Jan. 26, 1971 A. KREBS 3,557,502

CELLAR WALL CONSTRUCTION

Original Filed Aug. 23, 1967

Fig. 1

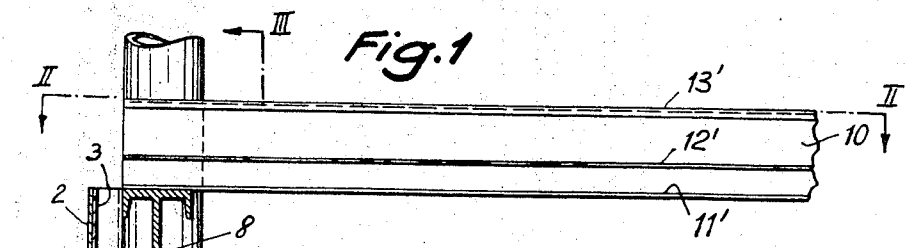


Fig. 3

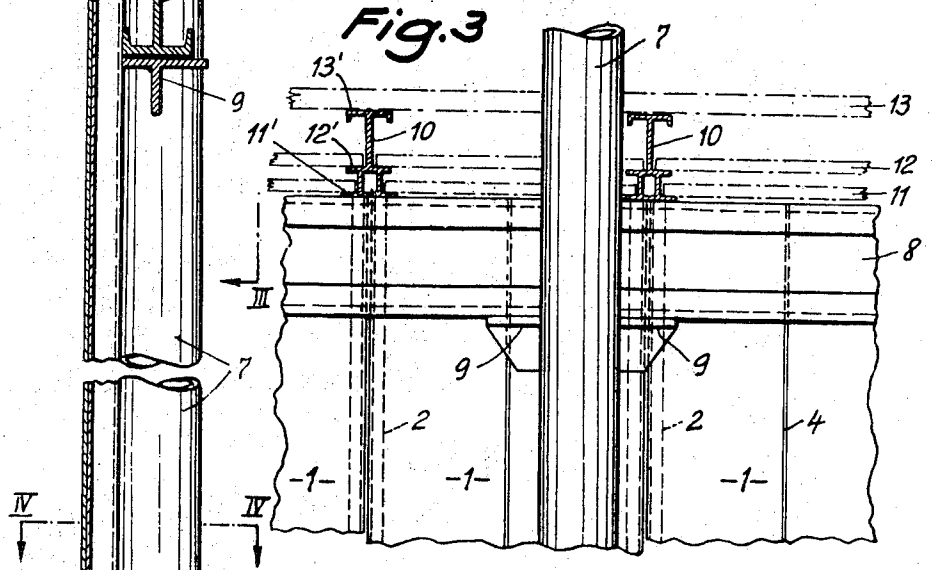


Fig. 2

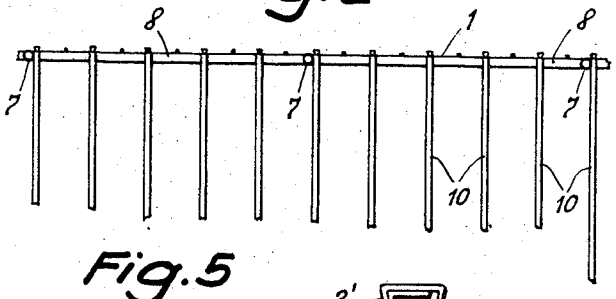


Fig. 5

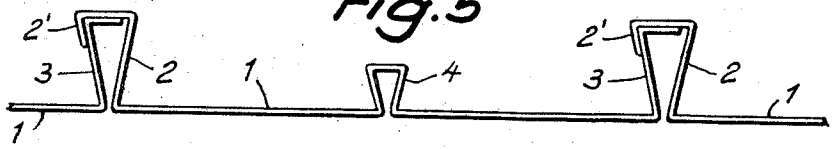
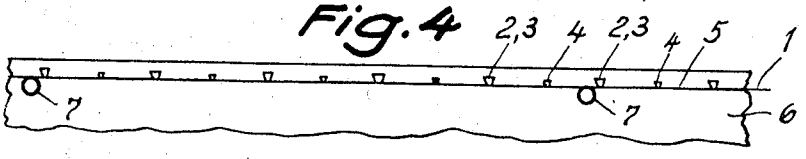


Fig. 4



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CELLAR WALL CONSTRUCTION

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Continuation of application Ser. No. 662,611, Aug. 23, 1967. This application May 20, 1969, Ser. No. 828,430
Claims priority, application Switzerland, Oct. 5, 1966, 14,401/66
Int. Cl. E02d 27/00; E04b 1/00
U.S. Cl. 52—169 6 Claims

ABSTRACT OF THE DISCLOSURE

A wall of a cellar is formed from sheet aluminum sections with interlocking vertical edge folds resting against a framework of columns and joists, rising from a concrete foundation, under pressure of soil material piled up outside the wall.

This application is a continuation of application 662,611 filed Aug. 23, 1967, now abandoned.

This invention relates to a cellar-wall construction which permits erection without the use of building equipment, except for earth-moving work, in a time-saving manner.

This is possible because the cellar-wall construction according to the invention has an outer wall consisting of aluminum wall elements with vertical rib-like connecting and reinforcing folds.

In the accompanying drawing, which shows by way of example a preferred embodiment of the invention:

FIG. 1 is a vertical cross-section through a cellar wall according to my invention along a junction between two outside wall elements;

FIG. 2 is a horizontal section taken on the line II—II of FIG. 1 on a smaller scale;

FIG. 3 is a part-sectional view taken on the line III—III of FIG. 1;

FIG. 4 is a horizontal section taken on the line IV—IV of FIG. 1 on a smaller scale; and

FIG. 5 shows the profile of the aluminum wall elements on a larger scale.

According to FIG. 5, the cellar-wall construction according to my invention shown has aluminum wall elements or sections **1** which are for instance 2.5 meters high and 1 meter wide. They are made of aluminum sheet 3 to 4 mm. thick and have at their vertical longitudinal edges interlocking folds **2** and **3** which project outwardly and are of a Z-shaped cross-section. A rib-like median fold **4** of substantially U-shaped or dovetail cross-section is located between successive joints **2, 3** and also projects outwardly. Edge folds **2** have a somewhat larger span than the mating formations **3** and grip the latter with reentrant flanges **2'**. The overlapping of edge folds **3** by edge folds **2, 2'** holds the wall elements together in a horizontal direction parallel to the plane of the wall. As is apparent from FIG. 5, folds **3** can easily be slid into folds **2, 2'**.

The wall elements are supported at their bottom ends on a ledge **5'** of a rabbet (FIGS. 1 and 4) of the foundation platform **6**. Supporting columns **7**, placed at intervals of about 5 meters, are concreted into foundation **6** close to rabbet, flush with the vertical shoulder **5** thereof, and are interconnected at a height of about 2.5 meters by longitudinal wall joists **8**. The latter rest on brackets **9** welded to columns **7** and are bolted thereto. The top ends of wall elements **1** lie against the longitudinal wall joists **8**. The aluminum wall thus assembled is held in place against an upright framework, composed of abutments **5, 6, 7, 8**, by soil material **14** heaped against its outside surface, such as gravel. The outer surfaces of wall elements **1** are provided with a bitumen coating and, at least on the outside, with a polyvinyl-chloride coating about 2 mm. thick, whereby their corrosion resistance is

considerably increased; part of this composite protective coating has been diagrammatically illustrated at **15** in FIG. 5. The flat inner surface of sections **1**, defining the major part of their area as best seen in FIG. 5, lie in a vertical plane defined by the shoulder **5** and the outer faces of joists **8**.

Transverse wall joists **10** are laid on the longitudinal wall joists **8** at intervals of about 1 meter in such a way that a transverse joist **10** comes to lie over each joint **2, 3** between two wall elements **1**. These transverse joists **10** serve as a support for the cellar ceiling **11**, for a dead floor **12** and for the ground-level flooring **13** (FIG. 3). The cross-section of transverse joists **10** has three supporting shoulders **11', 12'** and **13'** for this purpose; it also forms a horizontal duct **16** open toward the upper end of a vertical channel **17** defined by an aligned junction **2, 3**.

Columns and joists **7, 8, 10** may also be of standardized length, corresponding to a certain grid, for assembly with wall elements **1**, and thus matched to the wall elements.

I claim:

1. A wall structure for a cellar of a building, comprising a foundation, a framework rising from said foundation, and a plurality of coplanar sheet-metal wall sections with interlocking pairs of outwardly directed vertical edge formations resting on said foundation while bearing from without upon said framework under pressure of soil material piled up along their outer surfaces, said edge formations having substantially the shape of Z-profiles with one of the Z's of a pair having an outer flange terminating in a lip bent back toward its own web and bearing upon the web of the other Z, said webs being closely spaced in the vicinity of said framework and diverging outwardly toward said flange.

2. A structure as defined in claim **1** wherein said sections consist of aluminum.

3. A structure as defined in claim **1** wherein said sections are provided with a protective coating on their outer surfaces.

4. A structure as defined in claim **1** wherein said foundation has a rabbet supporting a multiplicity of said sections while leaving their outer surfaces fully exposed, said framework including columns flush with a vertical shoulder of said rabbet and longitudinal joists parallel to said rabbet secured to said columns at an elevated level above said foundation, said sections having major flat inner surface portions bearing along their lower edges upon said shoulder and along their upper edges upon said joists.

5. A structure as defined in claim **4** wherein said framework further includes floor-supporting transverse joists resting on said longitudinal joists in line with respective junctions between adjoining sections formed by said interlocking formations.

6. A structure as defined in claim **4** wherein each of said sections is provided with a single median fold forming a vertical rib separating said flat surface portions thereof.

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52—274, 293, 588