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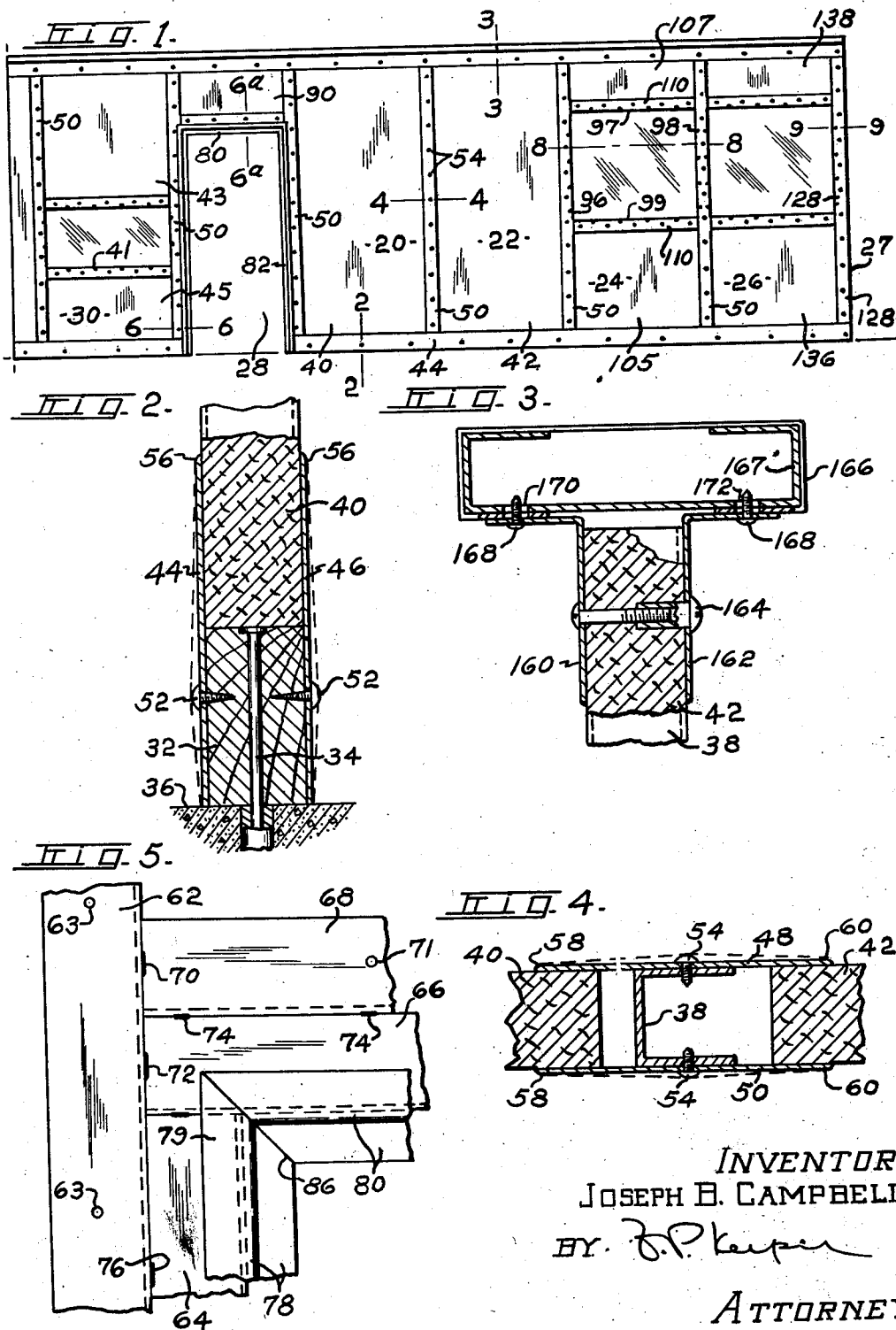
J. B. CAMPBELL

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PARTITION CONSTRUCTION

Filed Oct. 8, 1949

3 Sheets-Sheet 1



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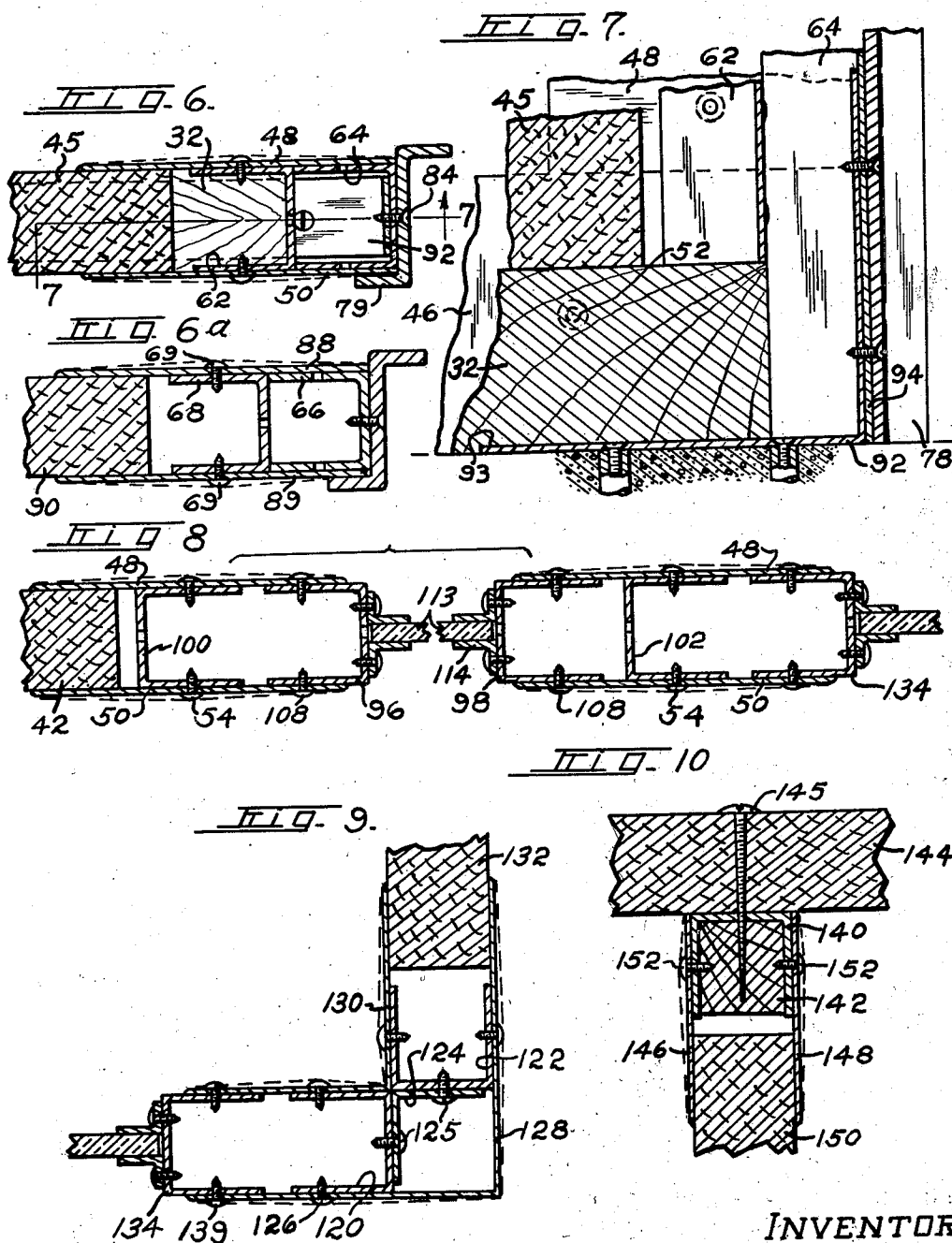
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3 Sheets-Sheet 2



INVENTOR
JOSEPH B. CAMPBELL
BY *J. P. Kuper*
ATTORNEY

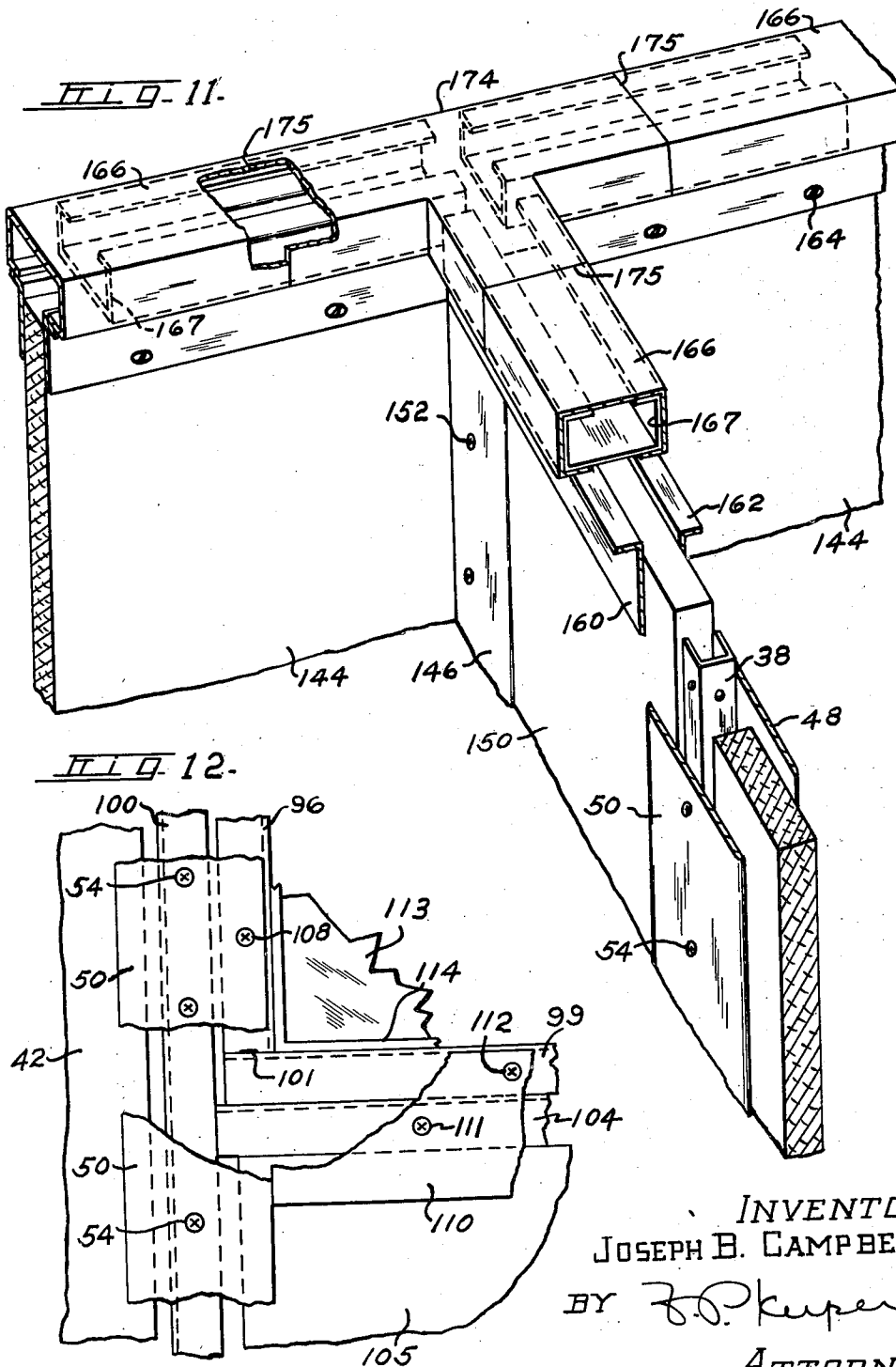
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INVENTOR
JOSEPH B. CAMPBELL
BY *J. P. Kuper*
ATTORNEY

UNITED STATES PATENT OFFICE

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PARTITION CONSTRUCTION

Joseph E. Campbell Syracuse, N. Y.

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5 Claims (Cl. 189-34)

1.

This invention relates to partition constructions, and more particularly to such constructions as are temporary or which may be subject to rearrangement and change as need arises.

In floor space utilized for offices, it is the usual practice to divide and subdivide the space by suitable partitions to provide proper space and privacy for personnel and other functions through partitions which may be capped at a standard height or extend to the ceiling. Since changes in personnel and activities require variation in partition arrangements from time to time, it is desirable to provide a partition construction which may be altered as to position, arrangement of doors, windows and the like, with a minimum of labor and a maximum of reuse of the material.

The present invention is directed to a partition construction in which the panels, studs, door and window frames, and method of assembly permit installation, rearrangement and alteration with a minimum of wastage of material and labor. The invention further has to do with a construction which may be installed with a minimum of damage to the floor space so utilized, using standard panel building material without injury thereto, and in which a maximum of flexibility is permitted. Further, the construction is such as to provide rigidity and a pleasing appearance. Still further, the invention is directed to a stud, panel and batten construction in which the battens are cambered, whereby, upon assembly, all parts are rigidly held in alignment under tension. Such cambered batten construction is also applied in conjunction with floor sills, door transoms and other horizontally extending junctures.

The above and other novel features of the invention will appear more fully hereinafter from the following detailed description when taken in conjunction with the accompanying drawings. It is expressly understood that the drawings are employed for purposes of illustration only and are not designed as a definition of the limits of the invention, reference being had for this purpose to the appended claims.

In the drawings, wherein like reference characters indicate like parts:

Figure 1 is an elevation of a partition utilizing a number of differing panelled sections;

Figure 2 is a section taken on the line 2-2 of Figure 1 showing a floor shoe, panel and battens;

Figure 3 is a section taken substantially on the line 3-3 of Figure 1, showing a typical cap construction;

Figure 4 is a section taken on the line 4-4 of

2.

Figure 1 showing a typical stud or mullion construction with battens;

Figure 5 is a fragmentary view of a door corner with battens removed;

Figure 6 is a section taken on the line 6-6 of Figure 1 showing a door jamb section;

Figure 6a is a section taken on the line 6a-6a of Figure 1, showing a transom section;

Figure 7 is a sectional view taken substantially on the line 7-7 of Figure 6, through the lower section of a door frame post and adjoining panel;

Figure 8 is a section taken substantially on the line 8-8 of Figure 1, showing a window frame construction;

Figure 9 is a horizontal section taken on the line 9-9 of Figure 1, showing a window frame and corner construction;

Figure 10 is a horizontal section showing an intersecting partition construction;

Figure 11 is a perspective fragmentary view, partly in section, of an intersecting partition construction with cap construction; and

Figure 12 is a fragmentary view of a window frame corner with parts broken away.

Referring to Figure 1, there is shown a partition composed of plain panel sections 20 and 22, and double adjoining window panel sections 24 and 26, terminating in a corner 27, a door panel section 28, and a single window panel section 30.

Such partitions and panel sections may be arranged to suit any floor and partition plan desired. Such floor plan, when laid out, may be outlined by floor shoes, such as 32 (see Figure 2) extending according to the plan, except for such spaces as doorways. The shoes may be of rectangular sectioned wood, and secured to the floor at appropriately spaced points by wood screws, or expansion bolts 34 extending into the floor 36.

Adjoining panel sections, such as 20 and 22, are erected by positioning a vertically extending channel section stud 38 (see Figure 4) at appropriate points to accommodate standard panels 40 and 42 of Celotex or other composition panel material of a thickness approximately the width of the channel member. The panels rest upon the floor shoes and are preferably of the approximate same thickness, and are held in position by cover plates 44 and 46 extending along the floor and battens 48 and 50 secured to the studs. Such floor plates and battens are cambered in the manner indicated by the dotted lines, or otherwise formed, such that when drawn into place by screws such as 52, or self-tapping screws 54, such plates take on a flat aspect as shown, the panel-engaging edges 56 or 58 and 60 bearing

under tension and being stressed against the opposed surfaces of the respective panel members 40 and 42. The flanges of the channel members are punched at suitable uniformly spaced intervals to receive the self-tapping screws 54 and the batten plates are punched at corresponding uniform intervals so that such fastenings may readily be inserted in aligned holes and drawn up to secure the respective parts in a secure, rigid manner.

In Figures 5, 6, 6a and 7, are shown details of a door frame, and the method of positioning such frame in the panel construction hereinabove described. Such door frame may be composed of a pair of channel stud-like members extending from the floor shoe to the cap of the partition, one such channel member being indicated as at 62. The door frame is further formed by additional vertical channel jamb members, one such being indicated as at 64, such members extending to the door transom formed of a pair of channel members 66 and 68 extending between the spaced channel members 62. The channel members 62, 64, 66 and 68 may be welded at points of abutment such as 70 and 72 and at suitable intervals along their coextensive lengths as at 74 and 76. Suitable Z members 78, 80 and 82 adapted to receive a hinged door, not shown, are secured to the channel members 64 and 66 by screws 84, the Z members being preferably mitered as at 86 at the upper corners.

Cambered battens 48 and 50 on opposite sides of the partition having uniformly spaced punched holes arranged on a center line are secured to the members 62 by self-tapping screws extending into corresponding uniformly spaced apertures 63 in the members 62, such battens extending over and neatly covering the adjoining members 62 and 64, and overlying the adjacent panel such as 40 on the right, or an adjacent window frame and upper and lower panels 41, 43 and 45, respectively, on the left in the panel section 30, as will hereinafter appear. The batten 50 extends beneath the flange 78 of the Z member 78. Cambered battens 88 and 89 on opposite sides cover the transom channel members 66 and 68 and likewise overlie the panel 90 thereabove, the battens being secured to the channel 68 by self-tapping screws 69 extending through uniformly spaced punched holes in the respective parts, the holes in the channel 68 being indicated as at 71.

The door frame may be rigidly secured to the floor through angle irons 92 at either side of the door, the horizontal portion being positioned beneath the adjacent shoes, the shoes being suitably relieved as at 93. The vertical portion of the angle irons extends upward within the channel door frame jamb members 64, and are secured thereto by self-tapping screws projected through the respective Z joint jamb members 80 and 82 and the corresponding webs 94 of the channel members 64.

Window frames are formed from channel members butt welded at the corners to form a rectangular frame. Such frames are preferably of a length to correspond to a standard building panel width. The vertical channel members 96 and 98 are disposed in opposite relation as shown in Figure 8 and abut at top and bottom similar channel members 97 and 99, likewise oppositely disposed, the members being welded at points 101 of abutment.

Each frame is thereafter preferably positioned between spaced channel studs 100 and 102 with the vertical channels 96 and 98 extending coex-

tensive therewith. Below and immediately above the frame are provided transverse channel members 104 extending from stud channel to stud channel, and therebelow and above are panels 105 and 107, to complete the panel section.

Cambered battens 48 and 50 are secured on opposite sides of the studs 100 and 102, the overlying edges being drawn into tight engagement with the channels 96 and 98 of the frame, the ends of the top and bottom channel members 104, and the opposite surfaces contiguous to the edges of the panels 105 and 107. Such battens have uniformly spaced holes as previously described along their center line to receive self-tapping screws in turn threaded into corresponding apertures in the studs 100 and 102. The frame members 96 and 98 are secured to the battens 48 and 50 by a plurality of self-tapping screws 108 inserted in holes drilled on the job. Horizontally extending cambered battens 110, with uniformly spaced holes along the center line thereof, are secured by self-tapping screws 111 extending into corresponding holes punched or drilled in the members 104. The battens 110 and frame members 97 and 99 may be additionally drilled on the job and self-tapping screws 112 inserted. While a single lower left hand corner of a window frame construction is shown in detail in Figure 12 for illustration, it will be understood that the frame is symmetrical about the horizontal and vertical axes, and the other corners therefore correspond.

Any standard glass fixture 113 may be secured within the frame by suitable fastenings such as 114.

When a corner construction is desired, channel members 120 and 122 connected by an angle iron 124 by self-tapping screws 125, or other suitable members, are provided, the flanges of the channel members being punched as before at uniformly spaced points to receive self-tapping screws. Angle members or angle battens 128 and 130 suitably cambered as shown in dotted lines in Figure 9 and correspondingly punched for screws 126, extend over the adjoining panel 132 on the one hand, as shown, and a window frame 134 and panels 136 and 138 therebelow and above on the other. In the latter case, additional fastening means in the form of self-tapping screws 139 inserted in holes drilled on the job are utilized to secure the frame 134 in position with respect to the channel member 120, in the same manner as described in connection with the panel section 24 in Figures 8 and 12.

Where partitions intersect, as is shown in Figure 10, a channel member 140, having a wood block 142, is secured to the panel 144 as by screws 145 and cambered batten strips 146 and 148 are drawn tight against the intersecting abutting panel 150 by self-tapping screws 152.

The partition construction may be of standard height, to accommodate, for example, 4 x 8 foot panels, and suitably capped, or the construction may extend to the ceiling in which case ceiling blocks corresponding to floor shoes 32 may be provided and camber strips similar to 56 and 58 secured to the ceiling blocks and utilized to secure the panels in alignment therewith.

Where capped partitions are desired, a cap construction shown in Figure 3 is preferably employed. In the arrangement shown, angle pieces 160 and 162 are secured by telescopic threaded members 164 at spaced intervals and carry a C channel crown member 166. The crown member is stiffened at joints and at suitably spaced

intervals by an interior C channel member 167 oppositely disposed. The angle pieces are punched at uniformly spaced intervals to receive self-threading screws 168; that in turn extend into slotted openings 170 and 172 in the crown and stiffening channel members, respectively. The slots permit the angle pieces to be drawn tight upon the panel sections, and thereafter to be drawn tight to the crown channel. Where an intersection such as shown in Figure 10 is encountered, a crown juncture member formed as a T, as at 174 is provided, each branch having the same cross section as the member 166. Each branch is arranged in abutting relation to the crown channels 166 as at 175. Interior channels 167 are so disposed as to telescope within and between the crown channels and crown juncture member branches to provide a rigid aligned construction. It will be appreciated that such juncture members may take various forms, such as a right angle for a corner, or a cross where four walls intersect at right angles, or any other juncture desired.

It will appear from the foregoing that all vertical battens are alike, except at intersections and corners, and excepting for such additional holes as may be drilled on the job, and that all studs are formed alike. In practice, for a partition slightly over eight feet, the channel studs will be 8 feet in length, and punched at eleven 8 inch intervals. The battens will be correspondingly punched, but to abut the base or floor cover plates, and the cap angle pieces, such battens will be approximately 7'8". All batten members, whether utilized at the corners or at intersections or below and above window frames or upon a door transom, are preferably punched at the same intervals, so that the punchings will accurately conform to the punchings in the flanges of the channel stud members, and other channel members. The channels will also be preferably punched along the web center line at the same intervals, so that studs may be assembled to angles, as in the corner construction of Figure 9, the angle likewise being uniformly punched along its length, or for attachment to a panel as in Figure 10, by the screws 145 positioned at uniformly spaced intervals.

Where uneven floors are encountered, the floor shoes and floor plates may be scribed and cut to compensate for such unevenness so that standard rectangular panels will always have their vertical edges adjoining studs in vertical relation. The arrangement described has been particularly adapted to the utilization of standard building construction panels measuring 4 feet by 8 feet, the adjacent studs being spaced a distance slightly greater than 4 feet to facilitate assembly. Where panel material of approximately inch or inch and an eighth thickness is employed, channels having outside dimensions of 1½"x1½" and of approximately ¼" stock afford ample rigidity and sufficient stock thickness for reception of self-tapping screws. While the foregoing dimensions are merely given as illustrative of one practical solution, it will be readily appreciated that deviations may be made therefrom to suit conditions and materials.

Any particular material may be selected for the various parts, the battens and channels preferably being of steel or aluminum or other rigid material, some resiliency being required for the cambered members. While self-tapping screws have been referred to as a suitable fastening

means, any other equivalent may be employed as will be understood.

It will be seen from the above that any partition layout may be readily set up from standard channel studs or the like, battens, door and window frames, building panels, caps and floor shoes, all of which material may be used over and over again whenever the partition layout requires change, or re-assembly at another position.

While various embodiments of the invention have been illustrated and described, it is to be understood that the invention is not limited thereto. As various changes in the construction and arrangement may be made without departing from the spirit of the invention, as will be apparent to those skilled in the art, reference will be had to the appended claims for a definition of the limits of the invention.

What is claimed is:

1. In a temporary partition construction, in combination, an upright channel member having a web and parallel side flanges forming an open side, wall panels in substantial abutting relation to said web and open sides and having a thickness substantially the same as outside width of said web, transversely cambered resilient batten members extending along the length of said flanges and detachably secured thereto along the length thereof with their concave sides against said flanges, said batten members being thin strips and extending over and engaging under pressure the opposed surfaces adjacent the abutting edges of adjacent panels of said wall panels and being flattened into broad surface contact by said surface engagement.

2. In a temporary partition construction, in combination, a stud having spaced parallel sides and of generally square configuration, panels in substantial abutting relation to said stud and having a thickness such that their side surfaces are substantially in alignment with the spaced parallel sides, cambered battens of a width about three times the width of said stud positioned upon the opposite parallel sides of said studs and extending along the length thereof, means detachably securing said battens to said studs for drawing said battens into tight engagement with said parallel sides, said battens having their concave faces facing one another, and overlying said panels whereby to exert opposed pressure upon the opposite surfaces of said panels.

3. In a temporary partition construction, in combination, a substantially rectangular sectioned floor shoe extending lengthwise thereof, a channel sectioned stud extending upwardly therefrom, with its flanges substantially flush with the sides of said shoe, panels mounted on said shoe on either side of said stud and in substantial abutting relation to said stud, and elongated cambered batten members of a width about three times the width of the flanges of said stud extending along the length of said shoe, and said stud on opposite sides thereof and having about a third of the width of said members adjacent an edge thereof overlying said panels, with their concave faces facing one another, and detachable means acting along a center line of said cambered members for drawing said cambered members against said flanges and floor shoe sides whereby to flatten said batten members by engagement of their marginal edges under pressure with said panels.

4. In a temporary partition construction, in

combination, a door frame composed of spaced jamb members and a connecting transom member, and stud members on the outside of said jamb members of a thickness the same as said jamb members, panels in substantial abutting relation to said stud members and having a thickness approximately that of said stud members, and cambered battens extending along and detachably secured centrally thereof to said stud members, on opposite sides thereof, with their convex faces exposed, each of said batten members being of a width about three times the width of said stud members and overlying on one side a jamb member and on the other side a panel and engaging the surfaces of said panel under compression, said battens being resiliently flattened by the securing thereof to said studs.

5. In a partition construction, in combination, a rectangular sectioned stud member, a panel in substantial abutting relation to one face of said stud and having surfaces substantially flush with the other opposed faces of said stud, a substantially rectangular window frame having a thickness substantially that of the width of the remaining stud face and having one upright member in substantial abutting relation to said stud and said remaining face, a substantially rectangular panel substantially abutting a horizontal member of said frame and the remaining face of said stud, cambered batten members of a width about three times the width of said stud

extending along and detachably secured along their center lines to the opposed faces of said stud and overlying said first named panel on one side and said upright frame member and said second named panel on the other, and means securing said batten members to said upright member, the concave sides of said batten members facing each other, said battens being resiliently flattened on being detachably secured to the stud.

JOSEPH B. CAMPBELL.

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