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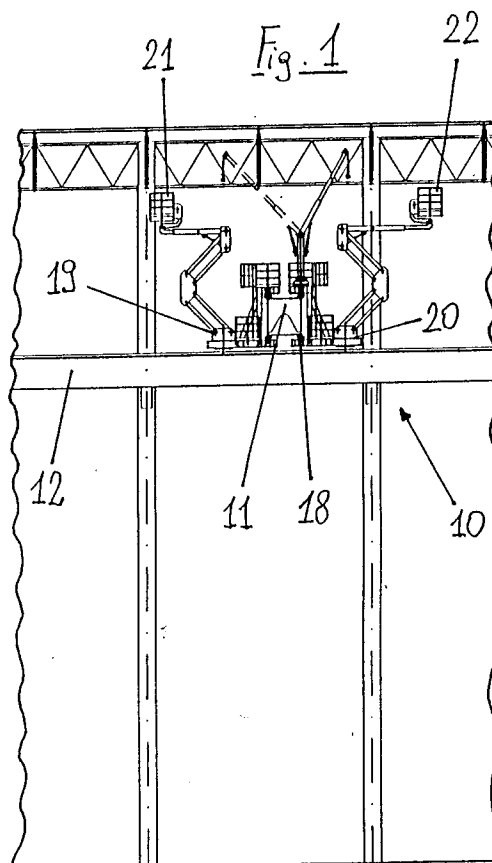
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I-33100 Udine (IT)(54) **Overhead traveling device for carrying out pipelining and large maintenance works in industrial buildings.**

(57) Overhead traveling device (10) for carrying out pipelining and large maintenance works in industrial buildings, comprising a girder (11) provided, at both ends thereof, with carriages (16) suitable for being translated along first runways (12) which are present inside of an industrial shed, in which said girder (11) is constituted by a plurality of separable and/or telescopic sections, in that at least one of the end sections of said girder is provided with a member (16, 17) for a micrometric adjustment of the length of said girder (11), and in that said girder is provided with second runways (18) suitable for enabling the translation of at least one overhead platform (19, 20) for receiving operating personnel.

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The present application relates to an overhead traveling device for carrying out pipelining and large maintenance works in industrial buildings.

More particularly, the present application relates to an overhead traveling device which is easily adaptable, on place, to any runway width of overhead traveling cranes which are normally present in industrial sheds and which is provided with an overhead platform comprising all those (electrical, hydraulic, pneumatic) services which are essential for carrying out a quick assembling operation or an effective maintenance operation of the installation part (wiring harness, water and oil pipelines, etc.) relative to said shed.

Said invention may be mainly applied in the field of industrialized building.

BACKGROUND ART

The building technique of modern sheds suitable to be used as industrial works provides for the placement of the installation part, i.e. of pipelines containing, respectively, electrical cables or fluids (either in a liquid or a gaseous form) under pressure, in the area located immediately beneath the upper covering of the shed, this in order to avoid any interference or trouble relative to the handlings which are carried out inside of the shed such as, for instance, the movements of an overhead traveling crane.

However, the assembly and the subsequent periodical maintenance of an installation which is placed as described above causes several problems, which are essentially due to the fact that the different pipelines should be fastened at a height of several meters; in some applications pipelines should be fastened at a more than twenty meters height.

In order to solve these problems, the background art provides for the use of personnel who approaches the working places through ladders or by means of movable vehicles which are provided with ladders or platforms; furthermore, cranes are used in order to raise the different pipelines to be assembled.

This working way involves several disadvantages and drawbacks, since the working time (and the cost relative to the same) which is necessary for assembling the installations is extremely high; furthermore, personnel is certainly not working in the best safety conditions.

DESCRIPTION OF THE INVENTION

The present invention aims to eliminate the drawbacks and disadvantages which are typical of the background art and to therefore provide for an overhead traveling device which may be adapted to

any width of pre-existent runways in an industrial shed, by means of which device the assembly and the maintenance of the installations are extremely facilitated, the necessary working time therefor is reduced to a fraction relative to the working time which is necessary by means of the background art methods and, finally, which allows personnel to work in great safety conditions.

This is achieved by means of an overhead traveling device having the features disclosed in the main claim.

The dependent claims describe advantageous forms of embodiment of the invention.

The overhead traveling device according to the invention comprises a main girder which is either decomposable into various sections or telescopic, said girder being provided with runways for the translation movement of at least one overhead platform which is placed on it.

According to a feature of the invention, at least one end of one of the section which constitute said girder is provided with a member for a micrometer adjustment of the girder length.

Said micrometer adjustment member is generally constituted by a pair of beams which are pivoted on the main girder section and which are disposed as a pantograph.

Furthermore, each of said beams is provided with a carriage which is able to roll on said pre-existing runways.

According to a further feature of the invention, said at least one overhead platform which is able to translate on said main girded comprises an operating personnel receiving cage, said cage being pivoted on said platform and being movable according to three mutually perpendicular directions.

Such arrangement allows an operator to firstly position the platform on a predetermined point, then to cause the movement of the cage until a precise working position is reached.

According to a further feature of the invention, at least one of said overhead platforms is moreover provided with a crane for raising the material which is placed on the floor.

Finally, said at least one overhead platform is provided with all those installations which are necessary for carrying out pipelining and maintenance operations such as, for instance, electrical, air, water and oil under pressure plugs, as well as electrical welding machines.

ILLUSTRATION OF DRAWINGS

Other advantages and features of the invention will become apparent from reading the following description, of a form of embodiment of the invention, given as a non-limiting example, with the help of the figures shown in the attached drawing, in

which:

- figure 1 shows a front section of an overhead traveling device according to the invention;
- figure 2 shows a side view of the device of fig. 1 and
- figure 3 shows a schematical plan section of one end of the device shown in fig. 2.

DESCRIPTION OF A PREFERRED FORM OF EMBODIMENT

In the figures, reference sign 10 generally illustrates an overhead traveling device according to the present invention.

The device 10 is essentially constituted by a box girder 11 which is transversally placed relative to a pair of runways 12 which are respectively supported on posts 14 adjacent to a side or intermediate wall 13 of an industrial shed.

According to a first feature of the invention, said box girder 11 is decomposable.

In fact, it comprises a plurality of sections having a predetermined length which are inserted into each other in order to form the girder 11.

In this way, according to the distance existing between the runways 12 which are present inside of the shed, a predetermined number of sections forming the girder 11 may easily be transported to the place where the overhead traveling device is to be assembled.

According to a second feature of the invention, at least one of the two end sections (both of which are anyway provided with carriages 15 allowing the device 10 to be translated along the runways 12) of girder 11 is provided with a member for a micrometric adjustment of the girder length, in order to enable a precise positioning of the overhead traveling device on the runways 12.

In the case shown in fig. 3, said adjustment member comprises a pair of beams 16, 17 which are pivoted at one end of box girder 11 and which carry, at each of their other ends, a carriage 15 suitable for being translated along the runways 12.

As it may be clearly noted by examining fig. 3, the pantograph structure constituted by the pair of beams 16, 17 allows a micrometric adjustment of the length of device 10 to be carried out relative to the distance between the runways 12.

According to a further feature of the invention, the box girder 11 is provided with runways 18 which are suitable for enabling the translation of at least one overhead working platform in a direction perpendicular to the longitudinal axis of runways 12.

In the case shown in figures 1 and 2 a first (19) and a second (20) overhead platforms are placed on girder 11, said platforms being respectively located on a first and on a second sides of

girder 11.

Both of said overhead platforms 19, 20 are provided with a cage 21, 22 which is movable in any direction since they are assembled on a series of suitable leverages.

Said cage 21, 22 is suitable for housing, in operation, one or more operators who, by maneuvering the cage, may displace themselves to the most suitable spatial position in order to carry out pipelining or maintenance works.

Particularly referring to fig. 2, it may be remembered that the installation pipelines are fastened, according to the modern technique, to the wall 13, in an area which is comprised between runways 12 and the shed covering.

In order to increase the device efficiency, the overhead platforms 19, 20 are further provided with all those installations which are necessary for carrying out the assembly operations.

Thus, at least one of the platforms is provided with a crane 23 suitable for raising from the floor the installation materials to be assembled, and both platforms are provided with electrical power plugs, as well as with connectors for pressurized water, air and oil and with electrical welding machines.

In operation, device 10 is brought by means of a vehicle inside of the shed where the pipelines are to be assembled.

The sole requirement therefor consists in the shed being provided with runways for an overhead traveling crane.

In this context, it should be noted that the assembly operation may be in this case carried out independently from and without any kind of interference with other possible works which are effected inside of the shed, since this operation takes place at a predetermined height, the operators being directly transferred by means of the overhead traveling device from one assembling position to another one, while keeping optimum safety conditions.

Once the assembly operation has been completed, device 10 is disassembled in order to set the runways free for the overhead traveling crane of the factory.

The invention has been described with reference to an advantageous form of embodiment thereof.

However, it comprises several variants which fall within its scope.

Thus, the invention englobes a form of embodiment according to which the sections constituting girder 11 are telescopically insertable into each other in order to form an assembly which, when disassembled, occupies the room of a single section.

The invention further englobes other forms of embodiment according to which the member for

the micrometric adjustment of the girder length has a different structure from that which has been described with reference to the shown figures, within the scope of mechanical equivalents.

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Claims

1. Overhead traveling device (10) for carrying out pipelining and large maintenance works in industrial buildings, comprising a girder (11) provided, at both ends thereof, with carriages (16) suitable for being translated along first runways (12) which are present inside of an industrial shed, characterised in that said girder (11) is constituted by a plurality of separable and/or telescopic sections, in that at least one of the end sections of said girder is provided with a member (16, 17) for a micrometric adjustment of the length of said girder (11), and in that said girder is provided with second runways (18) suitable for enabling the translation of at least one overhead platform (19, 20) for receiving operating personnel.

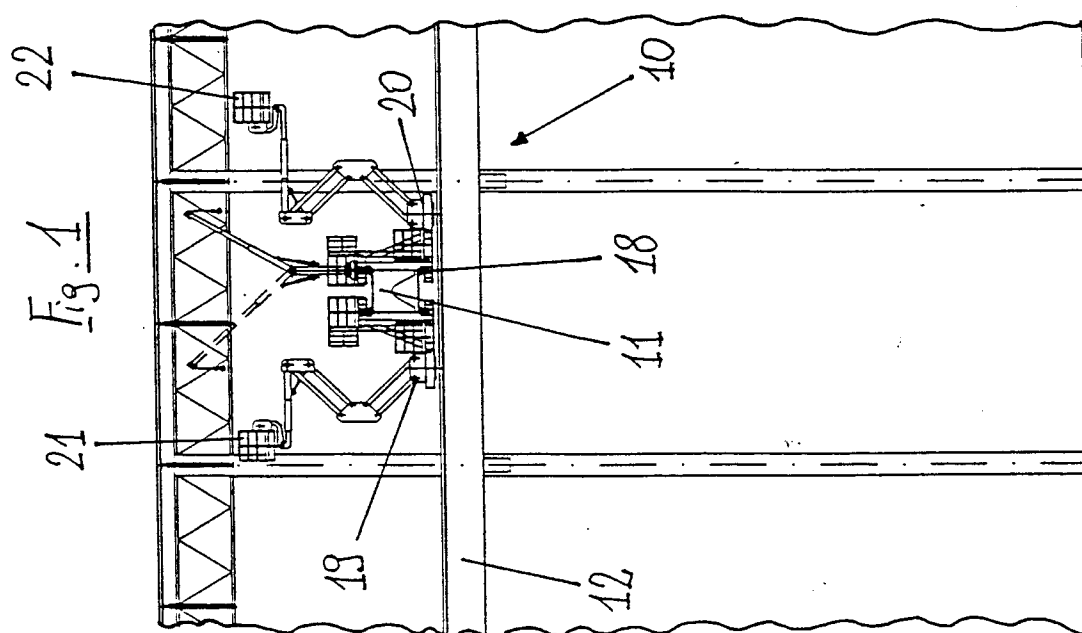
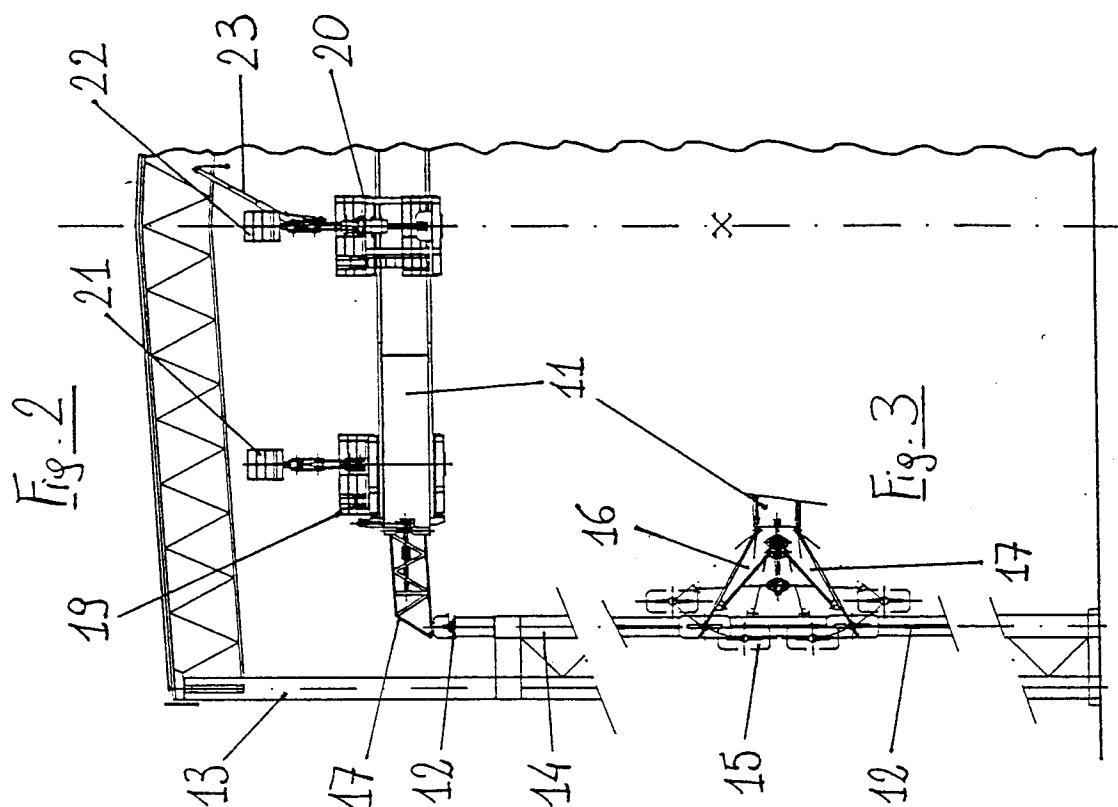
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2. Device (10) according to claim 1, characterised in that said member for a micrometric adjustment of the length of said girder (11) is constituted by a pair of beams (16, 17) which are pivoted, from one side, on said girder (11) and which are provided, on the other side, with a carriage (15) suitable for being translated on said first runways (12).

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3. Device (10) according to anyone of the preceding claims, characterised in that said at least one overhead platform (19, 20) is provided with a cage (21, 22) suitable for receiving operating personnel, said cage (21, 22) being connected to said platform (19, 20) by means of a mechanism which allows a movement of said cage (21, 22) according to three mutually perpendicular directions in the space.

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4. Device according to anyone of the preceding claims, characterised in that said at least one overhead platform (19, 20) is provided with a crane (23) suitable for raising installation materials from the floor.

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5. Device according to anyone of the preceding claims, characterised in that said at least one platform is provided with electrical plugs and/or with connectors for a liquid or gaseous fluid under pressure and/or with at least one welding machine.

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EUROPEAN SEARCH REPORT

Application Number

EP 91 11 6416

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	US-A-2 067 344 (RINGE) * Complete document *	1,2	B 66 F 11/04 B 66 C 17/00
Y	DE-B-1 206 133 (DEMAG-ZUG) * Column 4, claims 1,2; fig. *	1,2	
Y	EP-A-0 172 092 (SOM DELATTRE) * Page 1, lines 1-22 *	1	
A		4	
Y	FR-A-1 138 839 (DARMSTÄDTER) * Complete document *	1	
A	US-A-2 088 871 (RINGE)		
A	DE-A-2 531 316 (RUHRKOHLE)		
A	EP-A-0 277 078 (REEL)		
A	EP-A-0 095 373 (WESTINGHOUSE ELECTRIC CORP.)		
A	US-A-4 546 852 (MARTIN)		
A	US-A-4 630 708 (THOMPSON)		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 22-05-1992	Examiner VAN DEN BERGHE E.J.J.
CATEGORY OF CITED DOCUMENTS 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		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	