 18 are secured to furring strips 8 in side-by-side spaced apart relationship with their legs 18L extending toward the studding 2. Each panel 18 has an outwardly extending base portion 18B attached to the free end of each leg 18L which bears against the furring strip 8. A flange 18F is attached to the free end of each base portion 18B substantially parallel to the adjacent leg 18L so as to form a channel 20. Rectangular holes 24 are provided in the flanges 18F. It will be seen that a space 26 is provided between adjacent panels 18 (FIGS. 8 and 15). The panels 18 rest in the channel of trim strip 16 and are fastened to furring strips 8 by means of generally U-shaped clamping clips 30. Each clip has a base 30B of such length that it can fit into the space 26

between adjacent panels. The base 30B has a hole therein for receiving a screw 31 which is threaded into one of the holes 10 in the furring strip. Each leg 30L of the clips has an outwardly extending hook 30H at its outer end extending away from the leg and over the flanges 18F of the associated panel 18 so as to lock the panels in place. It will be seen that a space is provided between each leg 18L and the associated hook 30H. A U-shaped facing strip 32 having a base 32B of substantially less width than the distance between legs 18L of adjacent panels and substantially equal to or slightly less than the distance between the outside of hooks 30H, and the length of its legs substantially equal but preferably slightly less than the length of legs 18L is placed over the clips 30 with its sides contacting the hooks 30H in a tight friction grip and with a space 34 between its sides and adjacent legs 18L.

Panels are provided for use with the above structure in order to make desks, cabinets or other furniture. A cabinet panel 36 which I provide for such use is shown in FIGS. 2 to 4. Each panel 36 includes a main rectangular portion 38, a hollow rectangular portion 40 at each end of the rectangular portion, and a slot 42 between the main portion 38 and each portion 40. The main rectangular portion 38 may be filled with insulating material 44 to deaden the sound.

The panel 36 is preferably made of a steel front sheet 46 extending the full width of the panel and with its longitudinal ends bent around to form the hollow rectangular portions 40 and the slot 42, and a steel back sheet 48 extending the width of main rectangular portion 38 and with its longitudinal ends bent at right angles toward the front sheet 46 and then at right angles to form the bottom of slots 42. The sides of slots 42 adjacent main portion 38 have holes 50 therein extending through sheets 46 and 48. The holes 50 preferably are of the same shape and spacing as the holes 24 in panels 18. Each end of sheets 46 and 48 may be provided with flanges 52 to receive end covers 54 when desired. The end covers 54 may extend over the full width of the panel 36 or only over the main portion 38. The sheets 46 and 48 may be connected in any suitable manner such as by high strength adhesives. A slot 56 is preferably provided in the outer wall of each hollow portion 40 adjacent each end.

When it is desired to attach the panel 36 to wall panels 18, a U-shaped top mounting bracket 58 (FIG. 5) of such size as to be received in one hollow portion 40 is positioned in the top of one hollow section portion 40. A transverse cut is made in bracket 58 some distance below its top and the part of the U above the cut is bent outwardly at right angles from the base of the U to form a flange 60 which is received in slot 56. A downwardly extending tab 62 is punched out from the flange 60. A U-shaped bottom mounting bracket 58B (FIG. 6) is positioned in the bottom of the same hollow portion 40. This bracket is similar to racket 58, except that its flange 60B and tab 62B are on its lower portion. The end covers 54 lock the brackets 58 and 58B in place. The panel 36 is then secured to the wall by inserting the flanges 60 and 60B into the desired space 34 with the tabs 62 and 62B engaging in selected holes 24 as shown in FIG. 8.

A cabinet panel of the type described may also be used as a door 64 and hinged to a cabinet panel attached to the wall as shown in FIGS. 7 and 8. Each hinge consists of two brackets 66 and 68 or 66L and 68L. Only one hinge will be described, it being understood that the other hinge of each set will be the same except that the brackets are of opposite hand. As best shown in FIG. 14, the bracket 66 is U-shaped and has a flange 70 extending outwardly at right angles from the base of the U with a pivot pin 72 secured to its underside. The bracket 66 is received snugly within the top of that portion 40 remote from the wall with the flange 70 extending away from the wall. Plate 54 will hold the bracket 66 in place. The bracket 68 is also U-shaped and has a flange 74 extending at right angles from a side of the U with a pivot hole 76 therethrough for receiving pin 72. The bracket 68 is received snugly within one hollow section of door 64 with the flange 74 extending normal to the side of the door.

To form a complete cabinet as shown in FIGS. 7 to 14 two cabinet panels are secured to the wall in spaced apart relationship by inserting the flanges 60 and 60B in the selected spaces 34 with the tabs 62 and 62B engaging in selected holes 24, thus forming sides 78 of the cabinet. Four shelving brackets 80 extend between and are mounted on side panels 78. Each bracket 80 has enlarged ends 82 with a downwardly extending tab 84 therein. A rectangular hole 86 is provided in the center of bracket 82 for a purpose which will appear later. Two brackets 80 extend into the slots 42 of the wall end of panels 78, one adjacent the bottom of the panel 78 and one adjacent its top. As best shown in FIGS. 9 and 10, the tabs 84 are secured in holes 50 of panels 78 to hold the brackets in place. In like manner two brackets 80 extend into the slots 42 remote from the wall and are secured to the panels 78 at the same elevation as the first two brackets. A shelf panel 88 which may be of the same construction as the sides is placed on the bottom brackets 80 with the brackets being received in the slots 42 so as to form the bottom of the cabinet. A shelf panel 90 of similar construction is placed on the top of brackets 80 to form the top of the cabinet. Additional shelves may be added as desired.

When it is desired to close the front of the cabinet this may be done by one door or preferably by two doors as shown. The doors are mounted on the sides 78 as described above and as shown in FIGS. 7, 8 and 14. The doors 64 may be held closed by means of a standard magnetic latch 92 (FIGS. 12 and 13) which is supported by the top front bracket 80 by means of an L-shaped bracket 94. A downwardly extending tab 96 on the vertical leg of bracket 94 is secured in hole 86 of bracket 80. Two threaded holes 98 in the horizontal leg of bracket 94 are aligned with slots 100 in latch 92 with capscrews 102 passing through slots 100 and threaded into the holes 98 to hold the latch 92 in place. An L-shaped latching plate 104 is secured to each door 64 at an elevation to engage latch 92 when the door is closed. For this purpose one leg of the plate 104 extends into door slot 42 and has a downwardly extending tab 106 thereon for engaging the selected hole 50. The other leg of the plate 104 bears against the inside of the door. A handle 108 is preferably provided on the bottom of each door.

Unless otherwise noted the parts of the wall paneling and furniture are made of steel. It will be understood that various types of furniture may be constructed from the parts described. For example, a desk may be made simply by positioning two brackets 80 at the same elevation, one in each of spaced vertical openings or slots 34 with the tabs 84 extending into the selected holes 24, and then placing a cabinet panel on the brackets. Other adaptations and modifications may also be made.

I claim:

1. A wall panel system attached to a supporting structure comprising a plurality of elongated generally U-shaped wall panels arranged side-by-side in spaced apart relationship, each having a body portion and a leg along each longitudinal edge thereof with the legs extending inwardly from the body portion toward the supporting structure and a longitudinal edge of one panel adjacent a longitudinal edge of the adjacent panel, each panel having an outwardly extending base portion attached to the free end of each leg and bearing against said supporting structure and a flange attached to the free end of each base portion and extending away from said supporting structure generally parallel to the associated leg and having a length shorter than the associated leg, the flanges of each panel being spaced from the flanges of adjacent panels to pro-

vide a space therebetween; a plurality of generally U-shaped clamping clips fastening said panels to said supporting structure, the length of the base of each clamping clip being at least as small as the width of said space and the length of the legs of each clamping clip being approximately the same as the length of said flanges, each leg of said clips having an outwardly extending hook at its outer end, each clip being received in the space between adjacent flanges with the base thereof bearing against said supporting structure and the hooks thereof extending over the edges of the adjacent flanges of the adjacent panels; and means attaching the base of said clips to said supporting structure.

2. A wall panel system according to claim 1 including a plurality of U-shaped facing strips having a base of less width than the distance between adjacent legs of said wall panels, each facing strip being provided in the space between adjacent panels with its legs extending toward said supporting structure in tight engagement with the outside of the hooks of the clamps.

3. A wall panel system according to claim 2 in which said panels are arranged generally vertical with vertically spaced holes through the legs thereof and vertical openings between said facing strip and each adjacent panel leg; said system including a plurality of spaced apart brackets each having an end extending into one of said vertical openings at the same elevation and having a tab thereon extending into one of said spaced holes, and a cabinet panel supported on said brackets.

4. A wall panel system according to claim 2 in which said panels are arranged generally vertical with vertically spaced holes through the legs thereof and vertical openings between said facing strip and each adjacent panel leg; said system including a vertically extending cabinet panel, said cabinet panel having top and bottom tab plates thereon extending into one of said vertical openings, each tab plate having a tab thereon extending into one of said spaced holes.

5. A wall panel system according to claim 2 in which said panels are arranged generally vertical with vertically spaced holes through the legs thereof and vertical openings between said facing strip and each adjacent panel leg; said system including a pair of horizontally spaced vertically extending cabinet panels, each cabinet panel including a main rectangular portion, a hollow rectangular portion at each end of said rectangular portion, a vertical slot between said main rectangular portion and each hollow rectangular portion, and vertically spaced holes in one wall of each slot; top and bottom tab plates secured in one of the hollow rectangular portions of each cabinet panels and extending into one of said vertical openings, each tab plate having a tab thereon extending into one of said spaced holes of said panels; a pair of spaced apart brackets extending between said pair of cabinet panels with the ends thereof being received in said vertical slots, each end of each bracket having a tab thereon extending into one of said spaced holes in said cabinet panels; and a panel supported on said brackets.

6. A wall panel system according to claim 5 including a door having a main rectangular portion, a hollow rectangular portion at one end of said rectangular portion, a top hinge section secured in the other hollow rectangular portion of one of said cabinet panels, a top companion hinge section engaging said top hinge section and secured in the hollow rectangular portion of said door, a bottom hinge section secured in the said other hollow rectangular portion, a bottom companion hinge section engaging said bottom hinge section and secured in the hollow rectangular portion of said door.