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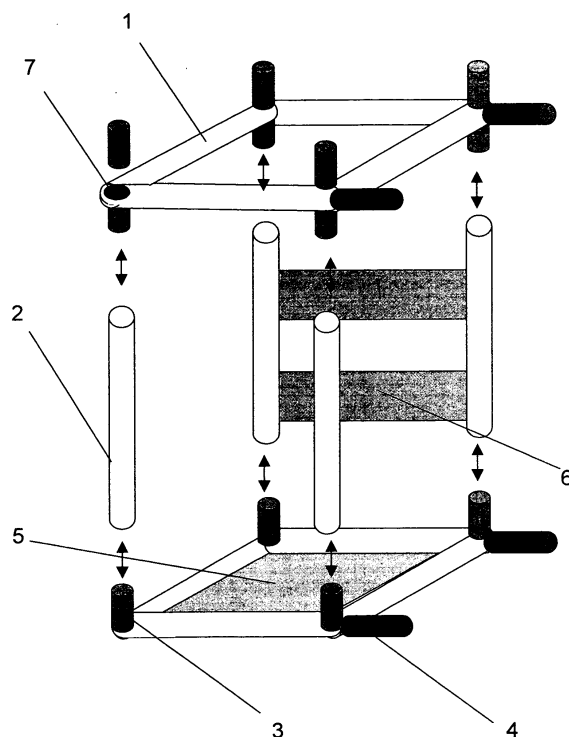
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(54) **Modular building scaffold based on pipes filled with water**

(57) The present invention consists in a modular building scaffold based on transparent pipes filled with water. It means to have a structure very easy to transport and manage which becomes a heavy and stable structured when every element is mounted on and filled with water. All the scaffold can be imagined like a unique long

pipeline so that it is very simple to fill it with water. The Three main elements of the modular frame are the ledgers (1), which are the sole element partially assembled forming a square pipeline, the screw couplers (3,4) and the standards (2). Tubes are made of transparent material to ensure every one can control water level in real time.

Fig.1



Description

Application field

[0001] The present invention concerns building scaffolds. A scaffold is a temporary frame used to support people and material in the construction or repair of buildings and other large structures, on a scaffold workers sit or stand when performing their tasks. It is usually a modular system of metal pipes (usually called tubes in Britain), although it can be made out of other materials, they are usually made of aluminium or steel. The main element of a scaffold are: tubes, couplers, boards, stairs and guard rails.

[0002] Tubes are divided into up-rights or vertical tubes (also called standards) which are the vertical tubes that transfer the entire mass of the structure to the ground; ledgers, which are horizontal tubes which connect between the standards. Couplers are the fittings which connect tubes. Boards are the base on which workers stand. Stairs allow to reach an higher floor of the scaffold and finally guard rails ensure safety for people working on the platform.

[0003] The main problem with scaffolds is that they must be very stable and safe structures and must be mounted on and dismantled very easily and quickly. Therefore every single element of the scaffold should be easy to transport. By now many kinds of scaffolds have been invented trying to satisfy all these needs.

Brief description of invention

[0004] The present invention consists in a modular building scaffold based on transparent pipes filled with water. It means to have a structure very easy to transport and manage which becomes a heavy and stable structured when every element is mounted on and filled with water. All the scaffold can be imagined like a unique long pipeline so that it is very simple to fill it with water. The Three main elements of the modular frame are the ledgers, which are the sole element partially assembled forming a square pipeline, the screw couplers and the standards. Tubes are made of transparent material to ensure every one can control water level in real time.

Brief description of the drawings

[0005]

Fig. 1 represented a singular module of the scaffold, when it is assembled it can be imagined as a big cube on which another big cube can be mounted on. The number of cubes depend on the height to reach.
 Fig. 1₍₁₎: it is the square ledger, the sole element of the scaffold which is partially assembled.
 Fig. 1₍₂₎: it is the standard or up-rights pipe.
 Fig. 1₍₃₎: It is the vertical screw coupler which connect a standard to a ledger.

Fig. 1₍₄₎: it is the horizontal screw coupler which connect a ledger to another ledger.

Fig. 1₍₅₎: It is the board, which acts as cube floor.

Fig. 1₍₆₎: It is the safety guard-rails.

Fig. 1₍₇₎: the ledger primary hole in which the coupler or the cap is screwed in to connect the ledger to the standard.

In Fig.2 is represented the device with which ledgers and standards are connected.

Fig.2₍₃₎: It is a zoom of the vertical screw coupler

Fig.2₍₇₎: It is a zoom of the ledger primary hole to connect the ledger to the standard-

Fig.2₍₈₎: it is the ledger screw cap.

Fig.2₍₉₎: it is the screw thread of the coupler and of the cap.

Fig.2₍₁₀₎: it is the coupler and cap watertight gasket

Fig.2₍₁₁₎: the ledger secondary hole, to connect two ledger horizontally.

20 Detailed description

[0006] The present invention consists in a modular building scaffold based on transparent pipes filled with waster. Once every element is assembled, the basic module is a sort of big cube. The main part are: a square ledger 1, which is the only element partially assembled, it has eight primary holes 7 in its four vertexes, four at the top and four at the bottom. In this way every ledger can act as superior ledger, middle ledger and bottom ledger of the cube frame. The superior ledger has four screw caps 8 on the top holes and four vertical screw couplers in the bottom holes, The middle ledger (which is between two cubes) has eight vertical screw couplers and finally the bottom ledger has four caps in the bottom holes and four vertical screw couplers on the top holes. The standards 2 are simple single pipes which are connected to the ledgers by vertical screw couplers. Vertical screw coupler 3, has a screw thread 9 to connect by a safe way ledger and standard, and also has a watertight gasket 10. Also the cap has a screw thread and a watertight gasket. To connect two cubes horizontally the ledger has four secondary holes 11 which can have a horizontal screw cap 4 or a caps if the ledger is connected or not connected to another ledger. The board 5 and the guard rails 6 doesn't strictly belong to the invention but are necessary requisites of every scaffold, the way by which they are fixed in the structure is not important to describe the present invention. The stairs too are not strictly part on the invention and aren't shown in the drawings.

[0007] Once assembled, regardless of the number of vertical or horizontal cubes, all the scaffold is a unique continuous pipe, easy to fill with water. The transparent pipes ensure a continuous control of water level in real time. It could be useful to use colored water to easier control water level.

[0008] Single elements are very light and easy to transport, as the matter of fact is the water which give stability to the scaffold once it is filled with.

Claims

1. The present invention consists in a modular building scaffold based on transparent pipes filled with water **characterized by the fact that** the main three elements are a square pipe ledger (1), a series of single tubular standard (2) and horizontal (3) and vertical (4) screw couplers which are provided of screw thread (9) and watertight gasket (10).
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2. A modular building scaffold based on transparent pipes filled with water as claimed in claim 1, **characterized by the fact that** the basic module is a sort of cube made with two ledgers and four standards. More cubes can be added vertically or horizontally.
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3. A modular building scaffold based on transparent pipes filled with water as claimed in claim 1 and 2, **characterized by the fact that** the ledgers have eight primary holes (7) and four secondary holes (11) to connect the ledgers by the screw couplers with standards or other ledgers. Holes not used to connect elements are covered with screw caps (8).
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4. A modular building scaffold based on transparent pipes filled with water as claimed in claim 1, 2 and 3 **characterized by the fact that** regardless of the number of holes, screw couplers, screw caps, filling liquid and fixing device, is substantially-similar to the structure described.
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Fig.1

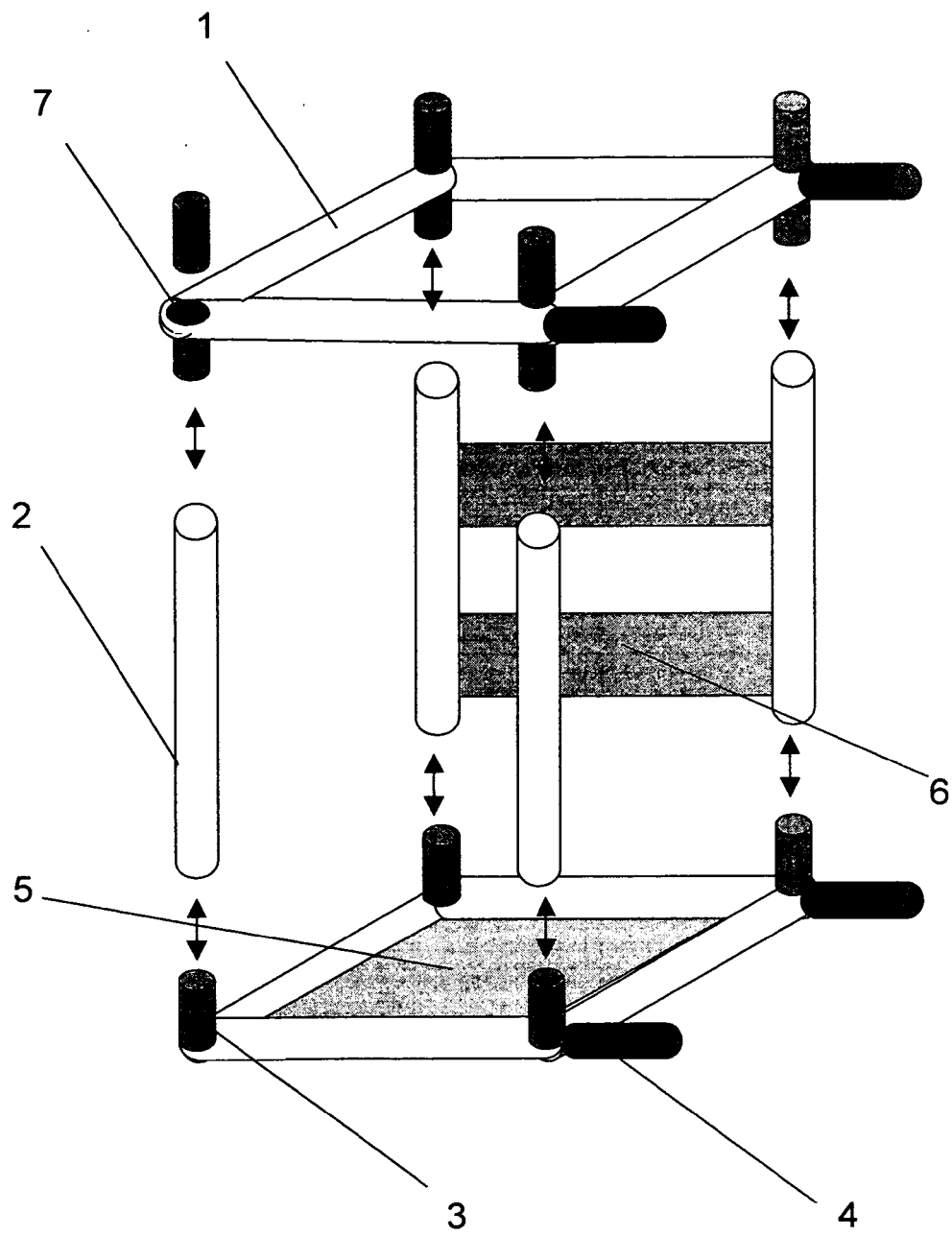
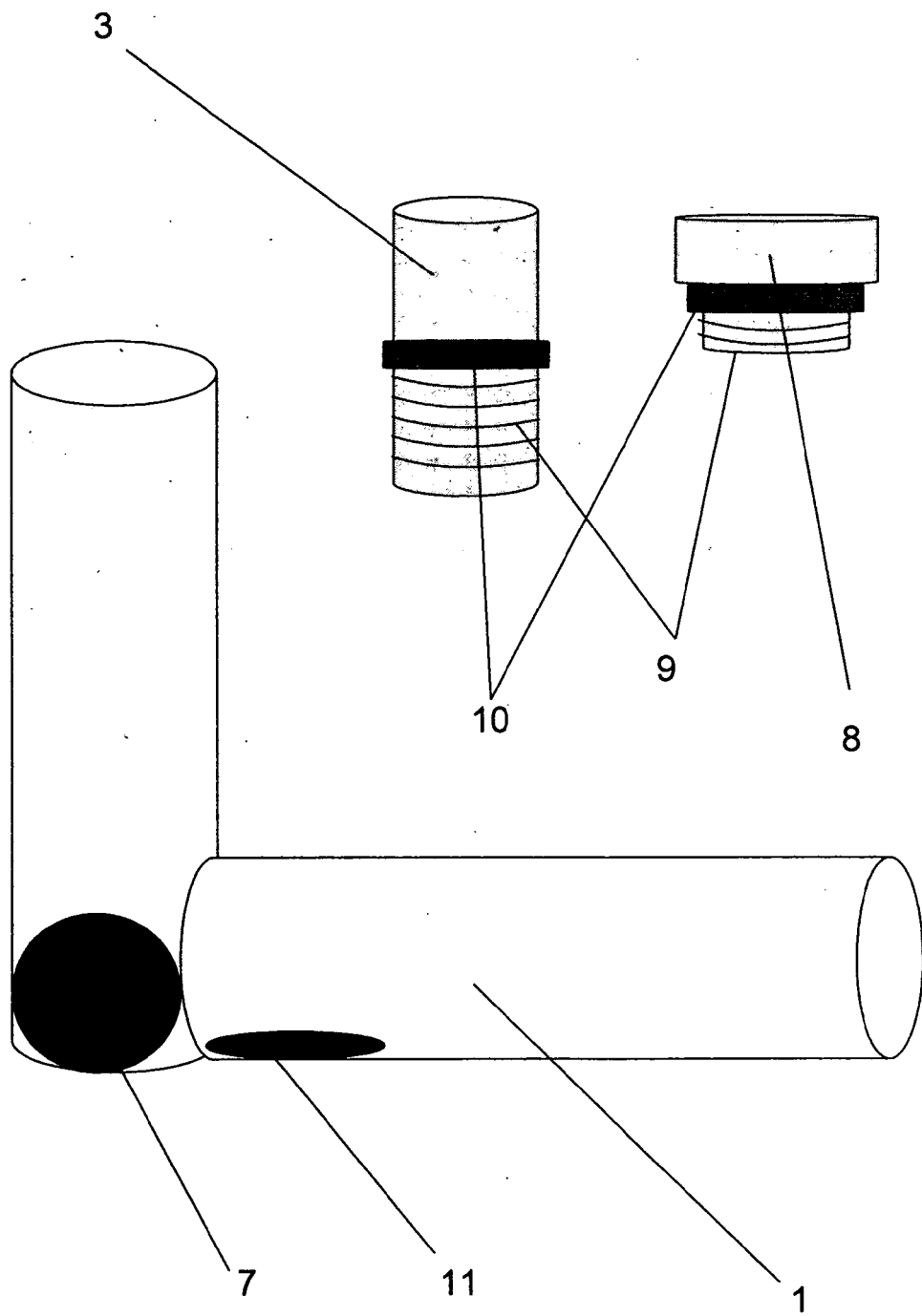


Fig. 2



**PARTIAL EUROPEAN SEARCH REPORT**

Application Number

which under Rule 63 of the European Patent Convention EP 09 42 5376 shall be considered, for the purposes of subsequent proceedings, as the European search report

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 17 75 125 A1 (HEROLD WILLY) 27 May 1971 (1971-05-27) * page 2, lines 4-14 * * page 3, lines 31-37; claims 1-4 * -----	1-3	INV. E04G1/04 E04G1/06 E04G1/14
A	EP 0 529 972 A2 (KASYU INTERNATIONAL CORP [JP]) 3 March 1993 (1993-03-03) * column 1, lines 19-23 * * column 4, lines 6-9 * * column 5, lines 29-36 * -----	1	
A	US 4 065 890 A (FENNER WOLFGANG) 3 January 1978 (1978-01-03) * figure 1 *	1	
A	FR 2 538 438 A1 (SOLETANCHE [FR]) 29 June 1984 (1984-06-29) * page 2, lines 29-38; figures 1,2 * -----	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			E04G
INCOMPLETE SEARCH			
The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims. Claims searched completely : Claims searched incompletely : Claims not searched : Reason for the limitation of the search: see sheet C			
Place of search		Date of completion of the search	Examiner
Munich		23 February 2010	Saretta, Guido
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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EPO FORM 1503 03/82 (P04E07)



**INCOMPLETE SEARCH
SHEET C**

Application Number

EP 09 42 5376

Claim(s) completely searchable:

1-3

Claim(s) not searched:

4

Reason for the limitation of the search:

Present claim 4 encompasses scaffolds defined only by some reference to "the structure described": in particular, this applies "regardless of the number of holes, screw couplers, screw caps, filling liquid and fixing device". The claim thus lacks technical features, and its definition is contrary to the requirement of clarity in Article 84 EPC: this mere reference to the description does not allow the scope of the claim to be ascertained.

Non-compliance with the substantive provisions is such that no meaningful search of claim 4 could be carried out at all (Rule 63 EPC).

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 42 5376

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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23-02-2010

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