

Feb. 7, 1967

E. H. CHINNECK

3,302,355

CEILING STRUCTURES

Filed June 8, 1964

2 Sheets-Sheet 1

FIG. 1.

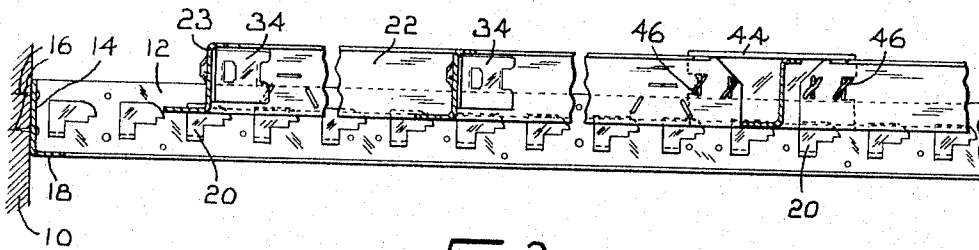


FIG. 2.

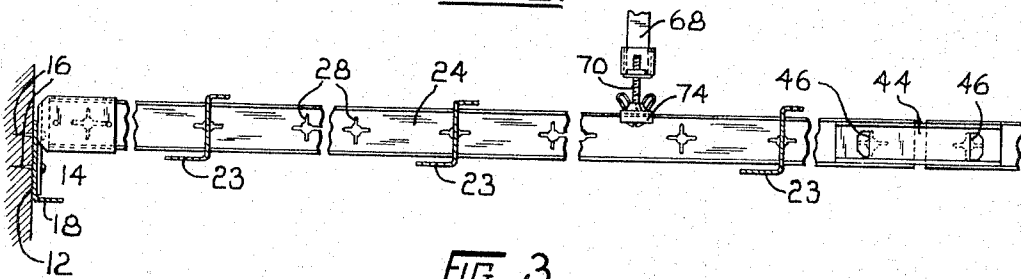
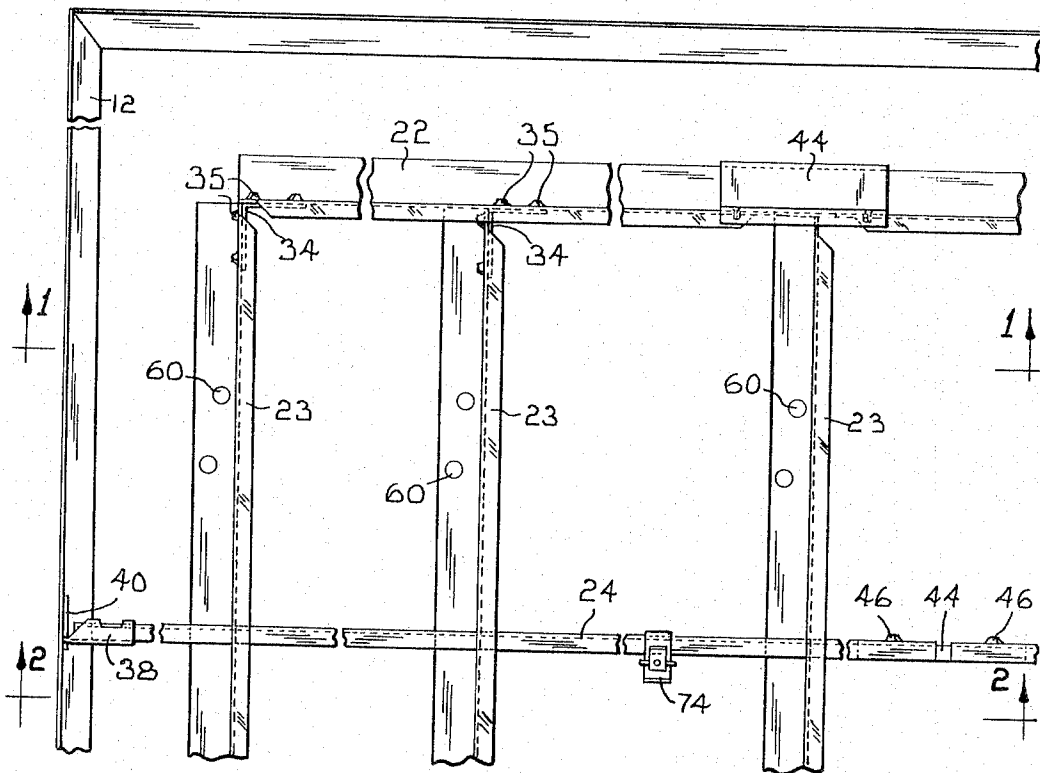


FIG. 3.



INVENTOR

EDGAR H. CHINNECK

By *Irwin S. Thompson*
ATTY.

Feb. 7, 1967

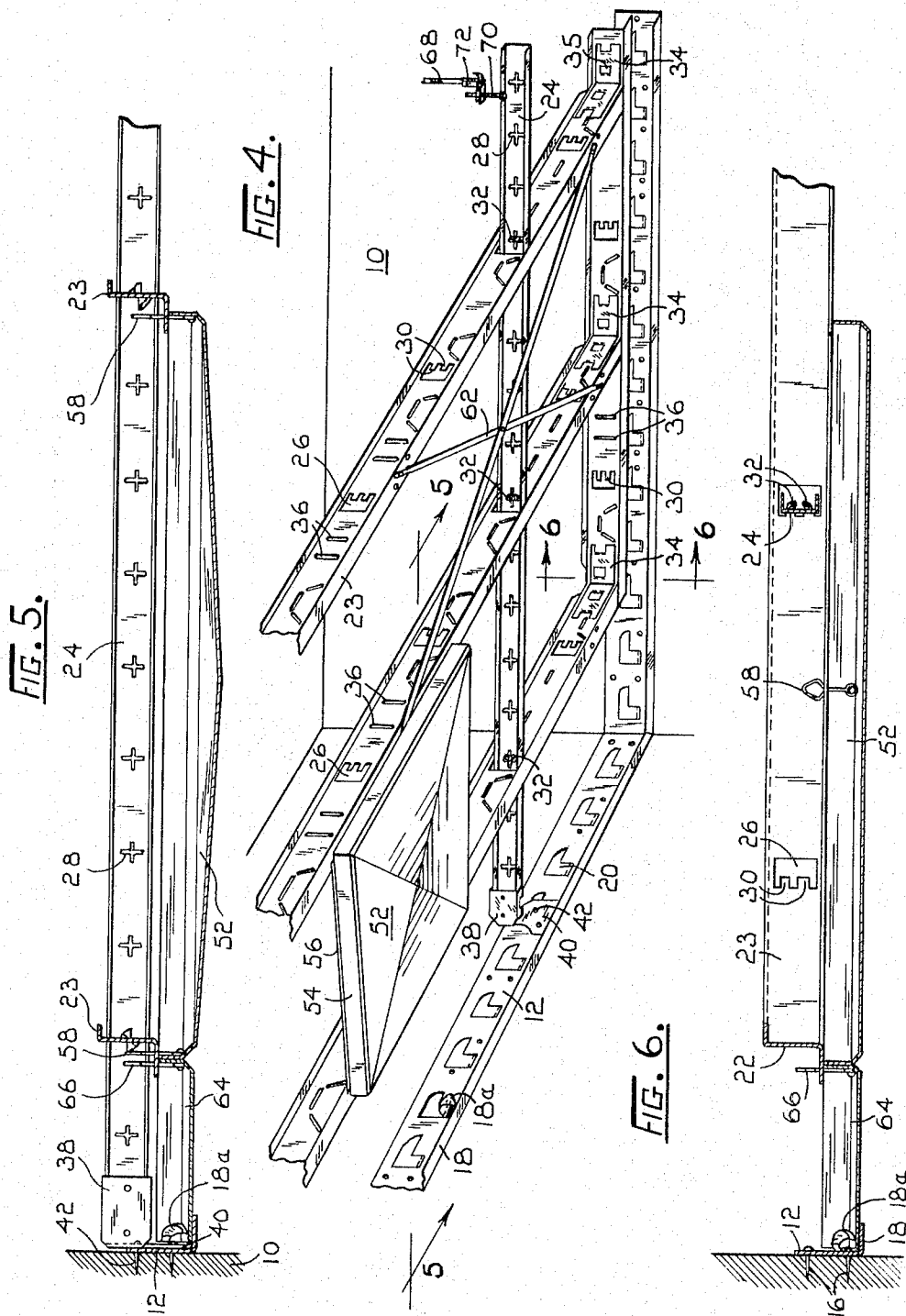
E. H. CHINNECK

3,302,355

CEILING STRUCTURES

Filed June 8, 1964

2 Sheets-Sheet 2



INVENTOR
EDGAR H. CHINNECK
By *Irwin S. Thompson*
ATTY.

1

3,302,355

CEILING STRUCTURES

Edgar H. Chinneck, Johannesburg, Transvaal, Republic of South Africa, assignor to Dowson & Dobson Limited, Selby, Johannesburg, Transvaal, Republic of South Africa

Filed June 8, 1964, Ser. No. 373,296
Claims priority, application Republic of South Africa,
Oct. 31, 1963, 63/4,938
4 Claims. (Cl. 52—484)

This invention relates to ceiling structures of the kind in which a series of panels is hung from a framework of sheet metal. Usually the framework is assembled by rivetting or by the use of screws and bolts and the panels are clipped in place.

The fabrication on the site of the framework is apt to be rather troublesome and consequently expensive and the object of this invention is to propose an alternative construction which is advantageous as regards labour, time and cost.

The invention is illustrated, by way of example, in the accompanying drawings in which:

FIGURE 1 is a vertical section through part of a ceiling,

FIGURE 2 is a similar view to FIGURE 1,

FIGURE 3 is a plan view of part of a ceiling structure,

FIGURE 4 is a perspective view of part of a ceiling structure,

FIGURE 5 is a vertical section on the line 5—5 of FIGURE 4, and

FIGURE 6 is a vertical section on the line 6—6 of FIGURE 4.

In the drawings, the walls are numbered 10. Around them and secured to them is a rectangular wall beam 12 having a vertical limb 14 (fixed to the walls by pins 16) and a horizontal limb 18 extending as a ledge inwardly from the walls. The limb 14 has a series of cuts defining tongues 20 any one of which can be bent inwardly, that is, to overlie the limb 18, as shown at 18a in FIGURE 4.

Within the wall beam is a rectangular grid, consisting of peripheral beams 22 of Z-section, identical parallel longitudinals 23, and parallel laterals or crossbeams 24 of channel section. The crossbeams could extend between pairs of longitudinals and be secured to them; or, as shown, they may extend through holes 26 preformed at intervals in the longitudinals 23. The crossbeams are formed with cruciform slots 28 spaced along their length. The holes 26 are E-shaped. The crossbeams are passed through the holes 26 and the tongued formations 30 of the E's are passed relatively through the slots 28 and bent over as shown at 32, to stabilize the grid. The longitudinals 23 are attached to the peripherals 22, and the peripherals 22 themselves are attached to each other at the corners of the grid, by means of angle brackets 34, with tongues 35 that are pressed outwardly, passed through slots such as 36 in the beams 22 and 23 and twisted.

The crossbeams 24 project beyond the peripheral grid. Their ends are engaged in channel-shaped brackets 38 that are supported on or are integral with plates 40 pinned to the walls by pins 42 through preformed holes in the wall beams 12. As will be seen, the beams 24 and hence the whole grid 22, 23, 24 is supported above the ledges 18.

2

The beams 22, 23, 24 are telescopic to be adjustable for length; or lengths may be joined together by complementally shaped connector plates 44 (FIGURES 1-3) that have tongues 46 to be received in slots 28 or 36 in the beams. The tongues are twisted to secure the lengths of beam together.

The panels 52 are shown as trough-shaped, in FIGURES 4 and 5 and flat in FIGURE 6. They can be perforated. The fourth edge 54 is of L-section, the web forming the wall of the trough and the flange 56 projecting outwardly. The face of each panel may be faceted or otherwise shaped for rigidity.

The panels are butted edge to edge to form a continuous rectilinear surface. The assembly of panels is secured by spring clips 58 (FIGURE 6), that are mounted on the edges of the panels and are passed into and through preformed holes 60 in the peripherals and the longitudinals. The flanges 56 overlie the edges of adjacent panels so that each panel assists in supporting its neighbour.

Cross braces 62 are used to stiffen the framework grid and are screwed to the beams.

The spaces between the peripherals 22 and the walls 10 are filled by panels 64 (FIGURES 5, 6) the outer edges of which rest on the ledges 18 and the inner edges of which are held up by spring clips 66, that pass through holes in the peripherals. The outer edges are anchored by bending out the tongues 18a to clamp the panel edges against the ledges 18.

The grid is held up by a series of straps 68 anchored to fixed structure above the ceiling. The strap is connected to the grid by screws 70 passed through preformed holes in the upper flanges of the crossbeams 24 and screwed into brackets 72 on the straps; or clips 74 may be used as shown in FIGURE 3 to secure the straps to the crossbeams 24.

I claim:

1. A ceiling structure of the kind in which a series of panels is hung from a framework of sheet metal elements, in which the framework consists in a rectangular wall beam of L-section that extends around the wall with one limb of the L extending inwardly to provide ledges for the outer edges of the outside panels; a rectangular outer frame inside the wallbeam and spaced from it, made up of Z-beams, a series of parallel longitudinal beams inside the outer frame and connected to it at the ends of the longitudinal beams, a series of crossbeams passing through preformed holes in the longitudinals and the outer frame and supported at their ends by the wall beam above the level of the ledges, straps to support the framework; a series of rectangular panels juxtaposed to form a continuous rectilinear surface, the outer edges of the outer panels resting on the ledges, and spring clips connecting the panels to the beams of the framework.

2. The structure of claim 1 comprising tongues on the wall beams bent inwardly from the wall and overlying the panel edges to anchor the panels between the bent tongues and the ledges.

3. The structure of claim 1 in which the longitudinal beams have a series of preformed holes spaced along their length, each hole having indentations to provide tongues and in which the crossbeams have a series of slots spaced along their lengths; tongues in the longitudinal beams bent over, passed through slots in the crossbeams and twisted over, and corner pieces connect-

3

ing the corner of the outer frame together as well as the ends of the longitudinal beams to the outer frame.

4. The structure of claim 3 in which the corner pieces secure the frame elements together by means of slots and tongues passed through the slots and twisted over. 5

References Cited by the Examiner

UNITED STATES PATENTS

2,640,570 6/1953 Horowitz ----- 189—36

4

2,710,679	6/1955	Bibbs -----	189—36
3,190,208	6/1965	Styne -----	52—484
3,204,383	9/1965	Adams -----	52—484
3,212,224	10/1965	Spangenberg -----	52—484

FOREIGN PATENTS

1,274,880 9/1961 France.

REINALDO P. MACHADO, *Primary Examiner.*