United States Patent

[11] 3,604,148

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[33] **Germany**
[31] **P 17 03 914.4**

[54] **TOY LAYOUTS FOR MODEL AIRCRAFT AND OTHER TOYS**
10 Claims, 32 Drawing Figs.

[52] **U.S. Cl.** **46/216**
[51] **Int. Cl.** **A63h 19/00**
[50] **Field of Search** 46/216

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Assistant Examiner—D. L. Weinhold
Attorney—Waters, Roditi, Schwartz & Nissen

ABSTRACT: The layout is assembled from a plurality of track sections each comprising a rail length and adapted to be twisted so that the assembled sections define a desired track or path of spatial movement of the aircraft or other toy, the latter having drive mechanism including a support wheel which engages a running face at one side of the track, and including also a guide element adapted to engage a guide face at the opposite side of the track, said guide element cooperating with the associated support wheel to hold the toy on the track during movement therealong.

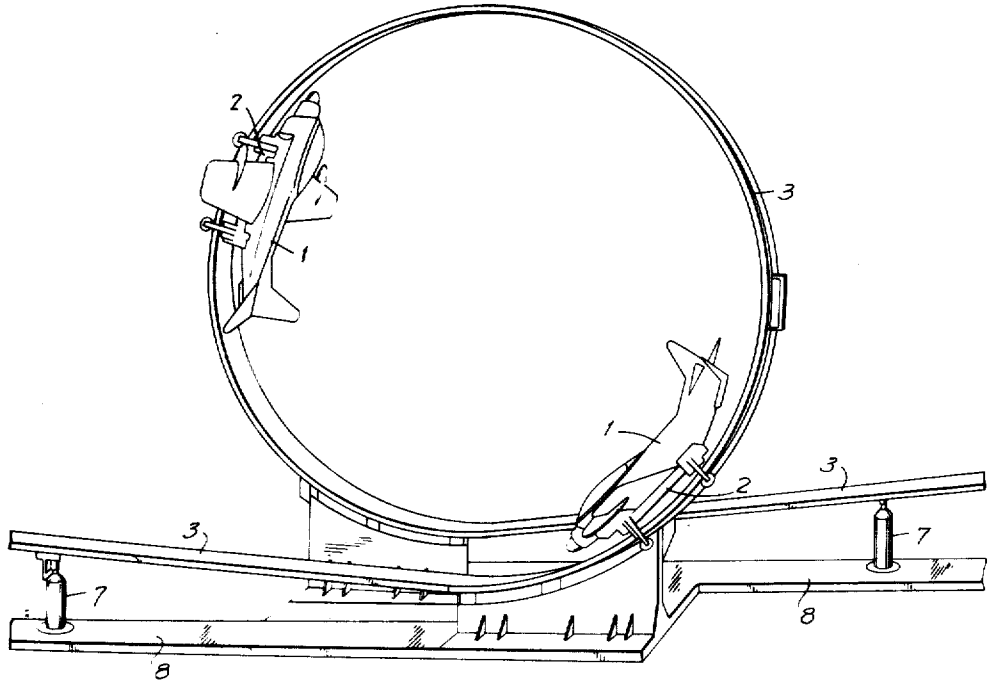


FIG. 1

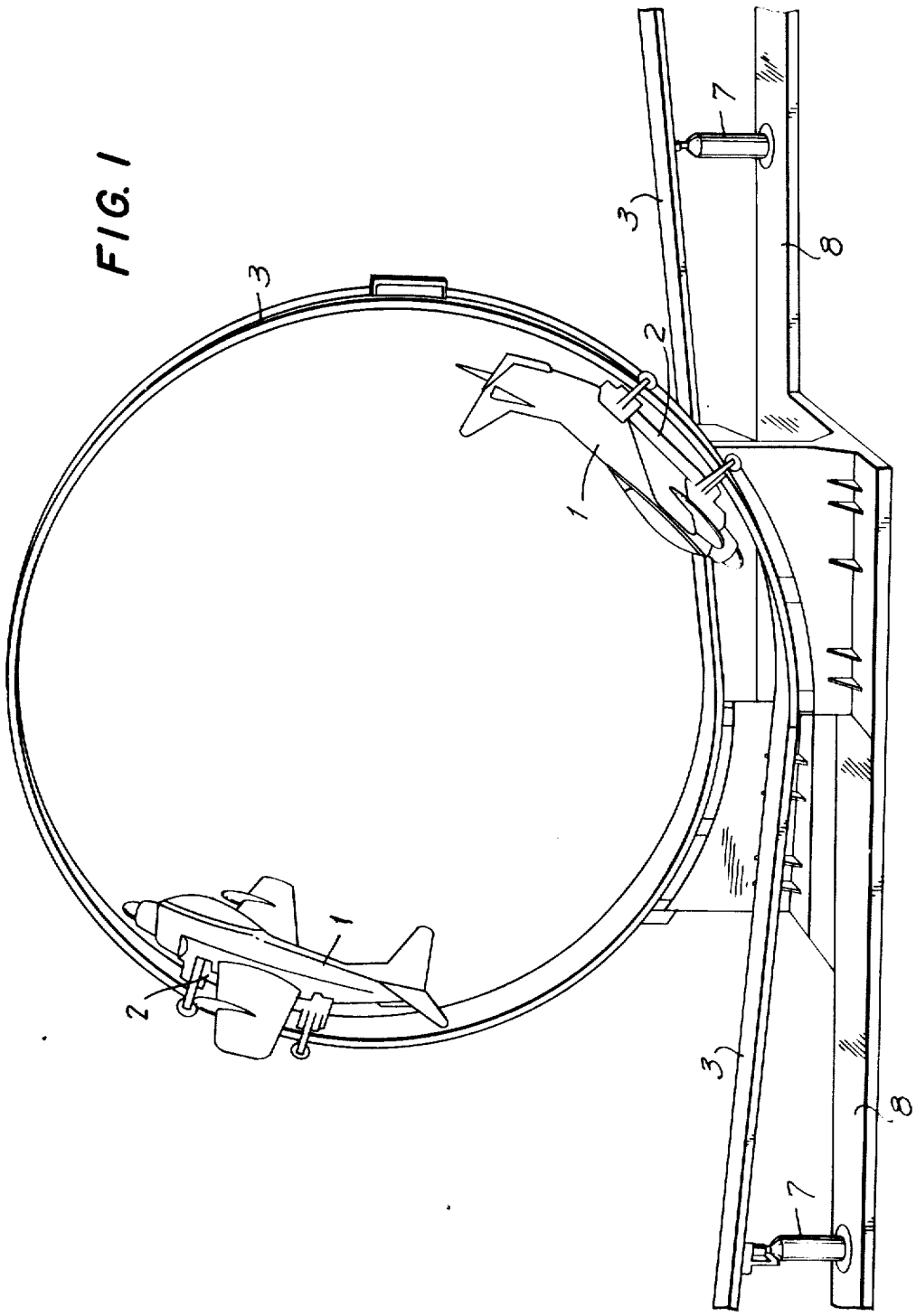
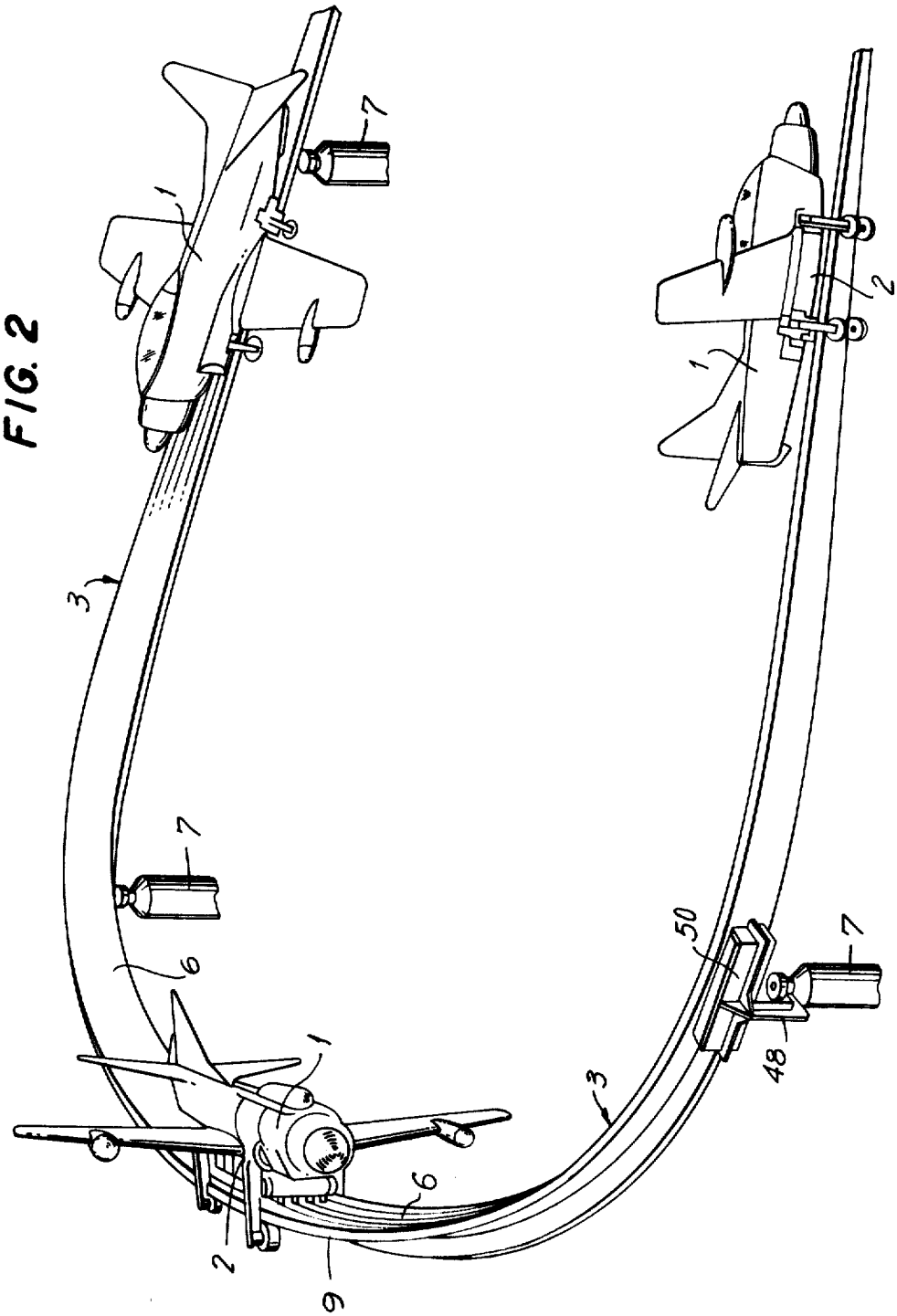


FIG. 2



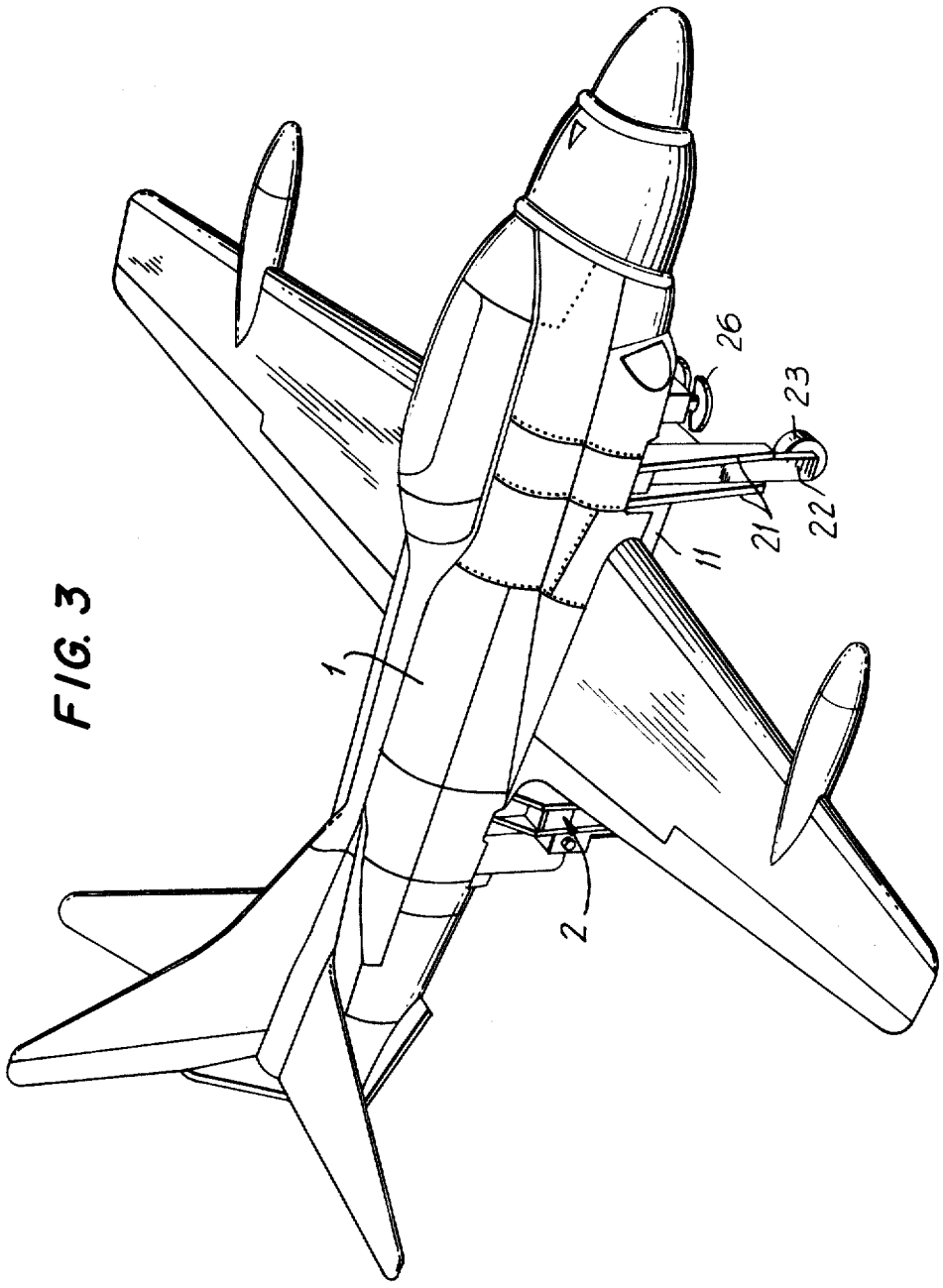


FIG. 3

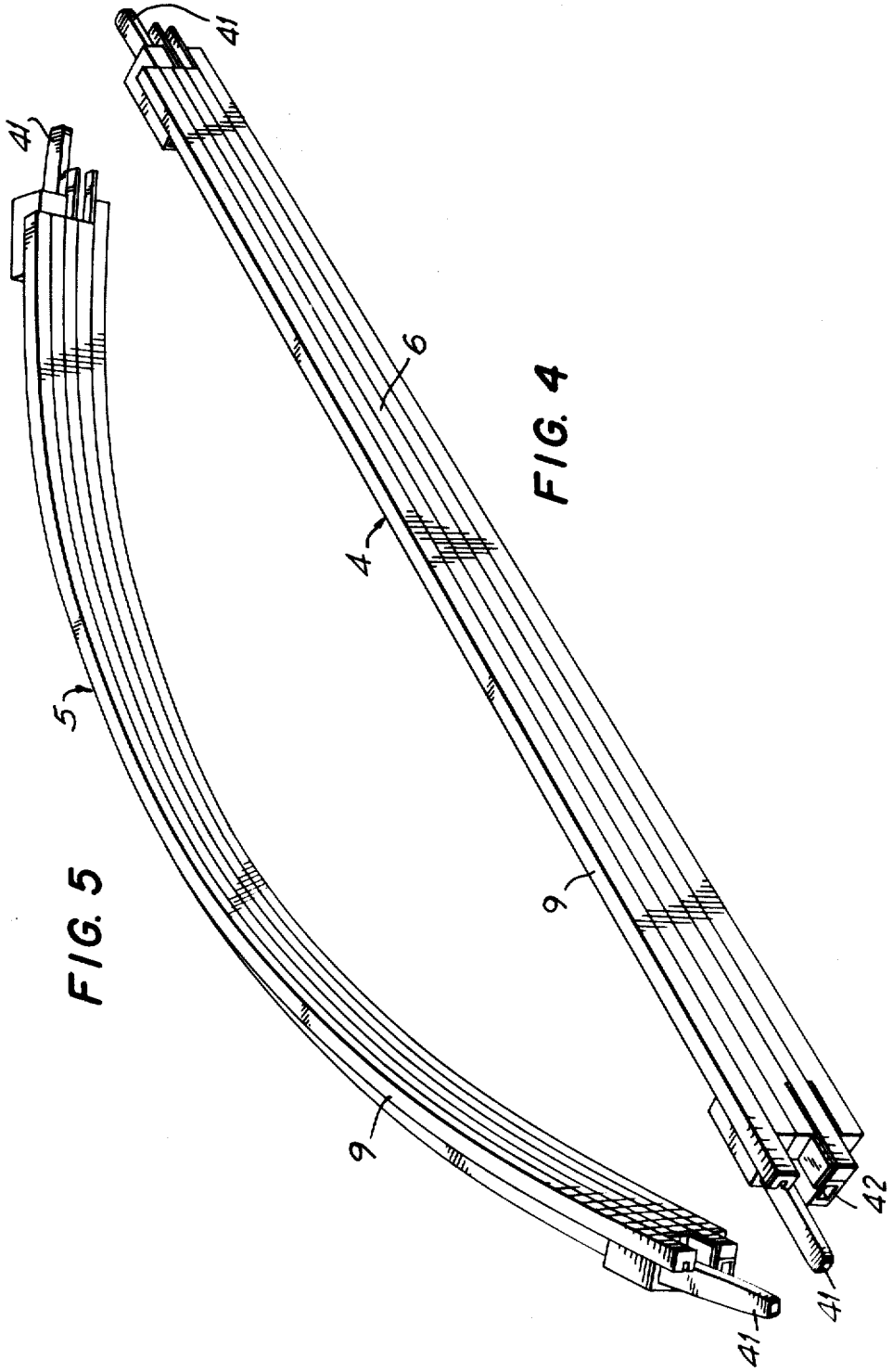


FIG. 4

FIG. 5

FIG. 6

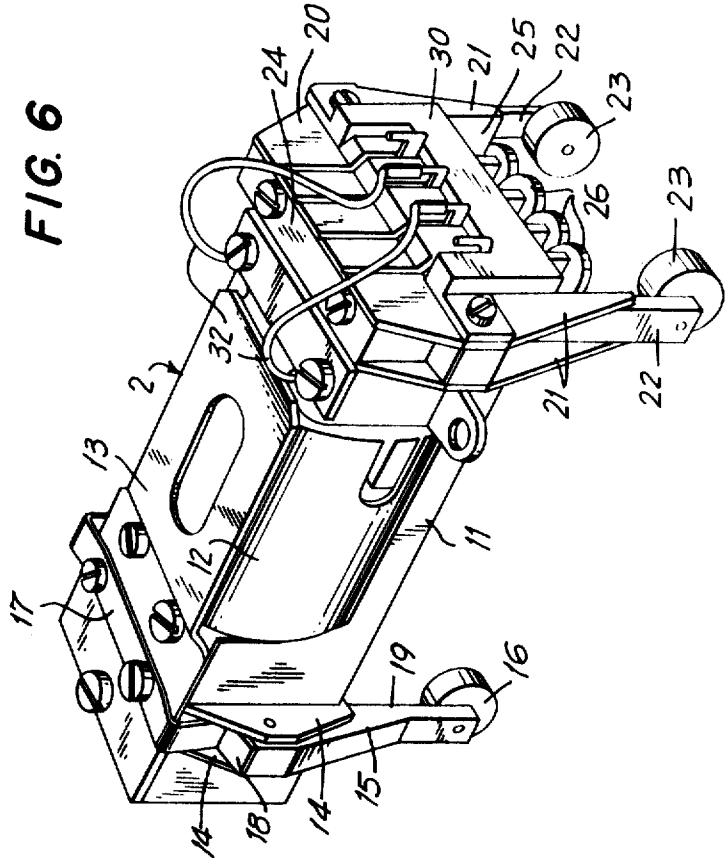
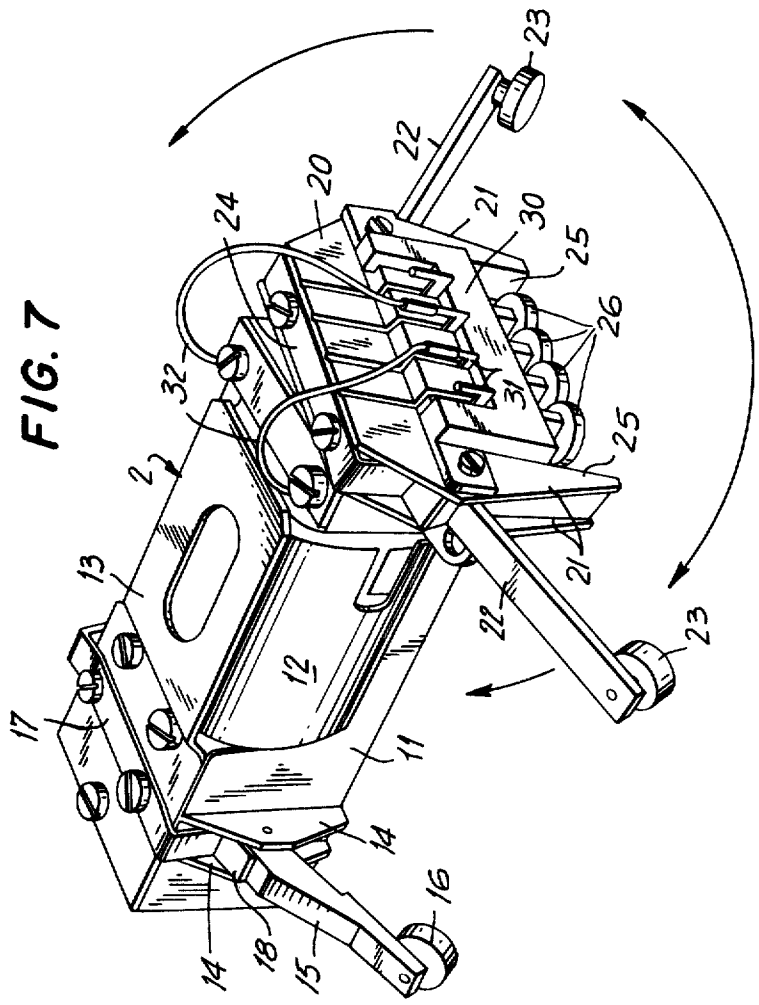


FIG. 7



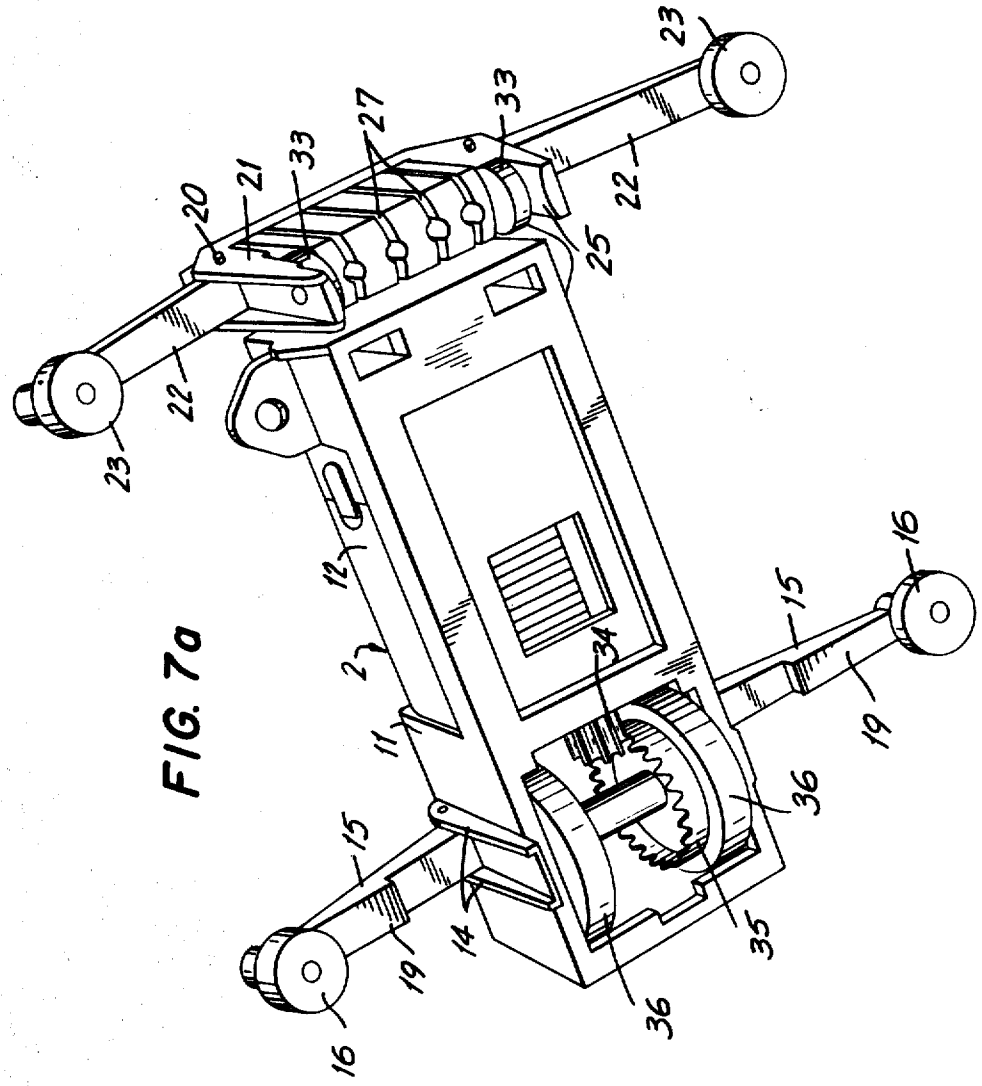


FIG. 7a

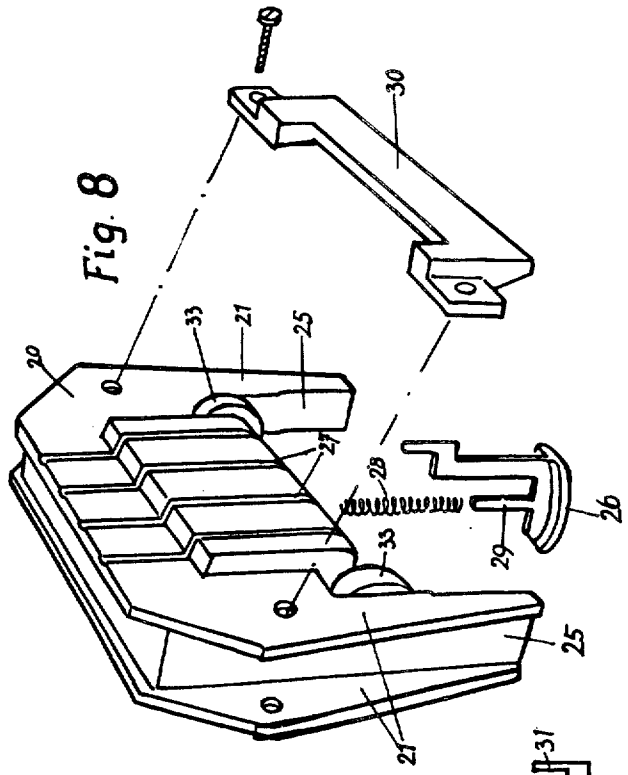


Fig. 8

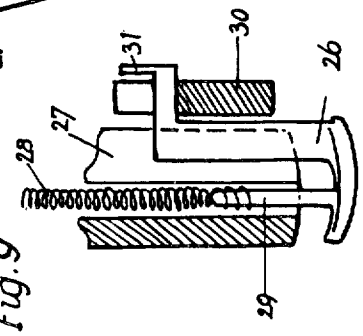


Fig. 9

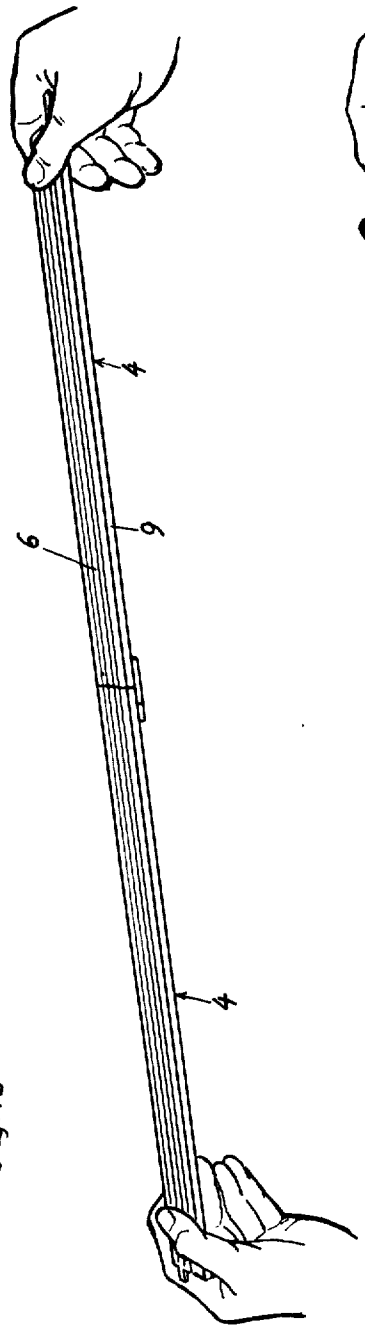


Fig. 10

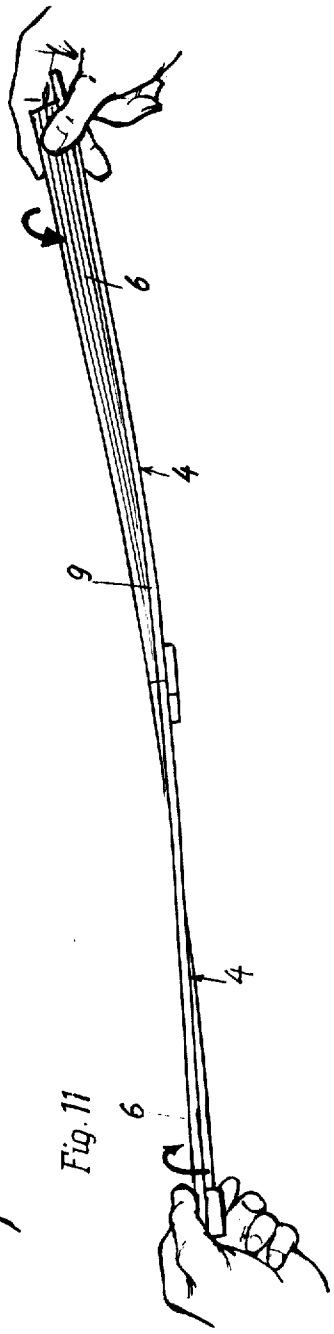


Fig. 11

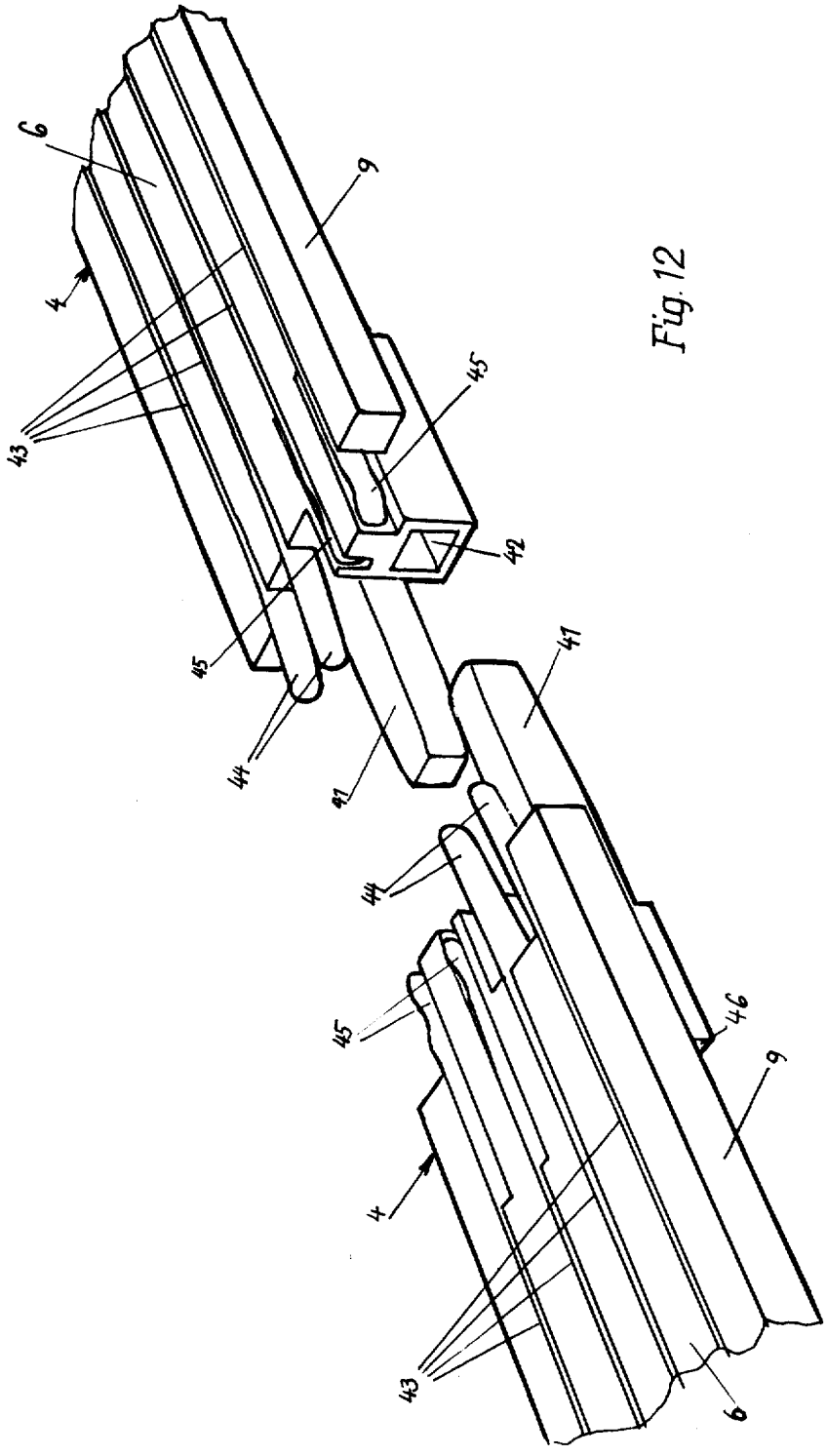


Fig. 12

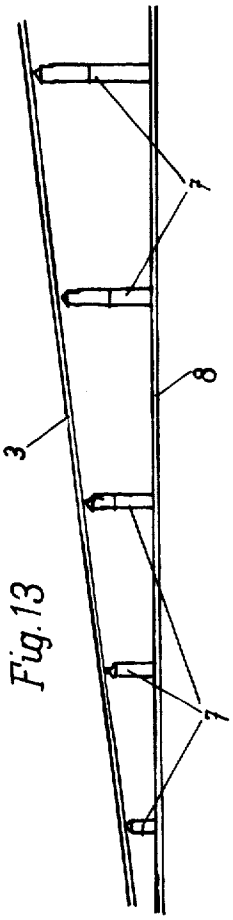


Fig. 13

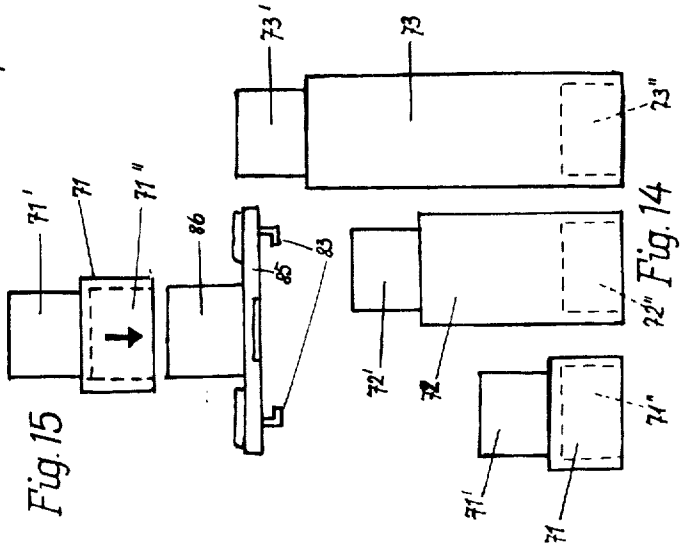


Fig. 15

Fig. 14

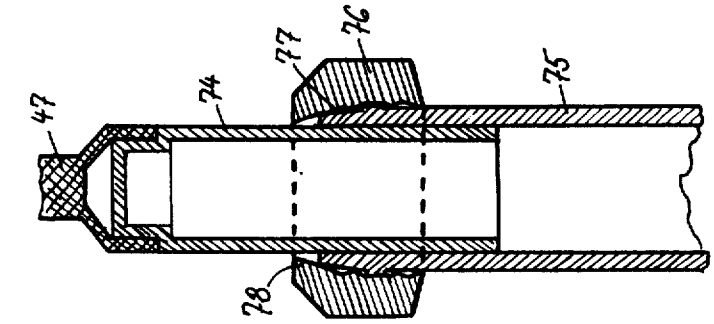


Fig. 14b

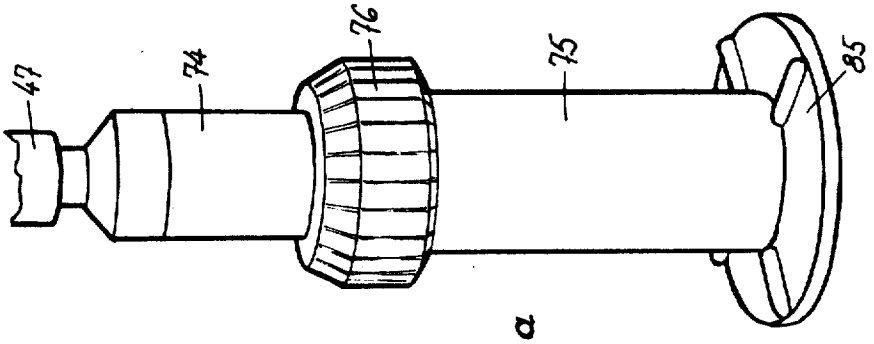


Fig 14a

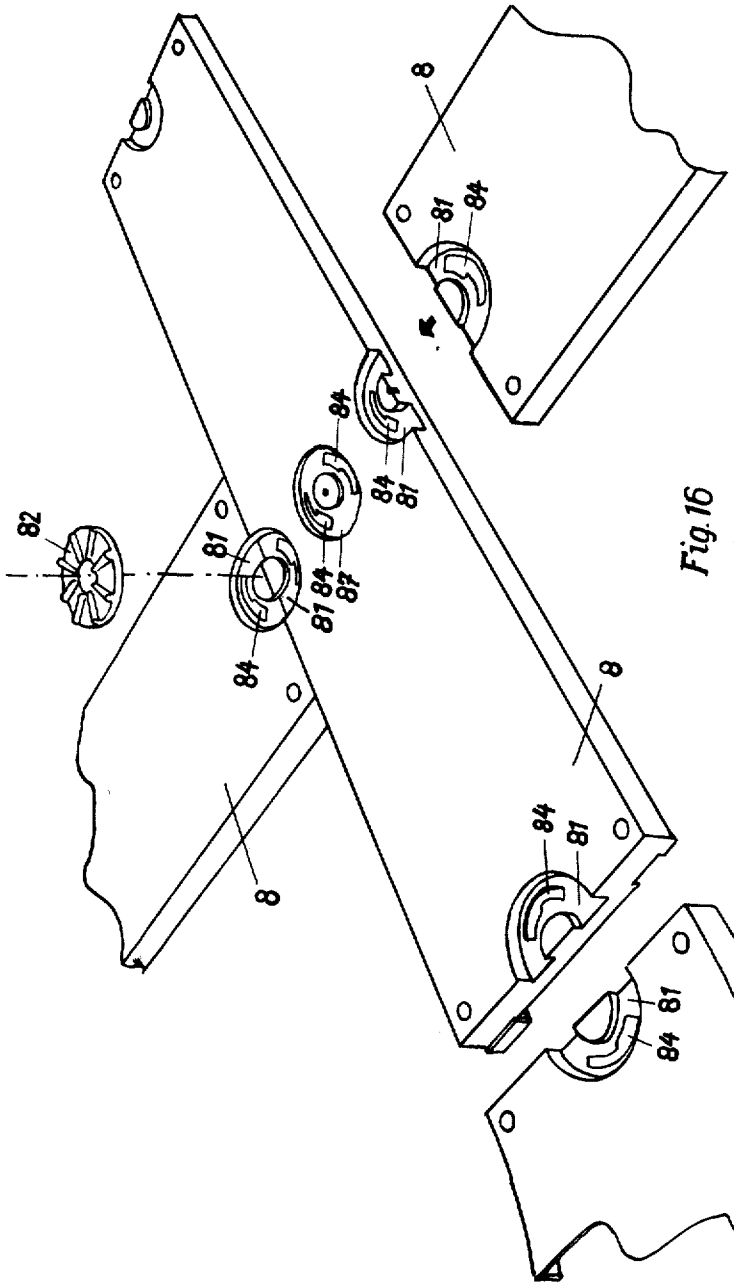


Fig. 16

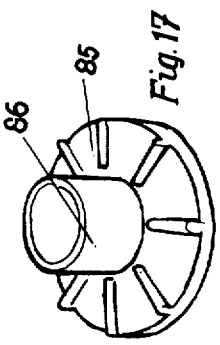


Fig. 17

Fig. 18

Fig. 18a

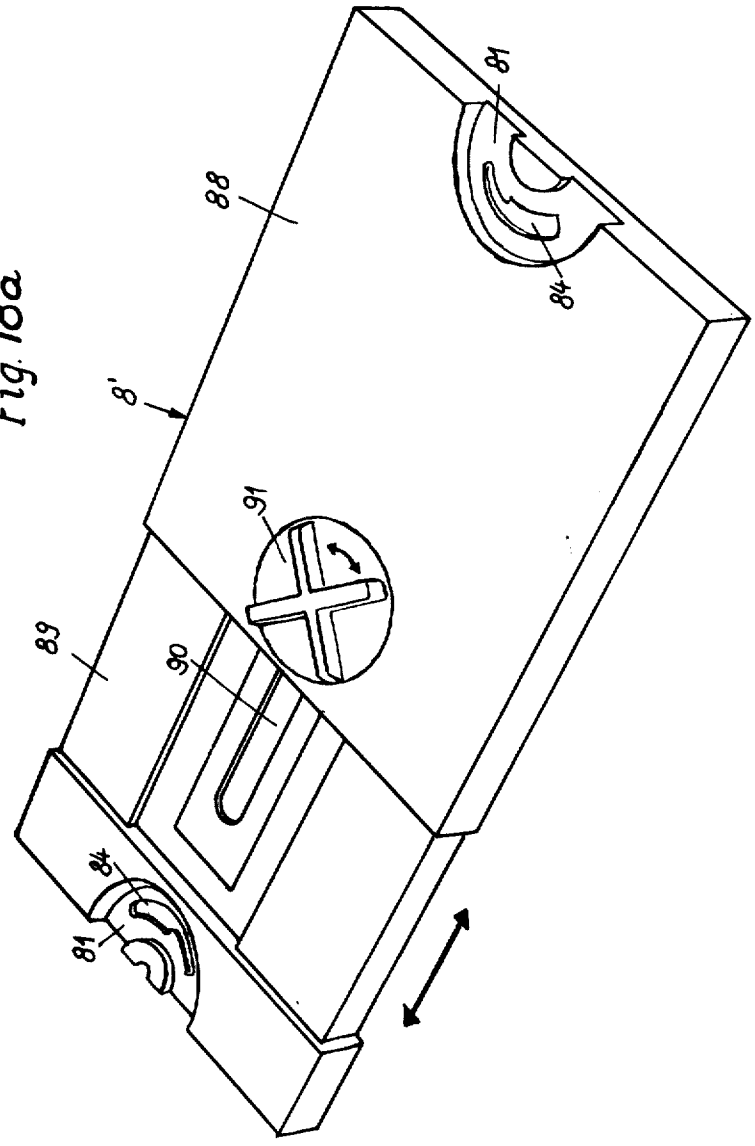
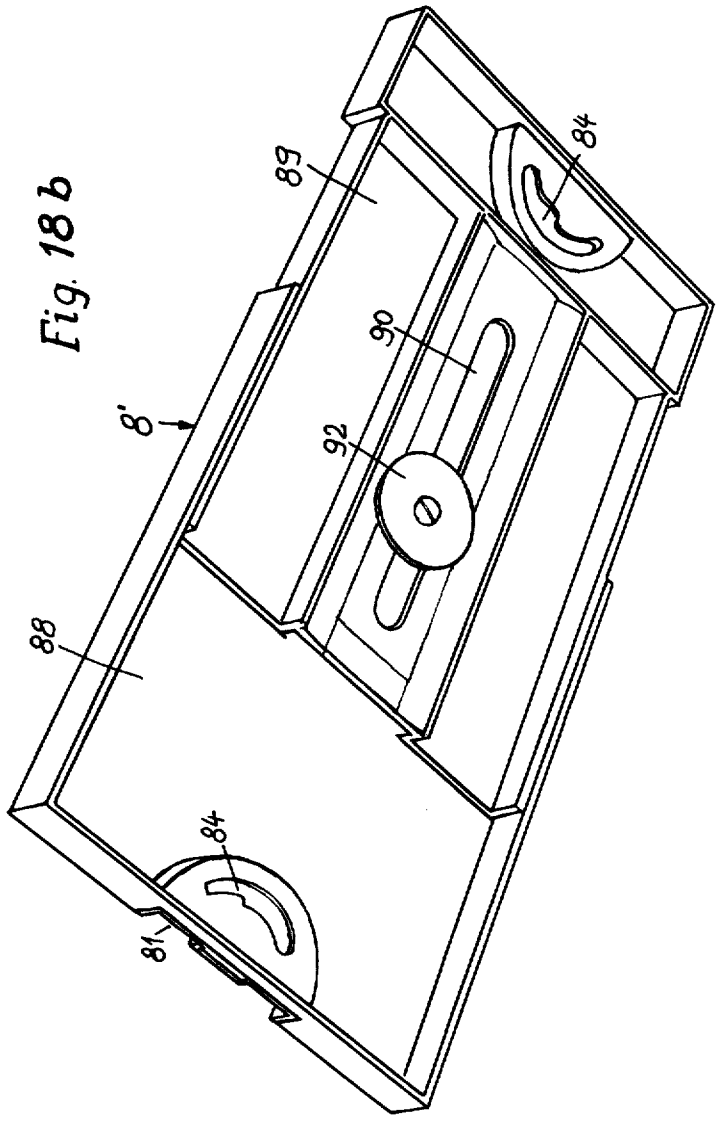
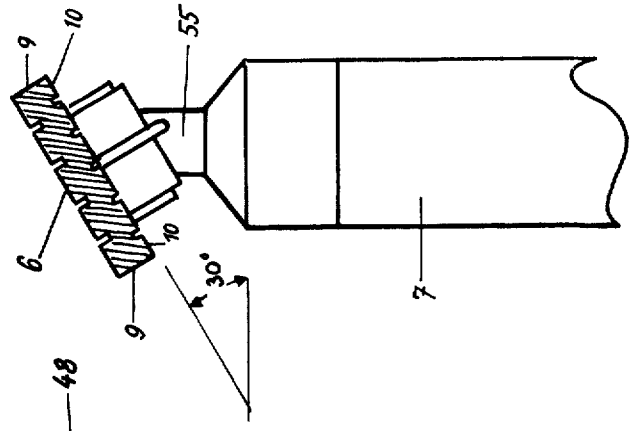


Fig. 18b





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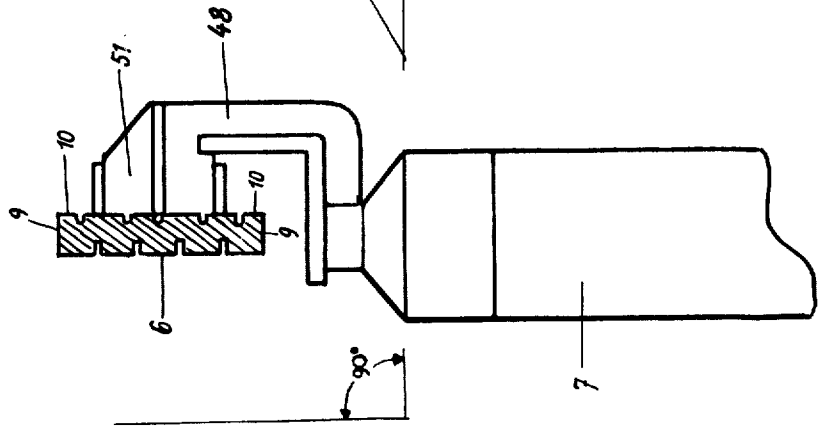

Fig. 20

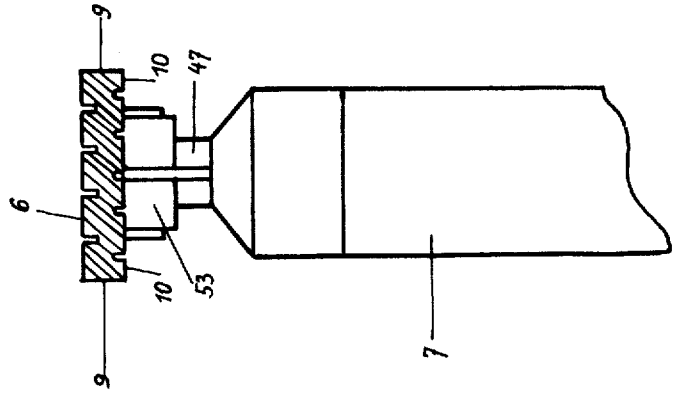

Fig. 19

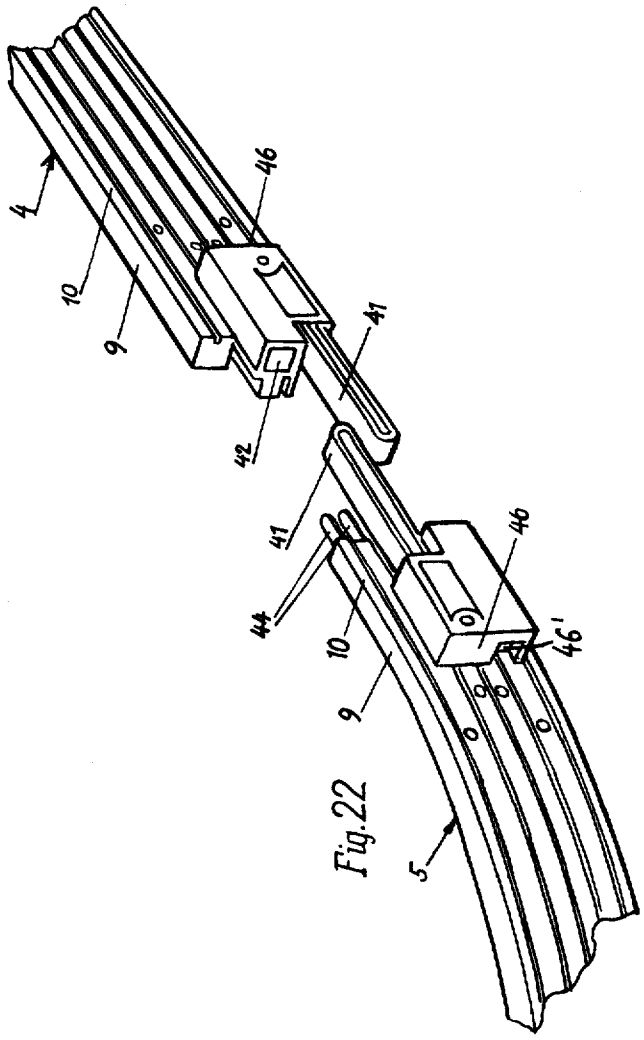

Fig. 22

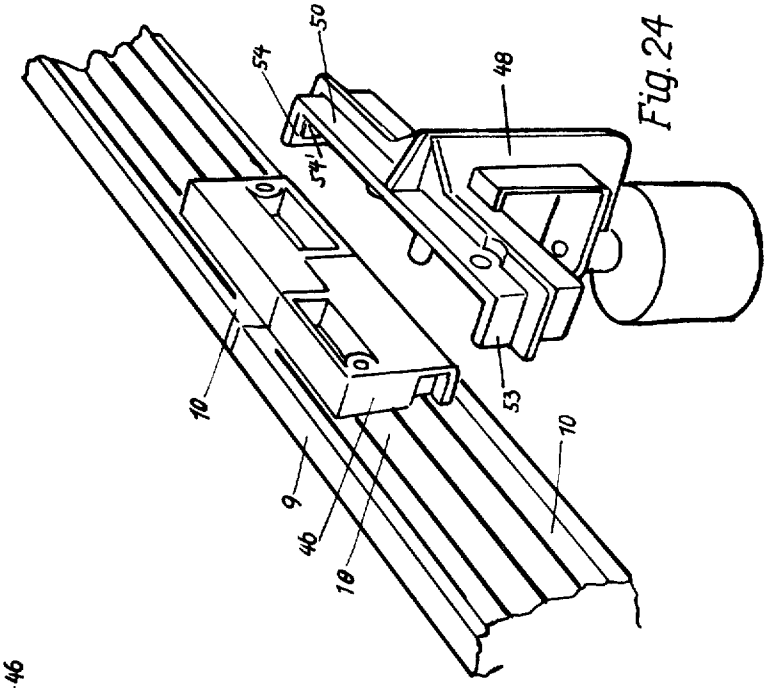

Fig.24

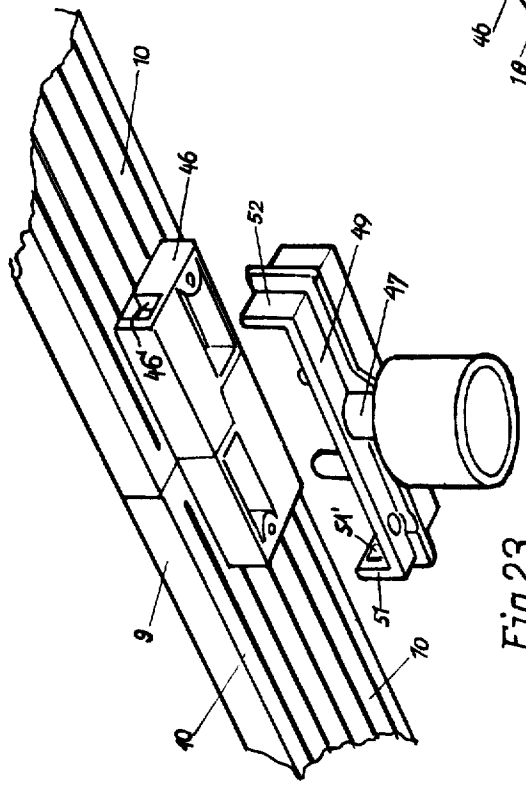

Fig.23

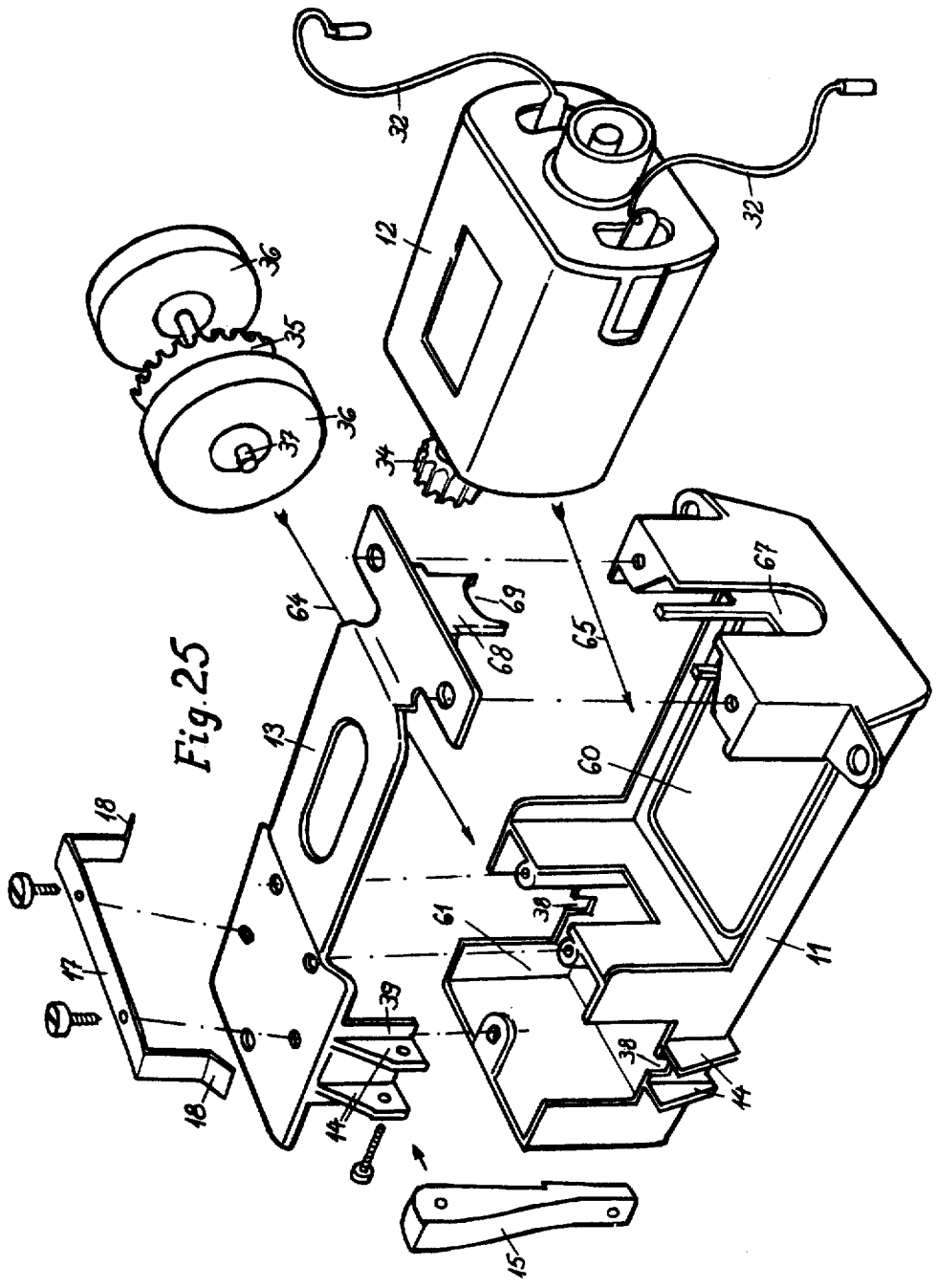
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Fig. 25

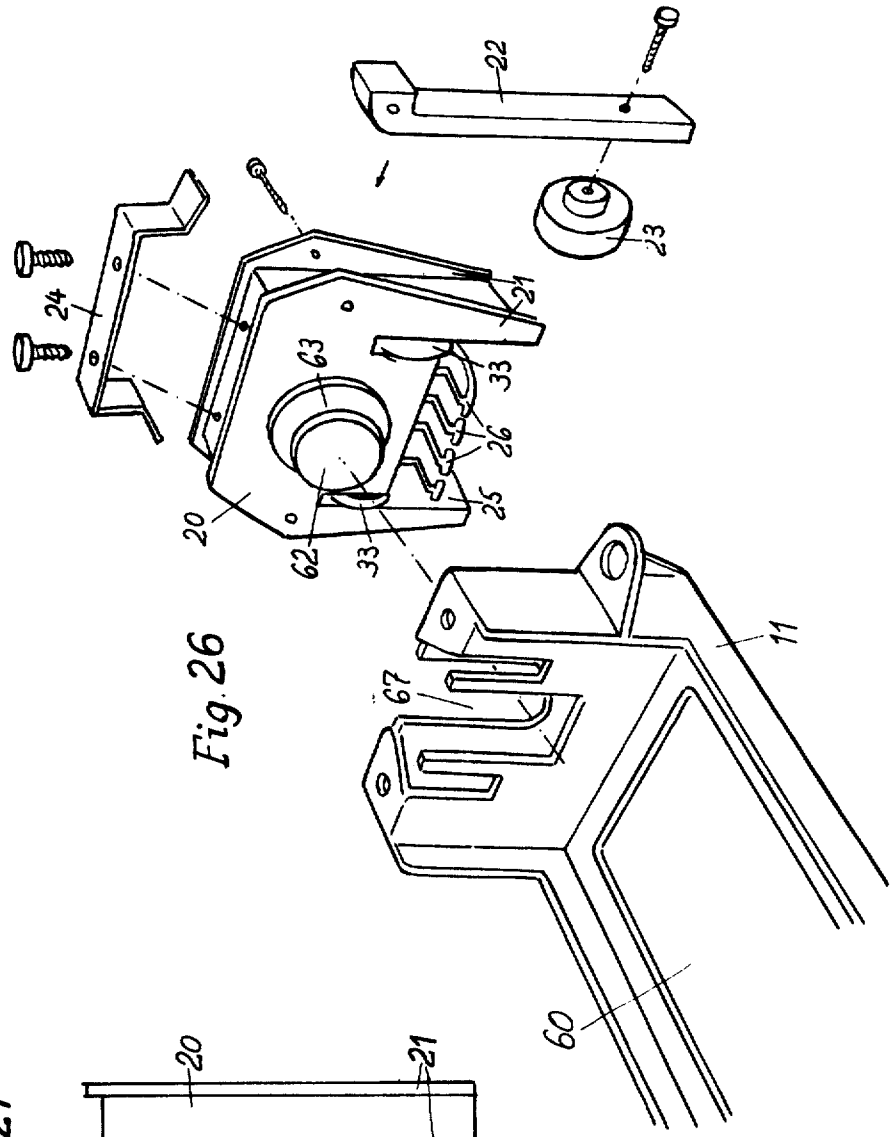

Fig. 26

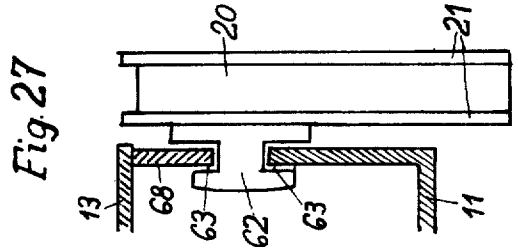

Fig. 27

TOY LAYOUTS FOR MODEL AIRCRAFT AND OTHER TOYS

This invention relates to toy layouts for toys, for example, model aircraft.

An object of the invention is to provide a toy layout of generally improved construction for the guiding of model aircraft and other types.

In accordance with the invention there is provided a track section which can be assembled with other similar track sections to form a toy layout for guiding the movement of a toy, for example, a model aircraft, said track section having along one side a running face engageable by a support wheel or other element of a toy, and having along its side remote from the running face, a guide face or guide faces engageable by a guide wheel or element of the toy so as to hold the toy on the track section during movement of said toy along the track section.

Each track section may comprise a body which can be twisted so that when the track sections are assembled to form a layout, the running faces of the track sections will be disposed to define a path representing spatial movement of a toy.

Each track section, or rail length, may have a body which is provided with inset electric current conductor elements so arranged that the running face of the track section is substantially flat but can conform to the required twisting of the track section.

There is further provided, in or for the toy layout, a toy, for example, a model aircraft, comprising a drive mechanism having support wheel means engageable with the running face of the layout rack, and having also guide elements carried by retaining arms of the drive mechanism so that, when the drive mechanism is arranged on the tracks, the guide elements can be against the guide faces at the side of the track remote from the running face, in such a manner that said guide elements cooperate with the support wheel means in holding the toy on the track for movement therealong.

Due to the design of the rail track as a guide element which twists into all spatial positions and the design of the drive mechanism of the toy in such manner that it is able to follow the rail track (while simultaneously being firmly guided) into all spatial positions, it becomes possible to effect all spatial movements with a model aircraft provided with drive mechanism of this kind.

The retaining arms may, for the lateral guiding of the drive mechanism be slidingly guided at the lateral faces of the track. Furthermore, the drive mechanism may, for lateral guiding, be provided also with guide arms sliding on the lateral faces of the track.

The drive mechanism may expediently comprise two pairs of support wheels, a guide wheel secured to a pivotal retaining arm or limb being associated with each support wheel. With this arrangement, the guide wheels which serve as holding or abutment elements, may be disposed opposite the support wheels.

In order to ensure that the drive mechanism shall follow the track reliably and as far as possible without friction, however much the rail track may twist and turn, and however "tight" the curves in the track may be, according to a further embodiment of the invention, at least one of the support wheels or pairs of support wheels arranged one behind the other in the direction of travel of the drive mechanism on the track is mounted in a bogie pivotal about an axis parallel to the direction of movement or longitudinal axis of the undercarriage. With this arrangement, the retaining arms with the guide wheels and the electric current collectors which contact current conductors set into the rail, are arranged on the bogie. Expediently, all the current collectors are secured to the bogie by means of a common retaining bracket.

In order that there may always be good contact with the current conductors in the rail track, the said conductors arranged

in the immediate vicinity or in the zone of the retaining arms, preferably between the support wheels, and the retaining arms may be arranged adjacent the support wheels. The arrangement of the current collectors in this vicinity is especially expedient since the part of the drive mechanism in the vicinity of the retaining arms is, during all the spatial twisting of the rail track, subjected to the smallest degree of relative positional variation relatively to the rail track.

The retaining arms carrying the guide wheels may be mounted under spring influence for pivoting relatively to the longitudinal axis of the drive mechanism, the position of the retaining arms embracing the rail being an end position fixed by increased spring force. The increased spring force is such that reliable retaining of the drive mechanism in all spatial positions and at all speeds is assured. Nevertheless, the spring force is also such that it can readily be overcome by hand to permit removal of the undercarriage or the toy model from the rail.

The retaining arms may be designed to be resilient in the direction of their longitudinal axis, in the position in which they engage about the rail track. This increase guiding reliability in the case of a considerably curved rail track.

The guide wheels may serve as electric current collectors for current conductors extending on the guide faces. Alternatively, the retaining arms or limbs may be adapted to serve as current collectors for current conductors arranged laterally on the track.

The truck sections or rail lengths forming the rail track, may each be made from a uniform insulating material, in particular, a plastics material capable of being deformed by pouring or hot-pressing, and may each have inset current conductors. The current conductors may be formed of a single-piece metal section filaments, one end thereof being adapted to function as a plug-in element and the other end being bent up or curved so as to function as a "socket" element so that electric contact can be made when one rail length is connected to a corresponding second rail length.

The rail track assembled from the track sections or rail lengths and adapted to be twisted continuously into all spatial positions, may be secured at intervals on support posts the height of which corresponds to each specific spatial position of the rail track, the support posts being secured on a baseplate disposed on the support or carrier of the layout and connecting the individual support columns together. With this arrangement, the support columns may be vertically adjustable and adapted to be secured on the support or carrier plate by means of a bayonet-locking means.

The baseplate may be assembled from carrier plates having, on one or more of their lateral edges, recesses supplementing those in a further carrier plate to constitute the recess for receiving a bayonet-locking means in which said recesses the closure member of the bayonet-locking means may be inserted, so as to lock the plates together. A support column may then be erected on each closure member.

In order to be able to lay the rail track, in simple manner, in all spatial positions, in particular with any desired descent or ascent, in connection with the vertically adjustable, in particular infinitely variably vertically adjustable carrier posts, the carrier plates may be assembled from two plate elements adapted to be pushed one within the other and adapted to be locked relatively to each other. In this way, the carrier plates may be adapted, with respect to their spatial extent, to the desired spacing between the carrier posts and may nevertheless be joined together to constitute a common, firm baseplate.

The assembly of the rail track, twisted into all spatial positions, may be effected through the agency of intermediate members erected on the carrier posts and provided with straight or angled retaining webs. The said retaining webs on the intermediate members may while leaving free access for the guide wheels of the undercarriage be secured on the rail between the guide faces on the side of the rail remote from the running face. Expediently, the retaining webs may be secured

between two rail lengths in the zone of the rail joint. Moreover, the retaining webs may be designed as clamps or clips holding the rail joint together by engaging behind abutment faces provided at the end zones of the rail lengths.

For a better understanding of the invention and to show how it may be carried into effect embodiments thereof will now be described, with reference to the accompanying drawings, in which:

FIG. 1 shows a detail of a toy layout according to the invention,

FIG. 2 shows a further detail of toy layout according to the invention,

FIG. 3 is a diagrammatic illustration of a toy aircraft suitable for use on the toy layout according to the invention,

FIG. 4 is a diagrammatic view of a straight rail length,

FIG. 5 is a diagrammatic view of a curved rail length,

FIG. 6 is a diagrammatic illustration of a drive mechanism used, by way of example, in a model aircraft according to FIG. 3.

FIG. 7 is a drive mechanism according to FIG. 6, having hinged retaining arms or limbs and a bogie pivoted about the longitudinal axis of the drive mechanism,

FIG. 7*a* shows a drive mechanism according to FIG. 6, as seen obliquely from below, having hinged retaining arms and without the current collectors inserted,

FIG. 8 shows the bogie body, with the retaining arms removed and the current collectors and retaining webs shown removed,

FIG. 9 is a detail section through the receiving slot for a current collector in the bogie body, with the current collector inserted,

FIG. 10 shows a portion, comprising two rail lengths of the rail track,

FIG. 11 shows the portion of rail track according to FIG. 10, after twisting,

FIG. 12 shows, drawn to a larger scale and as a detail, the two ends adapted to be joined together of two rail lengths,

FIG. 13 shows, diagrammatically and as a detail, a portion of the rail track as arranged on carrier posts of varying height,

FIG. 14 shows, as a side elevation, three different sizes of post elements adapted to be disposed one upon the other to form carrier or support posts of varying height.

FIG. 14*a* shows an elevational view of a further embodiment of a vertically adjustable carrier column,

FIG. 14*b* shows a sectional view of a carrier column according to FIG. 14*a*,

FIG. 15 shows, diagrammatically and as a side elevation, a countermember according to FIG. 17 relatively to the bayonet closure means shown in FIG. 16, with a carrier post element according to FIG. 14, adapted to be fitted on,

FIG. 16 shows, in diagrammatic form, individual carrier or support plates which connect the carrier posts together and are adapted to be joined together by means of a bayonet-locking means,

FIG. 17 shows a countermember in respect of the bayonet locking means, for the fitting-on of the carrier slots,

FIG. 18 shows in diagrammatic form as seen, obliquely, from below, two carrier plates adapted to be joined together by means of bayonet-locking arrangements,

FIG. 18*a* shows, in diagrammatic form as seen at an angle from above, an adjustable carrier plate,

FIG. 18*b* shows the carrier plate according to FIG. 18, as seen at an angle from below,

FIG. 19 shows the upper end of a carrier post having a retaining web for securing the rail track in the horizontal position,

FIG. 20 shows the upper end of a carrier post having a retaining web for securing the rail track in the vertical position,

FIG. 21 shows the upper end of a carrier post having a retaining web for securing the rail track in a position wherein it is inclined at an angle of 30° relatively to the horizontal,

FIG. 22 shows, diagrammatically and as a detail, two rail lengths to be joined together, shown as an elevation from the side remote from the running face,

FIG. 23 shows the mode of securing the retaining web according to FIG. 19 to the rail track,

FIG. 24 shows, in diagrammatic manner, the securing of a web according to FIG. 20 to the rail track,

FIG. 25 shows, in diagrammatic form, parts of the drive mechanism according to FIGS. 6–9, as an exploded view,

FIG. 26 shows further parts of the drive mechanism, in the same mode of illustration as used in FIG. 25, and

FIG. 27 shows, in diagrammatic form, a section through the mounting of the bogie in the drive mechanism housing.

In the toy layout shown as a detail in FIG. 1, the model aircraft are designated 1 and the drive mechanism (or running gear) for said model aircraft is designated 2. The model aircraft 1 travel, with the drive mechanism or running gear 2 on a rail track 3 assembled from individual straight and curved rail lengths 4 and 5 according to FIGS. 4 and 5. Each rail length is of substantially oblong rectangular shape in cross section and is formed to provide a running face 6 for the drive mechanism of the model aircraft. As can be seen from FIGS. 10 and 11, the rail lengths 4 and 5 for forming the rail track 3 are manufactured from a material which permits twisting of the rail track 3, so that the running face 6 can be adapted to all desired spatial positions of the track. In FIG. 1, the curved rail lengths 5 are assembled to form a track portion which enables the individual aircraft to "loop the loop." In FIG. 2, a portion of the rail track 3 is shown in a position which enables the model aircraft to bank with movements which simulate the movements of actual aircraft in flight in the air. Due to the fact that the individual rail lengths 4 or 5 may be twisted, continuous transition of the running face 6 into all spatial positions is assured. The rail track 3 is secured, at intervals, on carrier posts 7 which are secured on carrier or support plates 8 laid on a supporting base for the entire layout. The carrier plates 8 connect the individual carrier columns 7 together. Their design is discussed in greater detail hereinbelow. The rail track, or each individual rail length 4, 5 thereof, is provided adjacent its running face 6 with lateral faces 9 which serve for the guiding of the model aircraft, and is provided also with guide faces 10 on the side thereof remote from the running face. (See FIGS. 19 to 21 and 23, 24).

The drive mechanism 2 of the model aircraft 1 is discussed in greater detail with reference to FIGS. 6 to 9. The drive mechanism 2 comprises a housing or frame 11 in which an electric motor 12 for driving the model aircraft is inserted. The electric motor 12 is secured in the frame 11 by means of a releasable cover plate 13 and carries a pinion 34 (shown in FIG. 7*a*) meshing with a gearwheel 35 through the agency of which at least one of a pair of support wheels 36 of the drive mechanism, is driven. A second pair of support wheels 33 is mounted in a bogie 20 which forms a portion of the undercarriage of the drive mechanism.

The two pairs of supporting wheels 33, 36 of the drive mechanism 2 travel, in the position wherein the drive mechanism is set down on the rail track, on the running faces 6 of the rail lengths 4 or 5. The portion of the frame 11 which is disposed at the rear of the drive mechanism with respect to the direction of travel of the drive mechanism carries, at each side, lateral flanges 14 between which, on each side of the frame 11, a retaining arm or limb 15 is pivotally mounted. The lower free ends of the retaining arms 15 carry guide wheels 16 which, when the drive mechanism 2 is set down on the rail track 3, engage about the rail track and are supported, as abutments for the support wheels 36, on the guide faces 10 of the rail lengths 4, 5. The retaining arms 15 are then in the position wherein they are hinged against the drive mechanism frame 11, as shown in FIG. 6. A leaf spring 17 is secured to the top of the frame 11 the spring having end portions 18 which are arranged to act on the upper ends of the retaining arms 15 at the opposite sides of the frame 11. The upper end of each retaining arm 15 is bevelled in such a manner that the position

of the retaining arm 15 wherein the latter engages about the rail track 3 is an end position determined by increased spring pressure of the spring 17. The inner faces 19 of the retaining arms 15 are, when the drive mechanism 2 is set down on the rail track 3, arranged to bear slidingly, with play or clearance, on the lateral faces 9 of the rails.

As shown in FIG. 7, the bogie 20 forms the front portion of the drive mechanism as seen in the direction of travel of the drive mechanism. The bogie is arranged to pivot about an axis extending parallel to the longitudinal axis or in the direction of movement of the undercarriage of the mechanism 2. The bogie body 20 has lateral flanges 21 corresponding to the flange 14 and between which retaining arms 22 are pivotally mounted. The retaining arms 22 carry at their lower ends guide wheels 23 which, when the undercarriage 2 is set down on the rail track 3 and the arms hinged inwardly into an operative position as shown in FIG. 6, can travel along the guide faces 10 of he rail track and can serve as holding or abutment elements to cooperate with the support wheels 33 in holding the driving mechanism on the track. The upper ends of the retaining arms 22 are, like the retaining arms 15, under the spring influence of a leaf spring 24 corresponding to the spring 17. The bogie body 20 has downwardly directed guide arms 25 which, when the drive mechanism is set down on the rail track 3, can slide along (with play) the lateral faces 9 of the rail lengths 4, 5 and thereby function in a manner similar to that performed by the inner faces 19 of the retaining arms 15. It would also be equally possible, in this case also, for the inner faces of the retaining arms 22 to provide for lateral guiding or, alternatively guide arms could be arranged on the frame 11 of the undercarriage, in the zone of the retaining arms 15. Arranged in the bogie body 20, between the guide arms 25 are all the necessary current collectors 26. The number of current collectors 26 depends on the conductor system used and on the number of model aircraft operated on one rail. Referring to FIGS. 8 and 9, there are formed in the bogie body 20, juxtaposed vertical slots 27 in which the individual current collectors 26 are slidingly guided. When the drive mechanism is set down on the track, each current collector 26 is subjected to the compressive action of a spiral spring 28 which is disposed within the associated slot 27 and which engages a pin 29 of the current collector 26, pushing the current collector 26 downwards, i.e. against the corresponding current conductor in the rail track. The downward movement of each current collector is limited by a retaining web 30 which is common to all the current collectors 26 and is secured as by screws, to the bogie body 20.

The current collectors 26 have contact pins 31 which project above the web 30 the said contact pins being provided for receiving contact bushes of electric lead cables 32 leading for example to the electric motor 12. In the case of the form of embodiment of the bogie body 20 shown in FIG. 8, the second pair of support rollers 33 is, as shown more particularly in FIG. 7*a*, arranged inwardly of the guide arms 25 so that, when the drive mechanism is placed in position, on the said track 3, the rollers 33 can in addition to the support wheels 36, bear on the running face 6 of the rail track.

The rail lengths 4,5 have, for mutual interconnection (as can be seen in detail in FIG. 12), in each of their end zones a projecting coupling pin 41 so that, when two rail lengths are to be connected, a bush 42 at one end of one rail length can receive a cooperating coupling pin 41 at the adjacent end of the other rail length. Both the coupling pins 41 and also the bushes 42 are, in each case, in one piece with the twistable rail length elements which are manufactured from a uniform insulating material. In the embodiment shown of the rail lengths 4, 5, there are let into the running face 6 of each length, four current conductors 43 formed of single-piece metal section strands or filaments. In each case, two of the current collectors 43 project beyond the end face of the rail length 4, 5 and constitute plug-in elements 44 which contact the curved or bent-over end portions 45 of the current conductors of the adjacent rail length 4, 5. The bent-over end portions 45 of the current conductors 43 assume, in cooperation with recesses in the rail elements in which the bent-over end portions 45 are disposed, the function of socket elements. As can be seen from FIG. 22, the parts of the rail length which constitute the bushes 42 and the coupling pins 41, are formed with abutment or bearing faces 46 which in the assembled condition of two abutting rail lengths, are remote from each other and are adapted to be engaged by a clamp or clip which together with the press fit provided by the pins 41 and bushes 42, holds the rail lengths together.

The said clamp or clip may, as shown in FIGS. 23 and 24, be carried by retaining webs 47, 48 arranged at the upper ends of the carrier posts 7. The clip itself is designated 49 or 50. The clip 49 or 50 is adapted to embrace, by its lateral limbs 51, 52 or 53, 54 the abutment faces 46 and in this way to hold the individual rail lengths together. At the same time, this clip can be used with a retaining web to retain the rail track in the spatial position desired in each specific case, depending on the angle of the retaining web which carries the clip. Provided on the inner faces of the lateral limbs 51, 52 or 53, 54 are raised portions 51' (FIG. 23) or 54' (FIG. 24) adapted to engage in recesses 46'so as to lock the clip in position.

FIGS. 19 to 21 show, by way of example, various types of retaining web. The retaining web according to FIG. 19 corresponds to the retaining web 47 according to FIG. 23, whereby the running face 6 of the rail is retained in a horizontal position. The retaining web shown in FIG. 20 is the retaining web 48 according to FIG. 24, whereby the running face 6 of the rail is retained in a vertical position. FIG. 21 shows a retaining web 55 which, by means of a clip designed in accordance with the clips 49 and 50, retains the rail in a position wherein the running face 6 is inclined at an angle of approximately 30°relatively to the horizontal.

The carrier or support posts 7 are vertically adjustable, said posts being assembled from a plurality of cylindrical members 71, 72, 73 of varying height.

Each of the cylindrical members according to FIG. 14 has, at its upper end, a cylindrical projection 71', 72', 73' which is smaller in diameter and which is adapted to be pushed into a corresponding recess 71'', 72'', 73'' in the lower part off a corresponding cylindrical member 71, 72, 73 thereby enabling the carrier post to be built up to the desired height. A further design for vertically adjustable carrier posts is shown in FIGS. 14*a* and 14*b* . Two cylindrical elements 74, 75 which are slidingly guided one within the other are clamped together in the desired position by means of a capnut 76. For this purpose, the outer face 77 of the outer cylindrical portion 75 tapers conically at the upper end. Against, it bears a correspondingly conically tapering inner face 78 of the nut 76.

The carrier posts 7 carrying the entire rail track 3 stand on carrier plates 8 which are disposed on the support base for the toy layout as a whole and which serve to connect the individual carrier posts 7 together. Expediently, the carrier plates each extend, in projection, below the rail track 3, so that straight and curved carrier plates 8 are used to correspond to the rail lengths 4 and 5 (see FIG. 16).

The connection of the carrier plates 8 with each other and with the carrier posts 7 is expediently effected by bayonet locking means. Referring to FIG. 16, there are formed in the lateral edges of the plates semicircular recesses 81 each adapted to complement a corresponding semicircular recess 81 formed in an adjacent and abutting carrier plate 8, to constitute a circular recess for the reception of a locking member 82. The locking member 82 has, according to FIG. 18, on its underside, hook-shaped projections 83 which can be engaged in corresponding slots 84 formed in the recesses 81 and locked therein by rotating the locking member 82. If it is desired, simultaneously, in this manner, to connect a carrier post 7 with the carrier plates 8, then there is used a locking member 85 (FIG. 17, 14*a*, 15) having a cylindrical projection 86 corresponding to the cylindrical projection 71', 72', 73' of the cylindrical member 71, 72, 73. The carrier post assembled from corresponding cylindrical elements 71, 72, 73, or a carri-

er post according to FIG. 14*a*, 14*b*, is then, as shown in FIG. 15, adapted to be fitted on the locking member 85. As shown in FIG. 16, a carrier plate 8 may be formed in its side face with a circular recess 87 which has corresponding slots 84 for the reception of locking members 85 on which a carrier post 7 may be fitted. In this manner, a carrier post may be supported at a location removed from the abutting edges of two adjacent carrier plates. The carrier plate 8*a* shown in FIGS. 18*a* and 18*b* comprises two plate elements 88 and 89 which are adapted to be pushed one within the other, the element 88 engaging over the element 89. Formed in the element 89 is a longitudinal slot 90 through which projects a clamping screw 91 having a counterpressure disc 92 and by means of which the two plate elements may be locked in the desired drawn-out position relatively to each other.

FIGS. 25–27 illustrate, additionally, the assembly of the drive mechanism, parts of the drive mechanism being shown in the exploded condition. According to FIG. 25, a space 60 is provided for the introduction of the motor 12 into the drive frame 11. The introduction of the motor 12 (shown separately) is indicated by the arrow 65. When the motor is inserted, the motor shaft with the pinion 34, projects into a further space or chamber 61 in the frame 11. Into the said chamber 61 (as indicated by the arrow 64) are introduced the support wheels 36 with the gearwheels 35, in such manner that the outer stub axles 37 of the support wheels 36 take up their position in the recesses 38 in the frame 11. The securing of the inserted motor 12 and the support wheels 36 is effected by means of the cover plate 13, which is screwed to the frame 11. The cover plate 13 serves not only to retain the motor 12 in the frame but also the stub axles 37, the cover plate having flange portions 39 which close or bridge the recesses 38 to hold the stub axles 37 in said recess. The further details of the mounting of the bogie 20 may be ascertained from FIG. 26. The bogie 20 has a journal pin 62 formed with an annular groove 63. The said journal pin is received by a recess 67 formed in one of the end faces of the frame 11. When the bogie 20 has been introduced, with the journal pin 62, into the recess 67 in the frame 11, the fixing of the pin 62 in the recess 67 is effected by means of an attachment 68 (FIG. 25) provided on the cover plate 13 and which, when the cover plate 13 is in the assembled position, projects into the recess 67 and forms a circular aperture with its concave recess 69 in combination with the lower rounded portion of the recess 67. The mounting of the bogie 20, by engagement of the journal pin 62 in the circular aperture thus formed, is shown in diagrammatic form and in section in FIG. 27. The bogie 20 is thus mounted for pivotal movement about an axis extending in the direction or movement of the undercarriage.

I claim:

1. A toy for a toy layout, said toy layout comprising a plurality of track sections having running faces disposed to define a path representing spatial movement of the toy, said toy comprising a drive mechanism including support wheel means engageable with the running face of the layout track, said drive mechanism including retaining arms and guide elements carried by the retaining arms of the drive mechanism so that, when the drive mechanism is arranged on the track, the guide elements bear against the guide faces at the side of the track remote from the running face, said support wheel means comprising at least two support wheels arranged one behind the other in the direction of normal travel of the toy along the track, said guide elements comprising guide wheels rotatably mounted on the retaining arms, there being operatively associated with each support wheel one guide wheel secured on each retaining arm respectively, the latter arms being mounted for pivotal movement to enable the guide wheel to be moved into a out of engagement with the associated guide face of the track, said guide wheels being disposed opposite the support wheels.

2. A toy as claimed in claim 1, including means for supporting the guide element retaining arms such that the guide element retaining arms are adapted, when the drive mechanism is arranged on the layout track, to engage and slide along lateral faces of the track thereby to provide for the lateral guiding of the drive mechanism.

3. A toy as claimed in claim 1, including a bogie and wherein at least one support wheel is mounted in the bogie which latter is mounted for pivotal movement about an axis parallel to the direction of movement of the drive mechanism.

4. A toy a claimed in claim 3, wherein there is arranged on the bogie the retaining arm for the guide wheel associated with the support wheel mounted in the bogie, and wherein the bogie includes electric current collectors adapted when the drive mechanism is located on the layout track, to contact electric current conductors which are set into the track rail.

5. A toy is claimed in claim 4, including a common retaining bracket and wherein all the current collectors are secured on the bogie by means of the common retaining bracket.

6. A toy is claimed in claim 5, wherein the current collectors are arranged in the immediate vicinity of the retaining arms, and between the support wheels when two support wheels are arranged adjacent the retaining arms.

7. A toy as claimed in claim 1, wherein the retaining arms carrying the guide wheels are mounted for pivotal movement relative to the longitudinal axis of the drive mechanism and wherein spring means is provided for urging the retaining arms into an end position in which the latter engage about the track rail.

8. A toy as claimed in claim 7, wherein the retaining arms are each resilient in the direction of their longitudinal axis, in the position in which it engages about the track rail.

9. A toy as claimed in claim 4, wherein the guide wheels are constituted as electric current collectors for electric current conductors positioned on the guide faces.

10. A toy as claimed in claim 4, wherein the retaining arms are constituted as electric current collectors for current conductors disposed laterally on the rail.