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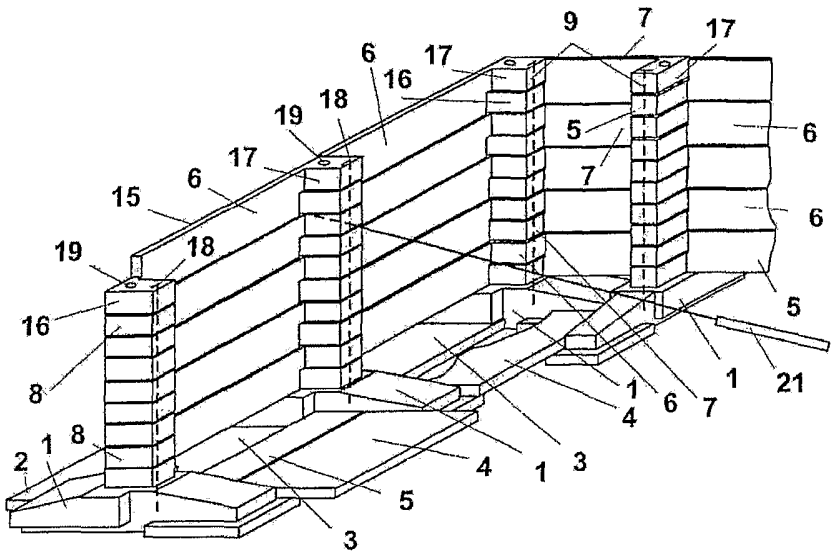
(54) Title: MOUNTABLE REINFORCED CONCRETE SUPPORT WALL WITH FUNDAMENT FOOT OF CHANGEABLE WIDTH



(57) Abstract: Reinforced concrete mountable support wall with fundament foot of changeable width is intended for permanent or temporary support of raising soils and it is composed of: fundament foot (1), pressure plate (2), additional pressure plate (3), hind plate (4), additional hind plate (5), basic element (6), angular element (7), square (8) and reinforcement ribs (9). We lay down pressure plates (2) upon fundament grounds and, if needed, additional pressure plates (3), at distances enabling laying down elements of fundament foot (1) among them. Upon the bearing of the hind plate and additional hind plate (11), we lay down the hind plate (4) and, if needed, as to physical characteristics of the soil an additional hind plate (5). When we achieve the wished height of the wall, we insert reinforcement and pre-stress it.

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MOUNTABLE REINFORCED CONCRETE SUPPORT WALL WITH FUNDAMENT FOOT OF CHANGEABLE WIDTH

DESCRIPTION OF INVENTION

Subject of the invention

The subject of the invention, the reinforced concrete support wall with fundament foot of changeable width pertains to the construction support i.e. rest walls.

Description of technical problem

The technical problems being solved by the invention, are the following: reinforced concrete support walls can be fully burdened only after the concrete has attained the prescribed firmness and does not enable simultaneous adjustment of the width of the fundament foot with regard to soil characteristics in the grounds of the hind soil rise.

State of teh art

The thus far known solution of the construction of reinforced concrete support walls is by their implmentation on the very site. The drawbacks are: dependence on construction as to metereological conditions, panelling and depanelling is necessary, as well as building in of reinforcement at the site, the quality of the reinforcement and of the concrete built is questionable, thus control over these works is necessary, the time of concrete solidification is lenghty, the implementation – in the time when the construction material industry is fully busy, due to lengthy implementation, brings about a greater chance of slip of the rising ground dig out, in case of different characteristics of land in the fundament soil and in the soil behind, as was found by investigations and a pre-project of the wall, is necessary, or a rehabilitation of the fundament soil is necessary. The solutions thus far do not enable temporary support of the rising land. Owing to questionable achievement of water permeability of concrete, it is necessary to protect the reinforcement in the concrete by hydro-isolation.

Description of new invention

The invention solves the following problems: it shortens the construction time, as carpenter's concrete worker's and ironer's works are not necessary, except for works of pre-stressing of ribs for injecting, construction is independent of external temperatures, enabling construction of elements outside the construction season, owing to industrial mode of production, the quality of elements is better and quality control is facilitated, enabling simulataneous support of rising soil, as all elements may be used again, during construction it is possible to adjust the width of the fundament foot, woith regard to physical characteristics of the soil in the hind rise and in the fundament soil.

Owing to optimal conditions for concrete implementation and the achievement of water permeability of concrete, it is not necessary to implement hydro-isolation owing to protection reinforcement.

Reinforced concrete mountable support wall with fundament foot of changeable width, pict. 1, is composed of: fundament foot 1, pressure plate, 2, pict. 7, additional pressure plate 3, pict. 7, hind plate 4, pict. 6, additional hind plate 5, pict. 6, basic element 6, angular element 7, square 8, reinforcement ribs 9 and mountable cylinder 12.

The fundament foot 1, pict. 5 and pict. 8 has the following components: bearing of the pressure and of the additional pressure plate 10, bearing of the hind and additional hind plate 11, bearing for anchoring reinforcement ribs 13, and bearings of ribs 14.

The basic element 6, pict. 3 and the angular element of the wall 7, pict. 4 is composed of the: facet 15, lower lying part of rib 16, higher lying part of rib 17, reinforcement channel of rib 18, mountable bearing 19.

Square 8, pict.2 has a rib reinforcement bearing 18 and a mountable bearing 19.

The invention is applied by all elements being dimensioned in the mode known at the present state of engineering and on the basis of these computations elements are produced in an industrial plant for the production of pre-fabricated elements. The load capacity of each element must be indicated. At the preparation of fundamental soil in the way which is known at the present state of engineering, we put pressure plates 2 at the ground soil and, if needed,

additional pressure plates 3 at distances enabling, to put down elements fundament feet 1. The bearing og the pressure and additional pressure plate 10 must lye at the pressure plate 2 and additional pressure plate 3. To the bearing of the hind and additional hind plate 11 we put the hind plate 4 and, if needed, the additional hinter plate 5. After laying down five fundaments 1, we begin to arrange by layers basic elements 6 upon rib bearings 14, and, if needed, anglular elements 7. At both ends of the wall, we insert square 8, below below higher lying parts of 16. After laying down the last row of basic elements 6 and of the angular element 7, we reinforce ribs, by inserting reinforcement from wire for stressing, into the reinforcement channel of rib 18, anchoring it into the bearing for anchorage of reinforcement of rib 13 and we strain it in the mode known according to the present state of engineering. We may also use ribbed or different reinforcement known by the present state of engineering. We protect the strengthening in reinforcement channels of tib 18 by injection mass in the mode and with materials, which are known by the present state of engineering. In case we have built into the mounting bearings 19 a mountable cylinder 12 of steel pipes or sticks, we also need to inject into these bearings as to preventing corrrosion.

Pict. 8 indicates the implementation of the mountable bearing 18 with round-form tooth, which enables also laying down elements in in curve position.

At temporary support of rising soil injecting for protection reinforcement as to corrosion is not necessary.

After the end of construction of mountable reinforced concrete wall with changeable fundament foot, we fill the hind position with soil material in the way known by the present state of engineering.

Rectilineally, we carry out the support wall by the use of pressure plates 2, additional pressure plates 3, hind plates 4 and additional hind plates 5, with rectangular forms at curve we use trapesoid-form plates 2-5. We lay down along the fundament foot 1 and the oblique fundament foot 20 at horizontal plane or at inclination. In case of a greater longitudinal inclination of terrain, it is necessary to conclude the fundament by steps and lay the following fundament feet 1 or oblique fundament feet 20 and to continue with the implementation of the wall. By the application of additional pressure plates 2 and additional hind plates 3, we raise the resistence and overtrun moment and thus the resultant inclination it falls into the

nucleus of the intersection and that straining tensions do not appear in the fundament ground.

In case the computation indicates instability of the wall as to slip we apply oblique fundament feet 20, pict. 9 or another mode known to present state of engineering.

Reinforced concrete mountable support wall with fundament foot of changeable width may also be anchored into the hind rising soil by anchors 21, by the mode known at the present state of engineering. An element intended for anchoring must have an elaborated bearing of the anchoring head.

PATENT CLAIM

1. Mountable reinforced concrete support wall with fundament foot of changeable width (picture 1) is characteristic, as to stress, caused by active soil pressure, being transferred - with mountable elements (6, 7, 8, 9), parts of which (8, 16, 17) , by mounting, compose a rib, which is pre-stressed - upon ground soil by way of a fundament foot (1), pressure plate (2), hind plate (4) and as to the magnitude of the pressure also, if needed, by additional pressure plate (3) and additional hind plate (4)

Fig. 1

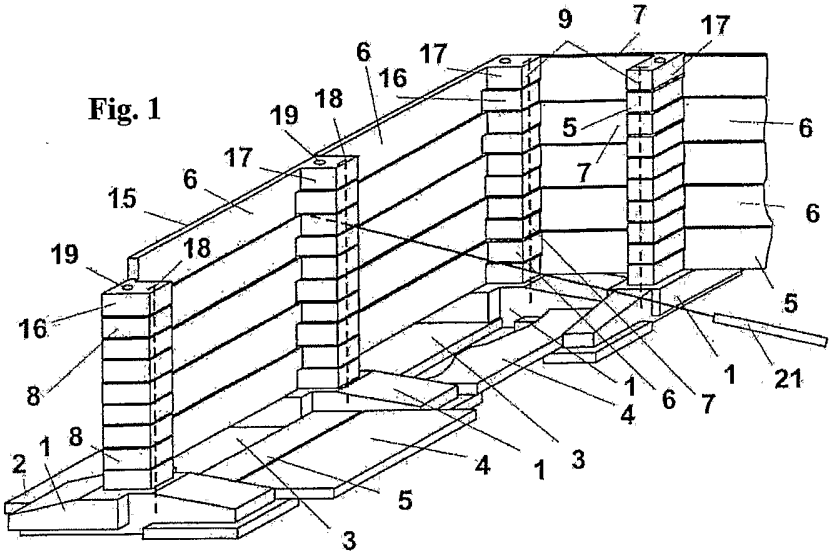


Fig. 2

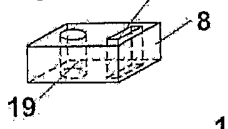


Fig. 3

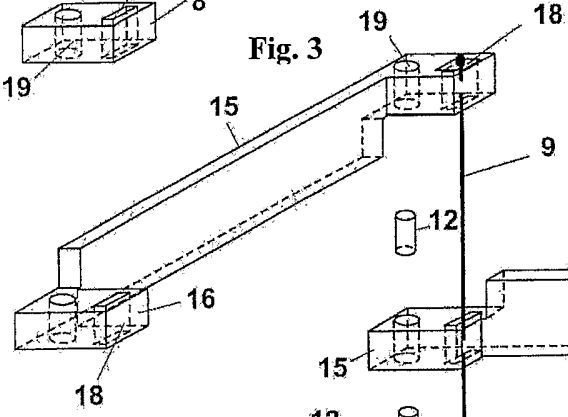


Fig. 4

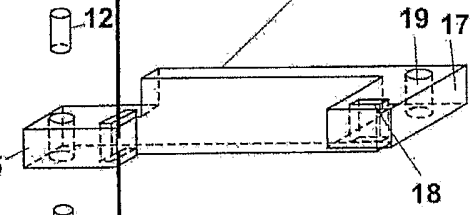


Fig. 5

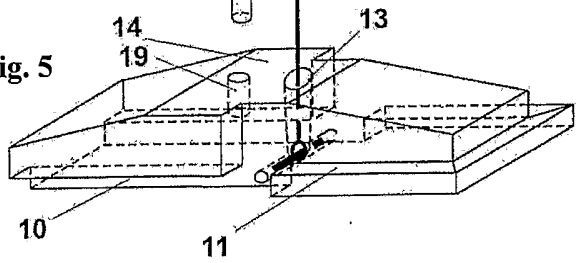


Fig. 6

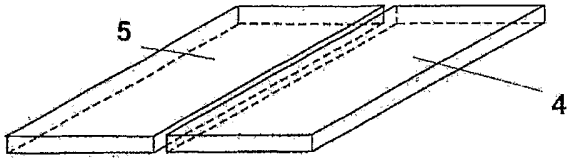


Fig. 7

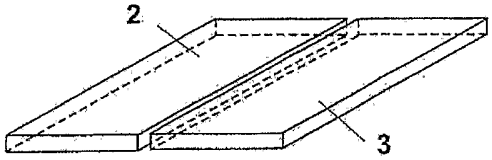


Fig. 8

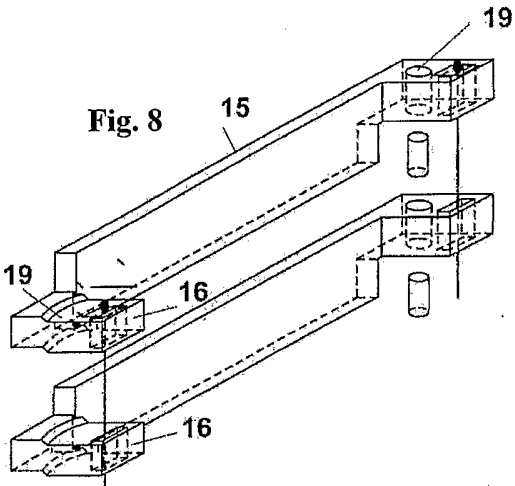
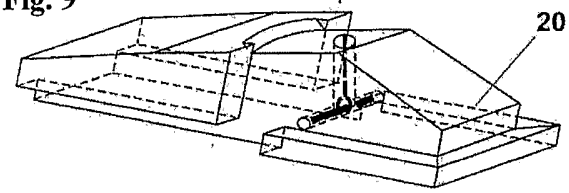


Fig. 9



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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 E02D29/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 068 482 A (HILFIKER ET AL) 17 January 1978 (1978-01-17) column 2, line 52 - column 5, line 62; figures 1-13	1
Y	DE 28 41 001 A1 (STETZLER KG BETONWERK PFORZHEIM) 3 April 1980 (1980-04-03) page 11, line 6 - page 14, line 5; figures 1-8	1
A	PATENT ABSTRACTS OF JAPAN vol. 011, no. 010 (M-552), 10 January 1987 (1987-01-10) & JP 61 186624 A (HANEDA CONCRETE KOGYO KK), 20 August 1986 (1986-08-20) abstract	1

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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Information on patent family members

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