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(54) Title: A SANDWICH BUILDING CONSTRUCTION, SUCH AS WALLS OR THE LIKE.

(57) Abstract

The invention relates to building construction and in particular sets out to provide a method of constructing walls on the principal of a sandwich of filling material retained between prepared outer surfaces which may be in the form of precast tiles.

More particularly the invention sets out to provide method and means for construction of "low cost" housing which may be assembled speedily.

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(56) Documents cited: AU 10877/76

WO 89/08755 A1

US 3 881 291

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This invention relates to building construction and in particular sets out to provide a method of constructing walls on the principal of a sandwich of filling material retained between prepared outer surfaces which may be in the form of precast tiles.

There is an increasing demand for low cost, high speed, simple methods of construction of walls in respect of houses, schools, factories and the like but the essence of the research is upon simplicity such that unskilled labour may successfully construct a reasonable quality building with a minimal number of preshaped building elements. The advantages of the invention will emerge from the description which follows.

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According to the invention a method of building construction includes the steps of positioning at least one pair of building elements in spaced relationship to each other upon a foundation; semi-filling the space between the elements with settable material; positioning a second course of building elements above the first course; filling with settable material to close the space between the elements in the first course and semi-filling the space between the second course elements whilst holding the second course elements in spaced relationship by a combination of upper and lower mating formations and repeating the procedure until the desired height of structure is reached.

Also according to the invention the building elements comprise tiles having male and female mating longitudinal edges for easy location of each succeeding course.

Further according to the invention a spacing device for holding the building elements in upper spaced relationship when the lower zone of each element is engaged in the complementary shaped male and female mating edges of the preceding course; includes a bar having two "fingers" disposed at a suitable angle thereto, the fingers being adapted to embrace the upper zones of both building elements of a course whilst infilling with settable material takes place.

In one form of the invention the building elements may be precast and will take the form of a slab of material which may be planar or curved of suitable thickness characterised by the opposite edges of the slab being formed into substantially V shaped cross

section thereby providing a substantially tongue and groove appearance; the tongue and groove arrangements being adapted to mate with successive courses of elements when stacked one above the other.

The inner surface of the building elements may be substantially prepared to form a key to attach grout infill to the structure.

In order to illustrate the nature of the invention and the manner in which it may be performed an example will be described with reference to the accompanying drawings.

In the drawings, Figure I illustrates a perspective view of two courses of building elements placed upon a foundation and semi-filled with grout whilst simultaneously illustrating a spacing device for temporarily holding second course and later course elements in upper spaced relationship while grout infilling takes place.

Figure II illustrates a compound wall part finished where a plurality of building elements have been located on a foundation for a desired length for a particular wall.

Turning to the figures of drawings, number 10 indicates a foundation upon which building elements 12 and 12a have been placed in a substantially vertical plane and spaced apart the required distance to give a wall of desired dimensions for the structure contemplated. Numeral 13 indicates a concrete grout mixture which may contain reinforcing rods 14 and 15 and which is

infilled to an approximate level indicated by 16 in the first course construction.

Thereafter when the grout is sufficiently set a second course of building elements illustrated by numerals 17 and 18 are placed above 12 and 12a where a characterising feature of the invention namely the "tongue and groove" configuration shown by numeral 19 and 20 locate elements 17 and 18 in the correct spacial relationship to elements 12 and 12a. To ensure that the elements 17 and 18 are held in the required plane and at the required distance apart, a spacer 21 comprising a bar with fingers 22 and 22a to one side of the bar 21 and fingers 23 and 23a to the other end of the bar is placed over the upper edges 24 and 25 of elements 17 and 18 thus securing elements 17 and 18 against lateral displacement when the next lot of grout is infilled above the level shown at 16 to the level now shown at 26.

NB The fingers 22, 22a and 23, 23a may be set at any suitable angle to accommodate the element being held (usually at right angles). Successive courses follow the same pattern until the required height of the wall has been reached.

It will be apparent to those skilled in the art that the building method proposed is likely to achieve the objectives and to constitute an improvement over known methods currently in use.

CLAIMS:

1. A method of building construction including the steps of positioning at least one pair of building elements in spaced relationship to each other upon a foundation; semi-filling the space between the elements with settable material; positioning a second course of building elements above the first course; filling with settable material to close the space between the elements in the first course and semi-filling the space between the second course elements whilst holding the second course elements in spaced relationship by a combination of upper and lower mating formations and repeating the procedure until the desired height of structure is reached.
2. A method as claimed in Claim 1 wherein the building elements comprise tiles having male and female mating longitudinal edges for easy location of each succeeding course.
3. A method as claimed in Claim 1 or Claim 2 wherein a spacing device is provided for holding the building elements in upper spaced relationship when the lower zone of each element is engaged in the complementary shaped male and female mating edges of the preceding course; includes a bar having two "fingers" disposed at a suitable angle thereto, the fingers being adapted to embrace the upper zones of both building elements of a course whilst infilling with settable material takes place.

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4. A method as claimed in any one of Claims 1 to 3 wherein the building elements are pre-cast and will take the form of a slab of material which may be planar or curved of suitable thickness characterised by the opposite edges of the slab being formed into substantially V shaped cross section thereby providing a substantially tongue and groove appearance; the tongue and groove arrangements being adapted to mate with successive courses of elements when stacked one above the other.
5. A method as claimed in any one of Claims 1 to 4 wherein the inner surface of the building elements is prepared to form a key to attach grout infill to the structure.
6. A building wherever produced by the method of construction herein proposed.

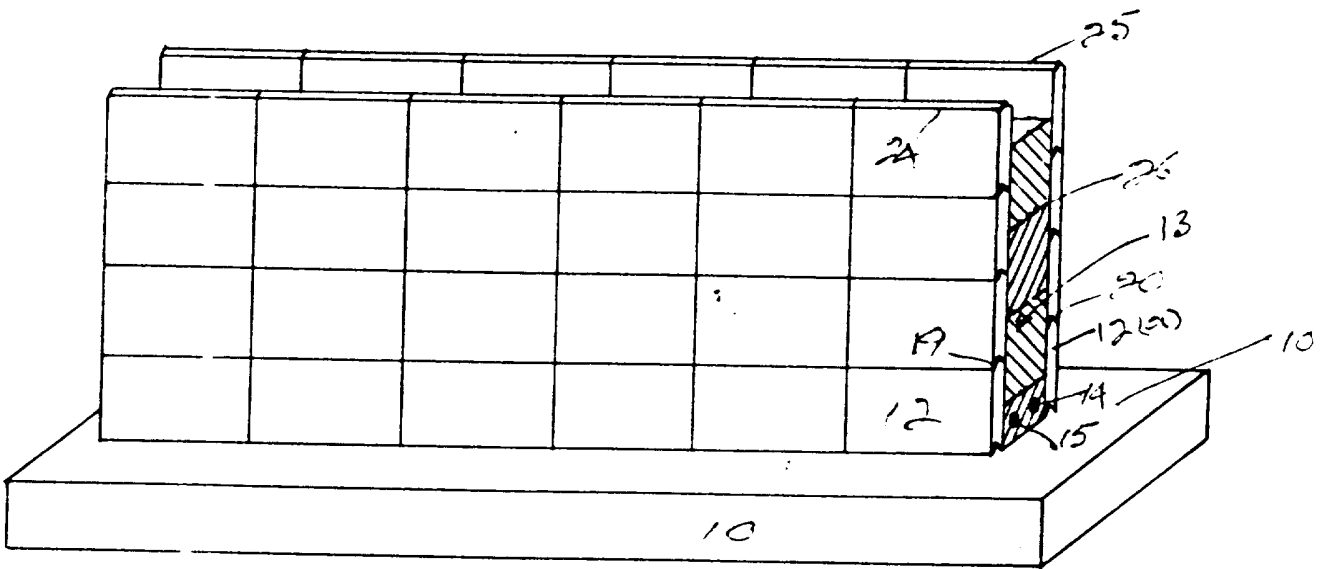


FIG. II

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

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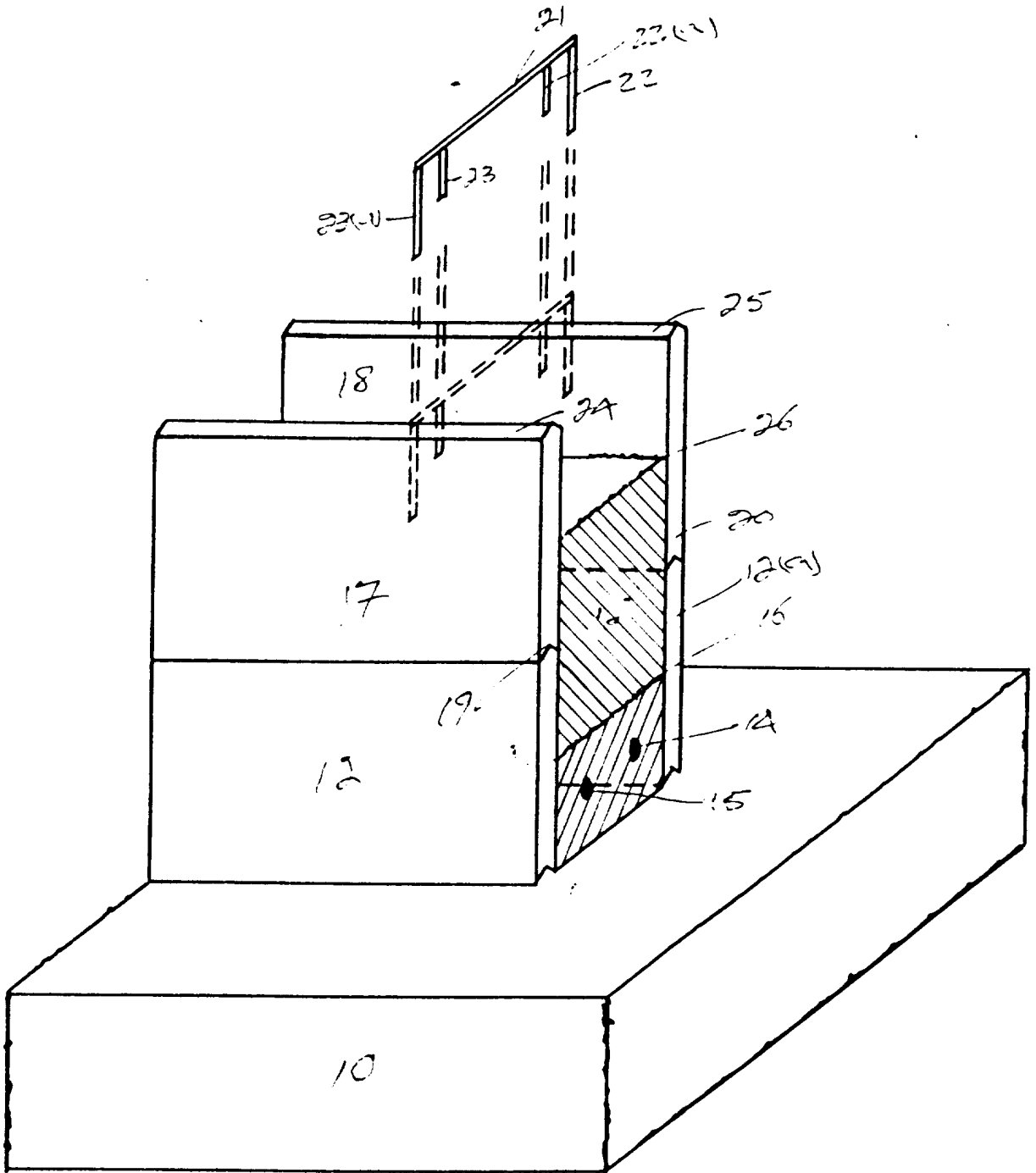


FIG I

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke at the end.

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