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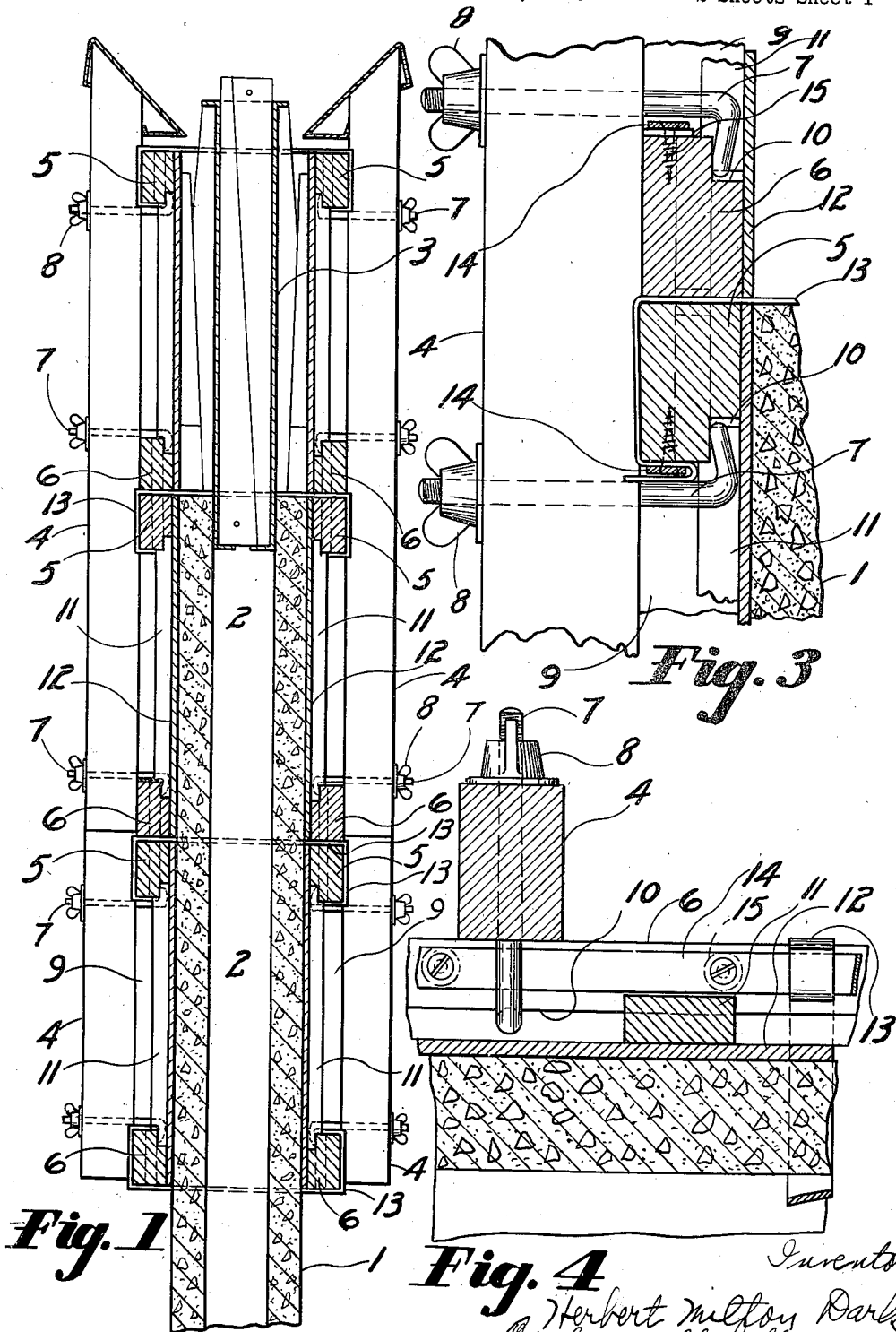
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2,275,738

FORM FOR MOLDING CONCRETE WALLS OR COLUMNS

Filed June 24, 1940

2 Sheets-Sheet 1



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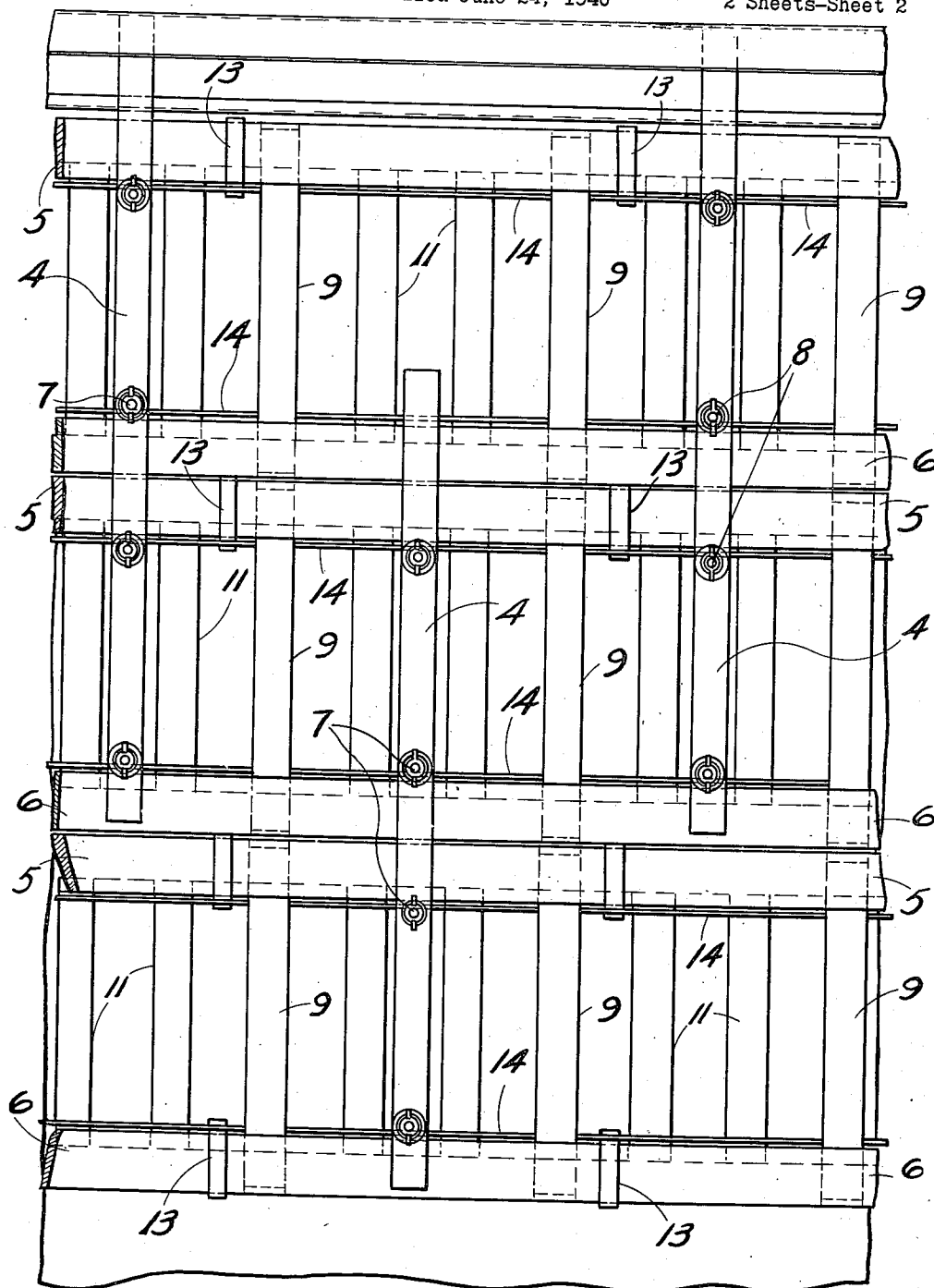


Fig. 2

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UNITED STATES PATENT OFFICE

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FORM FOR MOLDING CONCRETE WALLS
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Application June 24, 1940, Serial No. 342,182

In the Union of South Africa July 1, 1939
5 Claims. (Cl. 25—131)

This invention relates to an improved method of building construction and applies more particularly to walls, columns and the like constructed of concrete, cast in situ.

Broadly the invention consists of a method of building construction for a concrete wall, column or the like and is characterised by the use of sections of shuttering of convenient length for handling and of relatively low height, which sections are adapted to be secured in oppositely disposed spaced relationship to form the mould cavity by means of thin metal transverse ties the projecting ends of which are securable to top and bottom horizontal bracing members, which members are permanently fixed along the top and bottom edges of each section. The invention is further characterised in the provision of vertical bracing members adapted to be removably secured at spaced intervals to the horizontal bracing members by means of hooked fastening, members detachably engaging in horizontal rebates or the equivalent in the inwardly facing edges of said horizontal braces.

More particularly the transverse ties consist of thin sheet metal strips which are bent so as to pass around the outer corners of the horizontal braces and after passing down the outer faces thereof are bent inwardly to be secured to the inwardly facing edges of said braces. Preferably the ends of the ties are secured by being bent around a fixing plate fastened in spaced relationship to the inwardly facing edge of each horizontal brace.

It is to be understood that when one course of concrete has been poured the shuttering for the next course is superimposed on the shuttering for this lower course and so on until the full height of the structure is reached. The ties, besides acting as spacing control means, hold the sections of shuttering in position against the wall or the like to act as supporting means for the superimposed sections of shuttering until the concrete has set. Thereafter the lower sections are removed in turn and used for another course.

In this manner three or four tiers of shuttering sections may be used to build a structure of any height.

To enable the invention to be more clearly understood and carried into practice, reference is now made to the accompanying drawings in which like references denote like parts throughout the several views.

In the drawings:

Fig. 1 is a vertical sectional view showing a

cavity wall in the course of construction according to the method of the invention.

Fig. 2 is a side elevation on Fig. 1.

Fig. 3 is a fragmentary sectional view taken from Fig. 1 and shown to a larger scale, and

Fig. 4 is a fragmentary sectional plan view taken on Fig. 3.

Referring to the drawings reference 1 denotes a concrete wall having a cavity 2 which is moulded by the core form 3 more particularly described in my co-pending union patent application No. 768/39. In Figs. 1 and 2, three tiers of shuttering sections are shown in superimposed relationship with vertical braces 4 holding them in vertical alignment by being secured to the horizontal top and bottom braces 5 and 6 respectively of each section, by means of the hooked bolts 7 and wing nuts 8.

Each section of shuttering consists of the top and bottom braces 5 and 6 which are connected at spaced intervals by the vertical framing posts 9 permanently secured thereto. Each of the braces 5 and 6 is provided with a rebate 10 on its inwardly facing edge. This rebate, besides providing holding means for the hooked bolts 7, as clearly indicated in Fig. 3, forms locating means for the stump tenons of the movable slats 11 arranged in the spaces intermediately of the framing posts 9. The framework thus provided, is covered by sheathing 12 consisting of boarding, metal, sheets, fibreboard or other suitable sheet material. This sheathing is fixed to the top and bottom braces 5 and 6, and to the framing posts 9 but not to the slats 11, which are accordingly slidable in a horizontal direction in the rebates 10 for the purpose of adjustment.

The transverse ties 13 consisting of thin sheet metal strip are bent at each end so as to embrace the braces 5 and 6 as clearly shown in Fig. 3. Each end of a tie 13 is secured by being bent round a fixing plate 14 fastened in spaced relationship to the inwardly facing edges of the braces 5 and 6. The fixing plates 14 are fastened by wood screws 15 with interposed washers 15 to provide the spaces between said plates and the brace edge through which the ends of the ties 13 are threaded before being bent as shown in Fig. 3.

It will be understood that the ties 13 are placed and fixed in position after each course of concrete has been poured. When it is desired to remove them one end is straightened and the tie is then pulled out of the wall from the other side. The small hole remaining is thereafter filled with cement mortar. Owing to the said ties 13 being relatively thin, they will only cause a very narrow

gap in the joint between two courses of shuttering which opening may be easily closed by filling means such as a plastic or hard-setting composition. These ties 13, besides accurately controlling the wall thickness, act as supporting means for the section of shuttering so that one course may be superimposed on the other. In practice the bottom course is continually being removed and used as the shuttering for the next course, so that, as illustrated, three courses will be sufficient to carry a wall to any desired height.

What I claim is:

1. Apparatus of the character described, which consists of sections of shuttering composed of top and bottom horizontal braces connected at spaced intervals by means of fixed vertical framing posts, rebates provided in the inwardly facing edges of the braces, slats slidably located by their ends in said rebates and positioned intermediately of the framing posts, sheathing fixed to the braces and framing posts but not to the aforesaid slats which are thereby adjustable in a horizontal direction, and vertical bracing members detachably secured to the horizontal braces by means of hooked bolts the bent ends of which engage the aforementioned rebates.

2. Apparatus of the character described, which consists of sections of shuttering composed of top and bottom horizontal braces connected at spaced intervals by means of fixed vertical framing posts, rebates provided in the inwardly facing edges of the braces, slats slidably located by their ends in said rebates and positioned intermediately of the framing posts, sheathing fixed to the braces and framing posts but not to the aforesaid slats which are thereby adjustable in a horizontal direction, and vertical bracing members detachably secured to the horizontal braces by means of hooked bolts the bent ends of which engage in the aforementioned rebates, said vertical bracing members being at least twice as long as two superimposed sections of shuttering.

3. Apparatus of the character described, including sections of shuttering each composed of top and bottom horizontal braces and vertical framing posts fixedly secured to said braces at spaced intervals, the inwardly facing edges of said braces being provided with rebates, vertical slats slidably located by their ends in said rebates and arranged in the space between said vertical framing posts, sheathing fixedly secured

to the inwardly facing sides of said braces and said framing posts, vertical bracing members arranged on the outwardly facing sides of said horizontal braces, and means including bolts with hook-shaped ends for detachably securing the vertical bracing members to said horizontal braces, the hooked-shaped ends of said bolts engaging the rebate in the inwardly facing edges of said braces.

4. Apparatus of the character described, including sections of shuttering each composed of top and bottom horizontal braces and vertical framing posts fixedly secured to said braces at spaced intervals, the inwardly facing edges of said braces being provided with rebates, vertical slats slidably located by their ends in said rebates and arranged in the space between said vertical framing posts, sheathing fixedly secured to the inwardly facing sides of said braces and said framing posts, vertical bracing members arranged on the outwardly facing sides of said horizontal braces, and means including bolts with hook-shaped ends for detachably securing the vertical bracing members to said horizontal braces, the hooked-shaped ends of said bolts engaging the rebate in the inwardly facing edges of said braces, said vertical bracing members being at least as long as two superimposed sections of said shuttering.

5. Apparatus of the character described, including sections of shuttering each composed of top and bottom horizontal braces and vertical framing posts fixedly secured to said braces at spaced intervals, the inwardly facing edges of said braces being provided with rebates, vertical slats slidably located by their ends in said rebates and arranged in the space between said vertical framing posts, sheathing fixedly secured to the inwardly facing sides of said braces and said framing posts, vertical bracing members arranged on the outwardly facing sides of said horizontal braces, bolts with hook-shaped ends for detachably securing the vertical bracing members to said horizontal braces, the hooked-shaped ends of said bolts engaging the rebate in the inwardly facing edges of said braces, and means including clamping plates on said horizontal braces for securing thereto tie straps which extend transversely across the upper and lower ends of said sections of shuttering.

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