



New connection on: : 19-02-2018 : 03:57:14 - Last disconnection on: : 19-02-2018 : 03:57:14

V 4.0.0.44358(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201802)) (RPM D201802)

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 10] SS5

Results in EPODOC **104**

[SS 11] (pile+ or pier+ or anchor+) and (soil or ground or land)

Results in EPODOC **57.939**

[SS 12] * and pd<2013-09-05

Results in EPODOC **39.521**

[SS 13] * and rail+

Results in EPODOC **1.209**

[SS 14] * and helical

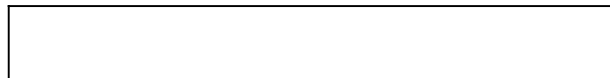
Results in EPODOC **10**

[SS 15] ..li



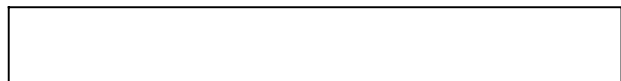
1/10 © EPODOC / EPO

PN - [CN202796993U](#) U 20130313
PR - CN20122448276U 20120904
AP - CN20122448276U 20120904
DT - I
PA - ZHONGXINBO NEW ENERGY
TECHNOLOGY SUZHOU CO LTD
TI - Solar photovoltaic bracket
AB - The utility model discloses a solar photovoltaic bracket. The bracket comprises horizontal guide **rails**, longitudinal guide **rails**, front columns, rear



columns, side tension braces, a back tension brace and a **ground pile**, wherein the lower ends of the front columns and the rear columns are connected with the upper end of the **ground pile**; two ends of each longitudinal guide **rail** are connected with the same-side upper ends of each front column and each rear column respectively; one end of each side tension brace is connected with the lower portion of each rear column, and the other end is connected with each longitudinal guide **rail**; the horizontal guide **rails** are arranged on and vertically connected with the longitudinal guide **rails** through bolts; the back tension brace is slantly connected between the two rear columns through a back tension brace connecting piece; and the **ground pile** comprises an expansion pipe and a **ground pile** outer tube, **helical** fins are arranged outside the **ground pile** outer tube which is in a sharp taper shape at the lower end, a flange head is arranged at the top end of the expansion pipe, a plurality of waist-type holes are arranged on the flange head, and the expansion pipe and the **ground pile** outer tube are fixed through an adjusting bolt. The solar photovoltaic bracket is convenient to install and the height of the **ground pile** is adjustable.

2/10 © EPODOC / EPO
 PN - [RU2010113458](#) A 20111020
 PNFP - RU2446246 C2 20120327
 PR - RU20100113458 20100406
 AP - RU20100113458 20100406
 DT - I

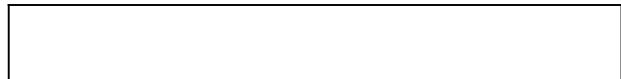


PA	- (C2) VOENNAJA AKADEMIJA TYLA I TRANSPORTA IM GENERALA ARMII A V KHRULEVA [RU]
TI	- (C2) METHOD TO ASSEMBLE INVENTORY LOW-WATER BRIDGE ON SCREW PILES BY SPAN LAUNCHING
AB	- (C2) FIELD: construction. ^ SUBSTANCE: assembly site is equipped on an entry bank for incremental assembly of a span from rolled metal products on roller assembly trolleys, than the bridge inventory property is stocked nearby, and elements of serial screw supports are stocked near water edge. A 40- ton ferry from a set of a pontoon- bridge park (PBP) is dropped on water, and a special purpose vehicle KrA3-255B (KrA3-260) is installed on the ferry from the PBP set, equipped with a fixator cartridge of screw piles, with elements of serial helical supports laid onto the ferry with an autocrane, and it is installed into the bridge range at the value equal to the rated span of the bridge from the coastal support trolley, a screw pile is inserted into a fixator cartridge with a regular weight-lifting boom of the special purpose vehicle, a detachable capstan is put on and fixed on it. A rope of a regular hoist is entered into the capstan, and a pile is screwed into soil by means of rope unreeling from the capstan, after the pile has been submerged to the design elevation, the ferry is moved on anchors across the bridge axis, and the operation is repeated with the second pile. Then the ferry is driven into the

bridge axis, the weight-lifting boom of the vehicle is used to mount a crossbar and a support trolley of a serial screw support, the ferry with the **pile**-driving equipment is slung with a span assembled on the assembly site as a continuous system with the help of joint pads, and a boat is used to launch the bridge over one span, afterwards the ferry with the **pile**-driving equipment is moved into the second span, and the operation of assembly of a serial screw support and launching is repeated, the bridge is moved into the last span from the opposite bank, using the special purpose vehicle removed from the ferry, afterwards the traffic area and the breast **rail** are assembled manually, and exits from the bridge are arranged. ^ EFFECT: reduced labour inputs, higher efficiency of low-water bridges construction under wartime conditions, disasters and emergencies. ^ 1 cl, 8 dwg

3/10 © EPODOC / EPO

PN - [CN102127890](#) A 20110720
 PNFP - CN102127890B B 20130116
 PR - CN2011180058 20110331
 AP - CN2011180058 20110331
 DT - I
 CT - (A)
[CN101024934](#) A [
]; [JPH10227003](#) A [
[DE4429248](#) A1 [
]; [JPH10219683](#)
 A [
 PA - (A)
 HUNANHENG DUNGEOTECHNICAL
 GROUTING TECHNOLOGY CO LTD
 - (B)
 UNIV CENTRAL SOUTH
 TI - (A B)



Reinforcing construction method
of existing **railway** subgrade

AB - (A)

The invention provides a reinforcing construction method of an existing **railway** subgrade. The method comprises the following steps of: positioning an aiguille on a subgrade slope, wherein the aiguille is peripherally provided with at least one stretchable **helical** vane; drilling by adopting a rotary drilling mode, and crushing a **soil** body around the drilling hole by the **helical** vane which extends from the aiguille when the aiguille drills to a preset depth; drilling to a preset depth; injecting slurry by utilizing a drilling rod while keeping the **helical** vane to stir the **soil** body after drilling is finished and also lifting the aiguille to the opening; and repeating the steps until forming needed injection stirring **piles** in a grid distribution. According to the method of the invention, a reinforcing body can be rapidly reinforced under the condition that train operation is not influenced. In addition, the method also has the advantages of reliable reinforcing quality, simpleness and convenience for construction and less environmental pollution.

4/10 © EPODOC / EPO

PN - [RU2008120494](#) A 20091210

PNFP - RU2383682 C2 20100310

PR - RU20080120494 20080526

AP - RU20080120494 20080526

DT - I

PA - (C2)
MELIKOV EHDUARD NIKOLAEVICH [RU]

- TI - (C2)
METHOD FOR ENLARGEMENT OF PORT MOORING PART
- AB - (C2)
FIELD: construction. ^ SUBSTANCE: invention is related to the field of construction, modernisation and reconstruction of port berths. Method is characterised with formation of mooring wall in the form of raft from several layers of multifunctionally used tight pipelines of various diameter, which are manufactured as **helical**-seamed and multilayer from composite set of materials. Wall is produced by two groups of technological tight pipelines laid on water surface in direction of its formation, which are joined to each other in each group with the help of coaxial stiff transverse ribs with development of two pontoons. Adjacent ends of ribs are joined to each other with the help of hinged joints, along axis of which the first of bearing pipelines is laid, and a pair of joined pipelines of the second layer is laid on top, and so on till rated level. Functional pipelines are laid onto the last horizontal layer of bearing pipelines, and composite elements of hatches and working surface fixed with tension to **anchor** ropes are mounted on functional pipelines. Internal volumes of upper - subsurface layer of pipes are equipped as functional premises: warehousing, technological, working premises. **Railway** track and motor road, which are joined to according **ground** transport network, are laid on surface of mooring wall. ^ EFFECT: invention makes it possible, as a result of elimination of earth works related to dredging, to reduce capital, material and financial costs in case of port mooring part enlargement, and also to reduce construction time. ^ 4 cl, 2 dwg

PN - [GB190522275](#) A 19060830

PR - GBT190522275 19051101

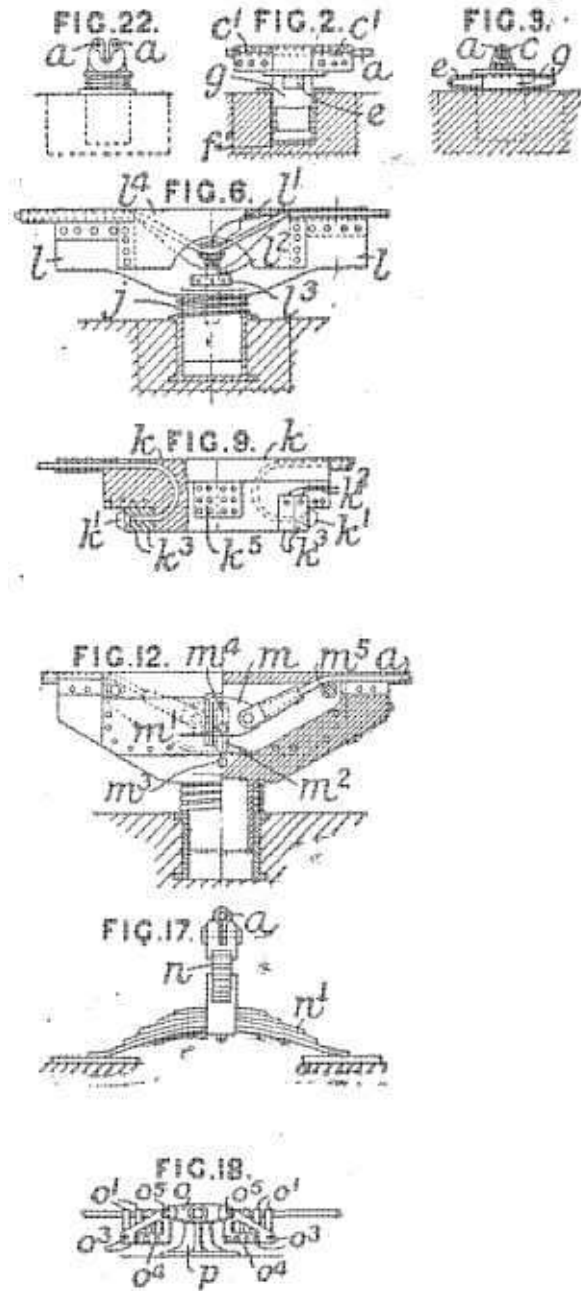
AP - GBD190522275 19051101

DT - I

PA - BURNABY ARTHUR ST VINCENT

TI - Improvements in **Rails**
for **Railways** and the like

AB - 22,275. Burnaby, A. St. V. Nov.
1. **Rails**; sleepers; **rails**, securing
to . sleepers; single-**rail railways**;
elevated **railways**.-Relates to
flexible **rails** for use in mono-**rail**
and elevated **railways** and
in **railway** systems generally, and
to means for supporting and
maintaining the tension in
such **rails**, reference being made
in the Provisional Specification
to the **railway** described in n
Specification N o . 5893, A.D.
1905. The **rail** a, Figs. 2 and 3, is
supported at intervals by pillars
g mounted upon springs e so as
to slide in sockets f formed in a
concrete or like foundation, and
is connected to the upper part of
the pillars by clips c and
prevented from end movement by
plates c' bolted to th e clip.
The **rail** may be supported at
intermediate points directly
upon elliptical springs, the lower
branches of which are connected
to vertically-sliding pillars.
The **rail** may be supported
upon **helical** springs j, Fig. 6. In
cases where the **rail** ends are
spliced together, the tension in
the **rail** may be adjusted by a
screw l<2> provided with an eye
l<1> through which the **rail**
passes and with an adjusting-
nut l<3> mounted in the support l.
The central gap of the support l
is bridged by a piece l<4> shaped
to form a continuation of the **rail**
surface. In cases where the **rail**
ends are not spliced together,

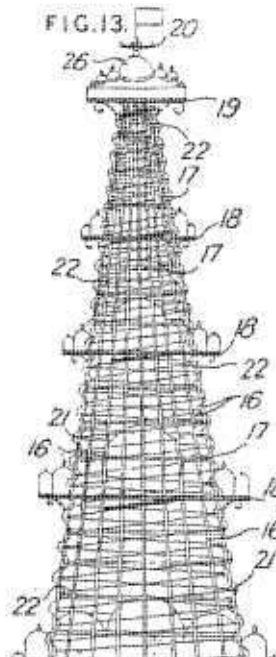
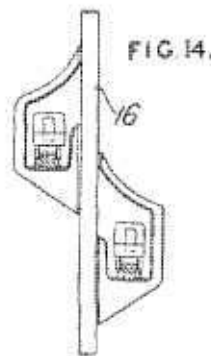


they may be passed through grooves formed in the support k, Fig. 9, and be formed with enlarged heads k<1> which bear against blocks k<3> formed with flanges k<2> bolted to the support k, the tension in the **rail** being adjusted by varying the number of blocks k3. The support k is in two pieces connected by plates k<5> and having the upper edges formed as a continuation of the **rail** surface. In a modification, the **rail** ends are connected to a plate m, Fig. 12, provided with a pin m<1> which projects through slots m<2> in the sides of the support. The tension in the **rail** is increased by a jack or like device, one part of which is attached to the pin m<1> and the other part to a pin m<3> fixed to the support, the plate m being maintained in the adjusted position by the insertion of blocks m<4> above the pin m<1>. The **rail** portions a may pass over rollers m<5>. In another modification, the **rail** is secured to clips which are similar to those in Fig. 3 but are capable of longitudinal adjustment in the support. The **rail** may be supported upon semi-elliptic springs n, n<1>, Fig. 17, arranged at right-angles to each other in the manner shown, or with the ends of both springs bearing upon the **ground**. In a modified form of support, the springs are dispensed with, the clips which hold the **rail** being secured in plates o', Fig. 18, which are pivoted at o<3> to side plates o<4> connected by pivots o<5> to links o pivoted to a support p which is **anchored** to the **ground**. Fig. 22 shows a support designed to carry a

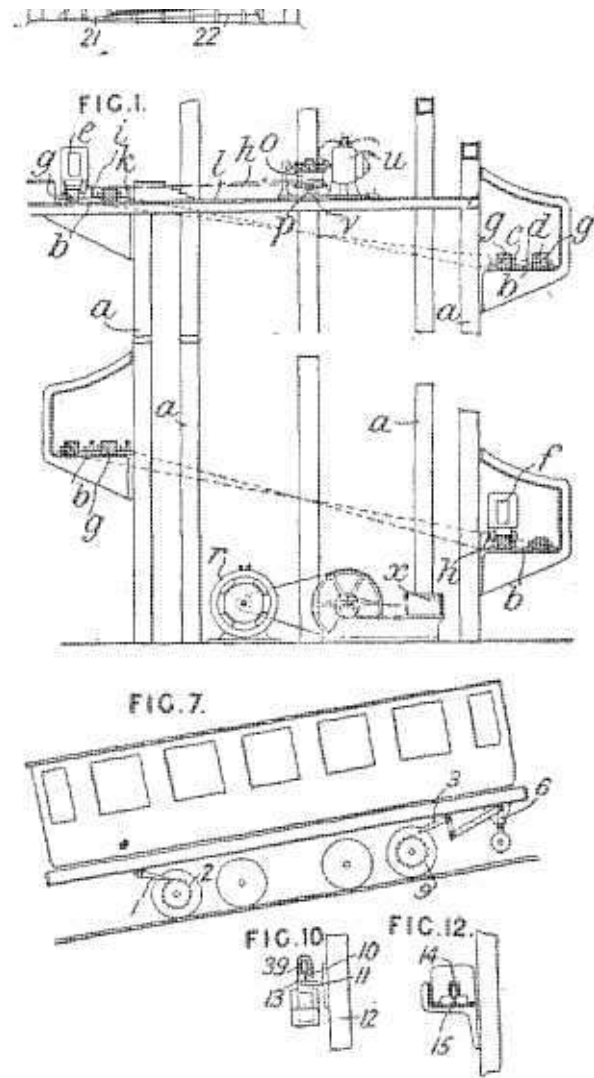
duplex **rail**. The **rails** are preferably in the form of cables, which may be protected against wear by short lengths of metal tubing or by a **helical** wrapping of metal ribbon or wire, the wire serving also as a means of attachment to the supports. In lieu of cables, short lengths of rigid **rail** pivoted together and preferably of tubular section or having a vertical web, chains covered with short pieces of metal tubing, metal links, or ribbons may be used. The **rails** may be used also as guide or safety **rails**.

6/10 © EPODOC / EPO

- PN - [GB190310501](#) A 19040505
 PR - GBT190310501 19030508
 AP - GBD190310501 19030508
 DT - I
 PA - GRAYDON JAMES WEIR
 TI - Improvements in & relating to Towers for Recreation & other purposes.
 AB - 10,501. Graydon, J. W. May 8. **Railways** for recreation ; toy buildings.- Towers for recreation and other purposes are provided with spiral or **helical railways**, so constructed that the cars cannot leave the **rails**, and in which ascending and descending cars are connected together by a cable &c., so as to balance each other. Means are also provided to prevent the cars from running back if the cable should break, or other means of propulsion fail. Fig. 13 shows one form of tower in sectional elevation. The tower is preferably constructed of steel or iron, and is composed of a number of legs a, made of box girders. The spiral **railway** b is built or supported on the



outside of the legs, and may have two tracks c, d, as shown, or one track only. The tracks each consist of two **rails** on which cars e, f run, a projection g being formed between the **rails**, to prevent the wheels from becoming de-**railed**. The cars on the outside and inside tracks are connected together and propelled by means of a cable h, which passes round pulleys i, k, mounted on the upper platform l, guide-pulleys being provided, as shown. The cable is driven by means of a drum o mounted on a shaft p. When the tower is small or in the form of a toy, the shaft may pass through a tubular bearing to the bottom of the tower, but for high towers the shaft p is mounted in a footstep bearing v, and driven through worm gearing by a motor u supplied with current from a dynamo r, driven by an engine x. The cars are built in the form of a helix, or part of a helix, the axles being made to radiate from the centre of the curve of the track. Fig. 7 shows a form of safety apparatus for use where the cars ascend on one track, and descend on another track, so as always to travel in the same direction. Each car is provided with a ratchetwheel 1 and pawl 2 for preventing an ascending car from running back, and a ratchetwheel 9 and pawl 3, operated by a swinging bell-crank lever 6, for preventing a descending car from running away. In a modification, a car may be suspended by its flanged wheels 39, Fig. 10, from a **rail** 10, carried by brackets 11 on the box girder 12. The strap or bracket 13 passes over the top of the wheel



to below the level of the **rail**, to prevent the wheels from being de-**railed**. Or, a car may be mounted on wheels 14, running on a **rail** 15, the centre of gravity of the car being below the level of the **rail**. A recreation tower tapering towards the top, as shown in Fig. 13, is composed of a number of legs 16, of steel box girders, braced by cross or diagonal girders 17, and carries intermediate platforms 18 and a platform 19 near the top. Pavilions 26 or ball rooms, restaurants, skating rinks, clubs, bazaars, &c. may be built at the base of the tower and on the platforms 18, 19, and observatories may be built on the platform 19 if desired. On the top of the tower is placed a rotating platform 20, for supporting searchlights and mirrors for producing light effects, and for throwing images on the clouds. An outer spiral **railway** 21 is mounted on the outside of the legs 16, and, on reaching the platform 19, describes a circle and continues downwards spirally to form an inner spiral **railway** 22. The method of supporting the tracks, and preventing de-**railing** of the cars, is shown in Fig. 14. The cars 23 may ascend by the outer track, and descend by the inner one, or vice versa. Promenades for pedestrians may be formed at the sides of the spiral **railway** tracks, and arrangements may be made for firework displays. Lifts or elevators may be arranged to take passengers up the tower, and supporting cables or guys from the top of the tower, or from intermediate places, may be **anchored** to the **ground** and

used as aerial railways, on which suspended cars run up and down.

7/10 © EPODOC / EPO

PN - [GB814086](#) A 19590527

AP - GB19540036159 19541214

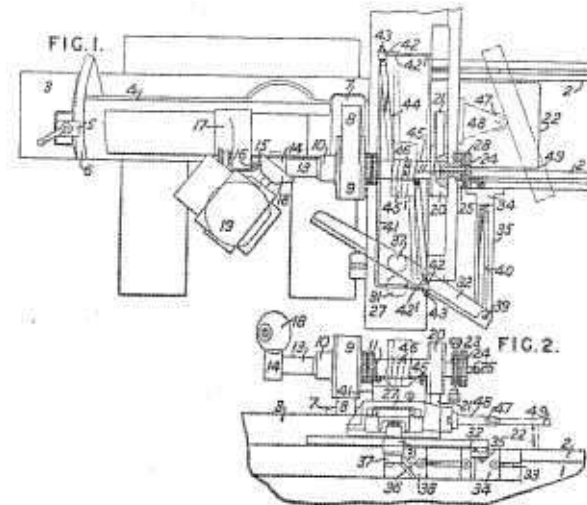
DT - *

CCI - [B24B3/045](#)

PA - JONES & SHIPMAN A A LTD;
JOSEPH HOULDSWORTH

TI - Improvements relating to
machine tools

AB - 814,086. Grinding. JONES & SHIPMAN Ltd., A. A., and HOULDSWORTH, J. Dec. 28, 1955 [Dec. 14, 1954], No. 36159/54. Class 60. A machine tool has means for converting a relative rectilinear motion between the work and the tool into a rotary motion of the work including a rotatably-mounted body which is coupled in use to the work so as to rotate the latter, and a transmission tape which is wrapped in a plurality of side by side turns around this body with its length at an oblique angle to the axis of rotation of the body and is movable transversely to this axis, in response to said relative rectilinear motion, to wind helically on and/or off the body and thus rotate the latter and the work. A machine for grinding the **helical** teeth of milling cutters comprises a work-carrying frame 4 pivotally adjustable on a worktable 3 running on a bed 1. The frame 4 is secured in adjusted position by a plate 5 co-operating with a segment 6. The frame 4 carries a plate 7 having an upstanding arm 8 carrying a cylindrical bearing 9; rotatable in annular



bearing races in the cage is the hollow cylindrical end 10 of a spindle 11, this end being internally tapered to receive the part conical end of an arbor 13 carrying workpiece 14. The workpiece 14 may also be supported at its outer end through a mounting sleeve 15 from a centre 16 carried by a tailstock 17 on the frame 4. The grinding wheel 18 is mounted on a wheel head 19 capable of being orientated. The spindle 11 is rotatably supported at its other end in a bearing 20 carried by an arm 21 on an extension 22 of the frame 4. Mounted on spindle 11 between bearings 9, 20 is a drum 54 capable of rotation relative to spindle 11, both spindle 11 and drum 45 projecting through the bearing 20. A setting dial 23 adjustable relative to drum 45 by worm gearing has a ring of closely spaced apertures selectively engageable by a retractable pin 25 carried by a block 24 secured to the end of spindle 11. A steel tape 44 is wrapped in a number of side by side turns around the drum 45; the ends of the tape are attached to screwed rods 43 received in **anchorage** sleeves in lugs 42 at the diagonally opposite corners of a frame 41 upstanding from a cross slide 27 carried by the table 3 or by the frame 4. The cross slide carries a roller 31 co-operating with an adjustably inclined bar 32. One end of the bar 32 is articulated to an arm 35 by nut and bolt 39 adjustable along slot 40 in arm 35, the arm projecting from a bracket 34 adjustable along a groove 33 in the machine bed 1. The bar 32 is also supported by

a stud 37 on an arm 36 carried by a bracket 38 adjustable along the groove 33. Thus as the table 3 is traversed longitudinally the work is given a conjugate rotation. The mid-point of the tape 44 may be secured to the drum 45 by a clamp 46. The drum 45 may be replaced by a larger drum 45<SP>1</SP>, and the ends of the tape are then secured to

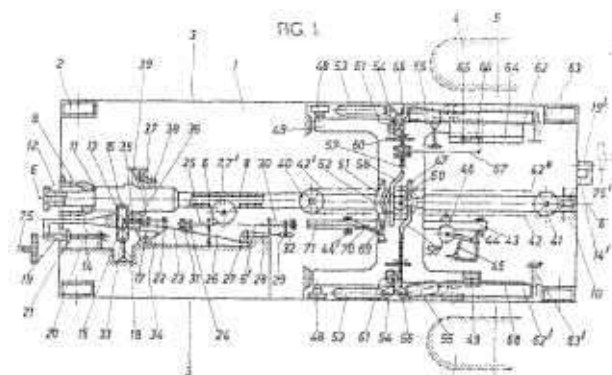
alternative **anchorages**

42<SP>1</SP> on the frame 41.

Alternatively, the inclined bar 32 may be carried by the cross slide 27 and co-operate with a roller fixed on the machine bed. In another arrangement the cross slide may be directly propelled and thus used to impart the traversing movement to the worktable, e.g. by employing a roller 47 carried in a bracket 48 secured to the crossslide 27, the roller co-operating with an inclined bar 49 adjustably fixed to **rails** 2 attached to bed 1. The effective edge of the inclined bar 32 may be shaped to vary the form of each individual tooth along the length of the latter, whereby cutters having a non-parallel axial section can be **ground** with a constant **helical** angle.

8/10 © EPODOC / EPO

- PN - [GB1099194](#) A 19680117
 PR - DE1964M060785 19640425
 AP - GB19650016988 19650422
 DT - **
 CCI - [E04H6/183](#)
 PA - MOHR & FEDERHAFF AG
 TI - Improvements in transport trolleys for moving vehicles in parking garages



AB

- 1,099,194. Mechanical garages. MANNHEIMER MASCHINENFABRIK MOHR & FEDERHAFF A.G. April 22, 1965 [April 25, 1964], No. 16988/65. Heading B8E. A trolley 1, Fig. 1, for moving vehicles in a garage comprises devices for engaging the wheels of vehicles having different wheel bases and track widths including for each steering wheel 4, 4<SP>1</SP> of the vehicle, a wheel boom 55 for guiding the wheel when it is in rolling contact with the **ground**, the boom 55 having a wheel-engaging position substantially radial to the wheel and inclined to the vertical. The trolley runs on rollers 2 and is moved through cables 6, 61 by an external drive system disposed, for example, in a lift cage. A shaft 8 is slidably mounted in the trolley for longitudinal movement limited by stops 11, 12, the shaft 8 carrying pulleys 7, 7<SP>1</SP> round which extend the cables 6 6<SP>1</SP> to spring-loaded **anchor** bolts 24, 29. The shaft 8 is releasably locked by a spring-loaded bolt 13 which engages a recess 16 in the shaft and is slidably mounted in a pivoted and spring-loaded lever 14, the latter being held in the position shown by a spring-loaded, slidably mounted bolt 19. The end 22 of the lever 14 is connected by a linkage 23 to the **anchor** bolt 24 and from there by a linkage 26, a pivoted lever 27 and a further linkage 28 to the **anchor** bolt 29. The linkages 23, 28 have slots 31, 32 to give lost-motion connections with the **anchor** bolts 24, 29. The bolt 13 has a recess 33 in which there is engaged a spring-loaded catch 35, the latter being

releasable by movement of a bell-crank lever 36, 37 which carries a roller 38 for engagement by a cam 39 on the shaft 8. On the latter are two pulleys 40, 41 around which extends a cable 42, the cable being secured to a slidably mounted slide **rail** 43 releasably held in the position shown by a spring-loaded catch 46. The ends of the cable 42 are wound in opposed directions on a drum 47 which is rotatably mounted on a carrier 49 having rollers 48 for running in the trolley 1, a gear-wheel 50, Fig. 2 (not shown), and a toothed brake disc 51 being fixed to the drum 47. The disc 51 is engageable by a pivoted, toothed brake lever 52 which is operable by a pivoted bell-crank lever having rollers 69, 70 on its respective arms for engaging the bell-crank brake lever 52 and a cam guide 71 provided on the slide **rail** 43. The wheels 4, 4¹ are also engaged by booms 53, each of which is pivotally mounted on the carrier 49 and carries a roller 61 which is engaged in a spring-loaded guide 62 or 62¹, the latter being pivotally mounted on the trolley 1, and each boom 55 is mounted on an arm 56 connected through a worm gearing 57 with a rack 58 or 58¹ which is engaged by the gear-wheel 50. The booms 53, 55 include roller assemblies. The arms 56 can be rotated through about 45 degrees by a lever 60 connected by a linkage 74, Figs. 3 and 4 (not shown), to a roller 73 which engages a guide 72 provided on the slide **rail** 43, and the arm 56 is releasably held in the shown position by a catch 67 which is connected to a pivoted

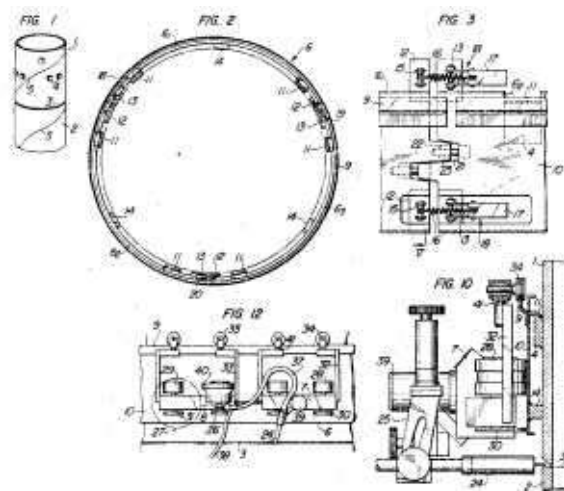
bell-crank lever 66 carrying a roller 65, the latter being engaged in a guide 64 attached to the guide 62. The guide 62<SP>1</SP> has a brake surface 68 adapted to engage the carrier 49. The cable 42 may be replaced by a chain or belt. In operation, when the trolley 1 is moved to the left by the cable 6 to engage a vehicle, the trolley movement is continued until a stop 75 is engaged by the bolt 19 to release the lever 14 for engagement behind the stop 75. The movement of the lever 14 disengages the bolt 13 from the recess 16 in the shaft 8 so that upon reversal of the drive the shaft is moved to the right by the cable 6<SP>1</SP>. The cam 39 engages the roller 38 to withdraw the catch 35, so permitting the bolt 13 to be pressed against the shaft 8 until it engages behind the stop 11 thereon. Upon movement of the shaft 8 to the right, the carrier 49 is displaced to the right by twice the distance moved by the shaft 8 and due to the engagement of the rollers 61 in the guides 62, 62<SP>1</SP>, the booms 53 are pivotally moved outwardly, Fig. 5 (not shown). The movement of the carrier 49 continues until the booms 53 engage the vehicle wheels 4, 4<SP>1</SP>, the booms 53 being then displaced in a reverse direction to move the guides 62, 62<SP>1</SP> inwardly of the trolley 1. The brake surface 68 on the guide 62<SP>1</SP> engages the carrier 49 to stop its further movement and, simultaneously, the bell-crank lever 66 is moved to disengage the catch 67 from the arm 56. Upon further

movement of the shaft 8 the drum 47 is rotated and the racks 58, 58<SP>1</SP> with the arms 56 are moved laterally of the trolley until the booms 55 engage the vehicle wheels. Further movement of the shaft 8 now moves the slide rail 43 to the right, the catch 46 being overridden, to engage the brake lever 52 with the disc 51 and to rotate the arms 56 to a position in which the booms 55 are directed substantially radially of the vehicle wheels. Due to the interconnection of the arms 56 and the racks 58, 58<SP>1</SP> by the worm gearings 57 the rotation of the arms causes the booms 55 to withdraw a short distance from the vehicle wheels. Further movement of the cable 6<SP>1</SP> now moves the trolley 1 to the right, the lever 14 being disengaged from the stop 75 and reengaged by the bolt 19 by the initial pull of the cable 6<SP>1</SP> on the **anchor** bolt 29. The movement of the lever 14 also re-engages the catch 35 in the recess 33 in the bolt 13. The movement of the trolley 1 to the right continues until a stop 75<SP>1</SP> is engaged by a bolt 19<SP>1</SP>, a lever 141 thereafter engaging behind the stop 75<SP>1</SP>; the levers 14, 14<SP>1</SP> and the bolts 19, 19<SP>1</SP> are similar and are respectively interconnected mechanically or hydraulically so that they move in unison. In depositing a vehicle the above described movements are carried out in reverse sequence. In a second embodiment, Fig. 6 (not shown), the trolley 1 is driven by a motor 81 through a clutch 80 and a brake 79. The

motor 81 is also connected to a threaded spindle 82, rotation of which moves a nut 83 having half-clutches 84, 84<SP>1</SP> which are adapted to selectively engage complementary half-clutches 85, 85<SP>1</SP>. Secured to the latter are worm or **helical** gears 86, 86<SP>1</SP> movement of which is transmitted through rack gears 87, 87<SP>1</SP> to a shaft 88 corresponding to the shaft 8 of the first embodiment. The gears 86, 86<SP>1</SP> are multiple threaded to prevent self-locking. In operation, after the trolley has travelled from, for example, the lift cage to a parking space and the half clutch 84 has engaged the clutch half 85 due to movement of the nut 83, a catch (not shown) is applied to ensure that on further movement of the motor 81 a disengagement of the half-clutches 84, 85 can take place only when the shaft 88 has completed its movement to engage or deposit a vehicle. The operation of the catch may be co-ordinated with the operation of the clutch 80.

9/10 © EPODOC / EPO

- PN - [GB1450470](#) A 19760922
 PR - JP19730020162 19730221
 AP - GB19740006607 19740213
 DT - **
 CCI - [B23K9/0286](#)
 PA - HITACHI LTD; KAWASAKI STEEL CO
 TI - APPARATUS FOR USE IN
 AUTOMATIC WELDING TOGETHER
 OF STEEL PIPES
 AB - 1450470 Welding by fusion
 HITACHI Ltd and KAWASAKI STEEL
 CORP 13 Feb 1974 [21 Feb 1973]
 6607/74 Heading B3R Gas-

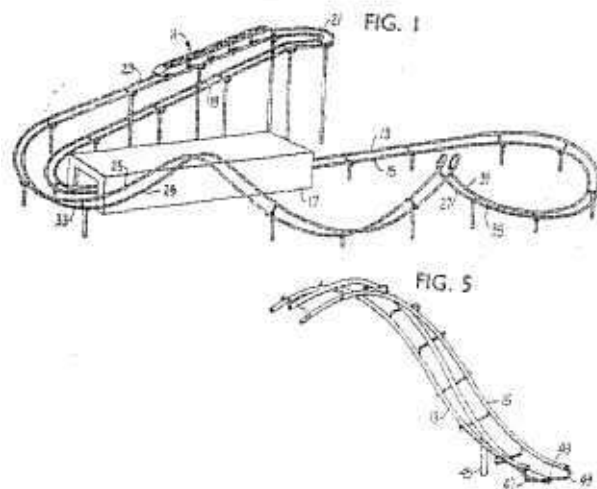


shielded, consumable electrode, arc welding apparatus, for end-to-end butt welding together, at a zone 3, of upper and lower vertical axis large diameter pipes 1, 2 to produce **piles** or columns, particularly for use with welded-up pipes having seams (e.g. as shown at 5, **helical**) forming pipe surface ribs, comprises an annular series of hook pads 4 welded, in use of the apparatus, to the upper pipe 1 equidistantly from the weld zone 3, a tightenable support garter 6 having welded-on or bent-out garter suspension hooks 11 engageable with the pads 4, garter stand-off feet 12-14, a suspension **rail** 9 and a cylindrical track surface 10, and a self-driven carriage 7 supporting a position-adjustable welding torch 24 and provided with carriage suspension rollers 34 engageable with the **rail** 9 and magnetic rollers 28 and non-magnetic or, if necessary, magnetic auxiliary rollers 30 connected, via reduction gearing, to a carriage drive motor 39 and engageable with the surface 10. Preferably the garter, is surface treated, e.g. plated, to prevent rusting. The suspension rollers 34 are turnably supported by vertical spindles 41 coaxial with the magnet roller axes to permit use of the carriage with various sizes of pipe. A motor-driven electrode wire feed device and wire storage reel 26, 27 may be installed on the **ground** or, as shown, mounted on a trailer carriage 8 which is disconnectibly coupled to the carriage 7 and is provided with suspension, magnetic and auxiliary rollers 35, 29, 31. The

garter 6 comprises two or more steel segments 6 1 -6 3 connected together and mutually located respectively by pairs of toggle fasteners 18...20 and pins and sockets 21, 22 disposed inwardly of the surface 10. A gap between the segments 6 1 , 6 2 allowing for garter/ pipe dimensional discrepancy is made zig-zag to provide for a continuous track surface. The connections 18 include springs 16.

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 AB - 1490018 Amusement rides
 ARROW DEVELOPMENT CO INC 14
 Feb 1975 [19 Feb 1974] 6397/75
 Heading A6M An amusement ride
 comprises passenger carrying
 vehicles 11 a pair of rails 13 and
 15 fixed with respect to
 the **ground** to carry and guide the
 vehicles 11 over a predetermined
 path a portion of which, between
 25 and 27, follows a **helical**
 shape extending an axial length
 corresponding to at least one
 cycle of the helix and the helices
 of the rails 13 and 15 being
 congruent and having a common
 substantially horizontal axis
 with respect to the **ground**. In a
 preferred embodiment a
 passenger loading station 17 is
 located at the foot of a steep
 upgrade portion 19 of track up
 which the cars are mechanically
 assisted whereafter they enter a



descent 23 leading to the **helical** portion beginning at 25 and ending at 27, transition sections 33 and 35 providing smooth entry and exit therefrom. The **rails** 13 and 15 (Figure 5) are connected at intervals by brackets 47 and 49 at their outer and facing sides with respect to the track to a support **rail** 43 which is **anchored** to the **ground** at intervals by posts 45 and follows a similar **helical** path, but of larger radius than that of the **rails**, this path having a pitch angle of between 40 and 90 . A part of the cars may project below axis of wheels 55 and 57 toward the support **rail** 43 to lower the centre of gravity of the cars with respect to the **rails** and each car has a cluster of three wheels 55, 57 and 59 on each side, the wheel 59 contacting the underside of the **rail** with respect to the car to retain the car in contact with the **rails** in the event of accidental speed reduction in the **helical** region of the track. Additionally wheels are provided to contact the inside of the track.

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[EPODOC: SS 15]