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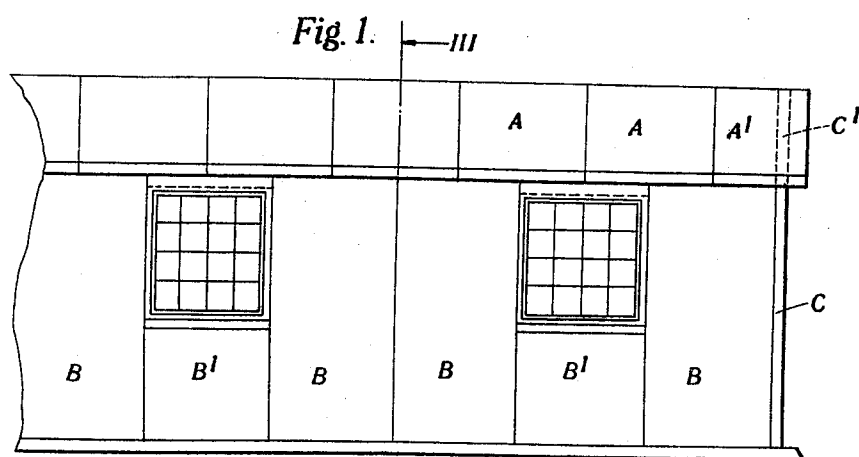
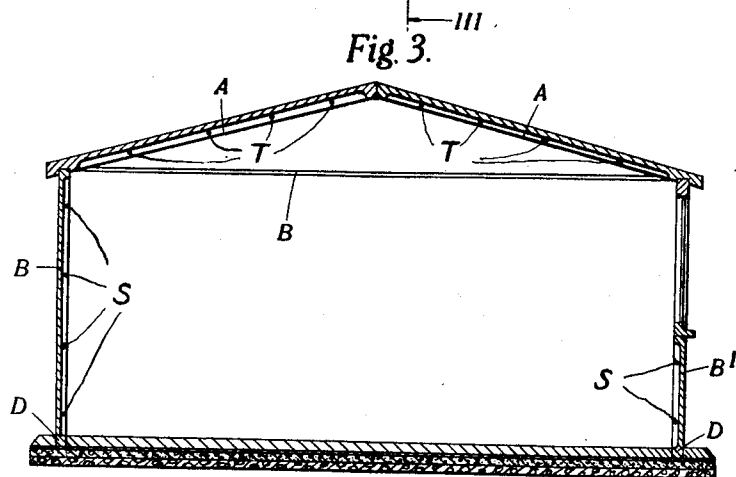
W. H. SMITH

2,331,083

BUILDING AND BUILDING CONSTRUCTION

Filed March 27, 1941

3 Sheets-Sheet 1



WILLIAM H. SMITH INVENTOR
BY *J. H. Smith*
ATTORNEY

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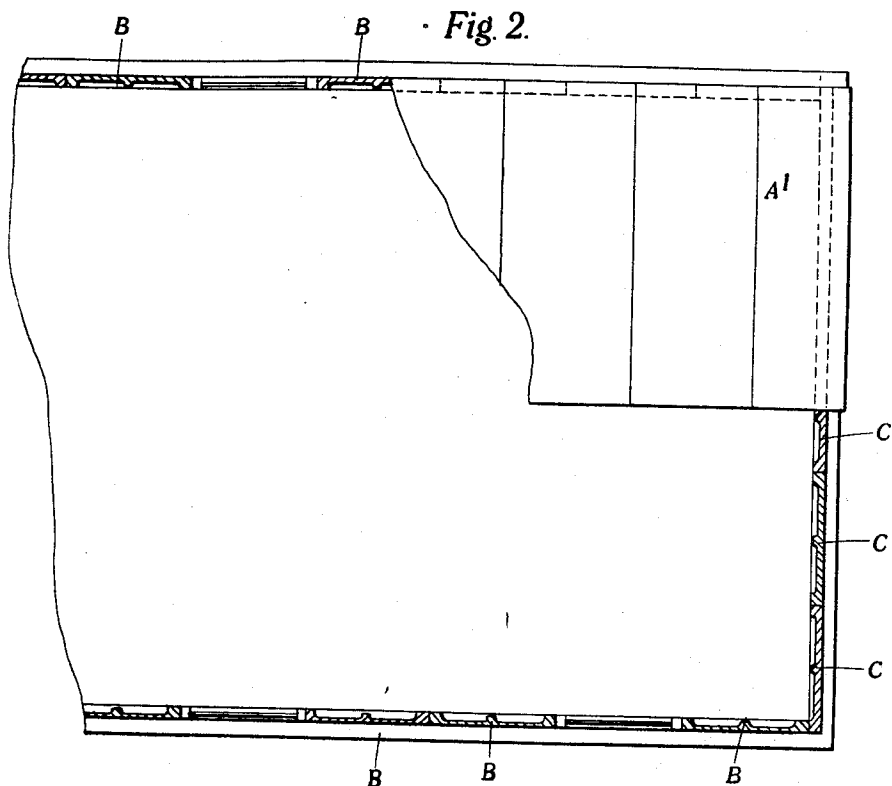
W. H. SMITH

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BUILDING AND BUILDING CONSTRUCTION

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3 Sheets-Sheet 2



INVENTOR

William H. Smith

BY

[Signature]

ATTORNEY

Oct. 5, 1943.

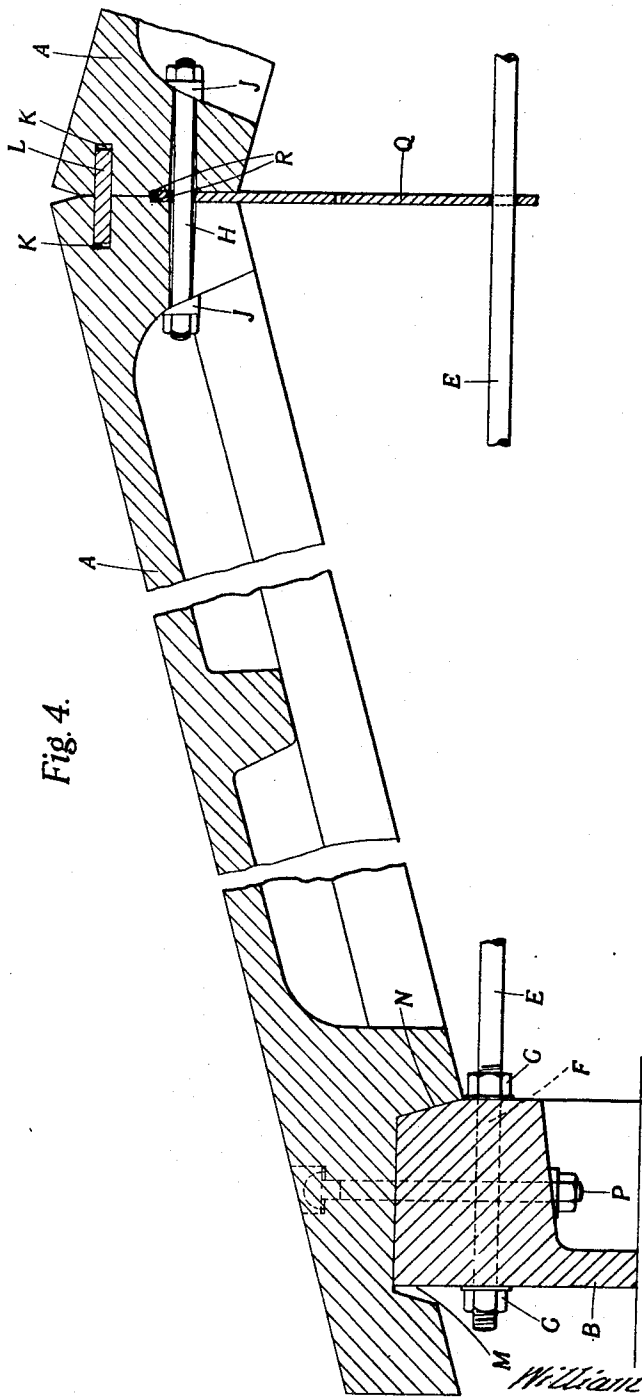
W. H. SMITH

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BUILDING AND BUILDING CONSTRUCTION

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3 Sheets-Sheet 3



INVENTOR
William H. Smith
BY *J. J. Smith*
ATTORNEY

UNITED STATES PATENT OFFICE

2,331,083

BUILDING AND BUILDING CONSTRUCTION

William Herbert Smith, East Molesey, England

Application March 27, 1941, Serial No. 385,523
In Great Britain March 20, 1940

1 Claim. (Cl. 72—1)

This invention relates to the construction of single story buildings, consisting of pre-cast reinforced concrete flanged wall members bolted together and pre-cast flanged reinforced concrete roof members bolted together.

Proposals have previously been made to provide buildings of this kind, but these have either had a steel framework between which the wall and roof members were connected, or have concrete beam members cast in situ in horizontal grooves at eaves level.

The present invention is directed towards the provision of a single story of the type above mentioned in which no steel frame-work is necessary nor is any in situ reinforced concrete work required.

The primary object of the present invention is to provide a building of the above mentioned type, in which steel tie rods are provided passing through the tops of said wall slabs and secured thereto by nuts and bolts which pass through the top flanges of said wall slabs and through the ends of said roof slabs.

Another object is to provide an improved detail construction of the joints between the roof slabs on one side and the roof slabs on the other.

With these and other objects in view the invention consists in the improved combinations and arrangements of the preferred embodiments illustrated in the accompanying drawings and set out in the claim which follows.

In these drawings Fig. 1 shows a side elevation of a portion of a building.

Fig. 2 shows a corresponding plan partly in section.

Fig. 3 shows a section taken along the line III—III of Fig. 1.

Fig. 4 is a detail view illustrating the roof construction.

In the building illustrated in Figs. 1-4, the side walls of a hut are of precast reinforced concrete coffered slab units B. The floor is of concrete laid for example on a base of hard core and the units are received in a groove D formed in the foundation so that their bottom ends are maintained in alignment.

The wall units are of such height as to extend up to the eaves of the hut and are joined together by bolts S or the equivalent passed through holes cast in the outer ribs of adjacent units.

Short wall slabs B' are used where windows are required.

Tie rods E at suitably spaced intervals along the length of the hut connect opposite units,

these rods passing through preformed holes F in the top ribs of the units and being fixed by nuts G or the equivalent.

The top ribs of the wall units are chamfered at an angle of about 15° on the inner side of the wall to provide a bearing for the roof units.

The roof is formed of precast reinforced concrete coffered slab units A, A' which are bolted together in pairs by bolts T and these pairs span the width of the hut, their outer ends engaging the top of the wall units.

The end roof units A' are shorter than the others A and the units A are so arranged that each one rests on two wall units B so that the roof joints and wall joints are staggered and the roof units hold the wall units in alignment.

Each roof unit lies at an angle of for example about 15° to the horizontal and the inner ends of the units are shaped so as to form a close abutment with the end of the other unit of the pair when two units are bolted together.

A bolt H passes through the adjacent outer ribs of the roof units of each pair and bevelled spacing washers J are provided between the bolt (or not) and the inner surface of these ribs.

Grooves K are formed in the abutting faces of the units of each pair and a flat dowel L is inserted in these grooves to hold them together.

At the outer ends, the roof units are formed with grooves M which engage over the top ribs of the wall units. The inner sides of these grooves bear on chamfered surfaces N of the wall units.

Bolts P passing through preformed holes in the outer ribs of the wall units and in the roof units fasten the roof and wall units together.

Adjacent roof units are also bolted together by bolts passing through preformed holes in their abutting ribs.

A sag rod O is provided for each tie rod. This sag rod may be hung from the bolt H connecting a pair of roof units, the units having recesses R on their abutting faces to accommodate this rod.

The end walls are formed from wall units C similar to the wall units B to which are connected gable units C'.

The wall and/or roof units are chamfered along their edges so that a V is formed between adjacent units into which tarred hemp or other suitable material can be caulked and which can then be filled with hot bitumen, cement pointing or the like.

The units may be of vibrated concrete and protection from rain and damp can be provided by spraying suitable material (bitumastic paint

for example) into the pores of the concrete on the exposed surface.

I claim:

A single story building having in combination walls composed of reinforced concrete flanged slabs assembled side by side with adjacent flanges bolted together, a pitched roof of reinforced concrete flanged slabs assembled side by side with

adjacent flanges bolted together, bolts connecting the roof slabs of one slope with the roof slabs of the other slope, recesses in the lower portions of said roof slabs, said recesses receiving sag-rods suspended from said bolts connecting the roof slabs of one slope with the roof slabs of the other slope.

WILLIAM HERBERT SMITH.