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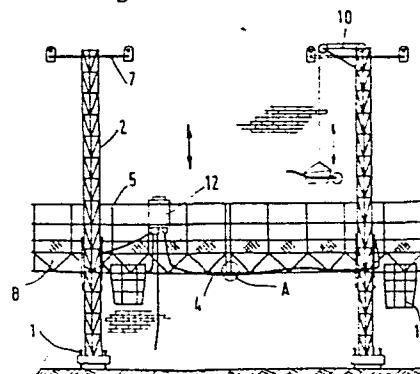
54 Crane with a movable work platform.

The invention relates to a crane with a movable work platform for secure lifting of material and workers to a desired height for performing various types of construction work on structures higher than 2 meters, in order to avoid pipe scaffolding or suspended scaffolding encountered with construction work on external surfaces.

The object to be solved by this invention is to provide a construction, which can easily be transported in a trailer of a passenger car, both in adequate dimensions and in its full weight, and can quickly be assembled, and will only minimally damage the structure during its erection.

This object is solved by a construction consisting of at least one crane base (01), and at least one support post (02) surrounded by a carriage (03) connected to a console supporting the work platform (04) with a protective fence (05) and of a lifting mechanism, connected to said carriage via steel cords over a recessed wheel secured to a support post rod, whereas the other end of the steel cord is also secured to the lifting mechanism and carries the work platform (04) over the console carriage, and whereas the crane is fitted along each support post (02) with an auxiliary crane (10) and with at least one positioning mechanism.

Fig.1



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## CRANE WITH A MOVABLE WORK PLATFORM

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The invention in question relates to a crane with a movable work platform for consolidated lifting of material, the work platform and workers to a desired height for performing various types of construction work on structures higher than 2 meters. Besides that, it serves for taking material in and out of the structure, as well as for the removal of injured persons from higher structures by way of windows and balconies; it also serves as an auxiliary elevator for lifting and lowering of material.

30

Construction work on external surfaces of the structure is performed from pipe scaffolding covered with boards or from suspended scaffolding.

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The problem with pipe scaffolding is that its construction is strenuous and the assembling is time consuming, while the work speed is lessened.

The problem with suspended scaffolding lies in its assembling, because usually the weights are installed manually on the roof.

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5 The structure must be finished in order for it to be assembled, and suspending scaffolding cannot be assembled on all structures, as it is not suitable for all external operations and the worker does not feel secure enough because of the swaying of the scaffolding, as only a little momentum is needed to separate it from the wall.

10 The transport of pipe scaffolding requires heavy vehicles. The productivity of work on pipe and suspended scaffolding is not satisfactory.

15 The loading of material on the work platform has not been solved in either of these two scaffoldings. For pipe scaffolding a special crane is required, while workers have to descend together with the platform to load the material and then raise it to the desired height.

20 The technical problem lies in how to create a construction which will be, first of all, lightweight, of a reasonably low cost both for private and public sector.

25 The construction should easily be transported in a trailer of a passenger car, both in adequate dimensions and in its full weight, should be quickly assembled, should minimally damage the structure (drilling) during its construction; it should also position the work platform on an optimal working height of the worker, use the same mechanism which raises the work platform for loading material on the platform, which would make the machine more effective in performing the work, while on the other hand -  
30 cheaper.

35 The work platform should be safe for work, should be extendable lengthwise and widened in respect to its optimal width. The supporting column should be easily assembled on any type of terrain configuration or hardness, without any special prepara-

tion of the terrain.

5

The work itself should be performed quicker in respect to the existing technology, and a possibility for attachments to speed up work should be foreseen.

10

However, the technical problem is solved with a crane with a movable work platform, according to this invention, where the length of the work platform is formed from the elements of the work platform and the above said platform is carried next to the structure along the support posts (which are also formed of its elements of support posts), that being a console which goes under the floor of the work platform, connected to a carriage surrounding the support post.

15

20

The support post is raised by a lifting mechanism by means of a steel cord over an (auxiliary pulley) to a desired height.

25

The support post leans on a structure, and is fixed to the structure over and under the work platform by means of support posts, while the base on which the support post leans is somewhat bigger than the cross section of the post.

30

An auxiliary crane serves for loading material on the work platform. It gets its power from the mechanism which lifts the platform, but with twice the lifting speed than that of lifting the platform.

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Depending on the length of the work platform, the platform could be lifted along one, two or more support posts.

The crane is produced for various loading capacities. Lifting is performed with electric motors or manually.

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5 The characteristics of a movable work platform according to this invention, are that construction work may be done on the exterior walls of the structure (as well as on interior walls on structures with high floors), such as: brick-laying, plastering, laying of tiles (marble, insulating, mosaics, etc.), finishing the facade, fixing the facade, carpentry work on the exterior, etc.

10 Other work can be done with the help of this invention, such as: the removal through windows and balconies of injured persons, as well as of material, in case of bomb attacks, earthquakes etc. The invention can also be used as an auxiliary  
15 elevator for taking load in and out. This is made possible because the invention is easily transportable (it can even be transported in a trailer of a passenger car because of its light weight); it can be assembled on any type of terrain. because the construction of its base permits this.

20 Assembling is quick because the assembly links are executed in such a way that they are connected with pegs, and these pegs are connected to chains, and, therefore, there is no loss in the search for them.

25 The execution of work is enabled by the movable work platform on which there are workers assembling the elements of the support posts to the desired height.

30 Next they continue with the planned work on the structure. The work platform is raised or lowered on the support posts by an electric motor which is controlled by the workers on the platform.

35 Depending on the shape of the structure, the crane with the movable work platform assembles on one support post; this is

5 when a shorter work platform is required, the assembling is then executed on two or more support posts. The crane lifts, by means of a lifting mechanism, steel cord and a (recessed wheel) along a support post, the work platform, tools, workers and material.

10 One characteristic of the work platform is that it can be 50% wider than its optimal width, when the configuration of the wall worked on requires it. This is achieved by supports which are pulled out from the work platform and then boarded.

15 Another characteristic of the movable work platform is that it can be positioned into the working position, and then, through the use of an auxiliary crane, load material onto the work platform. This is because the speed of the lifting of the work platform is limited by the safety precautions.

20 This is why the invention has been constructed to accommodate the use of an auxiliary crane to lift material at double speed.

25 In this way, workers' time is saved, only because there is no loss when the platform is lowered for loading of material and then raised again.

30 With an auxiliary crane there is no such loss.

This solution makes possible the construction of a mechanism for lifting, which has a safety brake on it and has the task of braking the platform should the brake on the mechanism fail, or should the steel cord break.

35 It can also position the work platform with the brake to the working position on the bar of the support post on the side

5       towards the wall; in this way the steel cord can be freed at  
one end and transferred over the leveling wheel and the wheel  
of the auxiliary crane ( a console crane that is attached by  
pegs to two adjacent junctions) of the support posts on the  
level of the recessed wheel so that the hook can be lowered  
to the ground, and also load with the same mechanism which  
carries the work platform.

10       Another characteristic of the invention concerns the choice  
of the static points of the construction, which tends to  
lean it towards the wall, and, therefore, makes fallovers  
minimal. (besides that, the crane has all of the necessary  
15       safety precautions).

20       This is made possible because the static support of the base  
is positioned indirectly under the support post itself, while  
the maximal load of the work platform is between the post  
and the object, so that there is a constant momentum which  
exerts pressure on the structure through the support.

25       The support is attached to the wall with rubber inserts so  
that, should there be a moment that makes it reflect from the  
wall, the force embodied in the rubber inserts will oppose it.

30       This invention is secured by a protective fence, so that the  
worker cannot work until the fence is adjusted on the platform.  
Protection from side swaying is secured by the positioning  
mechanism.

35       Another characteristic of this invention which concerns all  
of the assembly parts and elements, which can be seen in  
further descriptions and illustrations, is that the construc-  
tion is lighter than the pipe scaffolding several times, and

5 therefore makes the price acceptable for both the private and public sector. (e.g. it is to be foreseen that almost every private house with a ground and first floor will have the need for a one-post crane with a movable work platform for facade repair and for carrying various stuff).

10 With this invention, it is possible to facilitate quicker work on the structure itself, because of the gained work area and constant optimal working height of the worker as well as with other constructional advantages.

15 A further characteristics, according to this invention, for simplicity reasons, makes the construction itself and the choice of adequate elements reliable in work.

20 The final characteristic of the crane with the movable work platform is that it is lighter several times ( as much as 10 times in relation to the pipe scaffolding currently in use) and that to a great extent it will save steel for the country in question, and besides that, there are great savings in first class timber which is used for pipe scaffolding.

25 This invention will be clearly explained with the help of the accompanying drawings on which:

30 Figure 1 illustrates the general appearance of the two-post crane with a movable work platform on which there are shown joints from 01-13.

Figure 2 illustrates side view of Figure 1.

Figure 3 illustrates a view of one-post crane with a movable work platform with specific details shown on drawing.

35 Figure 4 illustrates a side view of the invention with designated details.

Figure 5 illustrates a cross-section of base of Figure 6 through line P-P.

Figure 6 illustrates the base of the invention with details.

Figure 7 illustrates a cross-section of Figure 8 through line P-P.

Figure 8 illustrates the construction of the elements of the support post 02.

Figure 9 illustrates the developed form of the frame of the support post 02.

Figure 10 illustrates the console with carriage 03 in conjunction with the support post 02.

Figure 11 illustrates the appearance of the recessed wheel 09 and the auxiliary crane 10 on the support post 02, viewed from the wall with details.

Figure 12 illustrates the projection of Figure 11 on a horizontal plane.

Figure 13 illustrates the side view of the work platform 04 and positioning mechanism 11, with details.

Figure 14 illustrates the connection of the supports to the wall through the line P - P of Figure 15, and from the view from the wall.

Figure 15 illustrates the cross-section of line E-E of Figure 14 with details.

Figure 16 illustrates detail A of Figure 1 of the connection of platform elements to the peg.

Figure 17 illustrates the view "D" of Figure 16 of Detail "A" from Figure 1.

Figure 18 illustrates lifting mechanism 06, safety brake 08 and joint connection with the support post 02, in side view with details.

Figure 19 illustrates detail of Figure 18, i.e. the connection between the hook and the safety brake.

On Figure 1, indicated are subjoins with first two figures:

- 01 - Crane base with movable working platform
- 02 - Support post composed of elements from support posts.
- 03 - console carriage
- 04 - Work platform
- 05 - Protective fence
- 06 - Lifting mechanism
- 07 - Wall support
- 08 - Safety brake
- 09 - Recessed wheel
- 10 - Auxiliary crane
- 11 - Positioning mechanism on working platform 04
- 12 - Electric control box with cables and end fuses
- 13 - basket

According to Figure 1, designated are subjoins of a two post crane with a movable work platform, which are connected during assembling on the structure in the following manner: elements of the work platform 04 (the protective fence 05 already assembled) are jointly connected in the upper and lower belts with two pegs 0412, which are secured by safety devices 0414, while the pegs are connected to the chain 0413 in order not to be lost.

5 The assembling of the platform to the desired length is executed next to the wall of the structure on stands 0418, while the carriage console 03 is placed on a specified spot on the platform ("B" darkened triangles), while making sure that the projection of the platform as well as the distance between the posts are not larger than prescribed.

10 The left and right sides formed by the supports 0319, 03191, 0320 and 0325, open at the connecting point 0315 by joints 0316, 0323 and 0327.

15 After that, on the first element of the support post, which has on the lower side a welded base 01, another element of post 02 with three "T" screws is assembled, and then a support 07 is positioned on the top of the support post in such a way that it is encircled around the support post by means of folding  
20 bars 0701 and fastened by peg 0711. A support post, assembled in such a way, is straightened from the back side of the platform, but along the vertical axis of the console 03, the sides close left and right 0319, 03191, 0320 and 0325, through joints  
25 0315 which connect the front carriage 0339 and back carriage 0336 by a pin 0337 which is tightened by peg 0311.

30 The front carriage is positioned on the supports 0214. The support post is placed in the vertical position, and if the work is performed on soft ground, pins 0107 are hammered so that the base would fit into the frame 0103 and the support 0102; on the other hand, if the work is done of hard ground then with the handle 0101 the uniform positioning of the base supports 0110 is achieved whereby the support post is in the  
35 vertical position.

Then the work platform 04 releases the stands 0418, while the

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load is transferred to the console, carriage and support post and further onto the base and support.

Similarly, on the other side for lifting mechanism 06, side support panels (2 pieces) are put on rod 0333 which lies on the connector 0315 and connects the joining rod 0628 to the left and right member 0309, which is welded to the left and right connector 0315. The support rod runs through the two members 0309, support pipe 0627 and is tightened by peg 0655, after that the electric control box 12 is assembled, the electric motors connected, and electricity plugged in.

The recessed wheel 09 is placed on both posts to the level of the supports 07. The steel cord 0632 is unwound from the lifting mechanism 06, is placed over the recessed wheel, while the hook 0635 is again tied to the lifting mechanism of the support 0636, while the same is welded to the supporting pipe 0806.

The wheel 1107 is rolled to the wall so that there is enough clearance between the wall and the wheel carriage 1101, so that the support would not damage the wall during lifting of the platform, while the wheel 1101 compensates for the uneven spots on the wall with the spring 1102.

After that the butterfly bolts 1104 are tightened so that the wheel support 1101 is fixed, followed by the assembling of the basket 13 on the member 0411, while the same serves the worker to tie the supports 07 from it, when the platform 04 passes over support 07, and to untie them when the platform 04 comes to the support 07; then the worker from the basket 13 releases the support 07 from the post 02.

The side columns 0501 of the fence are then raised, and on them

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chains 0509 are tied in three rows, while the column 1501 is then blocked with a peg 0504.

5

If the work platform is on a slope, then the electric motor of the lower side 1601 raises the platform to the level which seems to balance the work platform.

10

After that the electric motor 0601 of each of the support posts is commanded to jointly raise the work platform, the workers, the needed tools and a number of supports 07, post elements 02. When the work platform is raised to half of the assembled height, then another support 07 is installed on the support post 02 and secured by two inserts to the structure ( as shown on Figure 15).

15

When the support 07 is secured, it is then left to hang down the wall, which is permitted by joint 0723, 0719 and 0712 (figure 3 and Figure 15).

20

The platform continues to climb further all the way to the level of support 07 which is assembled on the support post 02 on the ground. The platform is then positioned on the safety brake 08, so that the worker can from the basket under the work platform, tie the support 07, which hangs on the wall, to the support 02 in the already described manner.

25

The next step is to remove the upper support 07, assemble the next post element 02, and after two or three extensions of element, tie the support again under the platform and so on to the desired height.

30

When the work platform is raised to the desired height, then the support 07 is secured to the wall over the work platform, and finally the auxiliary crane 10 is installed to the level

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5 of the recessed wheel 09, in such a way that the pegs 1017 are vertically "blocked" in a triangle composed of horizontal rods 0206 and 0205, and frames of the support posts 02 in the level of the recessed wheel, while the other peg 1017 in the following horizontal knot as showing on Figure 11 and Figure 12.

10 If it is necessary to lift the material from the ground, then the work platform 04 is positioned on the safety brake 08 in such a way that the catch 1801 is always in position. When the work platform 04 goes down, the catch rests on the bar 0205, then the hook 0635 is released from the support 0636 and  
15 the steel cord 0632 is placed over the levelling wheel 1001, and then over the wheel 1006, and so having the load lifted with the same mechanism that raises the platform.

20 When the load is lifted over the fence 05, with the help of the auxiliary crane 10, the load is positioned to 1002, 1016 and 1010.

The cycle then repeats itself.

25 According to Figure 3, illustrated is the crane with a movable working platform on a single post support 02. The difference in relation to the crane with a double post lies in the fact that only one element of the platform is installed, i.e., the crane with movable platform with a single post is relatively limited by the length of the work platform, and, as the work  
30 platform works on a single support post on both sides with projections, then the work platform 04 is positioned by two bars 0415 from the left and right side, tied to the top of the connectors 0315 and the upper rear extended support of the work platform 0402.

35 After that it is tied with two strong supports 0416 which are

5 tied with the upper post which is welded into a knot in the direction of the strong support 0410, so that the length can be adjusted, while the other end is tied to the lower ends of the supports 0315. The hole on the strong support 0416 is placed on the bolt of the connector 0315 and fastened by a nut.

10 The front end of the console is tied by the members 0344 to the upper front support 0402 to the member 0417. Such a stiffly positioned work platform is safe for work on heights. There are no other differences in respect to the two-post crane.

15 In order that the construction would be even more clearer, it is necessary to explain the details of the subjoints which are marked by the last two digits, i.e. they are marked with four digit numbers.

20 The base of 01 encompasses a somewhat larger aerea from the projected cross-section of the support post 02, while it is composed of a steel frame 0103 connected in the center to a support 0102 which is pressed into the soft ground, which  
25 secures a horizontal reaction, from the momentum of the support post 02 caused by the maximal load of the work platform 04.

The support 0102 is hammered into position of the peg 0107.

30 When the support 0102 is pressed into position, the frame rests against the ground and receives the total vertical force transferred from the support post 02.

35 When working on hard ground, the base is placed on two supports 0110 which are adjusted by a nut 0109, so that both would receive equal vertical and horizontal force.

5 The support post 02 serves to carry the maximal load which  
burdens the carrying console 03 and also serves as the rein to  
the carriage. It is composed of elements of the support posts.  
The elements of the support posts are composed of welded steel  
railings which also can be composed of pipe or other profile  
steel supports. The railing is illustrated on Figures 7, 8  
10 and 9.

The joining of elements of support posts is done in such a way  
that the first element is welded to the base 04 on points "b",  
while further connecting is done through the male positioning  
15 member 0209 and female positioning member, of which there are  
three in case of a three sided railing, and four in case of  
a four sided one.

20 The joint of the continual cross-section between two elements  
of a support post, is realized with "T" bolts 0210, which are  
blocked in a cartridge 0212, so that the bolts are directed  
into a groove which is formed by two triangular inserts 0211,  
then the bolts 0208 are bolted on a base 0207.

25 Due to statical reasons, the external vertical supports differ  
in the cross-section, so that the two front supports 0201 near  
the structure are the same, while the support 0204 which is  
behind, has a larger cross-section.

30 Supports 0201 and 0204 are simultaneously reins for the carriage.

The front horizontal support - cross-section 0205 serves also  
for installing the recessed wheel 09 and for the resting of  
the work platform 04 over the safety brake 08.  
35

The carriage console serves for 03 carrying the maximal load  
of the platform 04 and connecting the lifting mechanism 06.

5 It consists of a console 0301 which is made from steel profile supports, most frequently from pipes, with two upper members 0308 joined by a connecting rod 0312, to two mutually tied pipes 0334, which are positioned right and left to the connector 0315, while the two lower members 0307 of the console 0301 are also tied by a connector rod 0312 to the lower part of the left and right connectors 0315.

10 Connector rods are tightened by pegs 0311. The force in the upper supports of the console 0301 which appears from the load of the work platform 04, is transferred through joint 0323 on sides 0319, 03191, and 0325, symmetrically both from the left and the right side of the support post 02.

15 This force is further transferred to the pin 0337, through it it is carried to the support of the rear carriage 0336, and, finally over to two profiled wheels. So that the force could be transferred to two support fields of the support post railings and in that way lessened the force of the bending, a construction is provided with two separated wheels 0322 which enables smaller support dimensions 0204.

20 The profiled wheels roll along the rear vertical support 0204 of the support post 02. The pressure force in the lower part of the console rail support is transferred on members 0307, then onto the connector rod 0312, and further on to the support of the left and right front carriage 0339 (attached to pipes 0340).

25 The pressure force is thus divided into four profiled wheels, two on the left vertical support 0201 and two on the right vertical support 0201. In the same way the local bending on the vertical front support 0201 of the post element 02 is

lessened twice as much, and a result of that is a smaller cross-section of the support 0201.

On the upper part of the left and right connectors 0315 there are members 0309 which serve for connecting the mechanism, as it is described in the assembly.

On the very top end of the connectors 0315 are nuts which serve for connecting the support 0319 and tension rods 0415 for stiffly positioning the work platform 04. On the very lower end of the connector 0315 there are nuts to which supports and sides 03191, and strong supports 0416 are fastened by bolts.

Connectors 0315 are joined by a rod 0333 which prevents movement of the mechanism around the support rod 0628, while on the other side the rod 0333 facilitates the assembling of mechanism 06 in such a way that the mechanism 06 is easily positioned for inserting support rods 0628.

The console 0301 has on the front side at the ends of the upper supports members 0344 which are connected to members 0415 from the front part of the work platform 04 on the upper support 0402, i.e. on the side of the object.

This connection is necessary for single-post cranes. All support and connector rods are fastened by pegs 0311.

The work platform 04 serves for carrying material, workers who move around on it, and the required tools. It consists of a steel frame which has a triangular cross-section or a trapezoidal as illustrated on Figure 13, depending upon the width of the platform. The frame is so constructively solved that in the so called locations "B" of the darkened areas, a console

0301 can be inserted.

5

Lengthened supports 0402 are placed on the console 0301. The element of the work platform 04 is prolonged in length by members, 0406 and 0410 which are connected with pegs. They mutually center themselves with male and female positioning members 0409, 0424.

10

The work platform - the tread part 0411 is made from shaped metal which is welded along upper horizontal platform supports. Should the work platform 04 be widened, then the support 0420 is used. This support is carried by members 0421 attached to horizontal transversal support 04011.

15

Boards 0422 are placed on the produced supports 0420. The support 0420 has on it a member 0423. The platform has a stand 0418 on which the work platform 04 is placed while assembling is being performed.

20

The protective fence serves for preventing workers from falling. The columns 0501 of the fence connect by way of members to the support 0507 which is welded to the support 04011.

25

The whole fence can be disassembled during transport along the work platform 04, and while the work platform 04 is in use, then the fence is raised and secured 0504 on the members 0503. The lower part of the protective fence serves to prevent small material and tools from falling out. There are two rows of chains 0509 and on the top part of the fence there is a handle 0514. The chains on one end end with a hook 0517 so that they can be easily removed to permit passing. The fences join by connectors.

30

35

5 The lifting mechanism 06 serves for raising and lowering the console and carriage 03 with the work platform maximally loaded.

10 Besides that, it serves for lifting material by way of an auxiliary crane 10. The mechanism consists of an electric motor 0601 connected to a transmission housing 0605 in which there is a transmission 0604 with a connector bearing, with one part in the electric motor and one part on two inverse radio-axial bearings 0608, while on the upper part of the transmission there is a brake 0614 which brakes in all positions except when the running of the motor is in the direction of lifting the platform.

15 The transmission housing 0605 is connected with sheet metal with the possibility of adjusting the clearance on the transmission wheel by way of supporters which absorb transversal and longitudinal forces for the left and side sheet metal 0624.

20 The left and right sheet metal 0624 is carried by the transmission wheel 0606 which is connected to a drum 0647. The drum 0647 ties to itself the steel cord 0632, and both entwine with two harnesses 0654 and harness 0627.

25 The connecting of the lifting mechanism 06 to the carriage console 03 is done in such way that the notches of the sheet metal 0624 are placed on the rod 0333, then the support rod 0628 is pulled through the member 0309 and the support pipes 0627.

30 The support rod is tightened by a peg 0636, while the hook 0635 is placed over the recessed wheel 09 and tied to the support 0636.

35 The wall support 07 serves for supporting the support post 02 on the wall. It accepts horizontal and side forces from the

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5 harness which produces maximal load of the platform 04. The reason wha the support is wider on the ends 0723 is that it prevents the side forces which could result in the falling of the crane.

10 The support consists of a steel frame 0716, joint rods 0723 which can be lengthened or shortened depending on the required workand the wall configuration. The support rests on the screw 0712, and it on the member 0719, and together they form a joint which makes possible that the support 07 can be lowered to hang down the wall, which would enable the platform  
15 04 to pass by the support, so that it would again be able to attach to the support post 02, although under the work platform 04.

20 The member 0719 is welded to the plate with rubber thereon 0717 which has rubber 0720 stück on it to create friction, and not damage the wall. The plate with rubber thereon 0717 has a holw through which another hole is made for positioning the rubber insert with the screw 0721, reinforced rubber pipes 0722, foundation 0711, and butterfly screws (0710).

25 Tightening the butterfly screw makes the reinforced rubber "swell" on the screw 0721, so that a friction force is created. It is unknown to me that such inserts exist anywhere else.

30 The safety brake 08 serves in cases of breaking of the steel cord 0632 or if the brake 0614 fails. It "grabs" the bar 0205 of the support post 02. It also serves for adjusting work platforms 04 into the working position when the steel cord  
35 0632 is used for lifting loads by way of the auxiliary crane 10.

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5 The safety brake consists of a pipe support 0806 which goes over the supported pipe 0627. Two supports are welded on the support 0806, while a handle 1801 is welded on the two supports.

10 The handle is always directed downwards by the spring 0808 and the member 0805, during movement of the work platform, if the worker does not do anything to overcome the spring. The catch will then linger on the bar 0205 of the support post 02.

15 The recessed wheel 09 serves for raising the carriage console 03 along with the work platform 04 and the lifting mechanism 06, as well as for lifting of load through the help of the auxiliary crane 10. The recessed wheel 09 consists of the wheel 0902 which turns on the wheel support 0911, while the support 0911 is welded to the support pipe 1910 which is  
20 shortened in length so that it would not fall off the rod 0205 of the support post 02, on which it leans anyway.

25 The member is placed under the rods of horizontal supports 0206 of the support post 02. When the recessed wheel is used for lifting the carriage console 03 and the work platform, then the recessed wheel functions as an auxiliary wheel because the steel rope is tied by both ends to the lifting mechanism, while, when it lifts load by way of the auxiliary crane 10, then it functions as a stationary wheel and then it  
30 raises loads at double the speed.

35 The auxiliary crane 10 serves for lifting and placing load onto the working platform 04. It consists of two pegs 1017 which attach themselves to the support posts 02 on the level of the recessed wheel.

The steel cord is placed over the levelling wheel grooves  
1001, then over the wheel 1006.

The rotating console 1010 turns on the handles 1002, 1016.  
The vertical support 1009 is tightly connected to the handles 1002 and 1016, as well as to the pegs 1017, so that only the console rotates while everything else remains stationary.

The positioning mechanism on the work platform 11 serves for preventing swaying of the work platform, and in some cases takes the place of supports. It consists of a support 1101 which carries the wheel 1107 on the spring 1102 and two side supports 1103.

The support 1101 connects to the tread 0411 through the support 1110 and fixes the distance with butterfly screws 1104. If an elastic connection is desired, this is when the platform is moving, then the wheel is positioned to the wall and travels against the wall, with the springs 1102 compensating for uneven parts.

When a stiffer connection is desired, the support is pushed to touch the wall, then fixed in position by butterfly screws. This is when the elements are extended making the connection less flexible.

Electric control box 12 is used for control of electric motors, "up", "down" and "stop", for each motor separately and all together, and is further furnished with end switchers for up and down movement.

Basket 13 is used for fixation and defixation of wall support 07 below the platform 04, and is occupied by a worker. The basket is comprised of a steel frame and is connected by means of bolts to members 0417.

CLAIMS

5

1. Crane with a movable work platform for simultaneous lifting of work platform, material, tools and workers to the desired height in carrying out of various construction operations on a structure higher than 2 meters, characterized in  
10 t h a t it consists of at least one crane base (01), at least one support post (02) consisting of elements, which post is surrounded by carriage (03) connected to the console (0301) supporting work platform (04) with protective fence (05), and lifting mechanism (06), connected to said carriage (03) via  
15 steel cords (0632) over a recessed wheel (09) secured to support post (02) rod and the other end of the cord - hook (0635) is again secured to mechanism (06) and carries work platform (04) over console carriage (03), whereas work platform (04) is in some cases secured to support post rod by  
20 safety brake (08) and over console carriage (03) and lifting mechanism (06), and support post (02) is fixed with support (07) to the structure above and from said carriage (03) below the work platform (04) on a certain height, and in that the crane is along each support post (02) fitted with one auxiliary crane (10) and with at least one positioning mechanism (11).

25

2. Crane according to claim 1, characterized in  
30 t h a t the crane base (01) comprises a steel frame (0103) attached to a support (0102) for uniform positioning onto a soft ground, and base supports (0110) with optional adjustment of the position by means of nuts (0109) onto a solid  
35 ground.

35

5 3. Crane according to claims 1 and 2, characterized in that the support post (02) is welded to point (b) on base (01) and elements of said support post (02) form the desired height of the post by connection, and the support post frame next to the structure with horizontal bars (0205), while elements of said support posts (02) are connected  
10 into the post with "T" bolts within shells (0212) in recesses of the cartridge (0211) with nuts (0208) on washer (0207) and positioning members (0209, 02091).

15 4. Crane of claims 1 - 3, characterized in that the console carriage is connected to the back carriage support (0336) by means of two connector plates (0320) mutually joined with a pin (0337) which in turn is fastened by means of a peg (0311), while two back wheels (0322) rest  
20 on rear support (0204) of the support post (02); sides (0319, 0325, 03191) are welded to left and right plate (0320) and surround from both sides the support post (02), and the other side thereof is connected to joints (0316, 0323, 0327) located on both sides of said connector (0315), whereas two  
25 upper console supports are secured through members (0308) from the left and the right side by means of rod (0312) to two mutually connected members (0314) in joint (0323) on both sides of the connector (0315), while the lower console support connects rods (0312) through connector (0315), member (0307),  
30 front carriage supports (0339) welded to pipe (0340), and further through a second member (0307), connector (0315) and is fastened by peg (0311); and four wheels carried by front carriage supports rest on front faces of left and right vertical supports (0201) of said post which also act as front carriage  
35 directioning means.

. / .

5. Crane according to claims 1 - 4, characterized  
in that work platform (04) consists of steel or alumi-  
5 nium supports mutually welded into a support frame with tri-  
angular of trapeze cross section with location (B) occupied by  
console, so that two upper longitudinal platform supports (0406)  
rest on console (0301), and working surface (0411) is fixed to  
longitudinal and transverse supports (0406, 04011), and by  
10 means of two members (0421), support (0420) and boards (0422)  
the work platform (04) is widened, while by means of four mem-  
bers (0406), at one, and eight members (0410) at the other  
side of the work platform (04) and by pegs (0412), the elements  
of said platform are joined into the desired length.

15

6. Crane according to claims 1 - 5, characterized  
in that the protective fence comprises columns (0501)  
pivotally connected to members (0507) welded to transverse  
20 supports (04011) of the work platform (04), and secured by  
means of pins (0504) in a vertical position, whereas the lower  
parts of columns (0501) are horizontally connected to pro-  
tective fence (0512), and on the upper side are fitted two  
rows of chains (0509) which at one end between the columns  
25 (0501) terminate with a hook (0517), while upper ends of co-  
lumns (0501) are connected with handgripp (0514).

7. Crane according to claims 1 - 6, characterized  
30 in that lifting mechanism comprises an electric motor  
(0601) attached to transmission housing (0605) with flange  
(0602), the transmission being with one end located in electric  
motor by means of exiting electric motor shaft, and with the  
other in two opposite bearings (0608), and on the top of the  
35 transmission shaft (0604) there is a brake (0614), whereby the

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transmission terminates with a square for manual movement,  
while housing (0605) is secured by a member (0631) and two  
5 holders (0630) to the side metal sheet (0624), and between two  
side sheets (0624) there is located a transmission wheel  
tightly connected to drum (0647) for steel cord (0632), while  
side sheets are attached to two connectors (0654), whereas  
lifting mechanism (06) is connected to the console carriage (03)  
0 in such a manner that the side sheets' recess near the lower  
end thereof, rest on rod, and then the support rod (0628) is  
inserted through left member (0309) welded to left connector  
(0315) and then through support pipe (0627), through right  
member (0309) on the right side of connector (0315) and finally  
5 the support rod is fastened by peg (0655).

8. Crane according to claims 1 - 7, characterized  
in that wall support (07) comprises a steel frame (0716),  
20 two folding bars (0701) surrounding the support post (02) and  
are again attached to said steel frame with a peg (0711), while  
their second end is with two supports (0723) resting on the  
structure, whereby said bars are passed over a joint consisting  
of members (0719), bolt (0712) and support (0723), and two  
25 plates fixed to member (0719) with rubber (0720) thereon and a  
rubber insert positioned in the structure, and consisting of a  
bolt (0721), reinforced rubber tube (0722), washer (0711) and  
butterfly nut (0710), while the support (0723) is tightened with  
bolts (0724) in frame (0716) at a certain distance of the sup-  
30 port post (02) from the structure.

9. Crane according to claims 1 - 8, characterized  
in that a safety brake (08) comprises a carrying tube (0806)  
35 surrounding a carrying tube (0627), and said tube (0806) is  
welded to two supports (0807) to which is also welded a gripper

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(0801) while a spring (0808) keeps a bar (0803) on a member (0805) in order for said gripper (0801) to be directed on a bar (0205) of the support post frame to the structure, and a handle (0802) is tightly connected to the bar (0803).

10. Crane according to claims 1 - 9, characterized in that the recessed wheel (09) comprises a pulley (0902) on the support (0911) which is welded to a support (0910) leaning on a bar (0205) of the support post frame, while member (0912), welded to a support (0911), is resting below a horizontal support (0206) of the support post (02).

11. Crane according to claims 1 - 10, characterized in that the auxiliary crane (10) comprises two pegs (1017) one fixed to a holder (1002) and the second one to another holder (1016) to which also a vertical support (1009) is attached, while on said holders in bearings (1015) a rotatable console (1010) is positioned, said console incorporating a pulley (1006) for steel cord (0632) and two levelling pulleys (1001) attached to a support (1002), while upper peg (1017) is inserted into a knot formed by horizontal bar (0205) and support (0206) in the level of the recessed wheel (09), whereas the lower peg (1017) is inserted from the upper side into the adjacent knot below, which knot is formed by bar (0205) and bar (0206).

12. Crane according to claims 1 - 11, characterized in that the positioning mechanism (11) on work platform is secured to the walking surface (0411) by means of bolts and over washers (1110), and at a distance of the pulley (1107) tightened with spring (1102) to supports (1103) and with pins (1108), the support (1101) is positioned with butterfly bolts (1104).

5 13. Crane according to claims 1 - 12, characterized  
i n t h a t the electric control box (12) is attached to pro-  
tective fence (05) on handgripp (0514).

10 14. Crane according to claims 1 - 13, characterized  
i n t h a t the basket (13) is comprised of a welded frame  
in the form of a partially cutted cylinder, boarded with shaped  
metal sheets, which basket is secured to the platform on its  
bottom side to lower longitudinal support (04021) by means of  
members (0417).

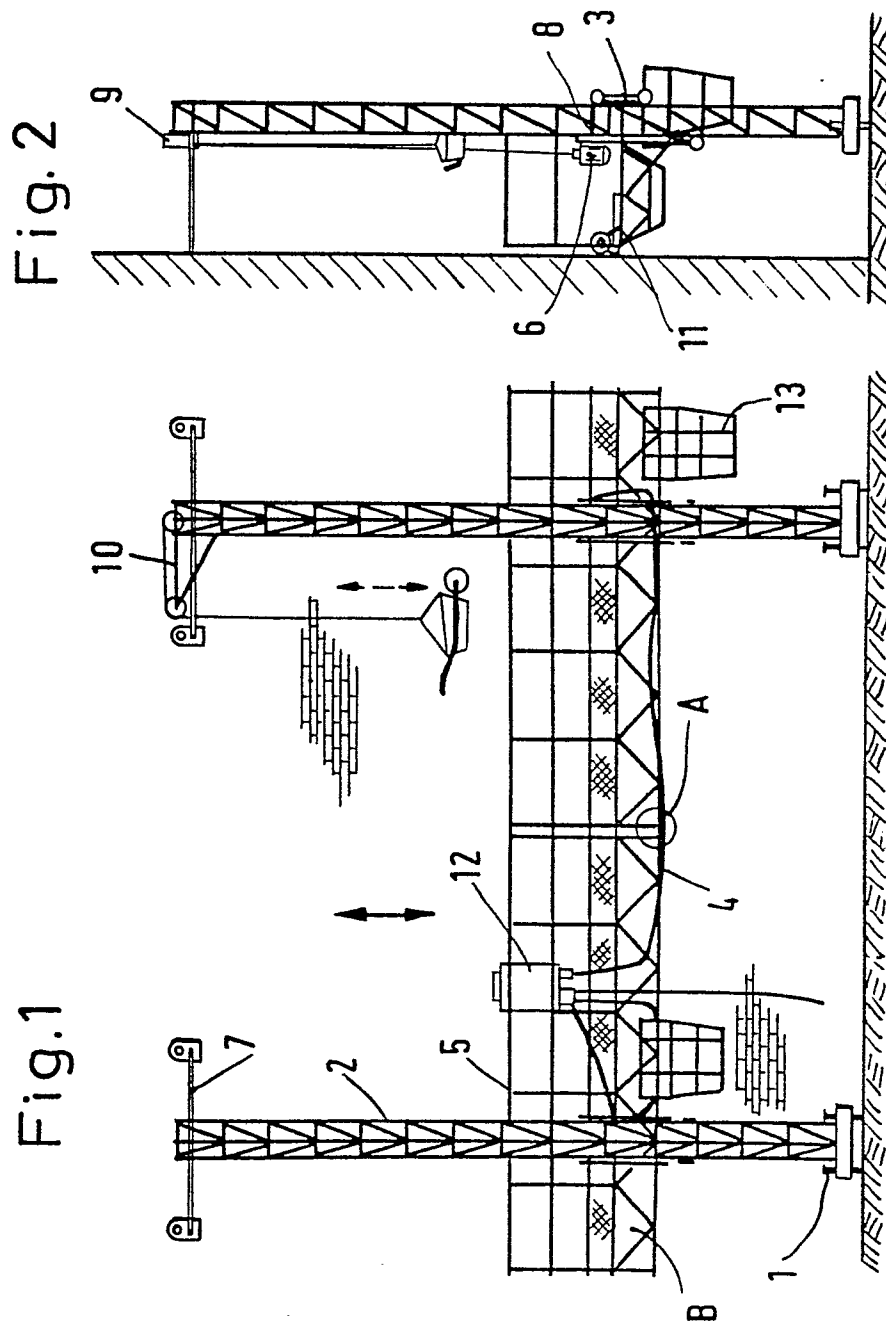
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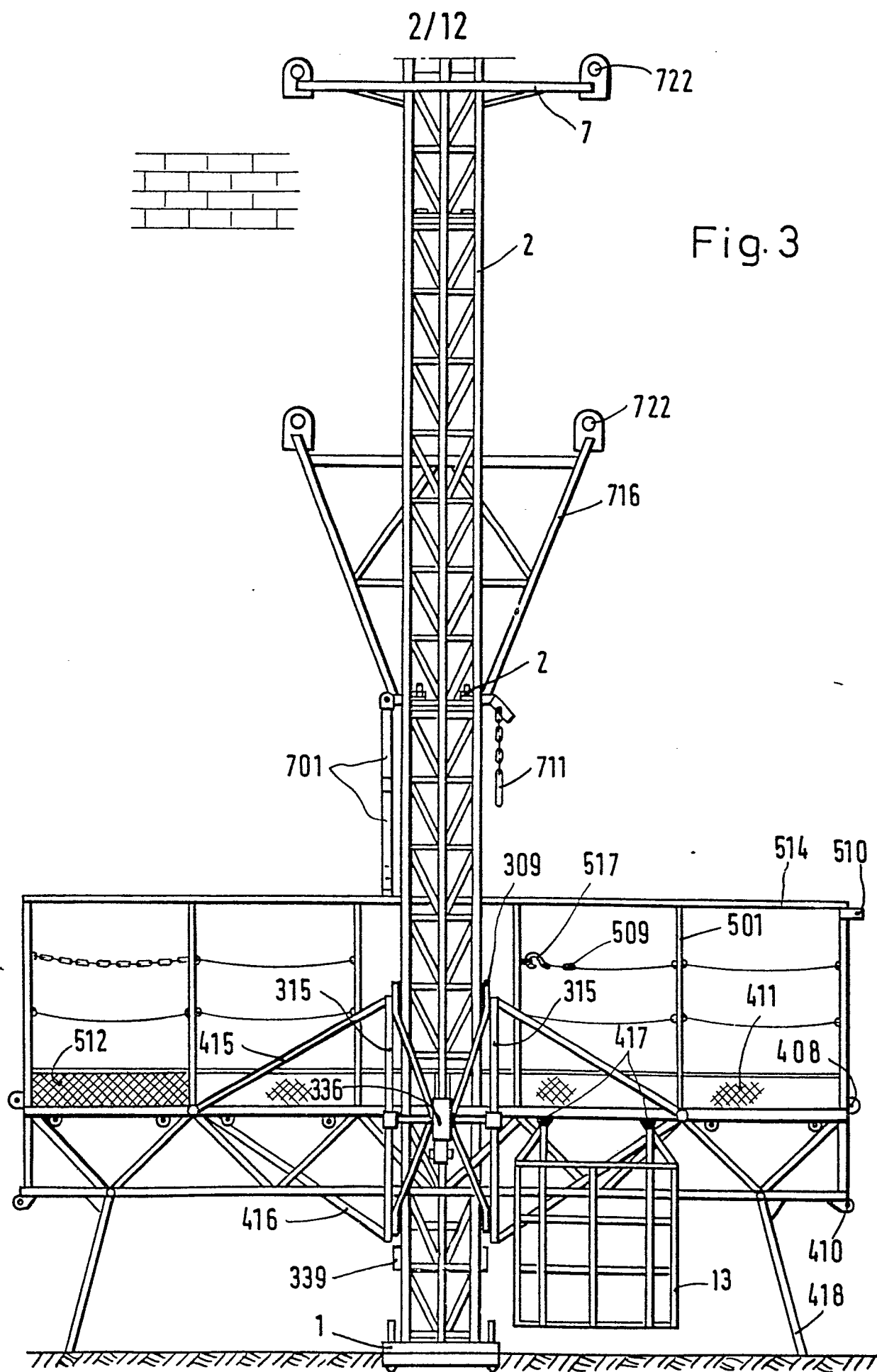
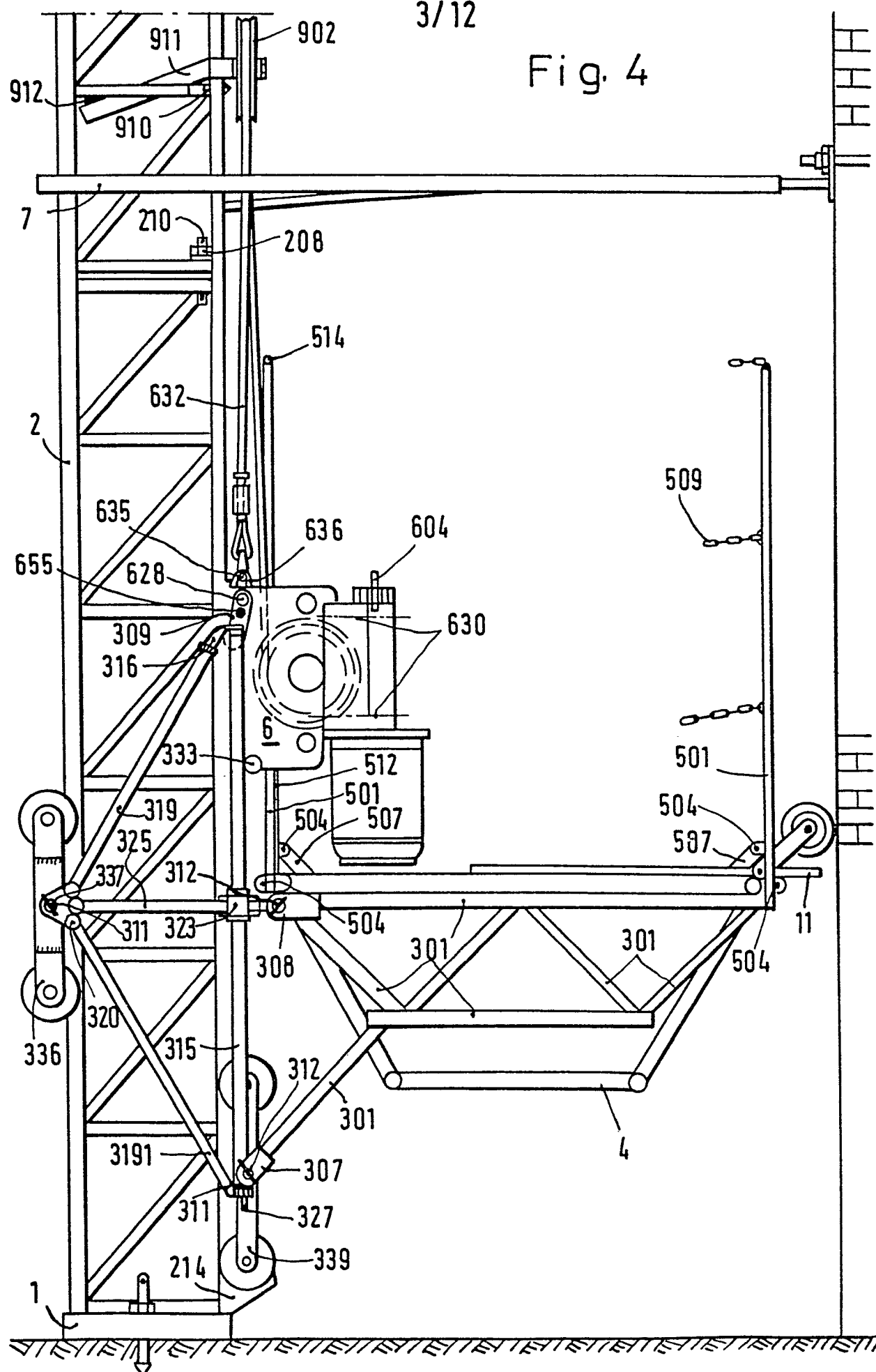


Fig. 4



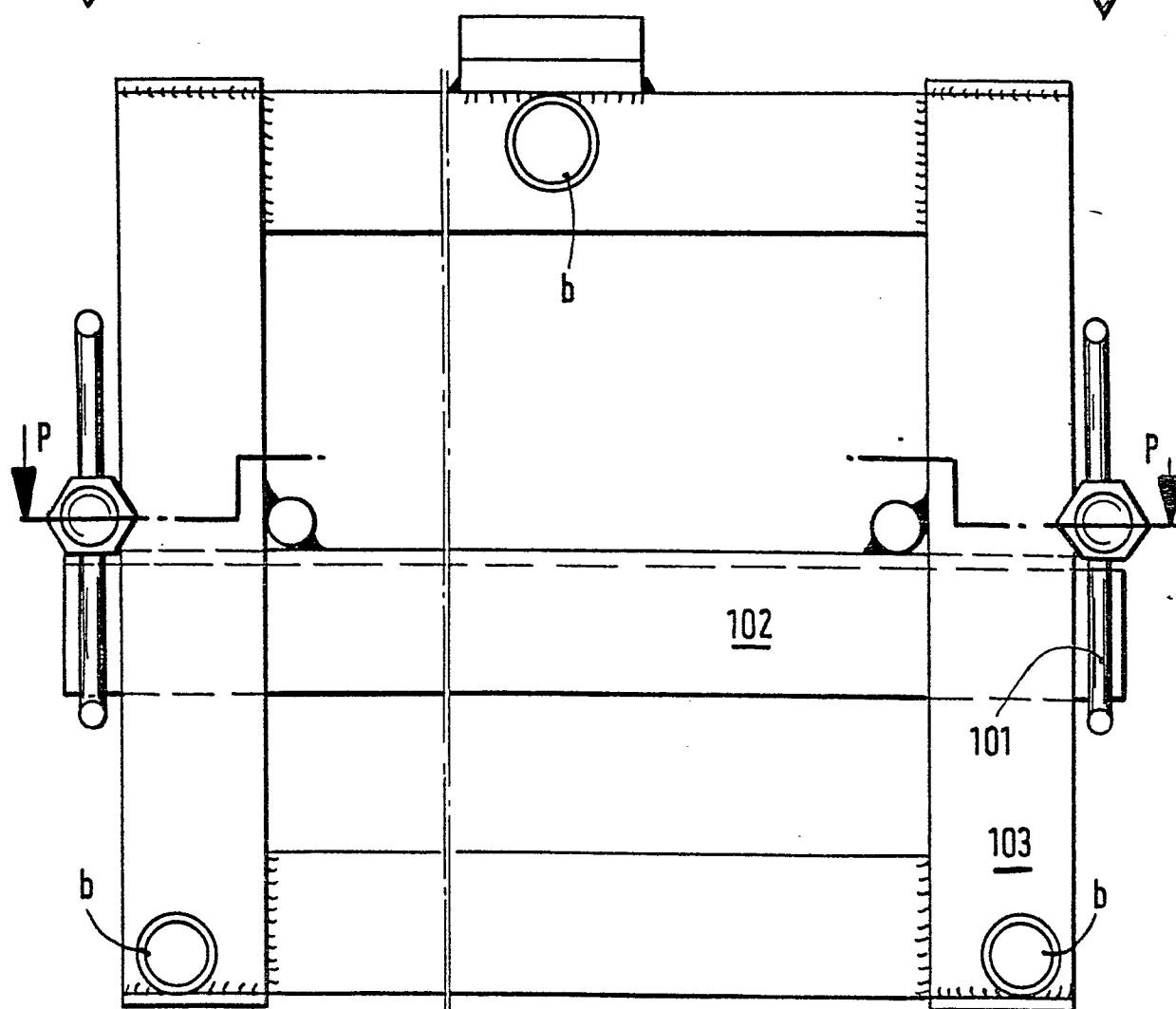


Fig. 6

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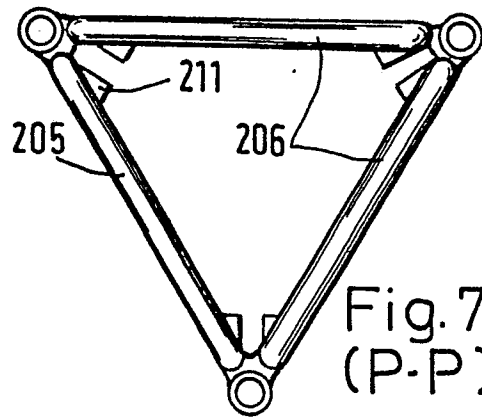


Fig. 7  
(P-P)

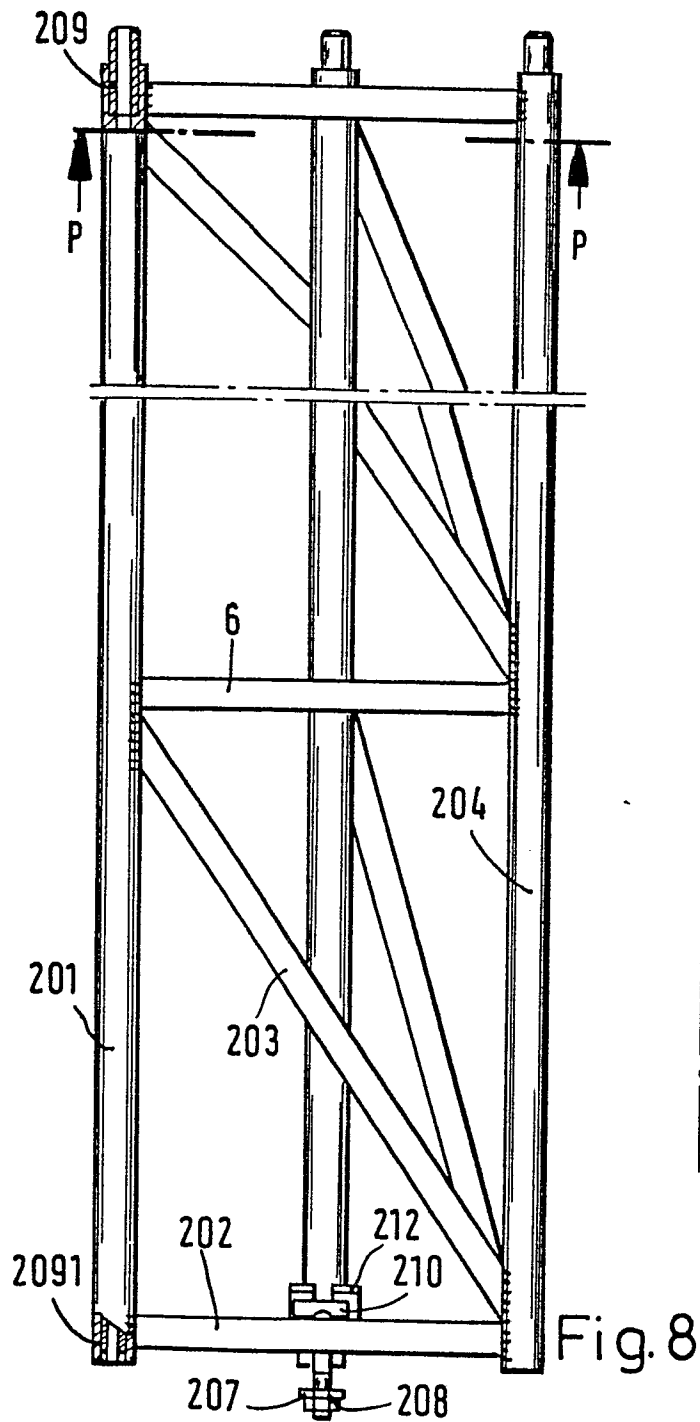


Fig. 8

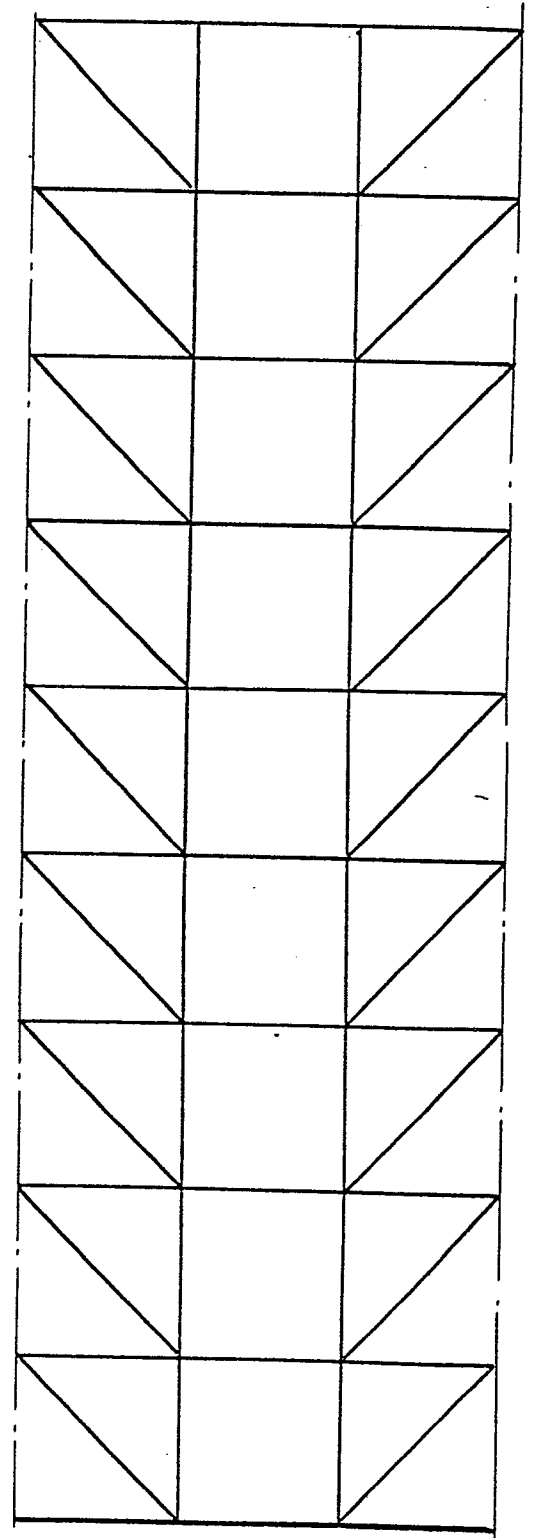
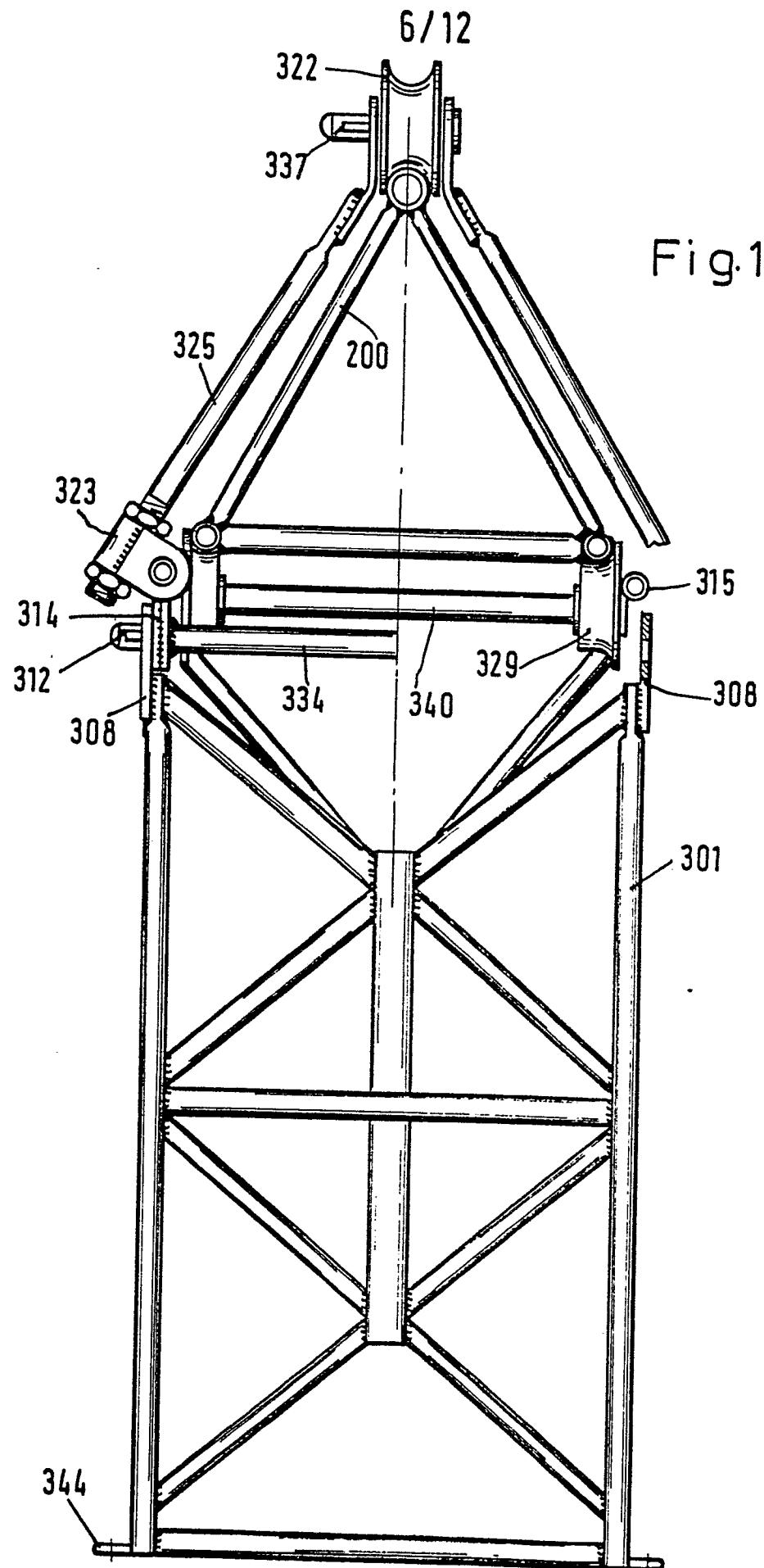


Fig. 9



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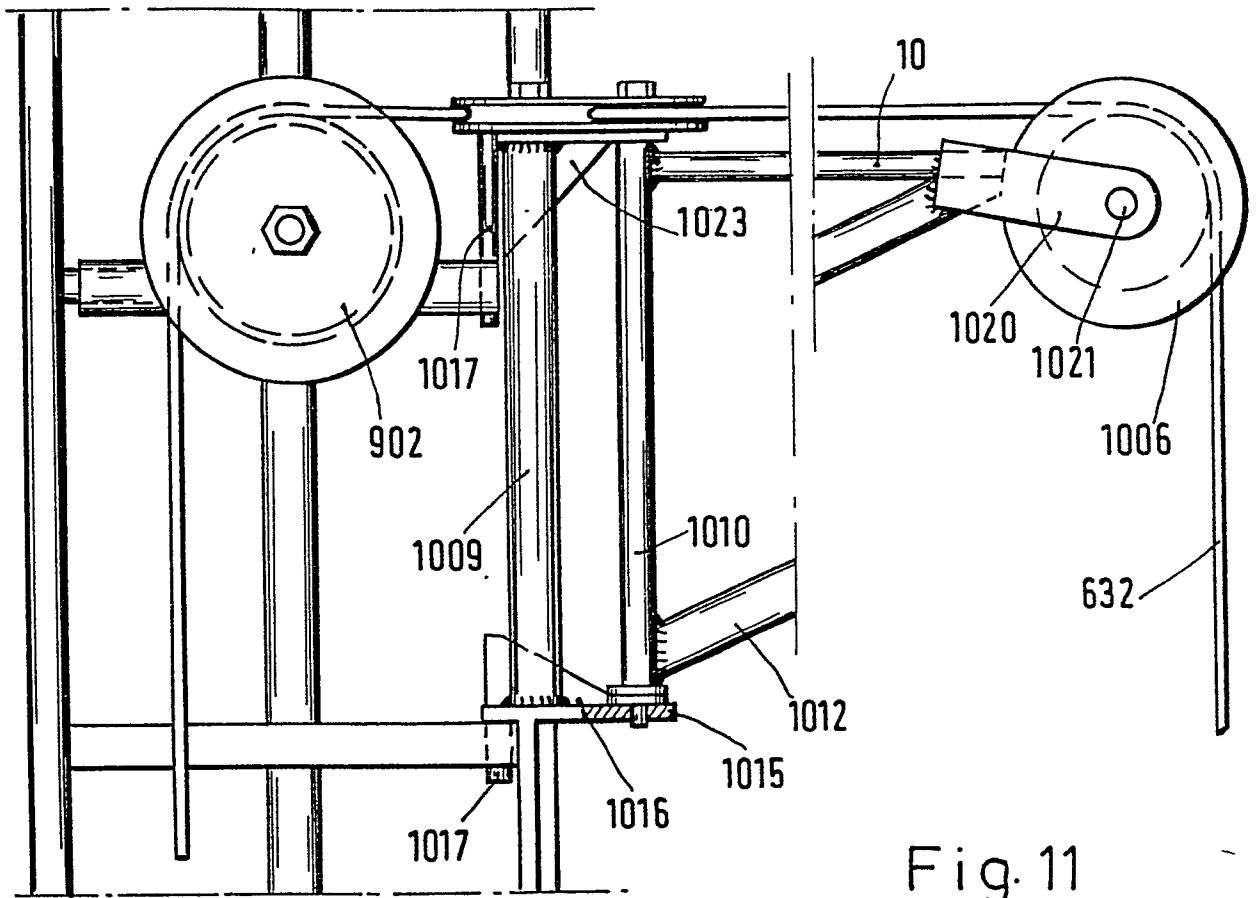


Fig. 11

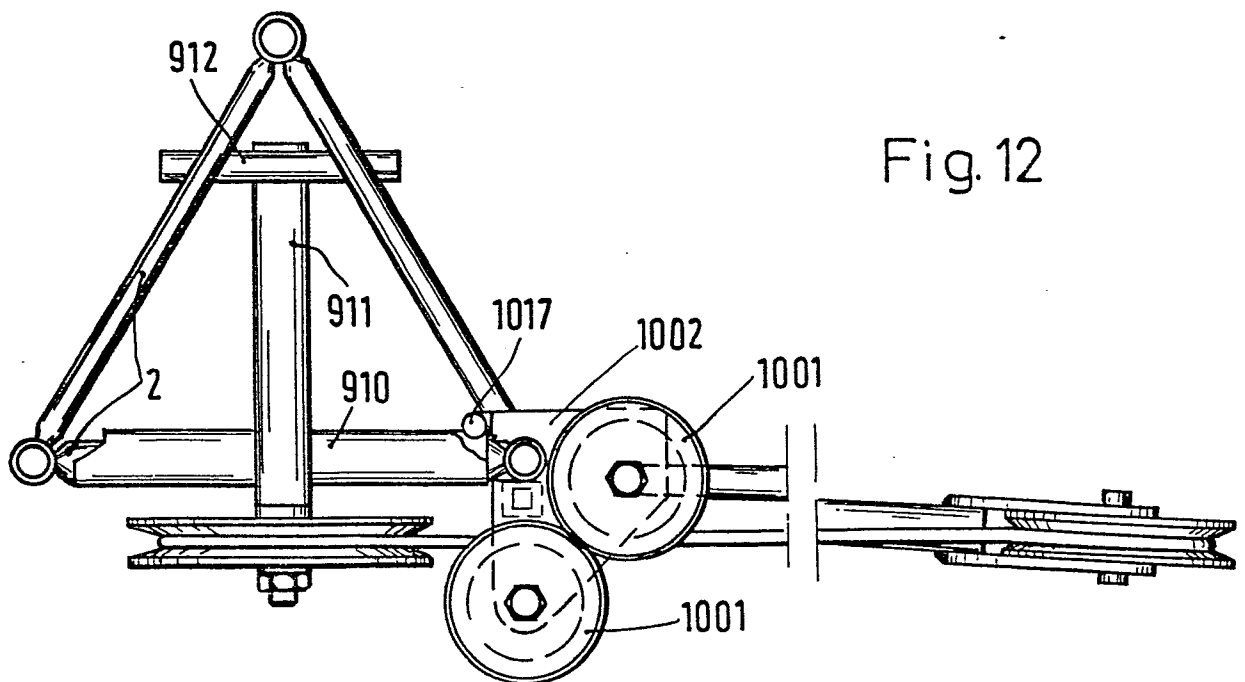


Fig. 12

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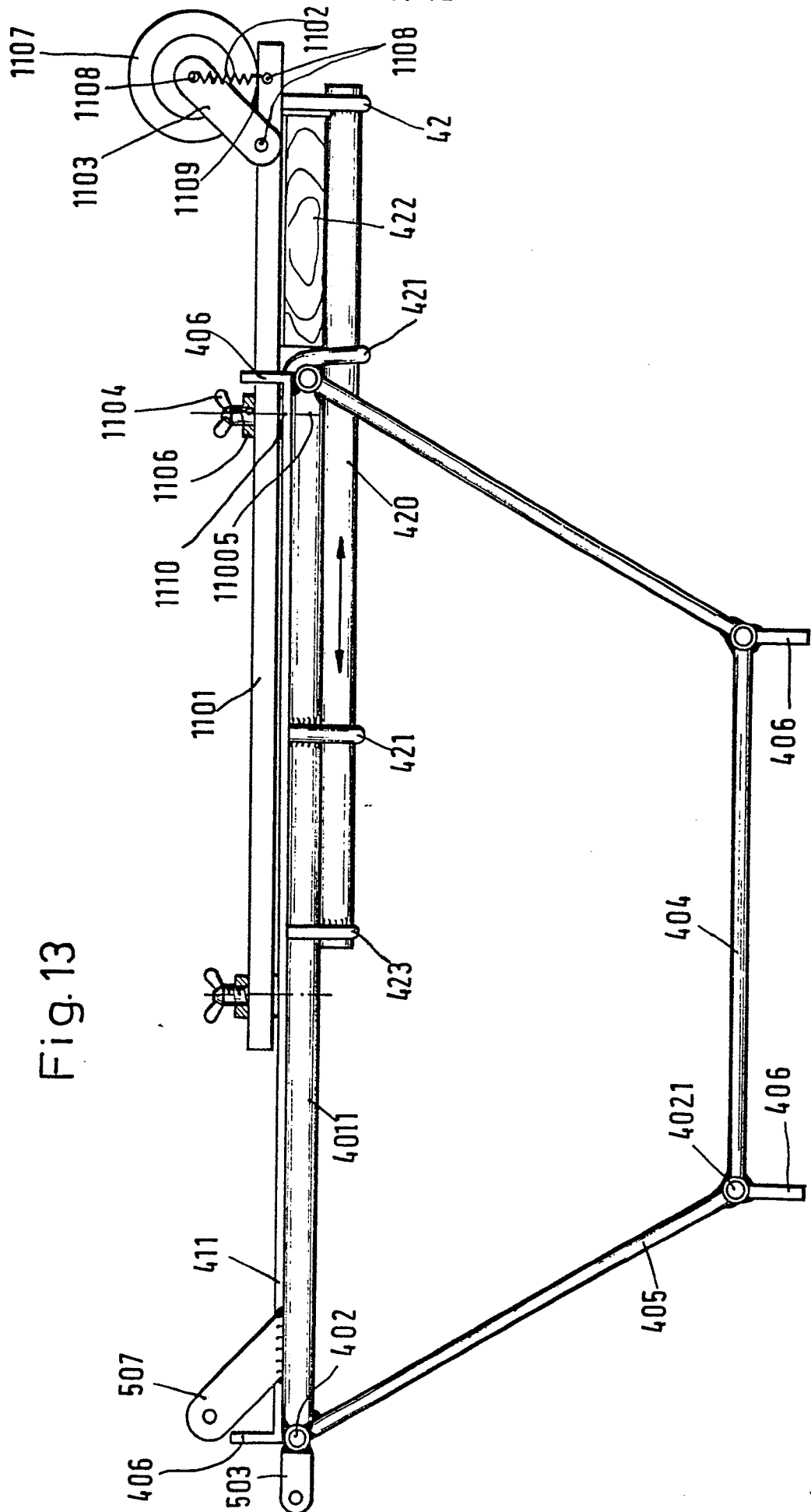


Fig. 13

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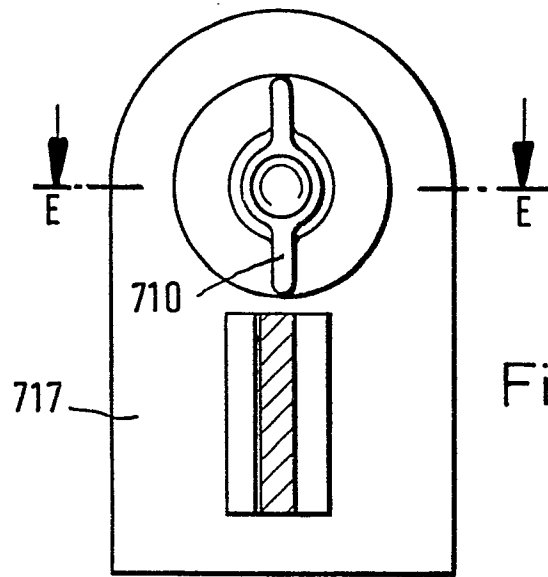


Fig. 14 (P-P)

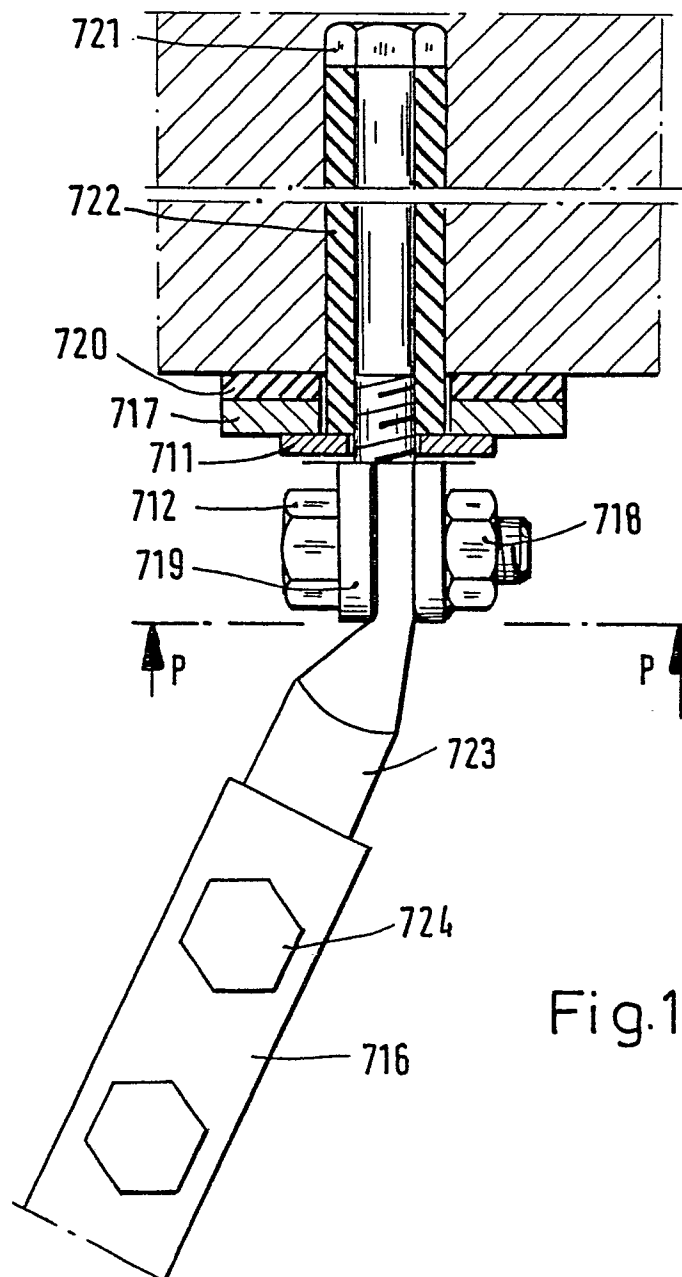


Fig. 15 (E-E)

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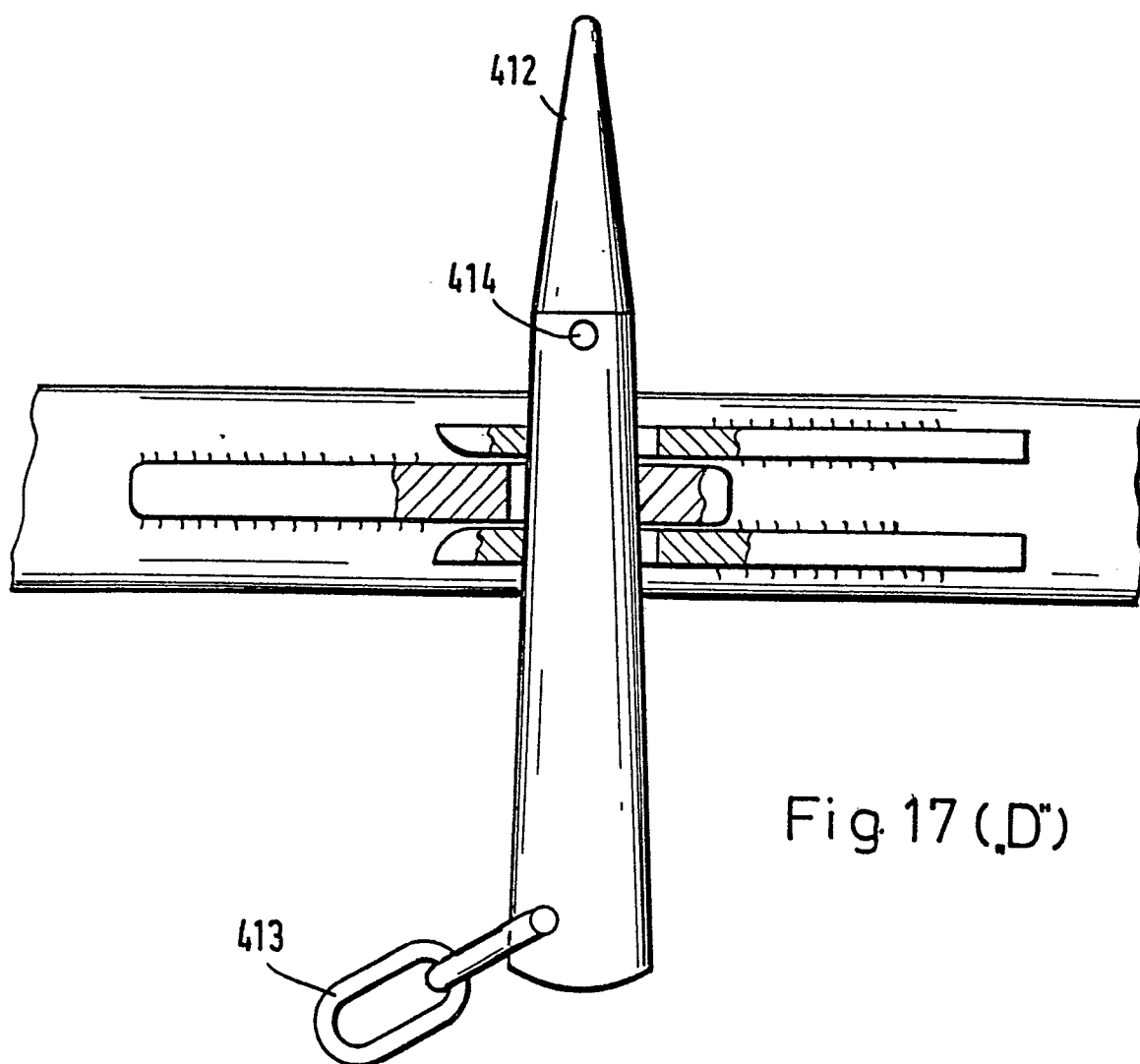
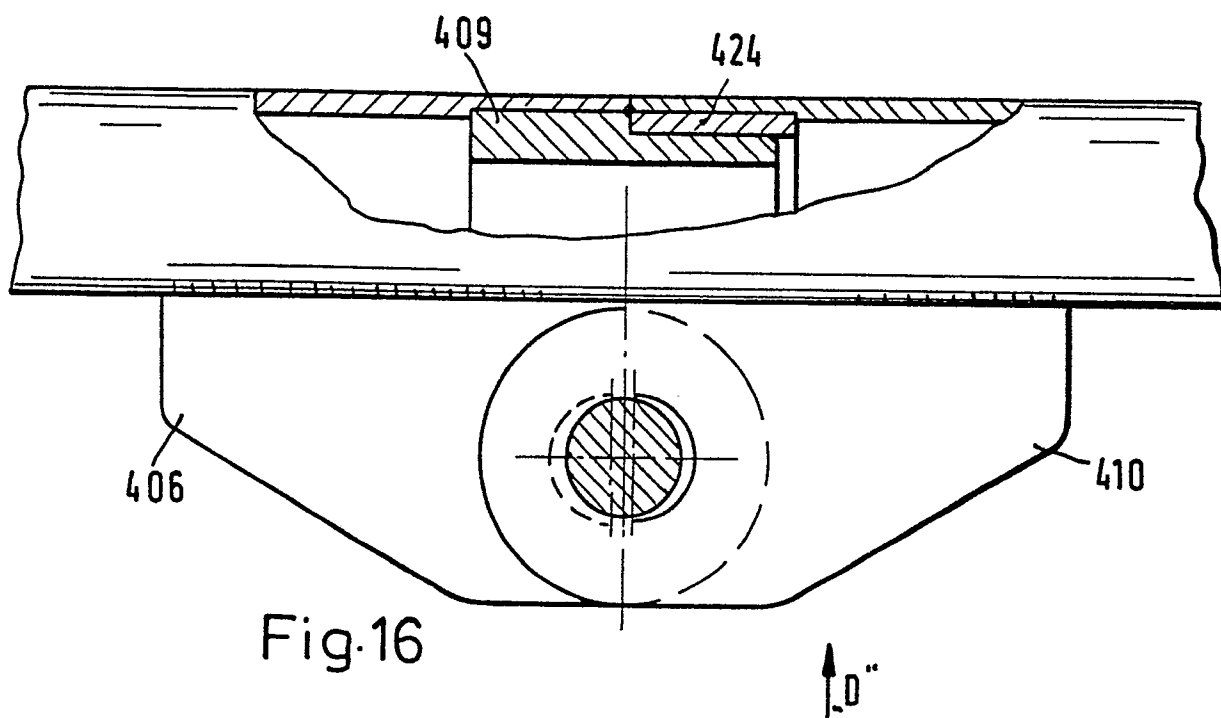
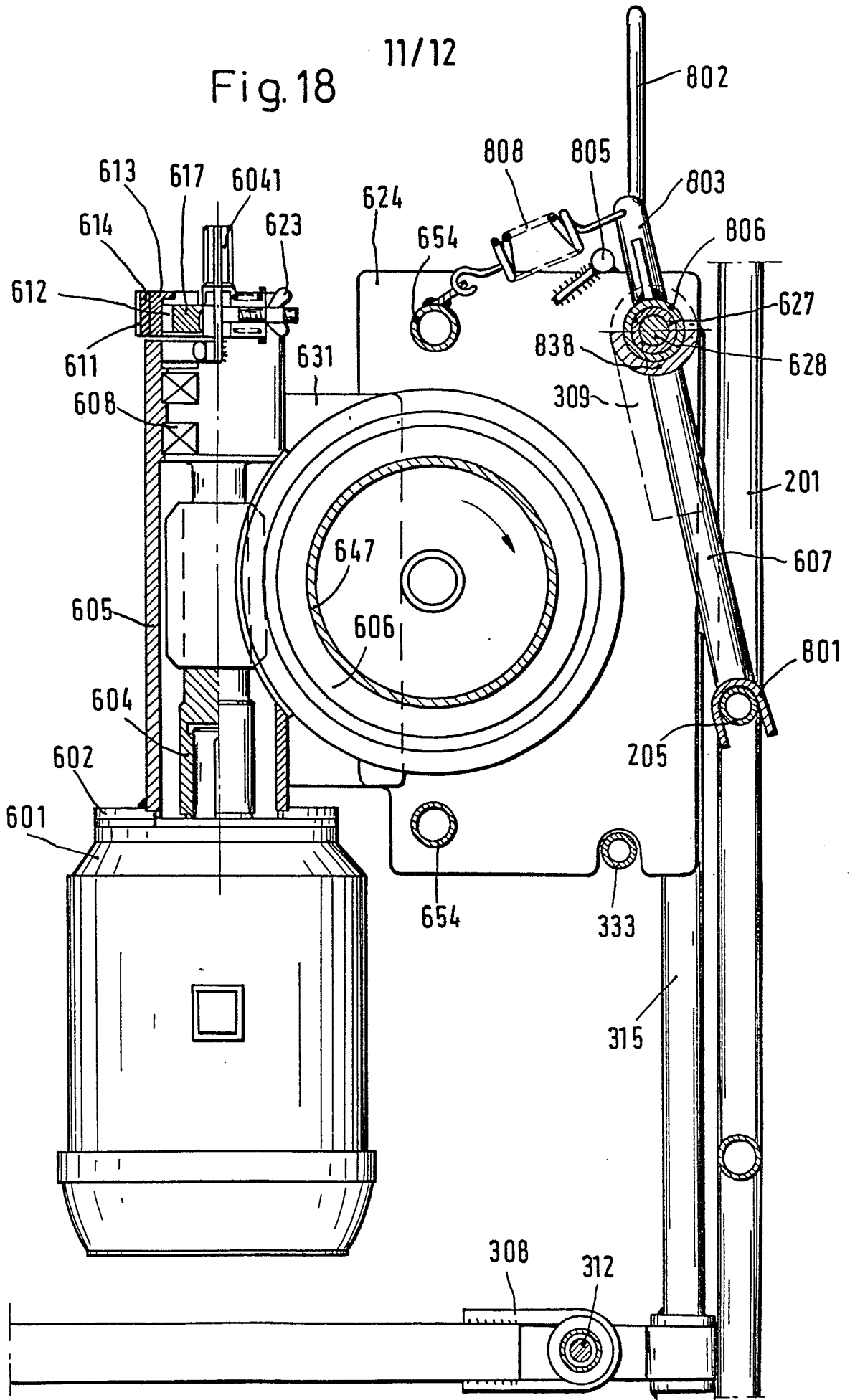


Fig. 18



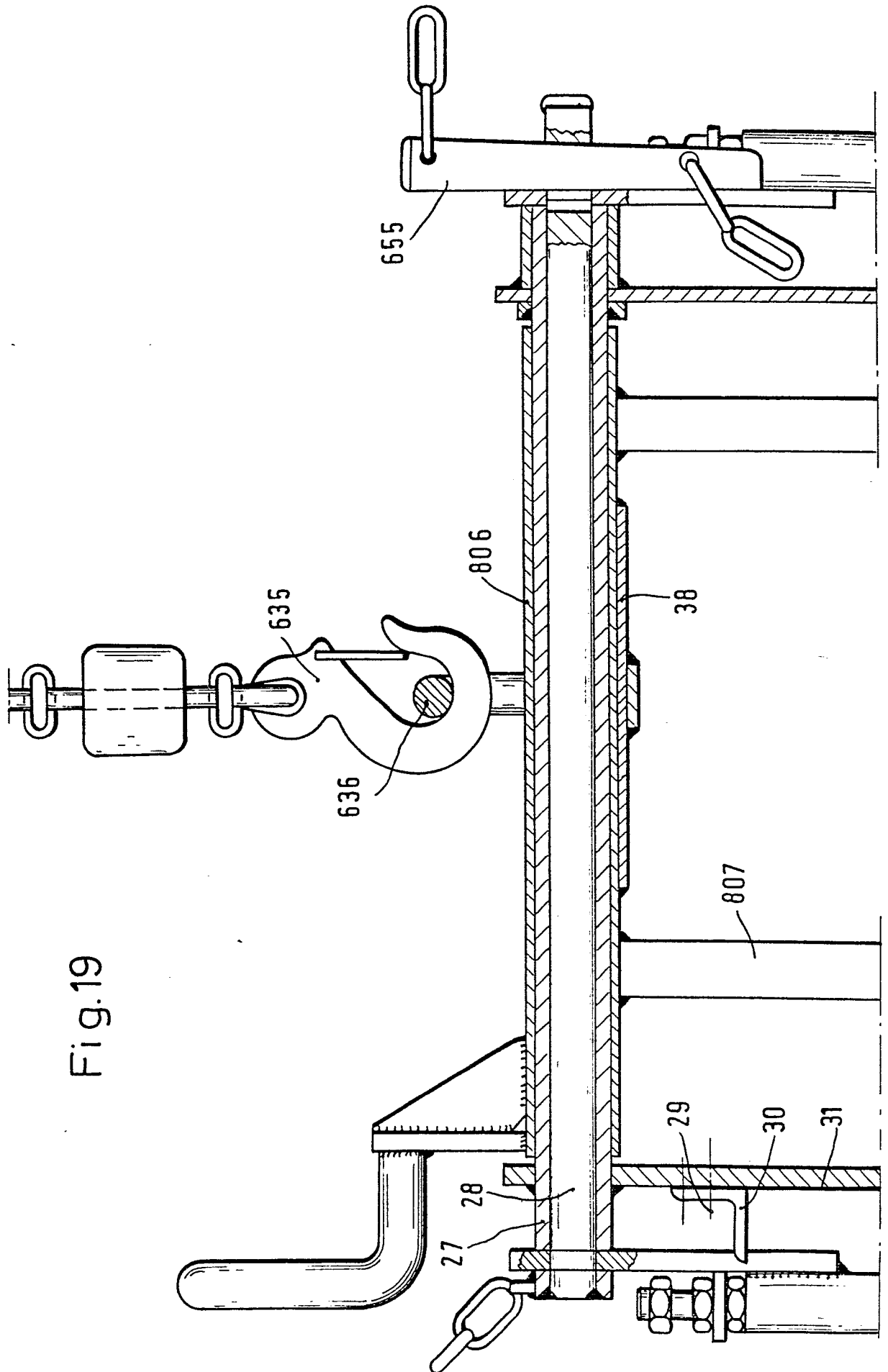


Fig. 19