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Remarks:

Claims 24-110 are deemed to be abandoned due to non-payment of the claims fees (Rule 31 (2) EPC).

(54) **Apparatus for cutting tiles**

(57) An apparatus for cutting tiles (2) comprises tool means (10) arranged to obtain intended separation line means on a face of said tiles (2), said tool means (10) being connected with operating lever means (7) having

a non-rectilinear shape and carriage means (6) on which said operating lever means (7) is hinged, said carriage means (6) being slidable along guide means (5) and a metal-polyarylamide coupling being provided between said carriage means (6) and said guide means (5).

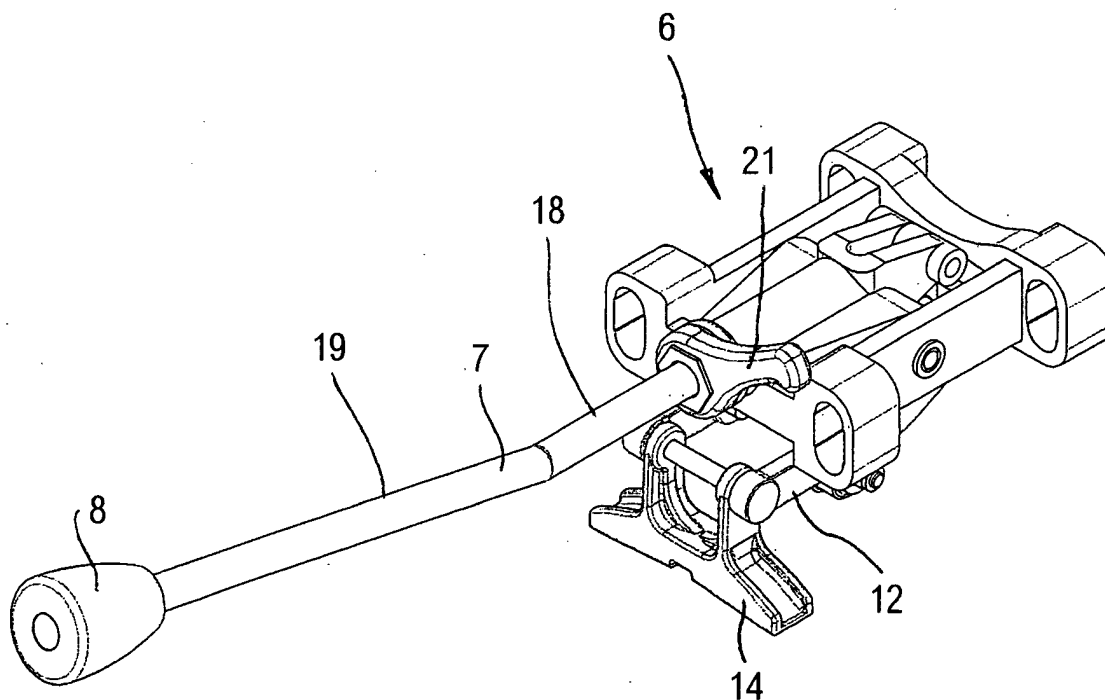


Fig. 4

Description

[0001] The invention concerns an apparatus for manually cutting tiles.

[0002] Apparatuses for manually cutting tiles are known comprising a base on which a tile to be cut can be placed, an incision-making tool suitable for making an incision, or a groove, on one of the faces of the tile, said incision defining an intended separation line, and a presser member suitable for interacting with the tile to subdivide it into two parts along said intended separation line.

[0003] The presser member comprises a first foot and a second foot that are placed in contact with respective zones of the tile arranged on parts opposite to each other with respect to the intended separation line.

[0004] The incision-making tool is connected to a lever that is hinged at an intermediate point thereof, on a carriage slidable on guides fixed to said base and extending in such a way as to define a substantially horizontal plane.

[0005] The lever is provided with a handle at one end by means of which it can be operated by an operator.

[0006] The lever is hinged, at a further end thereof, opposite to the previously mentioned end, on a connecting rod that connects the lever to a lever arm to which the presser member is fixed.

[0007] The lever, the lever arm and the connecting lever together constitute a force multiplier device that enables cutting operations to be facilitated.

[0008] Said lever arm comprises a first end part hinged on the connecting rod and a second end part to which the presser member is connected.

[0009] From an intermediate position of the lever arm a pin projects that is suitable for being accommodated in a guide groove obtained in said slidable carriage.

[0010] The ends of the pin are associated with slots shaped in such a way as to have a cam profile, said slots being obtained in appendices connected to a control lever hinged on said lever.

[0011] The cam profile is suitable for guiding the translation of the pin inside the groove between a raised position, in which the presser member is at a vertical height that is greater than the vertical height of the incision-making tool, and a lowered position, in which the presser member is at a vertical height that is lower than the vertical height of the incision-making tool.

[0012] During operation, the control lever is used to place the pin in said raised position in such a way that the incision-making tool is made to interact with a tile to be cut.

[0013] During a stroke of the slidable carriage a groove can thus be made on the surface of the tile.

[0014] Subsequently, the control lever is operated to transfer the pin to the lowered position in such a way that the presser member can be brought into contact with the tile on which an incision has been made to separate said tile into two portions by breaking the tile along

the previously made groove.

[0015] A drawback of the apparatuses described above is that the operations connected with cutting a tile are rather laborious because one hand of a user has to operate the lever of the apparatus and the other hand has to operate the control lever to exchange the relative positions of the presser member and of the incision-making tool.

[0016] As a result, cutting operations take a long time to be performed.

[0017] Furthermore, the apparatus is rather complex because it is necessary to provide a system of reciprocal movement of the presser member and of the incision-making tool.

[0018] Another drawback of the apparatuses described above is the significant wear generated by the friction between the slidable carriage and the respective guides, the slidable carriage and the guides being made of a metal material.

[0019] This results in a limited working life of the apparatus.

[0020] A further drawback of the known apparatuses is that such apparatuses are not suitable for cutting very thick tiles because if the cutting tool is brought into contact with the surface of a relatively thick product the lever handle is in a position in which it cannot be easily gripped by an operator.

[0021] In particular, if said handle is at a considerable vertical height with respect to the base of the apparatus the operator may be able to transmit to the lever sufficient force to separate the tile only after making a significant effort or may even be unable to achieve such a separation.

[0022] The apparatuses described above are further provided with a contrast bar that is associated with the base and is suitable for interacting with the face of the tile opposite to the face on which the incision is made.

[0023] In particular, the bar is positioned so as to be arranged along said incision to promote separation of the tile when the feet of the presser member come into contact with the tile.

[0024] The contrast bar comprises a metal member with a square cross-section that has a high degree of hardness.

[0025] European patent application EP 0428070 discloses an apparatus for cutting tiles comprising a base made with a profiled element provided with a cavity within which a contrast bar of the type described above can be accommodated, an edge of said contrast bar interacting with the tile to be cut.

[0026] Said cavity is delimited by a pair of converging walls at the point of intersection of which a rib of the profiled element is provided, which extends in a substantially vertical direction to join a lower portion of said profiled element.

[0027] A drawback of the apparatus described in the above-mentioned patent application is that the edge of the contrast bar protruding from the cavity has a pointed

end and is easily subject to risks of damage or breakage that limit effectiveness thereof.

[0028] A further drawback of the apparatus described above is that if the force transmitted to the contrast bar by the tile is directed, as normally occurs, in a substantially vertical direction, the rib that projects from the cavity is extremely stressed.

[0029] Furthermore, if the thrust line of said force is tilted with respect to the vertical the walls defining said cavity are subjected to a flexural stress that may cause them to yield.

[0030] An object of the present invention is to improve the apparatuses for cutting tiles. A further object of the invention is to obtain an apparatus for cutting tiles that is particularly easy to handle and simple to use.

[0031] A further object of the invention is to obtain an apparatus that enables a high number of tiles to be cut per time unit.

[0032] A still further object of the invention is to obtain an apparatus for cutting tiles in which the carriage to which the cutting tool is fixed and the respective guides are little subject to wear.

[0033] A still further object of the invention is to obtain an apparatus for cutting tiles provided with a highly resistant contrast bar.

[0034] A further object of the invention is to obtain an apparatus for cutting tiles provided with a base made with a profiled element that is able to effectively withstand the stress transmitted thereto by a tile during cutting operations.

[0035] A still further object of the invention is to obtain an apparatus with which it is possible to cut tiles having a thickness that falls within a wide range of dimensions.

[0036] In a first aspect of the invention, an apparatus for cutting tiles is provided, comprising tool means arranged to obtain separation line means on a face of said tiles, said tool means being connected with operating lever means, carriage means on which said operating lever means is hinged, said carriage means being slidable along guide means, lever arm means supporting pressing means suitable for separating said tiles along said intended separation line means, connecting lever means suitable for connecting said lever arm means to said operating lever means, characterised in that said pressing means is associated with said lever arm means through rotation coupling means.

[0037] In an embodiment, the rotation coupling means is so configured as to enable the pressing means to be arranged, due to the action of gravity, in a work configuration in which the pressing means defines a substantially vertical plane.

[0038] In another embodiment, the lever arm means is hinged on the carriage means.

[0039] In a further embodiment, the pressing means is so shaped as to have a portion that, when the pressing means is in said operating position, is nearer to the top face of tile to be cut than the tool means.

[0040] During operation, the pressing means is rotated

around the rotation coupling means in such a way as to enable the tool means to be positioned in contact with the face of the tile on which an incision is to be made.

[0041] The pressing means is thus in a rest configuration in which the pressing means rests on said face, thereby defining a plane that is tilted with respect to the vertical plane.

[0042] Whilst the pressing means is kept in the rest configuration and the tool means is in contact with the face on which an incision is to be made, the carriage means is translated, thereby enabling the tool pressed against the tile by the lever means to create the intended separation line means.

[0043] At the end of the stroke of the carriage means the lever means is lifted up.

[0044] This enables the pressing means to move from the rest configuration to the work configuration.

[0045] Subsequently, the carriage means is further translated to place the pressing means in the required position.

[0046] Still subsequently, by exerting a pressure on the lever means, separation of the tile along the intended separation line means is obtained.

[0047] Owing to this aspect of the invention, it is possible to obtain an apparatus for cutting tiles that is easy to use, in particular it is possible to obtain an apparatus that can be operated using just one hand, inasmuch as no device is required to transfer the pressing means from the rest configuration to the work configuration.

[0048] In a second aspect of the invention, an apparatus for cutting tiles is provided, comprising tool means arranged to obtain intended separation line means on a face of said tiles, said tool means being connected with operating lever means, carriage means on which said operating lever means is hinged, said carriage means being slidable along guide means, characterised in that said operating lever means has a non-rectilinear shape.

[0049] In an embodiment, the lever means comprises a first portion and a second portion associated in such a way as to define an angle of a preset width.

[0050] In another embodiment, the lever means comprises a first end associated with the carriage means and a second end at which handle means is obtained that is suitable for being gripped by a user.

[0051] Said first end can rotate inside a respective seat obtained in the carriage means in such a way that the lever means is movable between a first operating position, in which the lever means has a convex profile facing the tiles to be cut, and a second operating position, in which the lever means has a concave profile facing the tiles to be cut.

[0052] By arranging the lever means in said first operating position it is possible to cut tiles of limited thickness with great effectiveness.

[0053] In this case in fact, the handle means always maintains a certain distance from a base on which the tile to be cut is arranged.

[0054] This enables an operator to avoid the risk of

crushed fingers of the hand with which he acts on the handle means between the handle means and the base in the event of sudden separation of the tile along the separation line means.

[0055] On the other hand, by arranging the lever means in said second operating position, cutting tiles with significant thickness is particularly easy inasmuch as in the case of the. non-rectilinear lever means the handle means of is nearer to said base than in the case of rectilinear lever means. The handle means can therefore be grasped more easily by the operator.

[0056] In a third aspect of the invention, an apparatus for cutting tiles is provided, comprising tool means arranged to obtain intended separation line means on a face of said tiles, said tool means being connected with operating lever means, carriage means on which said operating lever means is hinged, said carriage means being slidable along guide means, contrast means suitable for interacting with a further face of said tiles opposite to said face, characterised in that said contrast means has a section having at least one curved part at which said contrast means interacts with said further face.

[0057] In an embodiment, said section has a circular shape.

[0058] Owing to this aspect of the invention, it is possible to obtain an apparatus for cutting tiles provided with contrast means that is little subject to breakage risks.

[0059] The absence of sharp edges in fact gives an improved mechanical resistance to the contrast means.

[0060] In a fourth aspect of the invention, an apparatus for cutting tiles is provided, comprising tool means arranged to obtain intended separation line means on a face of said tiles, said tool means being connected with operating lever means, carriage means on which said operating lever means is hinged, said carriage means being slidable along guide means, base means comprising a profiled element provided with cavity means arranged to receive contrast means suitable for interacting with a further face of said tiles opposite to said face, characterised in that at least two ribs of said profiled element are associated with said cavity means.

[0061] In an embodiment, said two ribs mutually diverge from a base zone of the cavity means.

[0062] In another embodiment said ribs are tilted with respect to a plane defined by the profiled element, said plane being suitable for receiving the tiles abutting thereon.

[0063] Owing to this aspect of the invention, if the tile transmits to the contrast means a force with a thrust line that is in a substantially vertical direction each of the ribs bears a component of the stress, thereby improving the strength of the profiled element.

[0064] On the other hand, if the thrust line of the force is tilted with respect to the vertical direction the presence of at least one rib working substantially under compression enables an apparatus to be obtained that has good

strength because wall means, that delimits the cavity means, is subjected to a limited flexional stress.

[0065] In a fifth aspect of the invention, an apparatus for cutting tiles is provided, comprising tool means arranged to obtain intended separation line means on a face of said tiles, said tool means being connected with operating lever means, carriage means on which said operating lever means is hinged, said carriage means being slidable along guide means, characterised in that a metal-polyarylamide coupling is provided between said carriage means and said guide means.

[0066] In an embodiment, the carriage means is made of polyarylamide and the guide means has a chromed external surface.

[0067] Owing to this aspect of the invention, it is possible to obtain an apparatus for cutting tiles that is little subject to wear.

[0068] Tests which have been carried out have shown that apparatuses for cutting tiles obtained according to this aspect of the invention can operate for about five million working cycles without requiring lubrication.

[0069] The invention may be better understood and carried out with reference to the accompanying drawings, which show an exemplifying and not limiting embodiment thereof, in which:

Figure 1 is a perspective side view of an apparatus for cutting tiles according to the invention;

Figure 2 is a perspective view from above of the apparatus of Figure 1;

Figure 3 is a view like that of Figure 1 showing base means of the apparatus;

Figure 4 is a perspective view of carriage means of the apparatus;

Figure 5 is a side view of the carriage means of Figure 4;

Figures 6 and 7 are side views of the apparatus according to the invention, showing lever means of the apparatus, suitable for driving tool means, arranged in an operating position and shown in two phases of the working cycle;

Figures 8 and 9 are views like those of Figures 6 and 7 showing the lever means, in two phases of the working cycle, arranged in a further operating position;

Figure 10 is a front view of a profiled element constituting the base means, said profiled element being provided with cavity means suitable for receiving contrast means suitable for interacting with the tiles to be cut.

[0070] Figures 1 to 10 disclose an apparatus 1 for cutting tiles 2 comprising a base 3 from which support means 4 protrudes to which guides 5 are fixed. that are arranged in such a way as to be substantially parallel to the base 3.

[0071] The apparatus 1 further comprises a carriage 6, slidable on the guides 5, on which a lever is hinged 7

that is provided at one end 9 with a handle 8 by means of which the operator can operate the lever 7.

[0072] Advantageously, the carriage 6 is made of polyarylamide, whereas the guides 5 have a chromed surface.

[0073] In this way, an apparatus 1 is obtained that has a long working life since friction between the carriage 6 and the guides 5 is extremely reduced.

[0074] A cutting tool 10 is rotatably coupled to the lever 7, said cutting tool 10 being arranged to make an incision on one face of the tiles 2 to obtain an intended separation line on said face.

[0075] The lever 7 is hinged at an intermediate portion 11 thereof on the carriage 6, in this way, by rotating the lever 7 in the direction shown by arrow R, it is possible to bring the tool 10 into contact with the tiles 2, whilst by operating the lever 7 in the direction indicated by the arrow F it is possible to make an incision that substantially extends over the entire length of the tiles 2 and defines said intended separation line.

[0076] A lever arm 12 is further hinged on the carriage 6; at an end zone 13 of said lever arm 12 a presser member 14 is rotatably coupled, said presser member 14 being suitable for separating the tiles 2 along the intended separation line.

[0077] Between the lever 7 and the lever arm 12 a connecting lever 15 is interposed that is respectively hinged on a further end 16 of the lever 7 opposite to the end 9, and on a further end zone 17 of the lever arm 12 opposite to the end zone 13.

[0078] The presser member 14 is movable between a work configuration, indicated by the letter A in Figures 6 to 9, in which the presser member 14 is contained in a substantially vertical plane, and a rest configuration, in which the presser member 14 defines a plane that is tilted with respect to the vertical plane.

[0079] The presser member 14 is hinged on the carriage 6 in such a way that, when the lever 7 is raised, the presser member 14 moves from the rest configuration to the work configuration A due to the action of its own weight, in other words without requiring any intervention by the operator.

[0080] It is possible to proceed in the manner indicated below to cut a tile 2.

[0081] Firstly, the presser member 14 is positioned in the rest configuration: in this way the cutting tool can be pressed against the face of the tile 2, whilst the presser member 14 rests on the latter.

[0082] Subsequently, an incision is made on the face of the tile 2 by operating the lever 7, during said operation the presser member 14 slides on said face without transmitting any force to the latter.

[0083] Subsequently, by raising the lever 7, the presser member 14 moves from the rest configuration to the work configuration A thereby being suitable for being pressed against the tile 2 to fracture the tile 2 along the previously obtained incision.

[0084] As shown in Figures 4 to 9, the lever 7 comprises a first portion 18 and a second portion 19 that are connected to each other in such a way as to form an angle of a preset width.

[0085] The lever 7 as a whole therefore defines a segment of broken line.

[0086] An end part of the first portion 18 is suitable for being accommodated inside a seat 20 obtained in the carriage 6.

[0087] Said end part of the first portion 18 is provided with a male thread suitable for being coupled with a corresponding female thread provided in the seat 20.

[0088] The first portion 18 is rotatable inside the seat 20 in such a way as to define a first operating position of the lever 7, indicated by the letter X in Figures 8 and 9, and a second operating position of the lever 7, indicated by the letter Y in Figures 6 and 7.

[0089] To the first portion 18 locking means 21 is associated that is suitable for locking the lever 7 in any required position, in particular in the first operating position X and in the second operating position Y.

[0090] When the lever 7 is in the first operating position X, the apparatus 1 is particularly suitable for being used for cutting tiles 2 having a limited thickness S1.

[0091] In this case in fact, during the entire working cycle, and in particular during the tile breaking phase, the handle 8 remains at a distance from the tile 2 sufficient to prevent the hand of the operator from being crushed between the guides 5 and the handle 8.

[0092] When the lever 7 is in the second operating position Y, on the contrary, the apparatus 1 is particularly suitable for being used for cutting tiles 2 of a significant thickness S2.

[0093] In this case in fact, considering the same thickness S2, the handle 8 is in a position that is nearer to the base 3 than the position that the handle 8 would take up if the lever 7 had a rectilinear shape.

[0094] This enables the operator to have an easier hold on the handle 8.

[0095] The operator can further more easily transmit to the lever 7 the force required to make an incision on the tile 2 and to fracture said tile.

[0096] Figure 10 discloses a profiled element 22, for example made of extruded aluminium, that constitutes the base 3 of the apparatus 1.

[0097] In the profiled element 22 a cavity 23 is obtained that is suitable for receiving a contrast bar 24 suitable for interacting with a face of the tile 2 opposite to the face in which the incision was made, said contrast bar 24 cooperating with the presser member 14 to fracture the tile 2 along said incision.

[0098] Advantageously, the contrast bar 24 is made of a material that has great mechanical strength and hardness.

[0099] The contrast bar 24 has a circular section: in this way, as the contrast bar 24 does not comprise sharp edges, interaction of the contrast bar 24 with the tile 2 occurs along a portion having curved shape.

[0100] This means that the risks of damage to or

breakage of the contrast bar 24 are greatly reduced or even avoided.

[0101] From the bottom of the cavity 23 two ribs 25, 26 start that are connected to a bottom part 27 of the profiled element 22.

[0102] A base 3 is thus obtained that has great mechanical strength; inasmuch as the stress transmitted by the tile 2 is subdivided and borne partially by the rib 25 and partially by the rib 26.

[0103] The ribs 25 and 26 are tilted with respect to the bottom part 27, in such a way as to constitute an isosceles triangle, the base of which is a portion of the bottom part 27 and the sides of which are the rib 25 and the rib 26.

[0104] This enables a base to be obtained that can effectively bear also stress that is not perpendicular to said base since, if a force is transmitted to the base that is directed obliquely with respect to the vertical direction, at least one of the ribs is mainly subjected to compression, which limits or even prevents deformation of said base.

Claims

1. Apparatus for cutting tiles (2), comprising tool means (10) arranged to obtain intended separation line means on a face of said tiles (2), said tool means (10) being connected with operating lever means (7), carriage means (6) on which said operating lever means (7) is hinged, said carriage means (6) being slidable along guide means (5), **characterised in that** a metal-polyarylamide coupling is provided between said carriage means (6) and said guide means (5).
2. Apparatus according to claim 1, wherein said carriage means (6) comprises said polyarylamide and said guide means (5) comprises said metal.
3. Apparatus according to claim 1, wherein said carriage means (6) comprises said metal and said guide means (5) comprises said polyarylamide.
4. Apparatus according to any one of the preceding claims, wherein said metal comprises chrome.
5. Apparatus according to claim 4 as appended to claim 2, wherein said chrome constitutes a coating of the external surface of said guide means (5).
6. Apparatus according to claim 4 as appended to claim 3, wherein said chrome constitutes a coating of the external surface of said carriage means (6).
7. Apparatus according to any one of the preceding claims, and further comprising lever arm means (12) supporting pressing means (14) suitable for

separating said tiles (2) along said intended separation line means.

8. Apparatus according to claim 7, and further comprising connecting lever means (15) suitable for connecting said lever arm means (12) to said operating lever means (7).
9. Apparatus according to claim 7, or 8, wherein said pressing means (14) is associated with said lever arm means (12) through rotation coupling means.
10. Apparatus according to claim 9, wherein said pressing means (14) oscillates around said rotation coupling means between a work configuration (A) in which said pressing means (14) is less distant from said tiles (2) than said tool means (10) and a rest position in which said pressing means (14) is more distant from said tiles (2) than said tool means (10).
11. Apparatus according to claim 10, wherein said rotation coupling means is so configured as to enable said pressing means (14) to move from said rest configuration to said work configuration (A) due to the action of its own weight.
12. Apparatus according to any one of claims from 7 to 11, wherein said lever arm means (12) is hinged on said carriage means (6).
13. Apparatus according to any one of the preceding claims, wherein said operating lever means (7) has a non-rectilinear shape.
14. Apparatus according to claim 13, wherein an end of said operating lever means (7) is accommodated in seat means (20) obtained in said carriage means (6).
15. Apparatus according to claim 14, wherein said end is rotatably coupled with said seat means (20).
16. Apparatus according to any one of claims 13 to 15, and further comprising locking means (21) suitable for locking said operating lever means (7) in an operating position (X, Y).
17. Apparatus according to any one of the preceding claims, and further comprising contrast means (24) suitable for interacting with a further face of said tiles (2) opposite to said face.
18. Apparatus according to claim 17, wherein said contrast means (24) has a section having at least one curved part at which said contrast means (24) interacts with said further face.
19. Apparatus according to claim 18, wherein said sec-

tion has a circular shape.

20. Apparatus according to any one of claims 17 to 19, and further comprising base means (3) provided with a profiled element (22) having cavity means (23) arranged to accommodate said contrast means (24).

21. Apparatus according to claim 20, wherein at least two ribs (25, 26) of said profiled element (22) are associated with said cavity means (23).

22. Apparatus according to claim 21, wherein said at least two ribs (25, 26) extend from a base zone of said cavity means (23).

23. Apparatus according to claim 22, wherein said ribs (25, 26) mutually diverge from said base zone.

24. Apparatus for cutting tiles (2), comprising tool means (10) arranged to obtain intended separation line means on a face of said tile means, said tool means (10) being connected with operating lever means (7), carriage means (6) on which said operating lever means (7) is hinged, said carriage means (6) being slidable along guide means (5), **characterised in that** said operating lever means (7) has a non-rectilinear shape.

25. Apparatus according to claim 24, wherein an end of said operating lever means (7) is accommodated in seat means (20) obtained in said carriage means (6).

26. Apparatus according to claim 25, wherein said end is rotatably coupled with said seat means (20).

27. Apparatus according to claim 26, and further comprising locking means (21) suitable for locking said operating lever means (7) in an operating position (X, Y).

28. Apparatus according to any one of claims 24 to 27, and further comprising lever arm means (12) supporting pressing means (14) suitable for separating said tiles (2) along said intended separation line means.

29. Apparatus according to claim 28, and further comprising connecting lever means (15) suitable for connecting said lever arm means (12) to said operating lever means (7).

30. Apparatus according to claim 28, or 29, wherein said pressing means (14) is associated with said lever arm means (12) through rotation coupling means.

31. Apparatus according to claim 30, wherein said pressing means (14) oscillates around said rotation coupling means between a work configuration (A) in which said pressing means (14) is less distant from said tiles (2) than said tool means (10) and a rest configuration in which said pressing means (14) is more distant from said tiles (2) than said tool means (10).

32. Apparatus according to claim 31, wherein said rotation coupling means is so configured as to enable said pressing means (14) to move from said rest configuration to said work configuration (A) due to the action of its own weight.

33. Apparatus according to any one of claims 28 to 32, wherein said lever arm means (12) is hinged on said carriage means (6).

34. Apparatus according to any one of claims 24 to 33, and further comprising contrast means (24) suitable for interacting with a further face of said tiles (2) opposite to said face.

35. Apparatus according to claim 34, wherein said contrast means (24) has a section having at least one curved part at which said contrast means (24) interacts with said further face.

36. Apparatus according to claim 35, wherein said section has a circular shape.

37. Apparatus according to any one of claims 34 to 36, and further comprising base means (3) provided with a profiled element (22) having cavity means (23) arranged to accommodate said contrast means (24).

38. Apparatus according to claim 37, wherein at least two ribs (25, 26) of said profiled element (22) are associated with said cavity means (23).

39. Apparatus according to claim 38, wherein said at least two ribs (25, 26) extend from a base zone of said cavity means (23).

40. Apparatus according to claim 39, wherein said ribs (25, 26) mutually diverge from said base zone.

41. Apparatus according to any one of claims 24 to 40, wherein a metal-polyarylamide coupling is provided between said carriage means (6) and said guide means (5).

42. Apparatus according to claim 41, wherein said carriage means (6) comprises said polyarylamide and said guide means (5) comprises said metal.

43. Apparatus according to claim 41, wherein said carriage means (6) comprises said metal and said guide means (5) comprises said polyarylamide.
44. Apparatus according to any one of claims 41 to 43, wherein said metal comprises chrome.
45. Apparatus according to claim 44 as appended to claim 40, wherein said chrome constitutes a coating of the external surface of said guide means (5).
46. Apparatus according to claim 44 as appended to claim 41, wherein said chrome constitutes a coating of the external surface of said carriage means (6).
47. Apparatus for cutting tiles (2), comprising tool means (10) arranged to obtain intended separation line means on a face of said tile, said tool means (10) being connected with operating lever means (7), carriage means (6) on which said operating lever means (7) is hinged, said carriage means (6) being slidable along guide means (5), lever arm means (12) supporting pressing means (14) suitable for separating said tiles (2) along said intended separation line means, connecting lever means (15) suitable for connecting said lever arm means (12) to said operating lever means (7), **characterised in that** said pressing means (14) is associated with said lever arm means (12) through rotation coupling means.
48. Apparatus according to claim 47, wherein said pressing means (14) oscillates around said rotation coupling means between a work configuration (A) in which said pressing means (14) is less distant from said tiles (2) than said tool means (10) and a rest position in which said pressing means (14) is more distant from said tiles (2) than said tool means (10).
49. Apparatus according to claim 48, wherein said rotation coupling means is so configured as to enable said pressing means (14) to move from said rest configuration to said work configuration (A) due to the action of its own weight.
50. Apparatus according to any one of claims 47 to 49, wherein said lever arm means (12) is hinged on said carriage means (6).
51. Apparatus according to any one of claims 47 to 50, wherein said operating lever means (7) has a non-rectilinear shape.
52. Apparatus according to claim 51, wherein an end of said operating lever means (7) is accommodated in seat means (20) obtained in said carriage means (6).
53. Apparatus according to claim 52, wherein said end is rotatably coupled with said seat means (20).
54. Apparatus according to claim 53, and further comprising locking means (21) suitable for locking said operating lever means (7) in an operating position (X, Y).
55. Apparatus according to any one of claims 47 to 54, and further comprising contrast means (24) suitable for interacting with a further face of said tiles (2) opposite to said face.
56. Apparatus according to claim 55, wherein said contrast means (24) has a section having at least one curved part at which said contrast means (24) interacts with said further face.
57. Apparatus according to claim 56, wherein said section has a circular shape.
58. Apparatus according to any one of claims 54 to 56, and further comprising base means (3) provided with a profiled element (22) having cavity means (23) arranged to accommodate said contrast means (24).
59. Apparatus according to claim 58, wherein at least two ribs (25, 26) of said profiled element (22) are associated with said cavity means (23).
60. Apparatus according to claim 59, wherein said at least two ribs (25, 26) extend from a base zone of said cavity means (23).
61. Apparatus according to claim 60, wherein said ribs (25, 26) mutually diverge from said base zone.
62. Apparatus according to any one of claims 47 to 61, wherein a metal-polyarylamide coupling is provided between said carriage means (6) and said guide means (5).
63. Apparatus according to claim 62, wherein said carriage means (6) comprises said polyarylamide and said guide means (5) comprises said metal.
64. Apparatus according to claim 62, wherein said carriage means (6) comprises said metal and said guide means (5) comprises said polyarylamide.
65. Apparatus according to any one of claims 62 to 64, wherein said metal comprises chrome.
66. Apparatus according to claim 65 as appended to claim 63, wherein said chrome constitutes a coating

of the external surface of said guide means (5).

67. Apparatus according to claim 65 as appended to claim 64, wherein said chrome constitutes a coating of the external surface of said carriage means (6). 5
68. Apparatus for cutting tiles (2), comprising tool means (10) arranged to obtain intended separation line means on a face of said tiles (2), said tool means (10) being connected with operating lever means (7), carriage means (6) on which said operating lever means (7) is hinged, said carriage means (6) being slidable along guide means (5), contrast means (24) suitable for interacting with a further face of said tiles (2) opposite to said face, **characterised in that** said contrast means (24) has a section having at least one curved part at which said contrast means interacts with said further face. 10 15
69. Apparatus according to claim 68, wherein said section has a circular shape. 20
70. Apparatus according to claim 68, or 69, and further comprising a lever arm means (12) supporting pressing means (14) suitable for separating said tiles (2) along said intended separation line means. 25
71. Apparatus according to claim 70, and further comprising connecting lever means (15) suitable for connecting said lever arm means (12) to said operating lever means (7). 30
72. Apparatus according to claim 70, or 71, wherein said pressing means (14) is associated with said lever arm means (12) through rotation coupling means. 35
73. Apparatus according to claim 72, wherein said pressing means- (14) oscillates around said rotation coupling means between a work configuration (A) in which said pressing means (14) is less distant from said tiles (2) than said tool means (10) and a rest position in which said pressing means (14) is more distant from said tiles (2) than said tool means (10). 40 45
74. Apparatus according to claim 73, wherein said rotation coupling means is so configured as to enable said pressing means (14) to move from said rest configuration to said work configuration (A) due to the action of its own weight. 50
75. Apparatus according to any one of claims 70 to 74, wherein said lever arm means (12) is hinged on said carriage means (6). 55
76. Apparatus according to any one of claims 68 to 75, wherein said operating lever means (7) has a non-

rectilinear shape.

77. Apparatus according to claim 76, wherein an end of said operating lever means (7) is accommodated in seat means (20) obtained in said carriage means (6).
78. Apparatus according to claim 77, wherein said end is rotatably coupled with said seat means (20).
79. Apparatus according to claim 78, and further comprising locking means (21) suitable for locking said operating lever means (7) in an operating position (X, Y).
80. Apparatus according to any one of claims 68 to 79, and further comprising base means (3) provided with a profiled element (22) having cavity means (23) arranged to accommodate said contrast means (24).
81. Apparatus according to claim 80, wherein at least two ribs (25, 26) of said profiled element (22) are associated with said cavity means (23).
82. Apparatus according to claim 81, wherein said at least two ribs (25, 26) extend from a base zone of said cavity means (23).
83. Apparatus according to claim 82, wherein said ribs (25, 26) mutually diverge from said base zone.
84. Apparatus according to any one of claims 68 to 83, wherein a metal-polyarylamide coupling is provided between said carriage means (6) and said guide means (5).
85. Apparatus according to claim 84, wherein said carriage means (6) comprises said polyarylamide and said guide means (5) comprises said metal.
86. Apparatus according to claim 84, wherein said carriage means (6) comprises said metal and said guide means (5) comprises said polyarylamide.
87. Apparatus according to any one of claims 84 to 86, wherein said metal comprises chrome.
88. Apparatus according to claim 87 as appended to claim 85, wherein said chrome constitutes a coating of the external surface of said guide means (5).
89. Apparatus according to claim 87 as appended to claim 86, wherein said chrome constitutes a coating of the external surface of said carriage means (6).
90. Apparatus for cutting tiles (2), comprising tool means (10) arranged to obtain intended separation

line means on a face of said tiles (2), said tool means (10) being connected with operating lever means (7), carriage means (6) on which said operating lever means (7) is hinged, said carriage means (6) being slidable along guide means (5), base means (3) comprising a. profiled element (22) provided with cavity means (23) arranged to accommodate contrast means (24) suitable for interacting with a further face of said tiles (2) opposite to said face, **characterised in that** at least two ribs (25, 26) of said profiled element are associated with said cavity means (23).

91. Apparatus according to claim 90, wherein said at least two ribs (25, 26) extend from a base zone of said cavity means (23).

92. Apparatus according to claim 91, wherein said at least two ribs (25, 26) mutually diverge from said base zone.

93. Apparatus according to any one of claims 90 to 92, and further comprising lever arm means (12) supporting pressing means (14) suitable for separating said tiles (2) along said intended separation line means.

94. Apparatus according to claim 93, and further comprising connecting lever means (15) suitable for connecting said lever arm means (12) to said operating lever means (7).

95. Apparatus according to claim 93, or 94, wherein said pressing means (14) is associated with said lever arm means (12) through rotation coupling means.

96. Apparatus according to claim 95, wherein said pressing means (14) oscillates around said rotation coupling means between a work configuration (A) in which said pressing means (14) is less distant from said tiles (2) than said tool means (10) and a rest position in which said pressing means (14) is more distant from said tiles (2) than said tool means (10).

97. Apparatus according to claim 96, wherein said rotation coupling means is so shaped as to enable said pressing means (14) to move from said rest configuration to said work configuration(A) due to the action of its own weight.

98. Apparatus according to any one of claims 93 to 97, wherein said lever arm means (12) is hinged on said carriage means (6).

99. Apparatus according to any one of claims 90 to 98, wherein said operating lever means (7) has a non-

rectilinear shape.

100. Apparatus according to claim 99, wherein an end of said operating lever means (7) is accommodated in seat means (20) obtained in said carriage means (6).

101. Apparatus according to claim 100, wherein said end is rotatably coupled with said seat means (20).

102. Apparatus according to claim 101, and further comprising locking means (21) suitable for locking said operating lever means (7) in an operating position (X, Y).

103. Apparatus according to any one of claims 90 to 102, wherein said contrast means (24) has a section having at least one curved part at which said contrast (24) means (24) interacts with said further face.

104. Apparatus according to claim 103, wherein said section has a circular shape.

105. Apparatus according to any one of claims 90 to 104, wherein a metal-polyarylamide coupling is provided between said carriage means (6) and said guide means (5).

106. Apparatus according to claim 103, wherein said carriage means (6) comprises said polyarylamide and said guide means (5) comprises said metal.

107. Apparatus according to claim 105, wherein said carriage means (6) comprises said metal and said guide means (5) comprises said polyarylamide.

108. Apparatus according to any one of claims 105 to 107, wherein said metal comprises chrome.

109. Apparatus according to claim 108 as appended to claim 106, wherein said chrome constitutes a coating of the external surface of said guide means (5).

110. Apparatus according to claim 108 as appended to claim 107, wherein said chrome constitutes a coating of the external surface of said carriage means (6).

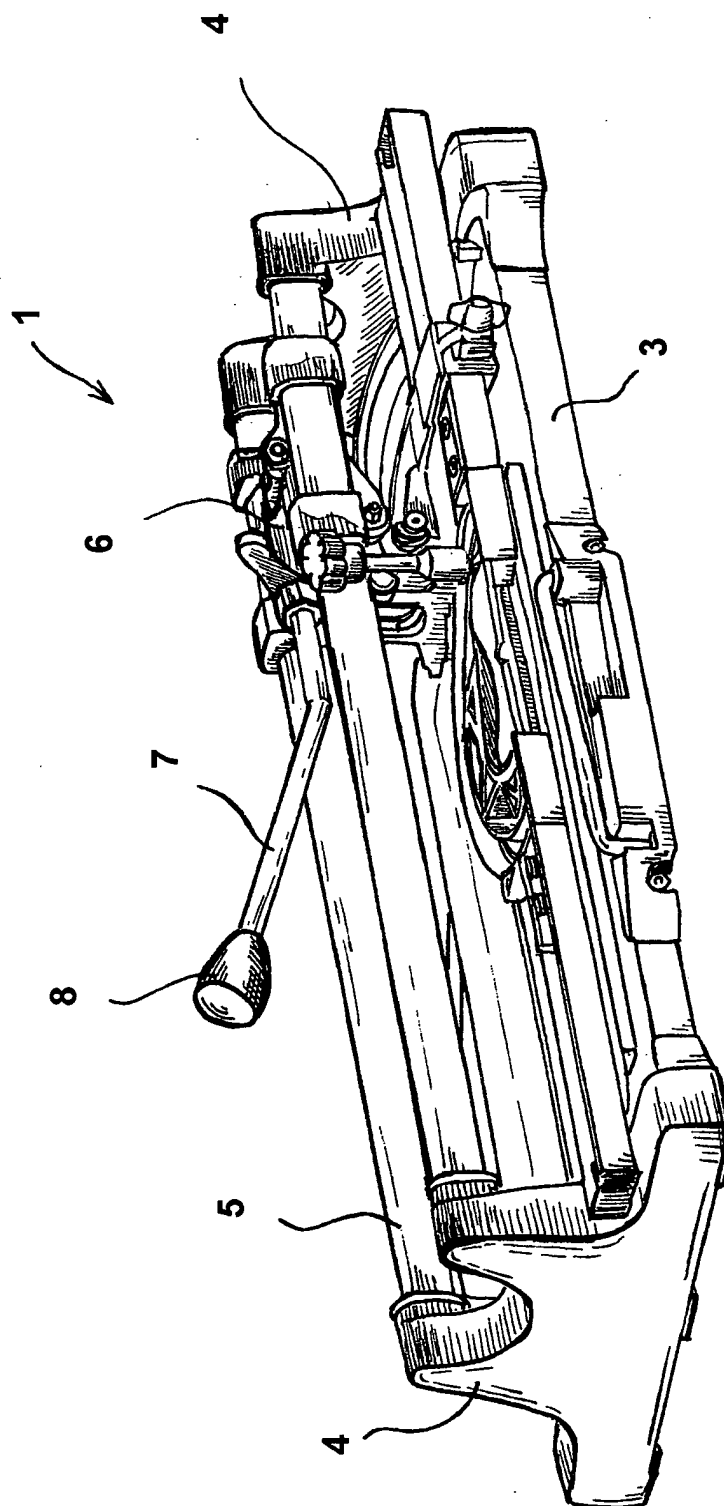


Fig. 1

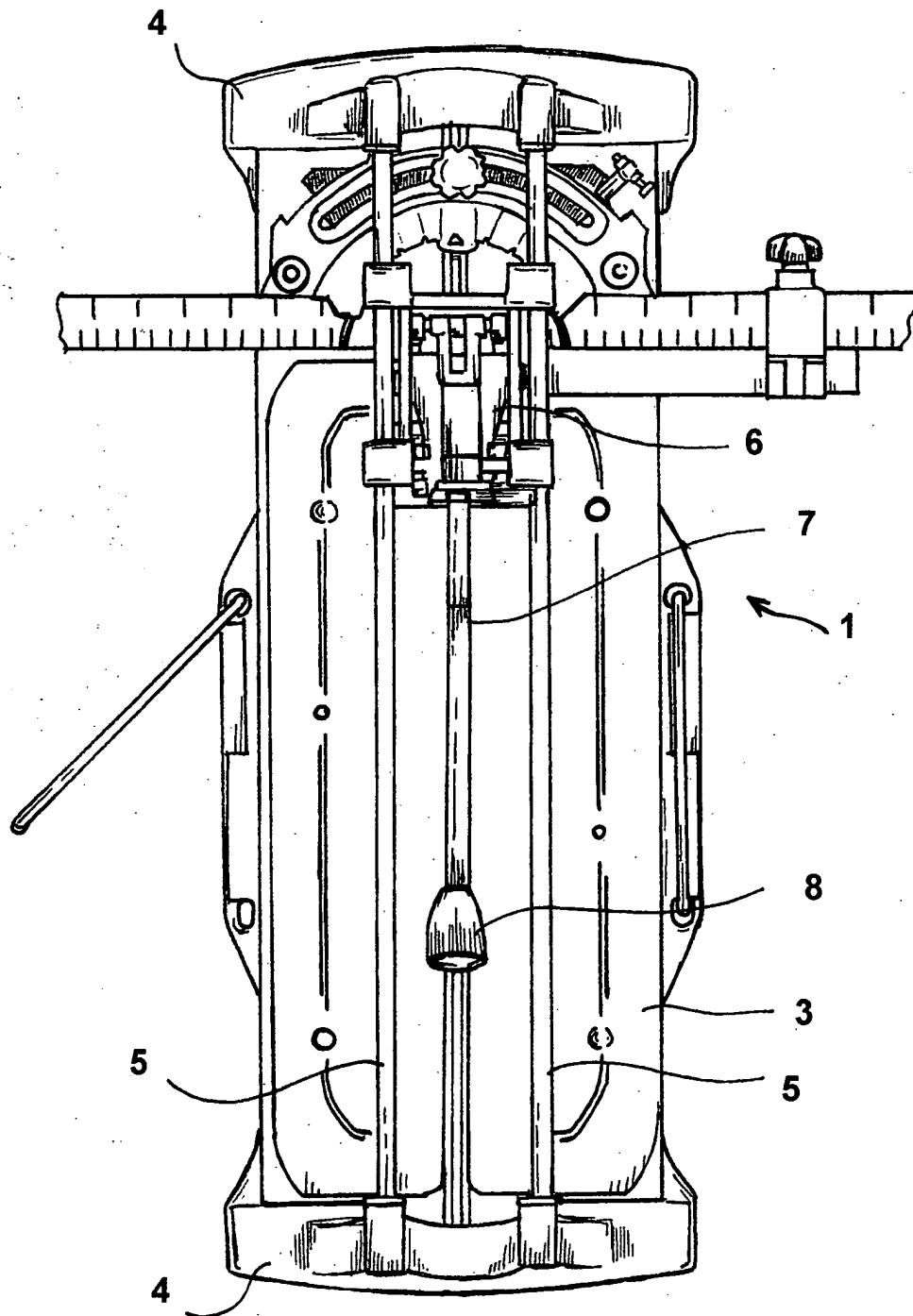
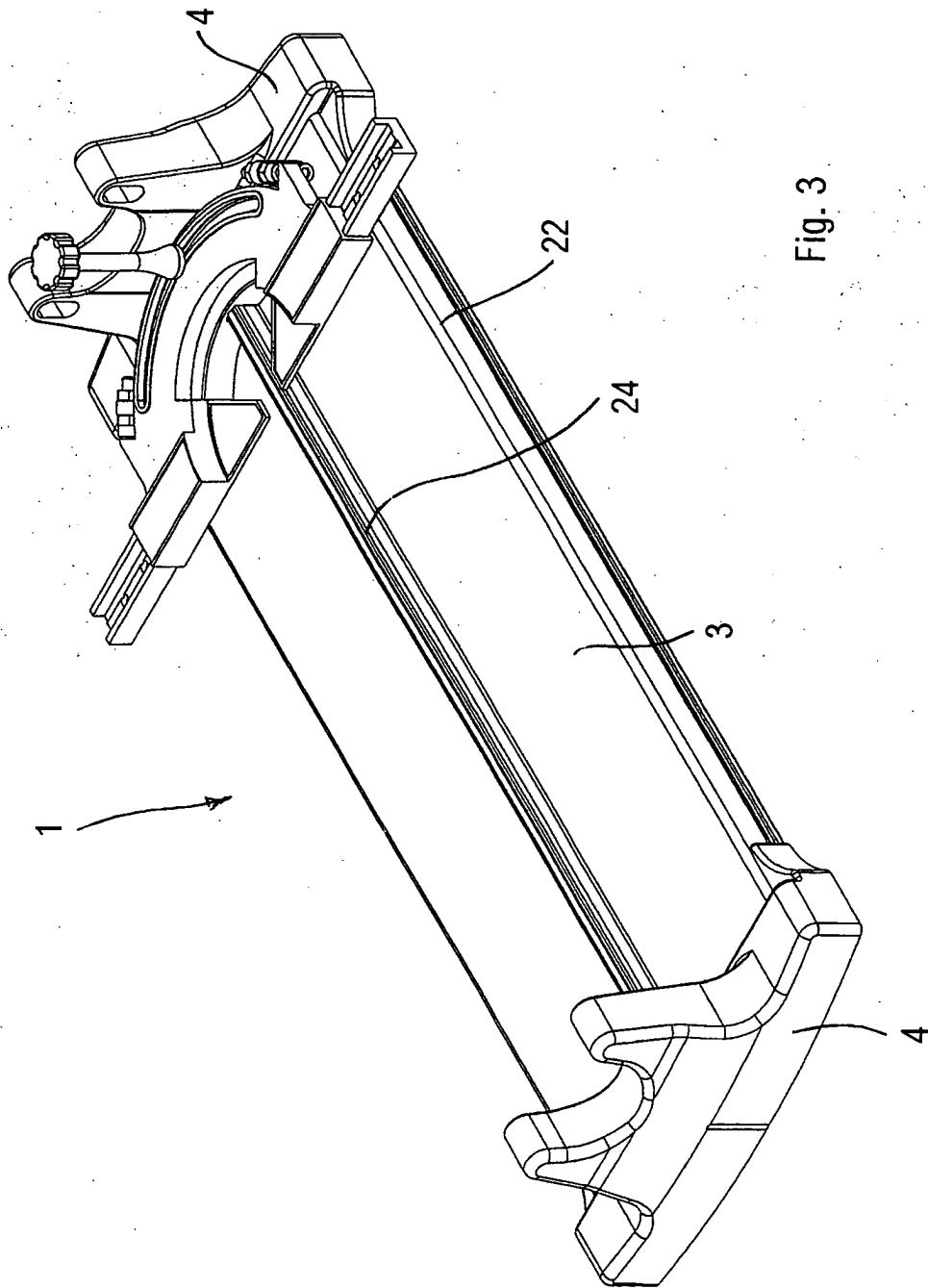
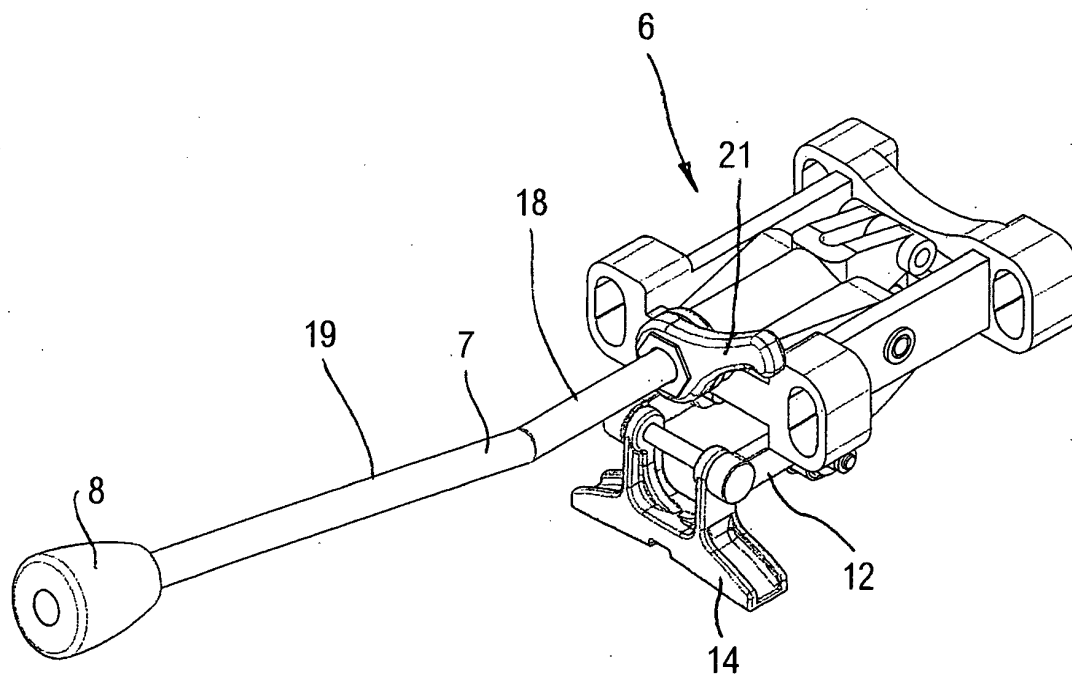
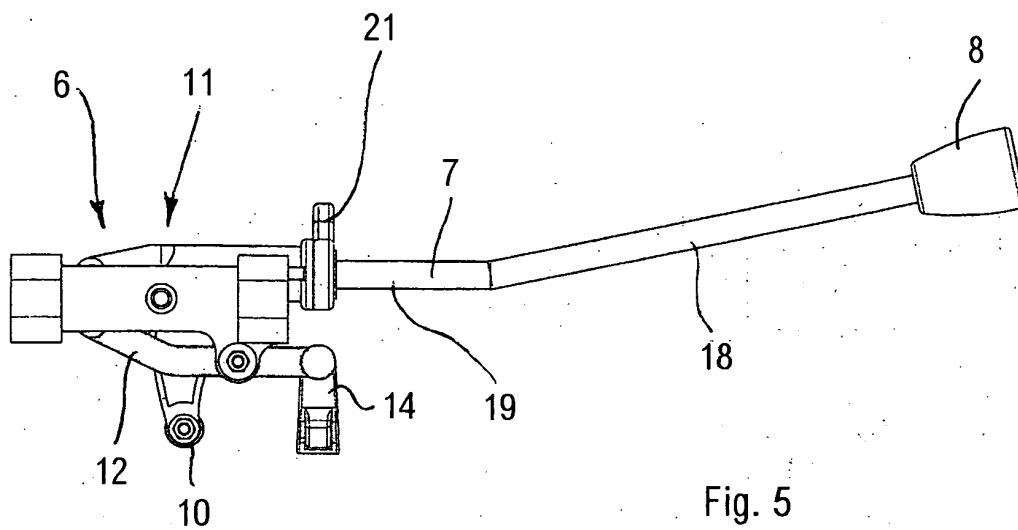


Fig. 2





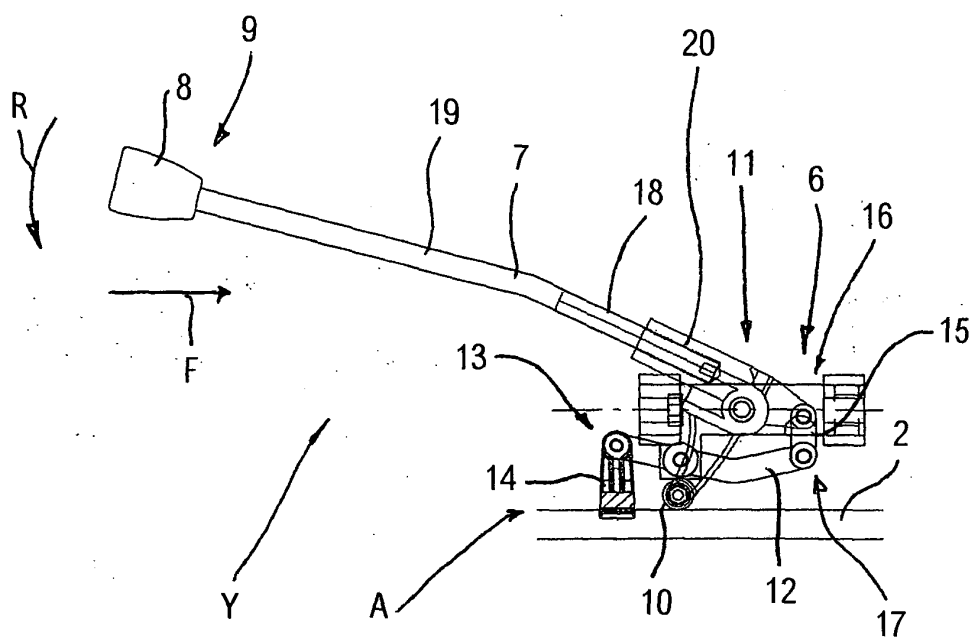


Fig. 6

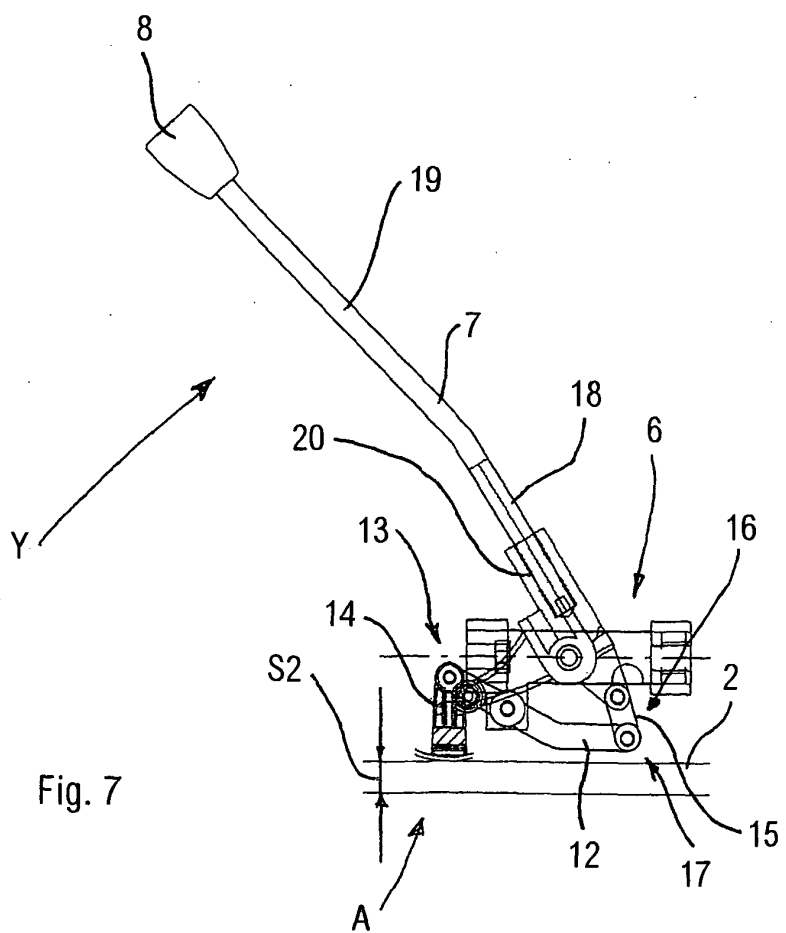
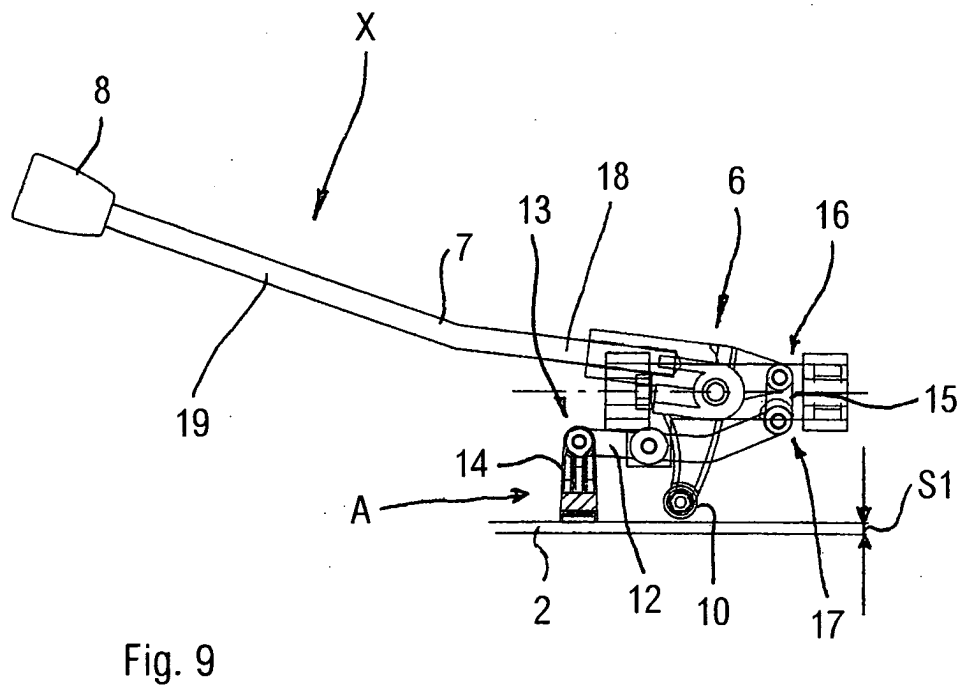
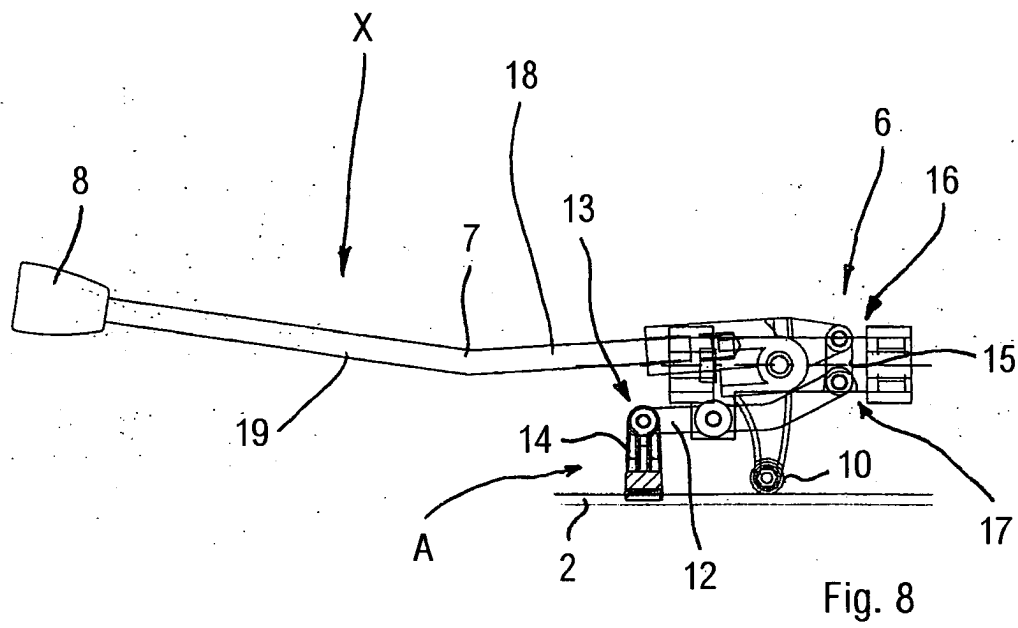


Fig. 7



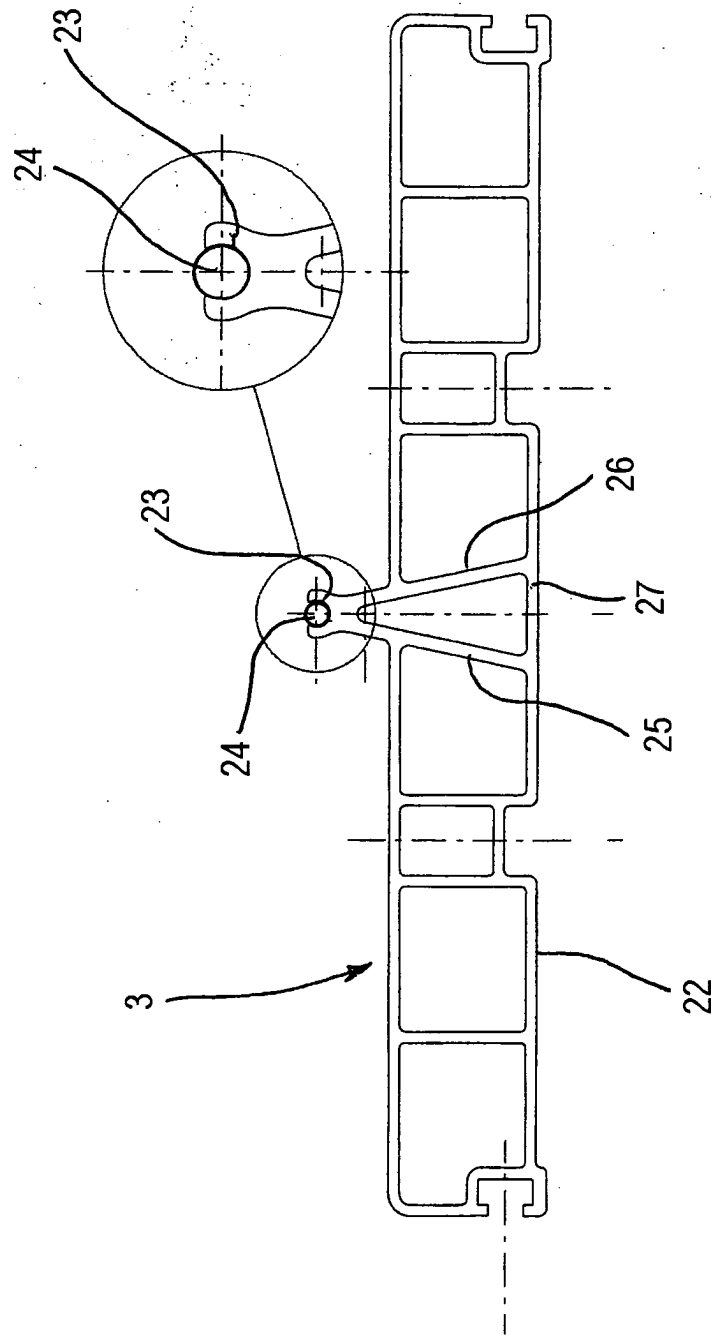


Fig. 10