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(54) **EVENT COMPLEX**

MEHRZWECKKOMPLEX

COMPLEXE POUR MANIFESTATIONS

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Description

[0001] The invention relates to an event complex provided with at least one event surface and one or more stands at least partially surrounding the event surface, at least one of which stands is slidable relative to the event surface over slide elements arranged between the stand and a ground and at least during sliding having low friction. Such an event complex, which can take for instance the form of a sports stadium is known from US-A-4,688,357 and compared with event complexes with fixed stands offers the advantage that the event complex can be used for a variety of purposes. By displacing one of the stands toward or away from a stand located opposite the complex can be made suitable for smaller-scale or larger-scale events than those for which it was basically designed. Thus, according to the mentioned US patent a football stadium may be transformed into a baseball stadium by displacing part of the stands.

[0002] A stadium having displaceable stands offers a variety of possible stand locations for a large number of events. By moving inward the stands to form a so-called arena arrangement, for instance a football stadium can thus be made suitable for instance for a boxing match or a small-scale concert, while, conversely, by moving the same part of the stand outward it becomes suitable for instance for circus performances or exhibitions. It has been found that the thus obtained flexibility in terms of use is an economic condition for a responsible operation of a large-scale event complex.

[0003] The known event complex with displaceable stands has a displacement system using rubber bags located under the displaceable stands and not being completely tight. Before displacing these bags are filled with water, which subsequently leaks from the bags thus forming a thin sliding layer. In comparison with earlier proposals, according to which the stands were movable along guide rails which were set into the event surface and in which rollers connected to the stands could move, this known system has the advantage that when the stand assumes its position moved furthest to the outside, no guide rails lie exposed in the event surface which would have to be covered. In the stadium as known from the cited US patent on the other hand, the event surface is completely free of obstacles after the stand or stands have been moved.

[0004] However, the known event complex has the drawback that the slide elements are not slidable in themselves, and prior to moving of the stand or stands must be filled with water, which then leaks away during moving. Therefore, moving the stands is relatively complicated, whereas after moving the event complex always has to be cleared of the water that has been used as a lubricant.

[0005] The invention now has for its object to provide an event complex of the above described type wherein this drawback does not occur. This is achieved according to the invention in that the slide elements comprise a material with low friction, like e.g. polytetrafluoroethylene, and in that each slide element forms an endless belt which is guided over reversing rollers and a transporting part of which is located between the stand and the ground and a return part of which is guided through the stand or the ground. Thus, by using slide elements which are well slidable in themselves, the stand may be slid about without complicated preparations or further treatment.

[0006] It should be noted that from DE-A-28 52 181 a stand for a sports hall is known, which consists of a plurality of rows of benches which may be telescopically slid under one another, and which are provided on their undersides with slide elements made of a low friction material like e.g. Teflon™ (PTFE). This however, is not a stand that is displaceable as a whole, and the slide elements in this prior art document are fixed, rather than movable in themselves.

[0007] In a preferred embodiment the event complex comprises drive means arranged between the displaceable stand and the ground and formed by at least one piston/cylinder combination mounted on the stand or the ground, and a plurality of push-off points connected to the ground or the stand, co-acting with the free outer end of the pistons and arranged with interspaces in the displacement direction. In this way the stand may be easily moved between its various positions.

[0008] In a further preferred embodiment of the invention, the event complex also comprises at least one floor part arranged on the event surface and displacable relative to the fixed stand parts. By thus making not only the stand but also the floor part displaceble, the flexibility of the event complex is further enhanced. It is preferred that the displacement of the floor part be effected by slide elements of the same type as used for displacing the stands, e.g. slide elements in the form of endless belts. The event complex may also comprise a furhter set of drive means for moving the floor part, which drive means are preferably simmilar for those used for moving the stand.

[0009] The invention also relates to a slide element for use in a stand for an event complex as described above, in addition to drive means for use therein.

[0010] The invention is now elucidated on the basis of a number of embodiments, wherein reference is made to the annexed drawing, in which:

Fig. 1 shows a partly cut away perspective view of an event complex with a slidably displaceable stand as according to a first embodiment of the invention;
Fig. 2 and 3 show schematically the event complex of fig. 1 with the stand in respectively outward displaced and inward displaced position;
Fig. 4 shows a schematic view corresponding with fig. 2 and 3 of an alternative embodiment of the event complex according to the invention, wherein all stands are fully displaceable;
Fig. 5 shows a detailed cross-sectional view of a

slide element and slide track for use in the event complex according to the invention;

Fig. 6 shows a view corresponding with fig. 5 of another embodiment of the slide element and the slide track;

Fig. 7 is a partly cut away perspective partial view of a third embodiment of the event complex with a displaceable stand in combination with a displaceable floor part;

Fig. 8 is a partly cut away perspective detail view of the slide elements and drive means which are used in the event complex of fig. 7;

Fig. 9 shows a cross-sectional view of a detail of the retractable drive means and guide means of the stand as depicted in fig. 8;

Fig. 10 shows a cross-sectional detail view according to the arrow X in fig. 7;

Fig. 11 shows a cross-sectional perspective detail view according to the arrow XI in fig. 7;

Fig. 12 is a partly cut away perspective view showing schematically a fourth embodiment of the event complex according to the invention;

Fig. 13 is a view corresponding to fig. 8 of an embodiment of the event complex having alternative guide means; and

Fig. 14 is a cross-sectional view of a stand having a plurality of slide elements.

[0011] An event complex 1 (fig. 1) comprises an event surface 2, in the shown example a football field, and a plurality of stands 3 wholly or partially enclosing this event surface 2. The stands consist herein of a number of fixed stands 4, in this case placed substantially in a U-shape and a stand 5 which is displaceable as according to arrow D relative to event surface 2. By moving the stand 5 in the direction of the stand located opposite a so-called arena arrangement is obtained which is particularly suitable for small-scale events. Such an arrangement ensures that all spectators have a good view of the event, also in the case of small-scale events such as for instance a boxing match or the like. Conversely, by moving stand 5 away from the stand located opposite the event complex is made suitable for large-scale events such as for instance circus performances or exhibitions. The opening formed by displacing stand 5 herein provides access for large units such as circus material, boats for exhibition and the like. Fig. 2 and 3 show the displaceable stand respectively in its position 5" slid fully outward for special events to be held in stadium 3 and its position 5' slid fully inward for smaller-scale events.

[0012] In a second embodiment of the event complex 21 (fig. 4) the stands 23 consists of two substantially U-shaped main stands 25' slidable toward each other according to arrows D1, D2 and two intermediate stands 24 slidable away from each other according to arrows D3 and D4. In this manner a comparatively small stadium is also obtained which, because both U-shaped stands 25 are moved against each other, moreover has more usable places than when only a part of the stand is displaced inward. In addition, the outward displaced stands 24' could serve as stand for smaller events taking place outside stadium 21.

[0013] The stand 5 is slidable over a ground 6 located outside the actual event surface 2, respectively 22. Arranged for this purpose between the ground 6 and a base 7 of the slidable stand 5 are slide elements 8 (fig. 5) which are manufactured from or at least coated with a material with low friction, such as for instance polytetrafluoroethylene (PTFE, known under the brand name Teflon). Each slide element 8 co-acts with a stainless steel slide track 9 which can be embedded in a strip of epoxy cement set into the ground 6 (fig. 5) or in the base 7 of the displaceable stand 5 (fig. 6). In the variant shown in fig. 5 a metal strip 11 in a rubber sleeve 12 is arranged in the base 7 of the displaceable stand 5, to which sleeve the slide element 8 is fixed. Herein the slide elements 8 are separate elements which can be removed after shifting of stand part 5 in order to keep the ground 6 also free of obstacles. Such separate slide elements could of course also be placed without problem on the event surface 2 itself.

[0014] In a third embodiment of the invention not only is a stand 35 of the event complex 31 displaceable (fig. 7) but also a floor part 42 arranged on event surface 32. The stand 35 is herein displaceable over an edge 36 which surrounds the event surface 32, while floor part 42 is displaceable over the event surface 32 itself. Stand 35 is formed by a bridge construction 40 suspended with posts 39 between two staircases 34 and embodied as a framework. Posts 39 are herein further connected by beams 41. The stand construction 35 is arranged on two base parts or supports 37 which are placed under the staircases 34 and which are displaceable over edges 36 with interposing of the slide elements 38. For displacement of stand 35 retractable first drive means 47 are further arranged which co-act with push-off points or recesses 48 arranged in the foot of edge 36. In order to ensure an even displacement of stand 35 guide means 76 are further arranged which likewise co-act with edge 36 and which for instance prevent possible tilting of stand 35. The displaceable floor part 42, which consists of a concrete tray 43 and a playing or sports field 44 accommodated therein, is displaceable over the slide elements 45 by second drive means 46 which are arranged in recesses 66 on the side of tray 43 and which likewise co-act with the push-off recesses 48 arranged in the edge 36.

[0015] The slide elements 38 and 45 are each formed in this embodiment by an endless belt which is guided over reversing rollers 49 respectively 50 (fig. 8, 10), and the transporting part of which is located respectively between the base 37 of stand 35 and edge 36 and between the floor part 42 and the event surface 32. The return part is herein carried through a guide path 51 respectively 52 arranged in the base 37 of stand 35 respective-

ly in the bottom of the tray 43 of the slidable floor part 42. The reversing rollers 49 respectively 50 are rotatable round a shaft 55 respectively 56 arranged in a guide frame 57 respectively 58. Guide frame 57, 58 is spring-mounted and is mounted pivotally on the base 37 respectively the tray 43 at pivot points 53 respectively 93. Arranged in this frame are brush heads 59 respectively 60 for the purpose of keeping slide elements 38 respectively 45 free of contamination. A spray nozzle 61 is furthermore present from which a silicone liquid is dripped onto slide elements 38 respectively 45 to further reduce the resistance thereof. A brush 62 is also present to keep the ground 36 respectively 38 for the slide elements 38 respectively 45 free of contamination. The spray nozzle 61 and the brush 62 are omitted in fig. 8 for the sake of clarity of the illustration. An additional guide roller 63 is further arranged in tray 43 in order to limit the construction height as far as possible and still enable use of a relatively large reversing roller 50. The slide elements 38 respectively 45 further co-act with stainless steel slide tracks 64 respectively 65 which are arranged on the underside of the support 37 and the tray 43 respectively. Due to this arrangement the stand 35 and the floor part 42 are in fact self-propelling over the ground 36 respectively the event surface 32. The event surface 32 and the ground 36 can therefore be manufactured in simple manner from smoothly finished concrete without for instance slide plates having to be cast therein. The slide elements as shown in fig. 5 and 6 could of course also be applied in this embodiment of the event complex, wherein use would then in any case have to be made of separate slide elements 8 for the floor part 42.

[0016] In case the stand 35 or the floor part 42 only need to be slidable along a straight line, it is possible to use endless belts 38, 45 extending over substantially the entire length of the stand 35, or the floor part 42 respectively. If on the other hand, it is desirable for the stand or the floor part to be able to perform a nonlinear movement, for instance a pivoting movement, use is preferably made of a plurality of relatively short length belts 138 or 145 respectively, which are arranged behind one another in the direction of sliding, and which might be constructed such as to be somewhat displaceable or pivotable perpendicular to the direction of sliding (fig. 14). Thus, a greater freedom of displacement is obtained so that the event complex may for instance be transformed from a football stadium into a baseball stadium.

[0017] The means 46 for driving floor part 42 comprise a plurality of piston/cylinder combinations 67 which are arranged in the recesses 66 on the side of tray 43 and which are movable and displaceable in a horizontal plane and which co-act with the push-off recesses 48 in the edge 36. For this purpose the piston/cylinder combinations 67 are provided on the free outer end of their piston 68 with a push-off part which can be placed against an end wall of the push-off recesses 48 and can push off thereagainst. By now moving the piston 68 of piston/cylinder combination 67 outward the floor part 42 is displaced along the edges 36. Each time a piston 68 reaches the end of its stroke it can be retracted again and the main piston/cylinder combination 67 can then be pressed by an auxiliary piston/cylinder combination 69 into a following push-off recess 48. Floor part 42 has a plurality of such sets of piston/cylinder combinations 67, 69 which are fixed to floor part 42 in two opposing directions in order to enable a displacement of floor part 42 in two directions. Floor part 42 is further provided with guide means arranged on its corners in the form of wheel sets 70 which run along the edges 36 and thus ensure an even movement of floor part 42.

[0018] In similar manner the displaceable stand 35 is provided with drive means, likewise in the form of main piston/cylinder combinations 71 and auxiliary piston/cylinder combinations 72 (fig. 8). These piston/cylinder combinations 71 co-act with the same push-off recesses 48 as the piston/cylinder combinations 67 of floor part 42. For this purpose these piston/cylinder combinations 71 are accommodated in a retractable auxiliary frame 73 with a guide leg 75 which is suspended with cables 77 from a transverse beam 41 of stand 35 and which is displaceable up and downward by means of two winches 74 (fig. 9). In order to absorb the reactive forces occurring during displacement of stand 35 the supports 37 are each provided with ears 96 which co-act with a leg 95 of auxiliary frame 73 when this latter is lowered. Leg 95 and ears 96 are herein connected by a releasable locking pin 97. The auxiliary frame 73 further has supports 94 which rest against the support 37 in the lowered position.

[0019] As stated, the stand 35 also comprises guide means in the form of wheel sets 76 to ensure an even displacement thereof along edges 36. These wheel sets 76 are likewise retractable by means of a winch 78 and a cable 79, wherein the wheel set 76 is then pivoted upward round a pivot shaft 80 connected to the frame of stand 35. Locking of the wheel sets takes place in the same manner as the above described taking up of the reactive forces by means of ears and a detachable locking pin, which are not drawn here for the sake of clarity. In this manner the drive of stand 35 can be raised when floor part 42 must be displaced and the stand 35 can be displaced when floor part 42 is shifted by lowering the drive 47. Because both stand 35 and floor part 42 are self-sliding over the endless slide elements 38, 45 arranged therein and the driving takes place via push-off recesses arranged in the side wall of the standing edge 36, after displacing of stand 35 or floor part 42 there remains an event surface 32 with edge 36 which is wholly free of obstacles. The utility of the event surface 32 and therewith the whole event complex is hereby greatly increased.

[0020] In lieu of guide means in the form of wheel sets 70, 76 it is of course also possible to use a guide system with which there is no direct contact between the guide

means and the guide track or edge co-acting therewith. This may be important in case there is no room for placing such a guide edge. In that case, an electronic guide system may for instance be used, in which the position of the movable floor part 42 or the movable stand 35 vis-à-vis a reference plane or line is determined by means of sensors 170, 176, and the drive means 46, 71 and 72 respectively are controlled on the basis of the position thus determined, so as to be able to carry out corrective action if necessary (fig. 13). When for instance the floor part 42 or the stand 35 should tend to tilt, the drive cylinders 67 and 71 respectively on both sides may thus make varying strokes, whereby the floor part 42 or the stand 35 is again precisely aligned. Instead of the distance measuring sensors 170, 176 as shown, it is of course also possible to use a guide system on the basis of for instance laser beams directed in the direction of movement, which are interrupted in case of diversions from the intended direction of displacement, whereby a correcting control signal is generated.

[0021] In a fourth embodiment of the event complex 81 (fig. 12), which takes a fully covered form, the slidable stand 85 is considerably smaller than the surrounding fixed stans 84. A projection screen 86 is for instance arranged herein above the displaceable stand 85. In this embodiment the stand 85 is slidable not only inward but also outward, whereby a large opening 87 is created in the wall of complex 81. The complex hereby becomes suitable for use as for instance circus. Since in the outward displaced position the stand 85 no longer contributes toward absorbing the structural loads resulting for instance from the weight of the roof 88, a support construction 89 is arranged round the opening 87 formed by two portals 90 leaning against each other. In this embodiment the stand 85 can also serve in its outward displaced position as small stand for events outside complex 81.

[0022] Due to the above described option of displacing a stand 5, 25, 35, 85, optionally in combination with displacing a floor part 42, 82, a very flexible event complex is obtained which lends itself for very varying events and can therefore be operated in economically responsible manner.

[0023] Although in the foregoing the displaceable stand in combination with the displaceable floor part is described as being slidable over for instance slide elements, it will be apparent to the skilled person that in principle all kinds of other displacement options may be deemed suitable for the floor part. The floor part could be embodied for displacement in for instance vertical instead of horizontal direction, as described for instance in the Belgian patent application 9200094. It will further be apparent to the skilled person that the drive means, guide means and slide elements described here may also be suitable for other applications. Envisaged here for instance is the transport of very heavy construction parts on a building site.

Claims

1. Event complex (1;21;31;81) provided with at least one event surface (2;22;32;82;132) and one or more stands at least partially surrounding the event surface (2;22;32;82;132), at least one (5;25;35;85;135) of which stands is slidable relative to the event surface (2;22;32;82;132) over slide elements (8;38;138) arranged between the stand (5;25;35;135) and a ground (6;36;136) and at least during sliding having low friction, **characterized in that** the slide elements (8;38;138 comprise a material with low friction, like e.g. polytetrafluoroethylene, and in that each slide element (38;138) forms an endless belt which is guided over reversing rollers (49;149) and a transporting part of which is located between the stand (35;135) and the ground (36;136) and a return part of which is guided through the stand (35;135) or the ground (36:136).

2. Event complex (1;21;31;81) as claimed in claim 1, **characterized in that** the stand (35;135) or the ground (36;136) has at least one guide path (51) for the return part coated with a material with low friction.

3. Event complex (1;21;31;81) as claimed in claims 1 or 2, **characterized in that** the slide elements (38;138) comprise at least a slide layer of polytetrafluoroethylene.

4. Event complex (1;21;31;81) as claimed in any of the foregoing claims, **characterized by** slide tracks (65) manufactured from a wear-resistant material and co-acting with the slide elements (38;138).

5. Event complex (1;21;31;81) as claimed in claim 4, **characterized in that** the slide tracks (65) are manufactured from stainless steel.

6. Event complex (1;21;31;81) as claimed in any of the foregoing claims, **characterized by** first drive means (47) arranged between the displaceable stand (35) and the ground (36) and formed by at least one piston/cylinder combination (71) mounted on the stand (35) or the ground (36) and a plurality of push-off points (48) connected to the ground (36) or the stand (35), co-acting with the free outer end of the pistons (71) and arranged with interspaces in the displacement direction.

7. Event complex (1;21;31;81) as claimed in claim 6, **characterized in that** the at least one piston/cylinder combination (71) is mounted on the stand (35) and the push-off points (48) are formed by recesses arranged in the ground (36).

8. Event complex (1;21;31;81) as claimed in claim 6

or 7, **characterized by** guide means (76) controllably connected with the first drive means (47).

9. Event complex (1;21;31;81) as claimed in any of the foregoing claims, **characterized in that** the stand (5;25;35;85;135) is displaceable away from the stand located opposite to a position outside the periphery defined by the fixed stands (4;24;84).

10. Event complex (1;21;31;81) as claimed in any of the foregoing claims, **characterized in that** the stand (5;25;35;85;135) is displaceable in the direction of the stand located opposite.

11. Event complex (1;21;31;81) as claimed in any of the foregoing claims, **characterized in that** the stand (5;25;35;85;135) is pivotable.

12. Event complex (1;21;31;81) as claimed in any of the foregoing claims, **characterized by** at least one floor part (42;142) arranged on the event surface (32;132) and displaceable relative to the fixed stand parts.

13. Event complex (1;21;31;81) as claimed in claim 12, **characterized in that** the at least one floor part (42; 142) forms a sports field (44).

14. Event complex (1;21;31;81) as claimed in claim 12 or 13, **characterized in that** the floor part (42;142) is slidable over slide elements (45;145) arranged between the floor part (42;142) and the event surface (32;132) and comprising a material with low friction, like e.g. polytetrafluoroethylene.

15. Event complex (1;21;31;81) as claimed in claim 14, **characterized in that** each slide element (45;145) forms an endless belt which is guided over reversing rollers (50;150) and a transporting part of which is located between the floor part (42;142) and the event surface (32;132) and a return part of which is guided through the floor part (42;142) or the event surface (32;132).

16. Event complex (1;21;31;81) as claimed in any of the claims 12-15, **characterized by** second drive means (46) arranged between the floor part (42) and the event surface (32) and formed by at least one piston/cylinder combination (67,68) mounted on the floor part (42) or the event surface (32) and a plurality of push-off points (48) connected to the event surface (32) or the floor part (42), co-acting with the free outer end of the piston (68) and arranged with interspaces in the displacement direction.

17. Event complex (1;21;31;81) as claimed in claim 16, **characterized in that** the at least one piston/cylinder combination (67,68) is mounted on the floor part (42) and the push-off points (48) are formed by recesses arranged in the ground (36) located outside the event surface (32).

18. Event complex (1;21;31;81) as claimed in claim 16 or 17, **characterized by** guide means (70) controllably connected to the second drive means (46).

19. Event complex (1;21;31;81) as claimed in claims 7 and 17 or 18, **characterized in that** either the piston/cylinder combination (71;67,68) fixed to the stand (35) or fixed to the floor part (42) is retractable and both piston/cylinder combinations (71;67,68) co-act with the same set of recesses (48) in the ground (36).

20. Event complex (1;21;31;81) as claimed in claim 12 or 13, **characterized in that** the floor part (42) is displaceable in vertical direction with respect to the event surface (32).

21. Slide element (38;45;138;145) evidently intended for use in an event complex (1;21;31;81) as claimed in one or more of the foregoing claims.

22. Drive means (46;47) evidently intended for use in an event complex (1;21;31;81) as claimed in one or more of the claims 1-20.

Patentansprüche

1. Veranstaltungskomplex (1; 21; 31; 81), der mit zumindest einer Veranstaltungsfläche (2; 22; 32; 82; 132) sowie mit einer oder mehreren Tribünen versehen ist, die die Veranstaltungsfläche (2; 22; 32; 82; 132) zumindest teilweise umgeben, wobei zumindest eine Tribüne (5; 25; 35; 85; 135) der betreffenden Tribünen relativ zu der Veranstaltungsfläche (2; 22; 32; 82; 132) über Gleitelemente (8; 38; 138) verschiebbar ist, die zwischen der Tribüne (5; 25; 35; 135) und einem Boden (6; 36; 136) angeordnet sind und die zumindest während des Verschiebens bzw. Gleitens eine geringe Reibung aufweisen, **dadurch gekennzeichnet**, dass die Gleitelemente (8; 38; 138) ein Material mit geringer Reibung, wie beispielsweise Polytetrafluoräthylen, aufweisen
und dass jedes Gleitelement (38; 138) ein endloses Band bildet, welches über Umkehrrollen (49; 149) geführt ist und von dem ein Transportteil zwischen der Tribüne (35; 135) und dem Boden (36; 136) liegt und von dem ein Rückführteil durch die Tribüne (35; 135) oder den Boden (36; 136) geführt ist.

2. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 1, **dadurch gekennzeichnet**, dass die Tribüne (35; 135) oder der Boden (36; 136) zumindest

eine Führungsbahn (51) für den Rückführteil aufweist, die mit einem Material mit geringer Reibung überzogen ist.

3. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 1 oder 2, **dadurch gekennzeichnet**, dass die Gleitelemente (38; 138) zumindest eine Gleitschicht aus Polytetrafluoräthylen aufweisen.

4. Veranstaltungskomplex (1; 21; 31; 81) nach irgendeinem der vorhergehenden Ansprüche, **dadurch gekennzeichnet,** dass Gleitschienen (65) vorgesehen sind, die aus einem verschleißfesten Material hergestellt sind und die mit den Gleitelementen (38; 138) zusammenwirken.

5. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 4, **dadurch gekennzeichnet**, dass die Gleitschienen (65) aus rostfreiem Stahl hergestellt sind.

6. Veranstaltungskomplex (1; 21; 31; 81) nach irgendeinem der vorhergehenden Ansprüche, **dadurch gekennzeichnet,** dass erste Antriebseinrichtungen (47) vorgesehen sind, die zwischen der verschiebbaren Tribüne (35) und dem Boden (36) angeordnet sind und die durch zumindest eine Kolben-/Zylinderkombination (71), die an der Tribüne (35) oder auf dem Boden (36) angeordnet ist, und eine Vielzahl von Abdrückpunkten (48) gebildet ist, die mit dem Boden (36) oder der Tribüne (35) verbunden sind, und die mit dem freien äußeren Ende der Kolben (71) zusammenwirken und mit Zwischenräumen in der Verschieberichtung angeordnet sind.

7. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 6, **dadurch gekennzeichnet**, dass zumindest eine Kolben-/Zylinderkombination (71) an der Tribüne (35) angebracht ist und dass die Abdrückpunkte (48) durch Ausnehmungen gebildet sind, die im Boden (36) angeordnet sind.

8. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 6 oder 7, **dadurch gekennzeichnet**, dass Führungseinrichtungen (76) vorgesehen sind, die steuerbar mit den ersten Antriebseinrichtungen (47) verbunden sind.

9. Veranstaltungskomplex (1; 21; 31; 81) nach irgendeinem der vorhergehenden Ansprüche, **dadurch gekennzeichnet,** dass die Tribüne (5; 25; 35; 85; 135) von der gegenüberliegenden Tribüne weg in eine Position außerhalb des Umfangs verschiebbar ist, der durch die festen Tribünen (4; 24; 84) festgelegt ist.

10. Veranstaltungskomplex (1; 21; 31; 81) nach irgendeinem der vorhergehenden Ansprüche, **dadurch gekennzeichnet,** dass die Tribüne (5; 25; 35; 85; 135) in Richtung der gegenüberliegenden Tribüne verschiebbar ist.

11. Veranstaltungskomplex (1; 21; 31; 81) nach irgendeinem der vorhergehenden Ansprüche, **dadurch gekennzeichnet,** dass die Tribüne (5; 25; 35; 85; 135) schwenkbar ist.

12. Veranstaltungskomplex (1; 21; 31; 81) nach irgendeinem der vorhergehenden Ansprüche, **dadurch gekennzeichnet,** dass zumindest ein Bodenteil (42; 142) auf der Veranstaltungsfläche (32; 132) angeordnet und relativ zu den festen Tribünenteilen verschiebbar ist.

13. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 12, **dadurch gekennzeichnet**, dass zumindest ein Bodenteil (42; 142) ein Sportfeld (44) bildet.

14. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 12 oder 13, **dadurch gekennzeichnet**, dass der Bodenteil (42; 142) über Gleitelemente (45; 145) verschiebbar ist, die zwischen dem Bodenteil (42; 142) und der Veranstaltungsfläche (32; 132) angeordnet sind und die ein Material geringer Reibung, wie beispielsweise Polytetrafluoräthylen, aufweisen.

15. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 14, **dadurch gekennzeichnet**, dass jedes Gleitelement (45; 145) ein endloses Band bildet, welches über Umkehrrollen (50; 150) geführt ist und von dem ein Transportteil zwischen dem Bodenteil (42; 142) und der Veranstaltungsfläche (32; 132) liegt und von dem ein Rückführteil durch den Bodenteil (42; 142) oder die Veranstaltungsfläche (32; 132) geführt ist.

16. Veranstaltungskomplex (1; 21; 31; 81) nach irgendeinem der Ansprüche 12 bis 15, **dadurch gekennzeichnet,** dass zweite Antriebseinrichtungen (46) zwischen dem Bodenteil (42) und der Veranstaltungsfläche (32) angeordnet und durch zumindest eine Kolben-/Zylinderkombination (67, 68) gebildet sind, die an dem Bodenteil (42) oder der Veranstaltungsfläche (32) angebracht ist, und eine Vielzahl von Abdrückpunkten (48) aufweist, die mit der Veranstaltungsfläche (32) oder dem Bodenteil (42) verbunden sind und die mit dem freien äußeren Ende des Kolbens (68) zusammenwirken und mit Zwischenräumen in der Verschieberichtung angeordnet sind.

17. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 16, **dadurch gekennzeichnet**, dass zumindest eine Kolben-/Zylinderkombination (67, 68) auf

bzw. an dem Bodenteil (42) angebracht ist und dass die Abdrückpunkte (48) durch Ausnehmungen gebildet sind, die im Boden (36) gebildet sind, der außerhalb der Veranstaltungsfläche (32) liegt.

18. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 16 oder 17, **dadurch gekennzeichnet**, dass Führungseinrichtungen (70) vorgesehen sind, die mit den zweiten Antriebseinrichtungen (46) steuerbar verbunden sind.

19. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 7 und 17 oder 18, **dadurch gekennzeichnet**, dass entweder die Kolben-/Zylinderkombination (71; 67; 68), die an der Tribüne (35) oder an dem Bodenteil (42) befestigt ist, rückziehbar ist und dass beide Kolben-/Zylinderkombinationen (71; 67; 68) mit demselben Satz von Ausnehmungen (48) im Boden (36) zusammenwirken.

20. Veranstaltungskomplex (1; 21; 31; 81) nach Anspruch 12 oder 13, **dadurch gekennzeichnet**, dass der Bodenteil (42) in vertikaler Richtung bezogen auf die Veranstaltungsfläche (32) verschiebbar ist.

21. Gleitelement (38; 35; 138; 145), welches offensichtlich vorgesehen ist für die Verwendung in einem Veranstaltungskomplex (1; 21; 31; 81) nach einem oder mehreren der vorhergehenden Ansprüche.

22. Antriebseinrichtung (46; 47), die offensichtlich vorgesehen ist für die Verwendung in einem Veranstaltungskomplex (1; 21; 31; 81) nach einem oder mehreren der Ansprüche 1 bis 20.

Revendications

1. Complexe pour manifestations (1 ; 21 ; 31 ; 81), pourvu d'au moins une surface pour manifestations (2 ; 22 ; 32 ; 82 ; 132) et d'une seule ou de plusieurs tribunes entourant au moins partiellement la surface pour manifestations (2 ; 22 ; 32 ; 82 ; 132), au moins l'une (5 ; 25 ; 35 ; 85 ; 135) desdites tribunes étant propre à glisser par rapport à la surface pour manifestations (2 ; 22 ; 32 ; 82 ; 132) sur des éléments de déplacement rectiligne (8 ; 38 ; 138) disposés entre la tribune (5 ; 25 ; 35 ; 135) et une infrastructure (6 ; 36 ; 136) et ayant, au moins pendant le coulissement, un faible frottement, caractérisé en ce que les éléments de déplacement rectiligne (8 ; 38 ; 138) comprennent un matériau à faible frottement, tel que, par exemple, du polytétrafluoréthylène, et en ce que chaque élément de déplacement rectiligne (38 ; 138) forme une courroie sans fin qui est guidée sur des galets inverseurs (49 ; 149), et dont une partie transport est située entre la tribune (35 ; 135) et l'infrastructure (36 ; 136), tandis que sa partie retour est guidée à travers la tribune (35 ; 135) ou à travers l'infrastructure (36 ; 136).

2. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 1, caractérisé en ce que la tribune (35 ; 135) ou l'infrastructure (36 ; 136) comporte au moins un chemin de guidage (51) pour la partie retour, revêtu d'un matériau à faible frottement.

3. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 1 ou 2, caractérisé en ce que les éléments de déplacement rectiligne (38 ; 138) comportent au moins une couche de glissement en polytétrafluoréthylène.

4. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon l'une quelconque des revendications précédentes, caractérisé par des chemins de glissement (65) fabriqués à partir d'un matériau résistant à l'usure et coopérant avec les éléments de déplacement rectiligne (38 ; 138).

5. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 4, caractérisé en ce que les chemins de glissement (65) sont fabriqués à partir d'acier inoxydable.

6. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon l'une quelconque des revendications précédentes, caractérisé par des premiers moyens d'entraînement (47), disposés entre la tribune mobile (35) et l'infrastructure (36), et constitués par au moins une combinaison de piston et de cylindre (71), montée sur la tribune (35) ou sur l'infrastructure (36), et par une pluralité de points de poussée (48), reliés à l'infrastructure (36) ou à la tribune (35) et coopérant avec l'extrémité extérieure libre des pistons (71) et disposés à intervalles dans la direction du déplacement.

7. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 6, caractérisé en ce que ladite au moins une combinaison de piston et de cylindre (71) est montée sur la tribune (35) et en ce que les points de poussée (48) sont formés par des évidements ménagés dans l'infrastructure (36).

8. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 6 ou 7, caractérisé par des moyens de guidage (76) reliés, de manière réglable, aux premiers moyens d'entraînement (47).

9. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon l'une quelconque des revendications précédentes, caractérisé en ce que la tribune (5 ; 25 ; 35 ;

85 ; 135) peut être déplacée pour s'éloigner de la tribune située en face, vers un emplacement à l'extérieur de la périphérie définie par les tribunes fixes (4 ; 24 ; 84).

10. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon l'une quelconque des revendications précédentes, caractérisé en ce que la tribune (5 ; 25 ; 35 ; 85 ; 135) peut être déplacée en direction de la tribune située en face.

11. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon l'une quelconque des revendications précédentes, caractérisé en ce que la tribune (5 ; 25 ; 35 ; 85 ; 135) est propre à pivoter.

12. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon l'une quelconque des revendications précédentes, caractérisé par au moins une partie formant sol (42 ; 142), placée sur la surface pour manifestations (32 ; 132) et propre à être déplacée par rapport aux parties formant tribunes fixes.

13. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 12, caractérisé en ce que ladite au moins une partie formant sol (42 ; 142) constitue un terrain de sport (44).

14. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 12 ou 13, caractérisé en ce que la partie formant sol (42 ; 142) peut glisser sur des éléments de déplacement rectiligne (45 ; 145) disposés entre la partie formant sol (42 ; 142) et la surface pour manifestations (32 ; 132), et comprenant un matériau à faible frottement, tel que, par exemple, du polytétrafluoréthylène.

15. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 14, caractérisé en ce que chaque élément de déplacement rectiligne (45 ; 145) forme une courroie sans fin qui est guidée sur des galets inverseurs (50 ; 150), et dont une partie transport est située entre la partie formant sol (42 ; 142) et la surface pour manifestations (32 ; 132), tandis que sa partie retour est guidée à travers la partie formant sol (42 ; 142) ou à travers la surface pour manifestations (32 ; 132).

16. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon l'une quelconque des revendications 12 à 15, caractérisé par des deuxièmes moyens d'entraînement (46), disposés entre la partie formant sol (42) et la surface pour manifestations (32), et constitués par au moins une combinaison de piston et de cylindre (67, 68), montée sur la partie formant sol (42) ou sur la surface pour manifestations (32), et par une pluralité de points de poussée (48), reliés à la surface pour manifestations (32) ou à la partie formant sol (42), et coopérant avec l'extrémité extérieure libre du piston (68) et disposés à intervalles dans la direction du déplacement.

17. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 16, caractérisé en ce que ladite au moins une combinaison de piston et de cylindre (67, 68) est montée sur la partie formant sol (42) et en ce que les points de poussée (48) sont formés par des évidements ménagés dans l'infrastructure (36), à l'extérieur de la surface pour manifestations (32).

18. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 16 ou 17, caractérisé par des moyens de guidage (70) reliés, de manière réglable, aux deuxièmes moyens d'entraînement (46).

19. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon les revendications 7 et 17 ou 18, caractérisé en ce que la combinaison de piston et de cylindre (71 ; 67, 68), soit fixée à la tribune (35) soit fixée à la partie formant sol (42) est rétractable et en ce que les deux combinaisons de piston et de cylindre (71 ; 67, 68) coopèrent avec le même jeu d'évidements (48) ménagés dans l'infrastructure (36).

20. Complexe pour manifestations (1 ; 21 ; 31 ; 81) selon la revendication 12 ou 13, caractérisé en ce que la partie formant sol (42) peut être déplacée dans le sens vertical par rapport à la surface pour manifestations (32).

21. Elément de déplacement rectiligne (38 ; 45 ; 138 ; 145) à l'évidence destiné à une utilisation dans un complexe pour manifestations (1 ; 21 ; 31; 81) selon une ou plusieurs des revendications précédentes.

22. Moyens d'entraînement (46 ; 47) à l'évidence destinés à une utilisation dans un complexe pour manifestations (1 ; 21 ; 31 ; 81) selon une ou plusieurs des revendications 1 à 20.

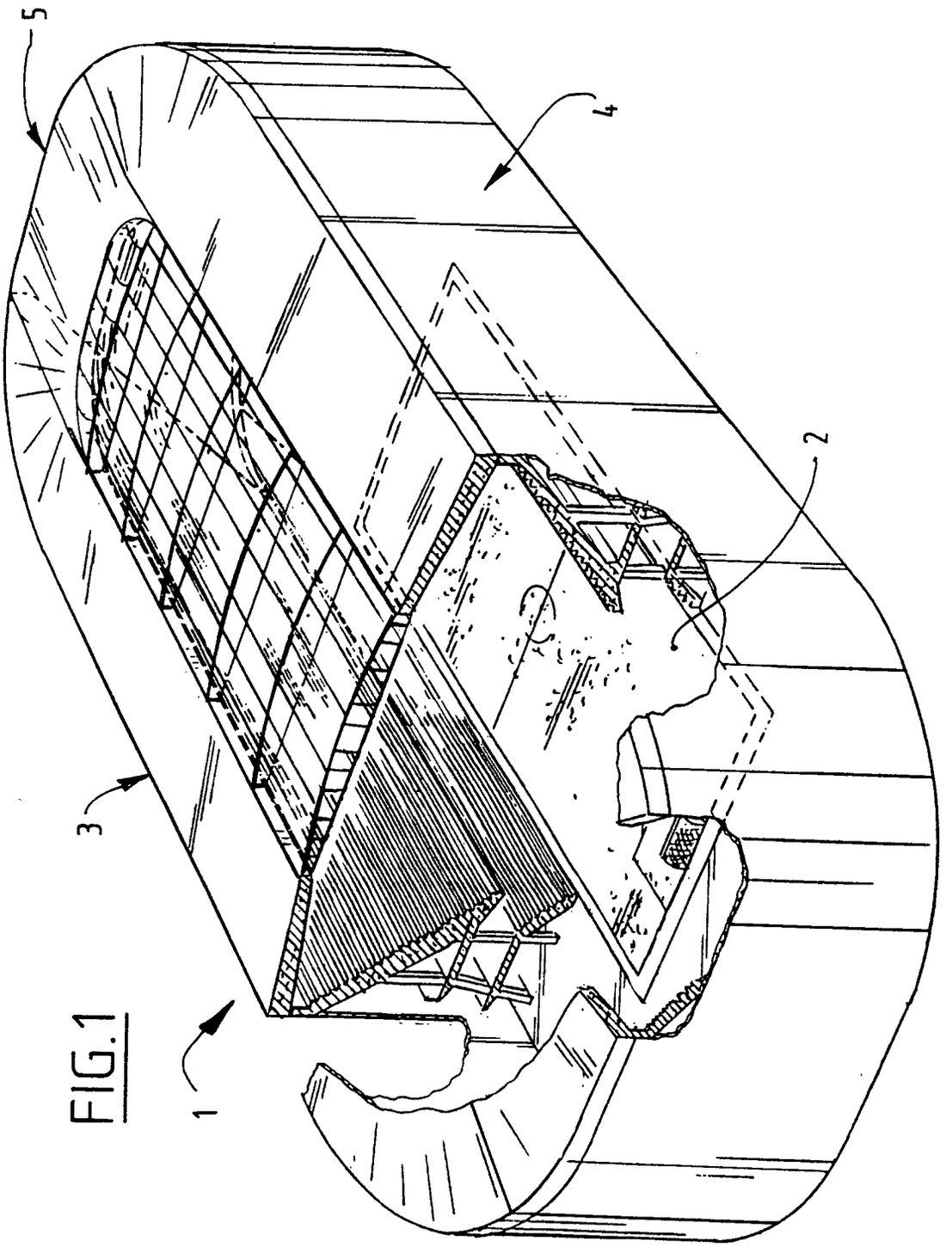

FIG.1

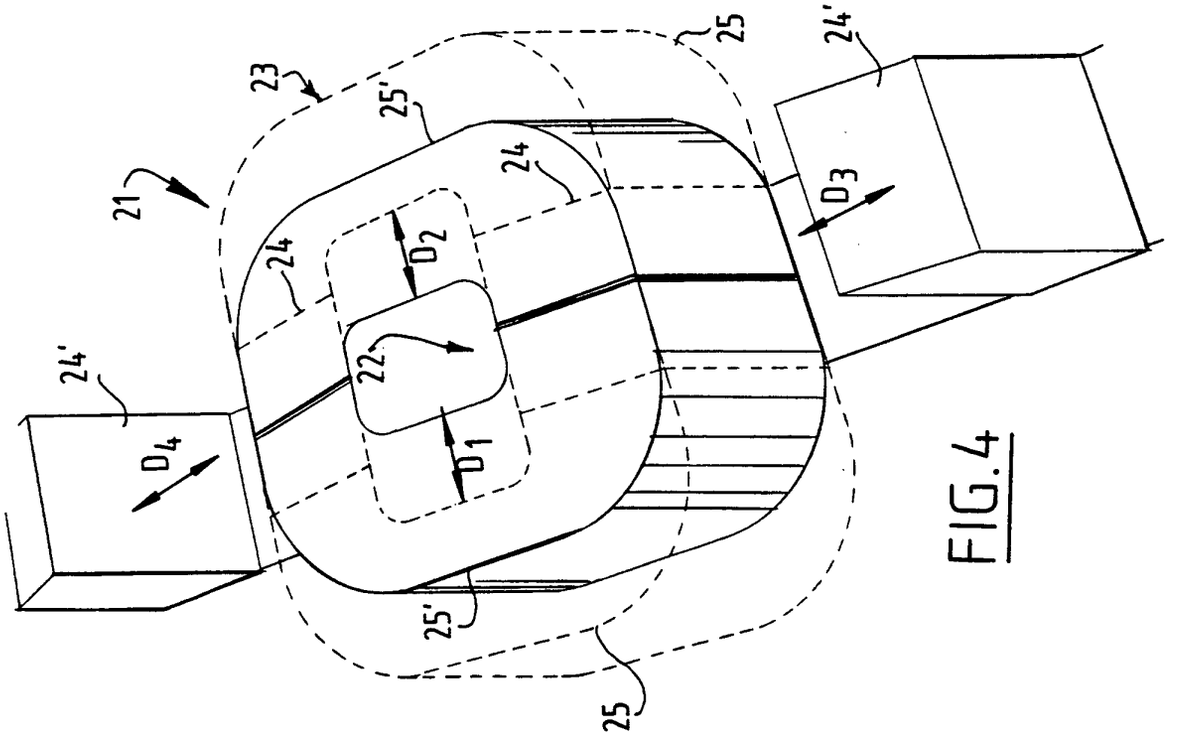

FIG.4

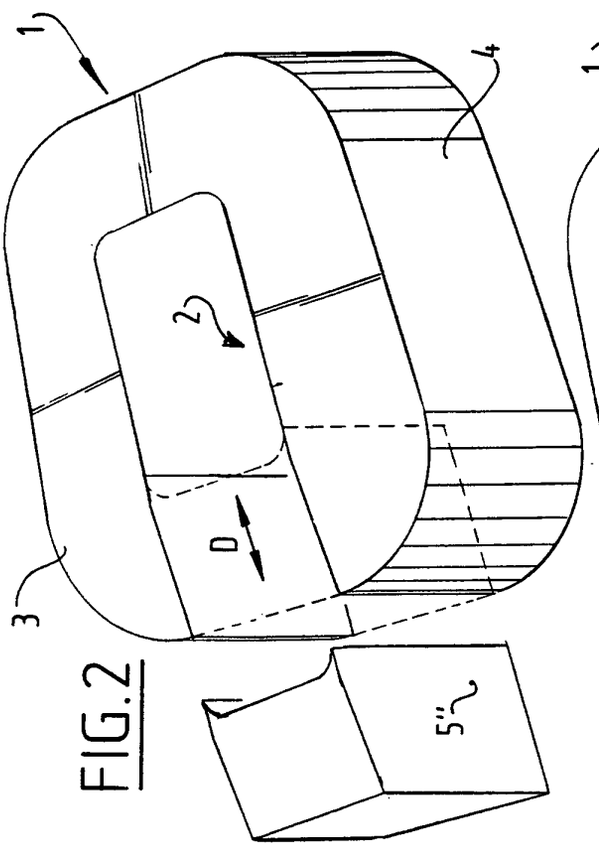

FIG.2

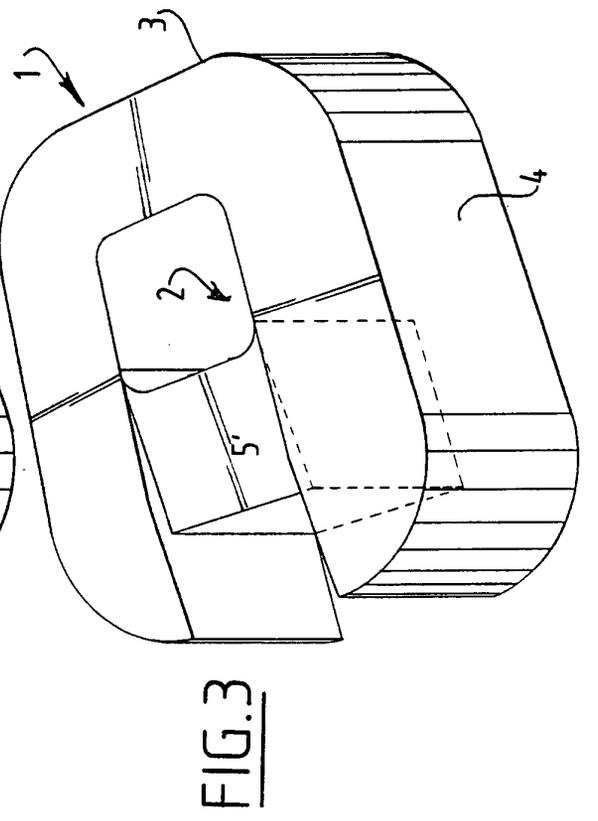

FIG.3

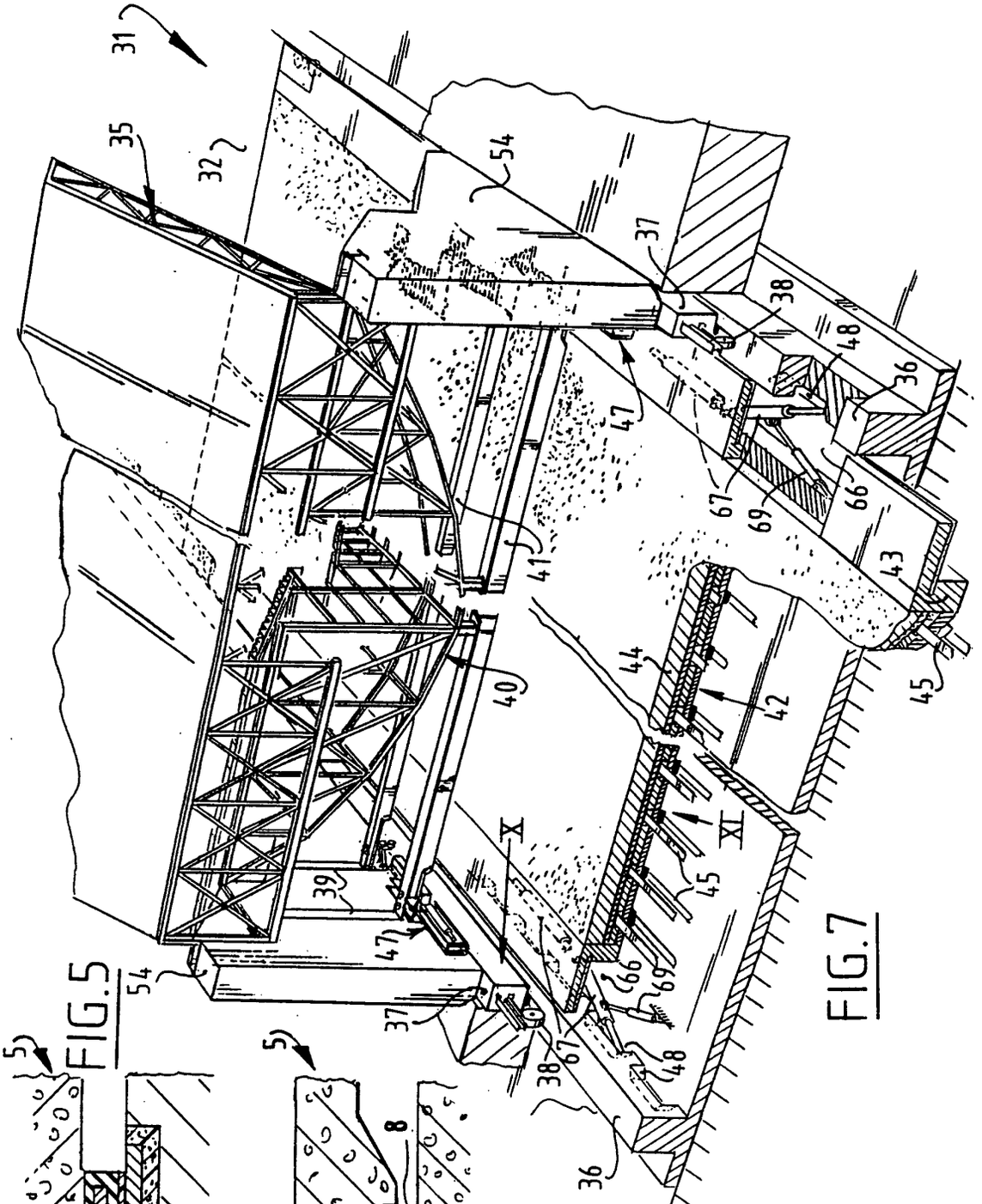

FIG.7

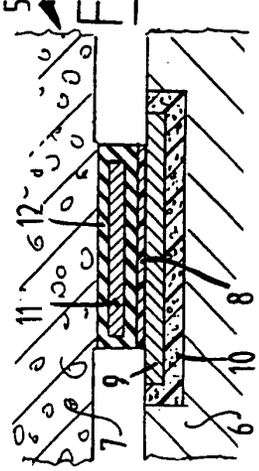

FIG.5

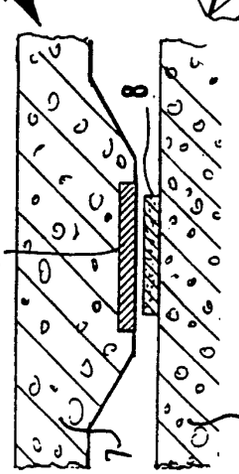

FIG.6

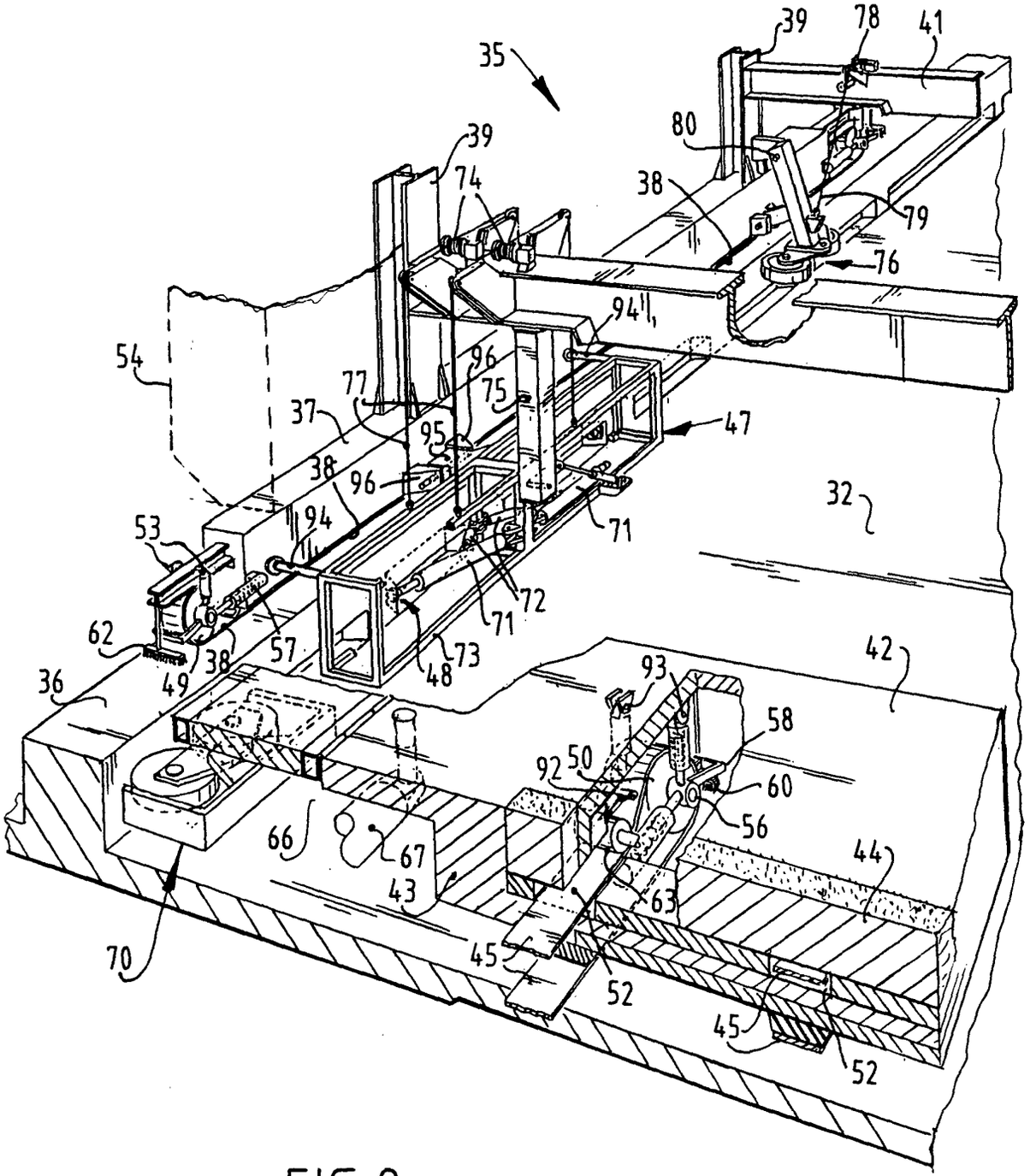
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FIG.8

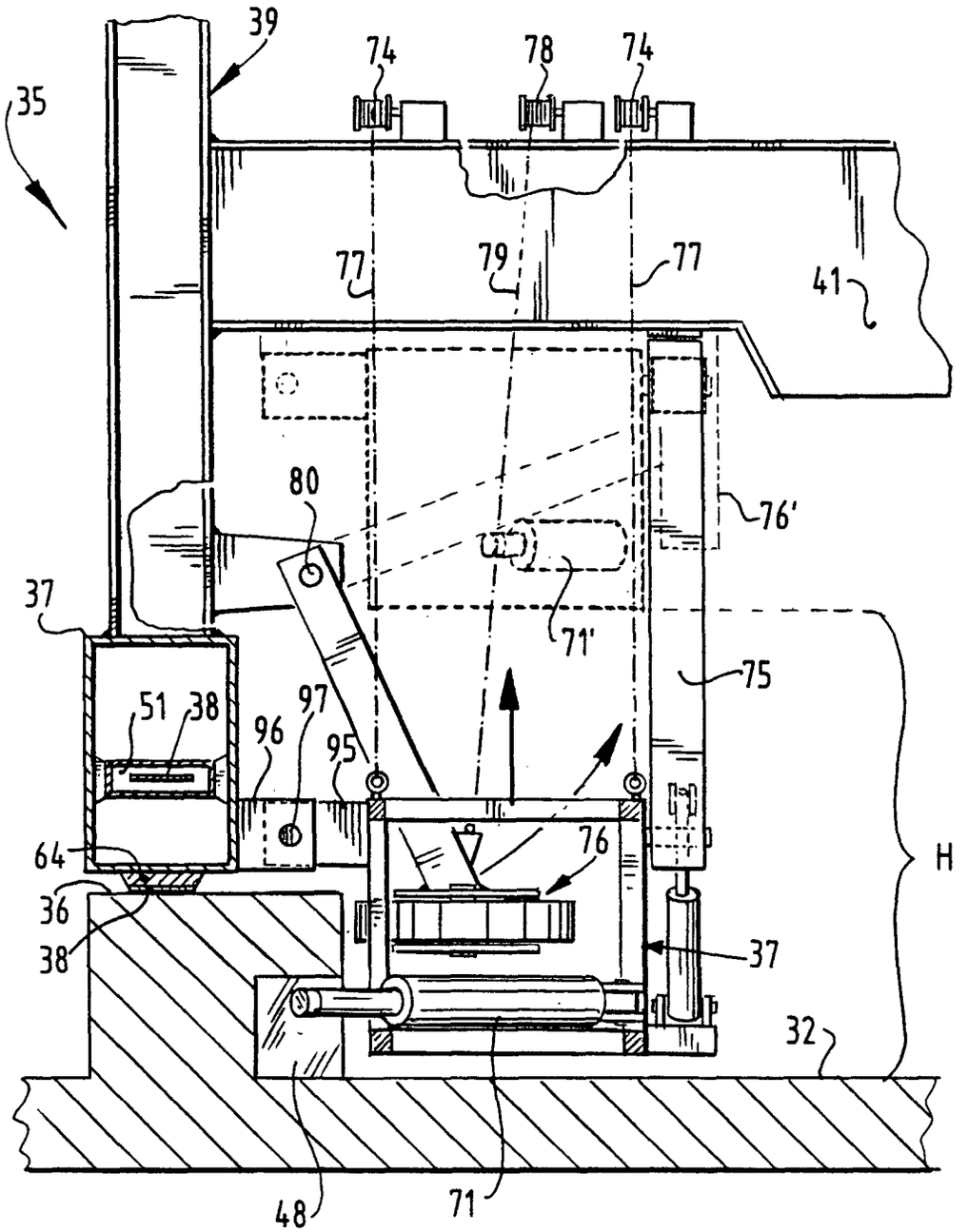
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FIG.9

FIG.10

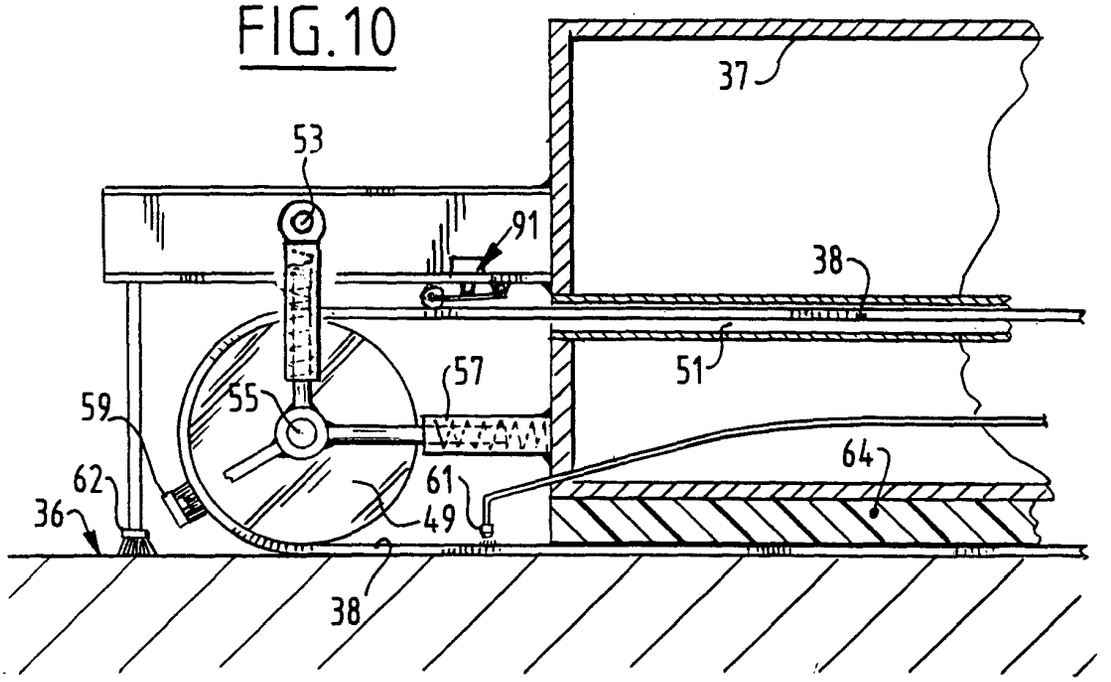
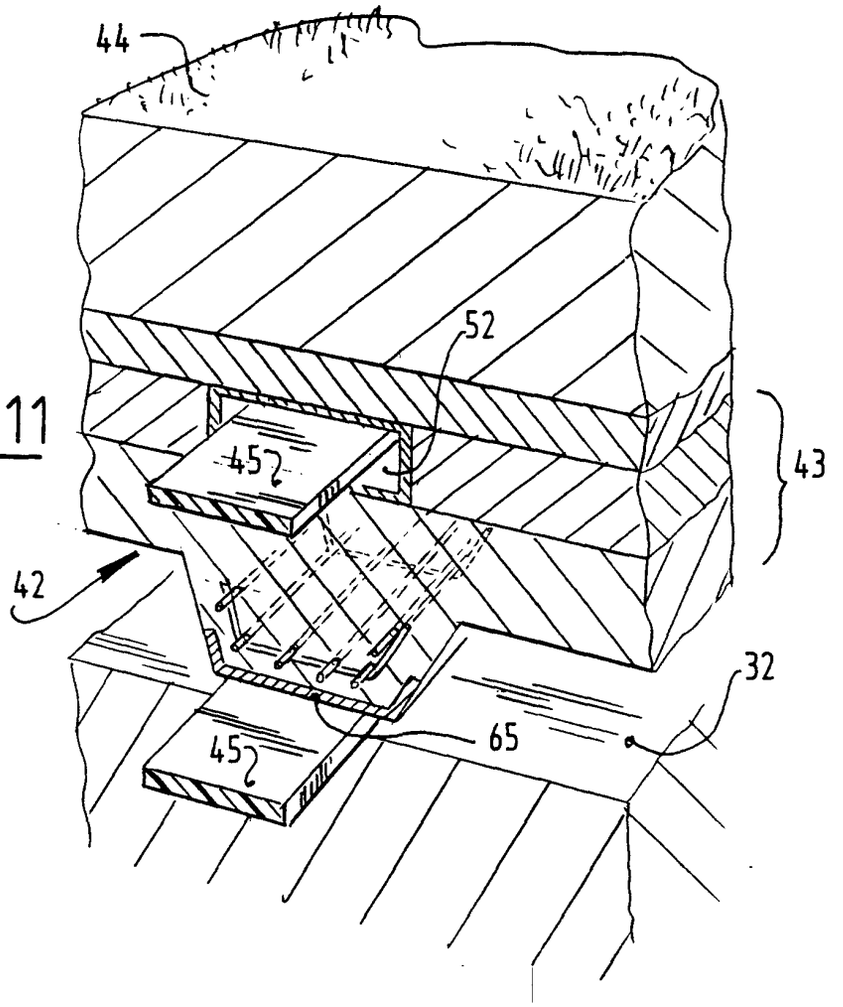


FIG.11



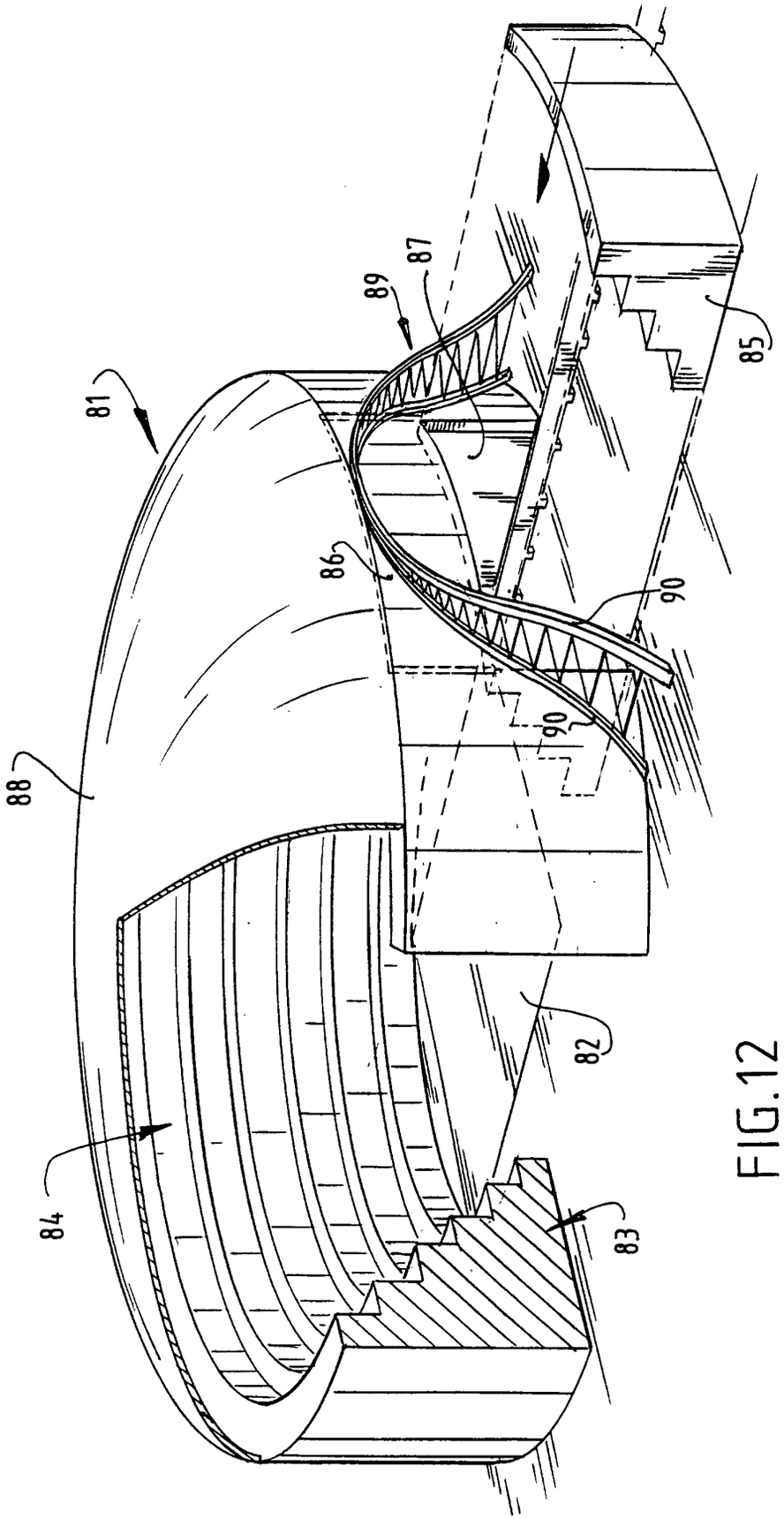


FIG.12

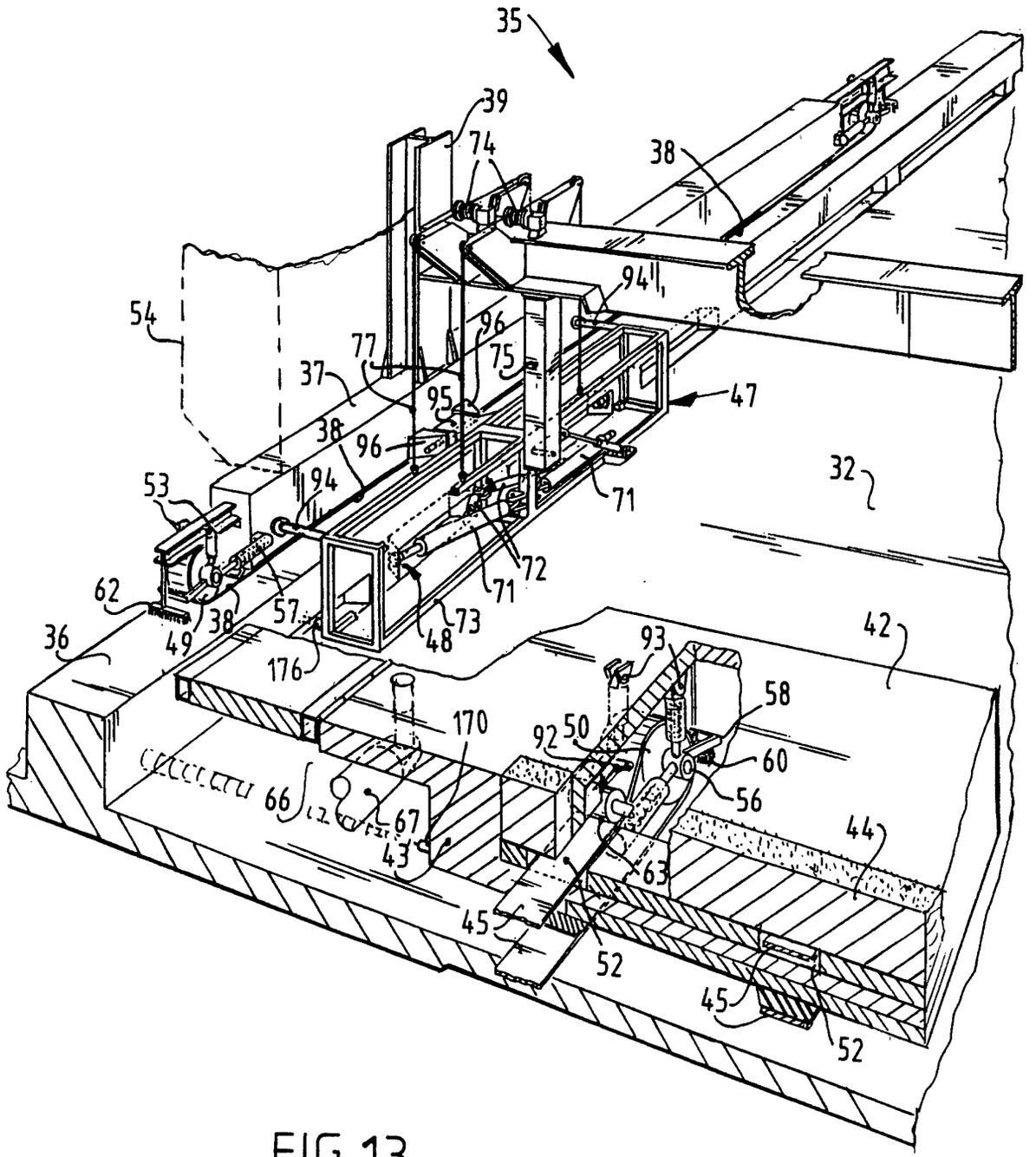

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FIG.13

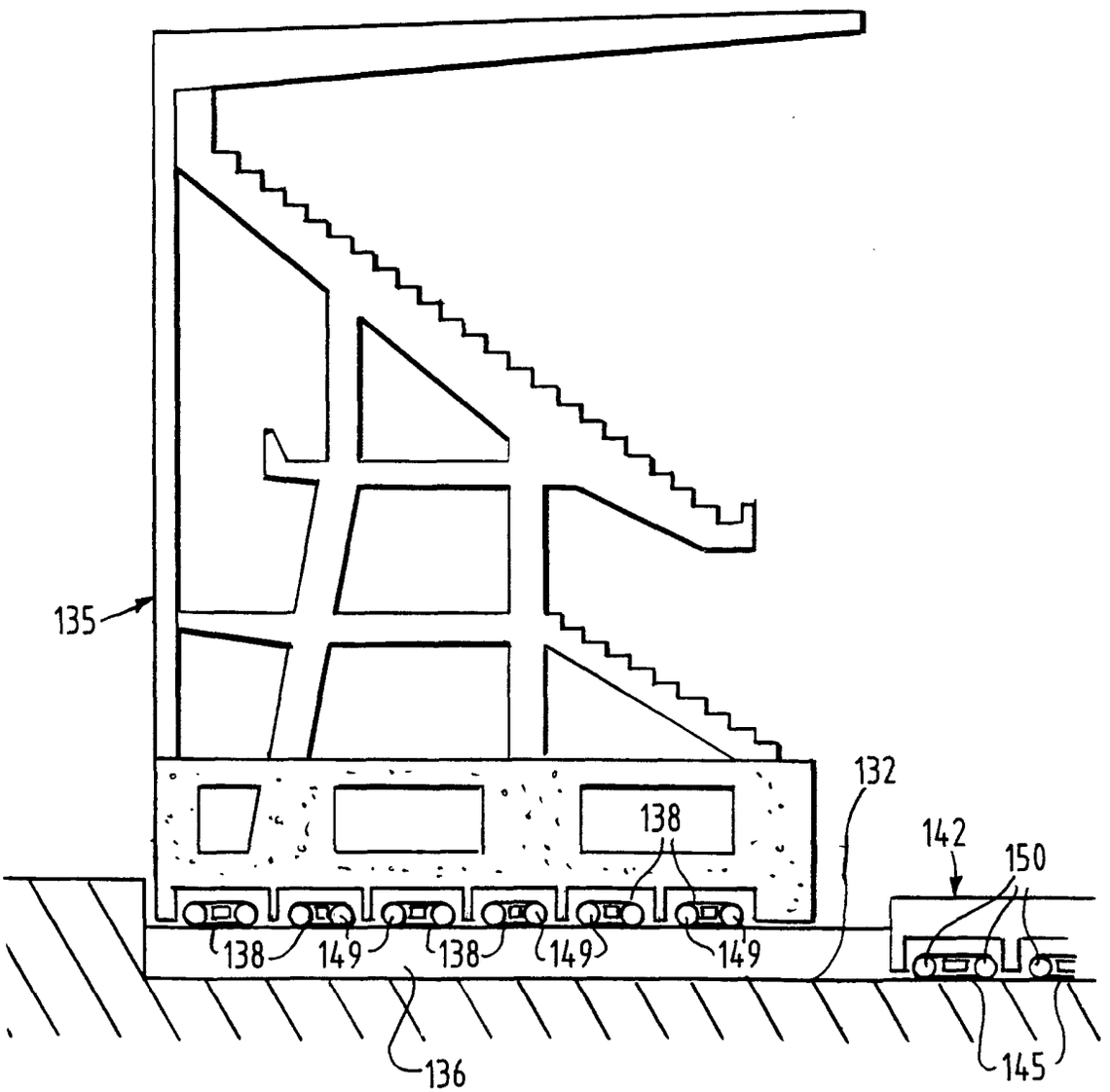

FIG.14