(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 432 191 B1**

(12) # EUROPEAN PATENT SPECIFICATION

(45) Date of publication of patent specification: **13.04.94**

(51) Int. Cl.5: **B63B 15/00**

(21) Application number: **89909636.6**

(22) Date of filing: **25.08.89**

(86) International application number:
PCT/SE89/00446

(87) International publication number:
WO 90/02077 (08.03.90 90/06)

(54) **AN ANCHORAGE DEVICE.**

(30) Priority: **29.08.88 SE 8803011**

(43) Date of publication of application:
19.06.91 Bulletin 91/25

(45) Publication of the grant of the patent:
13.04.94 Bulletin 94/15

(84) Designated Contracting States:
DE

(56) References cited:
EP-A- 0 087 120
DE-A- 3 309 087
DE-A- 3 514 472

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Description

The present invention relates to a device in accordance with the preamble of claim 1.

Prior art mast foot rails suffer from a number of drawbacks which substantially relate to such matters as seizure on contact with sand, an excessive number of stop positions, a difficulty - if not impossibility - in predetermining the stop positions and their number, as well as relatively high manufacturing costs. Moreover, many of the prior art designs have proved to be very short-lived, because of defective mechanical strength in the component parts included therein, leading to both rapid wear and early failure. An exampel of such a design is disclosed in DE-A- 3 514 472.

The object forming the basis of the present invention is to obviate or at least substantially reduce the drawbacks inherent in the prior art designs.

This task is solved according to the present invention in that the device disclosed by way of introduction is given the characterizing features as set forth in one or more of the appended claims.

The present invention clearly realises an extremely efficient and reliable device which is simplicity itself to operate and which permits optional placing of the stop positions as well reliable and rapid switching between the preselected stop positions without any imminent risk of seizure because of sand or the like. Furthermore, the anchorage of the rocker is stable and reliable, whereby unintentional release of the mast foot is prevented. In addition, the pedal is removable so that unintentional release of the mast foot is rendered impossible and transport of the sailboard is facilitated. As a result of the present invention, the device will also incur relatively low manufacturing costs, whereby the overall economical picture will be favourable in the extreme.

One embodiment of the device according to the present invention will be described in greater detail below, with reference to the accompanying Drawings. Fig. 1 is an exploded schematic view of one embodiment of a device according to the present invention, ghosted lines giving an intimation of the locations of the parts. Fig. 2 is a view, partly in section, of parts of the embodiment of Fig. 1. Fig. 3 is an exploded schematic view similar to Fig. 1 of another embodiment of the device according to the present invention. Fig. 4 is a view similar to that shown in Fig. 2.

The embodiment of a device according to the present invention illustrated in Fig. 1 includes a box 1, a rear end piece 2 and a forward end piece 9, a hinge shaft 3, a rocker 4, a sliding piece 5 (generally known in the art as a runner), projections 6 for anchoring on the rocker 4, the projections 6 being optionally in the form of Allen-screws, for instance M6, a pedal pin 7, a pedal 8, spring 10, locking stud 12, and mast foot end 13. The mast foot end 13 is provided with a threaded hole for a threaded stub shaft 14 on a connector 11 which is flexible and constitutes the transition between the mast foot end 13 and the mast proper (not shown). The flexible connector 11 may be manufactured of rubber and, in many contexts, is designated a power joint. It will further be readily apparent to the skilled reader of this specification that this part may be of many other designs than that shown on the Drawings.

In its upper wall, the box 1 has a longitudinal slot 15 in which the upper portion 16 of the runner 5 fits. On the inside of its side walls, the box 1 has two mutually facing flanges 17 and 18 for corresponding grooves 19 and 20 in the runner 5. Thus, the runner 5 fits in the box 1 and runs with close fit on the flanges 17 and 18 with the upper portion 16 in the slot 15. The fit should be such that grains of sand cannot penetrate. On the same side wall in the box 1 as the flange 18, the box displays a hinge portion or hinge flanges 21 which, in their longitudinal direction, are interrupted by means of apertures 22, 23, 24 and 25.

The rocker 4 displays three hinge portions 26, 27 and 28 which fit in the apertures 22, 24 and 25. After fitting of the rocker 4 in the box 1 and the hinge portions 26-28 in each respective aperture 22, 24 and 25, the hinge shaft 3 is inserted therein for pivotal mounting of the rocker 4 in the box 1. The hinge shaft 3 is also passed through the spring 10, which is located in the aperture 23, by means of which the rocker 4 is urged against the runner 5. One or more of the projections 6 are screwed into the rocker 4, their number being dependant upon how many stop positions are desired. In most cases, simply one forward and one rear position are necessary.

Fig. 2 illustrates in greater detail the cooperation between one projection 6 on the rocker 4 and a recess 29 in the runner 5. In this Figure, it will further be apparent that the runner is provided, on its underside, with a forward oblique surface 30 and a rear oblique surface 31 for facilitating passage of the projection 6 and downward urging of the rocker 4 against the action of the spring 10, until the projection 6 is located in the recess 29.

At the forward end, the box 1 is closed by means of a forward end piece 9 and, at the rear, the box 1 is closed by means of a rear end piece 2 which is provided with a hole 32 for cooperation with a shank 33 on the pedal 8. Furthermore, the shank 33 is provided with a transverse hole 33A for the pin or cross piece 7 which serves for engagement with the rocker 4 and pivoting thereof downwardly from the runner 5 in that the foot pedal 8 is

depressed into the hole 32.

The present invention makes possible such a design of the component parts included in the device that many of them may be manufactured by extrusion and injection moulding in suitable materials. The box 1 and the rocker 4 may suitably be extruded in aluminium, while the rear end piece 2 the pedal 8, the cross piece 7, the runner 5 and the forward end piece 9 may be injection moulded in a suitable plastic material.

The illustrated anchoring of the mast foot end 13 in the runner 5 is solely by way of example, and many other designs and constructions could equally well be employed. In the present embodiment, the mast foot end 13 is provided with a circumferential groove 34. The mast foot end 13 fits in a hole 35 in the runner 5 and the shanks of the locking stud 12 are inserted in the holes 36 and 37 which discharge in the hole 35, whereupon the locking stud shanks will extend into the groove 34 for fixedly locking the mast foot end 13 in the hole 35.

The embodiment of a device according to the present invention illustrated in Figs. 3 and 4 corresponds essentially to the embodiment of Figs. 1 and 2, apart from in certain details, which, however, are of major importance. The same parts have been given the same reference numerals. In this embodiment, the spring 10 is a leaf spring which is placed beneath the rocker 4, advantageously in the proximity of the rear end piece 2. The leaf spring 10 is designed such that its spring force is at its greatest at the beginning of the pivoting of the rocker 4 and at its least in the position for releasing the runner 5 from a projection 6. In the design of the leaf spring 10, account has also been taken of the fact that it may not impede pivoting of the rocker 4, in particular in the release position. The shank 33 on the pedal 8 is hexagonal and the hole 32 is adapted to the shank 33 and is provided with a plurality of recesses or grooves so as to permit rinsing-off of grains of sand and the like.

The forward oblique surface 30 of the runner 5 is less steep than the rear oblique surface 31, whereby leap-frogging of the projections 6 on the rocker 4 will be facilitated on movement from a forward position to a rearward position, while engagement of a projection 6 in the recess 29 is facilitated on forward movement.

A further crucial detail difference between the embodiment of Figs. 1 and 2 and that of Figs. 3 and 4 is that the hole for the shaft 3 is turned to face outwardly from the interior of the box 1, whereby the risk of injurious action by sand and salt is reduced to an absolute minimum.

Claims

1. A device for anchoring a mast foot in a sailbord, a so-called windsurfing board, so that the position of the mast foot along the length of the sailboard is variable during sailing, the device including a profile (1) recessed into the sailboard and along which a runner (5) is shiftable and is intended for anchoring the mast foot proper (13), and means for releasing and locking the runner (5), the profile being in the form of a box (1) with a longitudinal slot (15) for the mast foot (13) in its upper wall, and with two mutually facing, longitudinal inner flanges (17, 18) each for their groove (19, 20) on either side of the runner (5), characterised in that the runner (5) has, on its underside, a recess (29) for cooperation with one or more projections (6) on a rocker (4); and that the rocker (4) is pivotally secured in the one longitudinal side wall of the box (1) at several positions along the one longitudinal side wall of the box (1) and is disposed for cooperation with a pedal (8) which, on actuation for releasing the runner (5) from a locking projection (6), pivots the rocker (4), until the projection (6) is free from the recess (29) in the runner (5), whereupon this may be displaced along the flanges (17, 18).

2. The device as claimed in Claim 1, characterised in that the rocker (4) is pivotally secured to the box wall by means of a plurality of mutually spaced-apart hinge portions (21, 26, 27, 28) and a through shaft (3).

3. The device as claimed in Claims 1 and 2, characterised in that the rocker (4) is spring-biased (10) for pivoting in a direction towards the runner (5).

4. The device as claimed in Claims 1 and 3, characterised in that the runner (5) is provided, on either side of the recess (29), with an oblique surface (30, 31) for cooperation with the projections (6) on the rocker (4) which, at the moment of contact, is pivoted so that the projection (6) enters into engagement with the recess (29) and locks the runner (5) in that position along the rocker (4) where the projection (6) is located.

5. The device as claimed in Claims 1 and 2, characterised in that the pedal (8) is T-shaped; and that the vertical shank (33) fits in a corresponding hole (32) in the end piece (2), the pedal having a portion (7) for cooperation with the rocker (4).

6. The device as claimed in Claim 5, characterised in that the cooperation portion (7) is readily removable for removal of the pedal (8).

Patentansprüche

1. Vorrichtung zum Verankern eines Mastfußes in einem Segelbrett, einem sogenannten Windsurf-Brett, so daß die Position des Mastfußes während des Segelns über die Länge des Segelbrettes verstellbar ist, wobei die Vorrichtung ein Profil (1), das in das Segelbrett eingelassen ist und über das ein Läufer (5) verschiebbar und zum Verankern des eigentlichen Mastfußes (13) gedacht ist, sowie Mittel zum Lösen und Verriegeln des Läufers (5) aufweist, wobei das Profil als ein Kasten (1) mit einem Längsschlitz (15) für den Mastfuß (13) in seiner Oberseite und mit zwei einander zugewandten, länglichen Innenflanschen (17, 18) ausgestaltet ist, die jeweils in ihre Nut (19, 20) auf beiden Seiten des Läufers (5) passen, dadurch gekennzeichnet, daß der Läufer (5) an seiner Unterseite eine Ausnehmung (29) zum Zusammenwirken mit einem oder mehreren Vorsprüngen (6) auf einer Wippe (4) aufweist, und daß die Wippe (4) schwenkbar in der einen Längsseitenwand des Kastens (1) an mehreren Positionen entlang der einen Längsseitenwand des Kastens (1) befestigt und zum Zusammenwirken mit einem Pedal (8) angeordnet ist, das nach Betätigung zum Lösen des Läufers (5) von einem Riegelvorsprung (6) die Wippe (4) umlegt, bis der Vorsprung (6) von der Ausnehmung (29) in dem Läufer (5) frei ist, wonach dieser über die Flansche (17, 18) geschoben werden kann.

2. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Wippe (4) mit einer Mehrzahl voneinander beabstandeter Scharnierteile (21, 26, 27, 28) und einer durchgehenden Welle (3) schwenkbar an der Kastenwand befestigt ist.

3. Vorrichtung nach Anspruch 1 und 2, dadurch gekennzeichnet, daß die Wippe (4) zum Schwenken in einer Richtung zu dem Läufer (5) hin gefedert (10) ist.

4. Vorrichtung nach Anspruch 1 und 3, dadurch gekennzeichnet, daß der Läufer (5) auf einer Seite der Ausnehmung (29) angeordnet ist, mit einer schrägen Fläche (30, 31) zum Zusammenwirken mit den Vorsprüngen (6) auf der Wippe (4), die bei Kontakt so gedreht wird, daß der Vorsprung in die Ausnehmung (29) eingereift und der Läufer (5) in dieser Position entlang der Wippe (4) verriegelt, an der sich der Vorsprung (6) befindet.

5. Vorrichtung nach Anspruch 1 und 2, dadurch gekennzeichnet, daß das Pedal (8) T-förmig ist und daß der vertikale Schaft (33) in eine entsprechende Öffnung (32) in dem Endstück (2) paßt, wobei das Pedal ein Teil (7) zum Zusammenwirken mit der Wippe (4) aufweist.

6. Vorrichtung nach Anspruch 5, dadurch gekennzeichnet, daß sich der Zusammenwirkteil (7) leicht von dem Pedal (8) entfernen läßt.

Revendications

1. Dispositif d'ancrage d'un pied de mât dans une planche à voile, nommée planche de surf, de sorte que la position du pied de mât soit variable sur la longueur de la planche à voile durant l'activité de véliplanchisme, le dispositif comportant un profilé (1) encastré dans la planche à voile et le long duquel un patin coulissant est mobile et destiné à ancrer le pied même du mât (13), et des moyens de déblocage et de verrouillage du patin coulissant (5), le profilé se présentant sous la forme d'une boîte comportant en sa paroi supérieure une fente longitudinale (15) destinée à recevoir le pied de mât (13), et deux brides internes longitudinales se faisant face mutuellement (17, 18) ayant chacune sa rainure (19, 20) de chaque côté du patin coulissant (5), caractérisé en ce que le patin coulissant (5) comporte en sa partie inférieure un logement évidé (29) devant agir en coopération avec une ou plusieurs saillies (6) sur un palier à bascule (4); et que le palier à bascule (4) est fixé de façon pivotante dans une paroi latérale longitudinale de la boîte (1) en plusieurs points sur la longueur de cette paroi latérale longitudinale de la boîte (1) et qu'il est disposé de sorte à agir en coopération avec une pédale (8) qui, lors de son actionnement pour dégager le patin coulissant (5) d'une saillie de verrouillage (6), fait pivoter le palier à bascule (4) jusqu'à ce que la saillie (6) soit dégagée du logement évidé (29) dans le patin coulissant (5), après quoi celui-ci peut être déplacé le long des brides (17, 18).

2. Dispositif selon la revendication 1, caractérisé en ce que le palier à bascule (4) est fixé de façon pivotante sur la paroi de la boîte au moyen d'une multiplicité de charnières espacées les unes des autres (21, 26, 27, 28) et d'un axe traversant (3).

3. Dispositif selon les revendications 1 et 2, caractérisé en ce que le palier à bascule (4) est

à ressort (10) pour assurer le pivotement dans une direction vers le patin coulissant (5).

4. Dispositif selon les revendications 1 et 3, caractérisé en ce que le patin coulissant (5) comporte, de chaque côté du logement évidé (29) une surface oblique (30, 31) devant agir en coopération avec les saillies (6) sur le palier à bascule (4) qui, au moment du contact, pivote de telle sorte que la saillie (6) s'emboîte dans le logement évidé (29) et bloque le patin coulissant (5) en cette position le long du palier à bascule (4) où la saillie (6) est située.

5. Dispositif selon les revendications 1 et 2, caractérisé en ce que la pédale (8) est en forme de T; et en ce que le montant vertical (33) s'emboîte dans un trou correspondant (32) dans l'embout (2), la pédale comportant une pièce (7) devant agir en coopération avec le palier à bascule (4).

6. Dispositif selon la revendication 5, caractérisé en ce que la pièce agissant en coopération (7) est facilement amovible pour retirer la pédale (8).

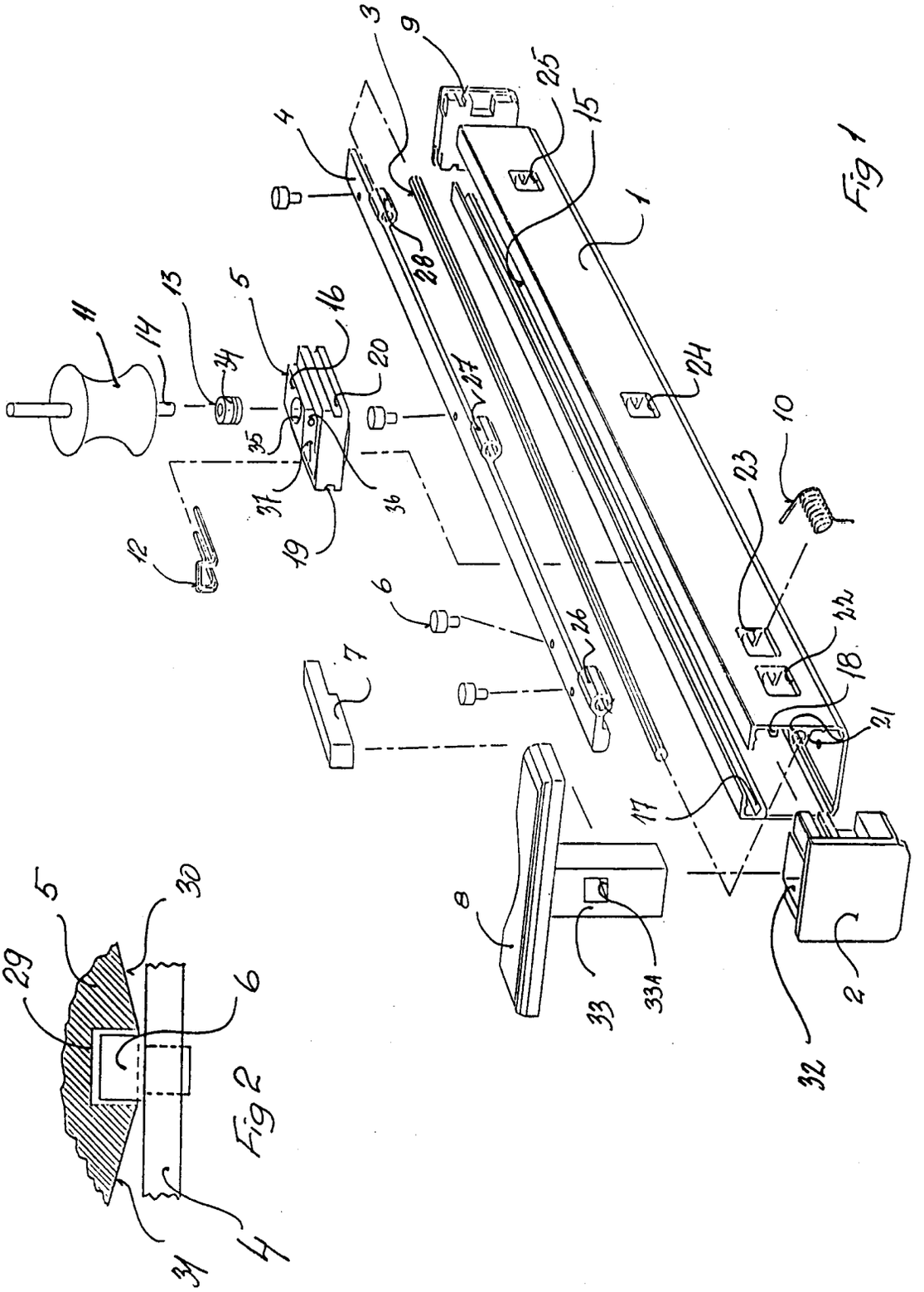
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Fig 1

Fig 2

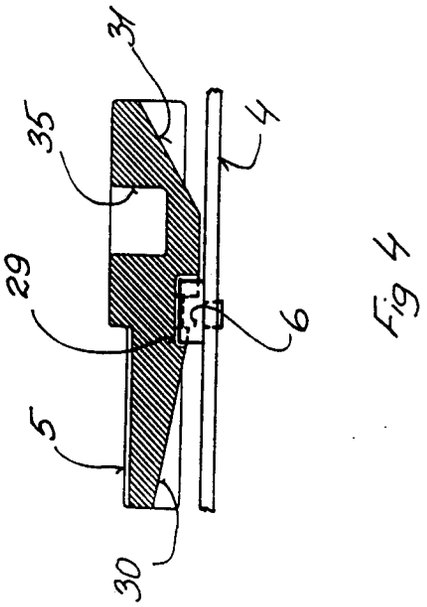
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Fig 4

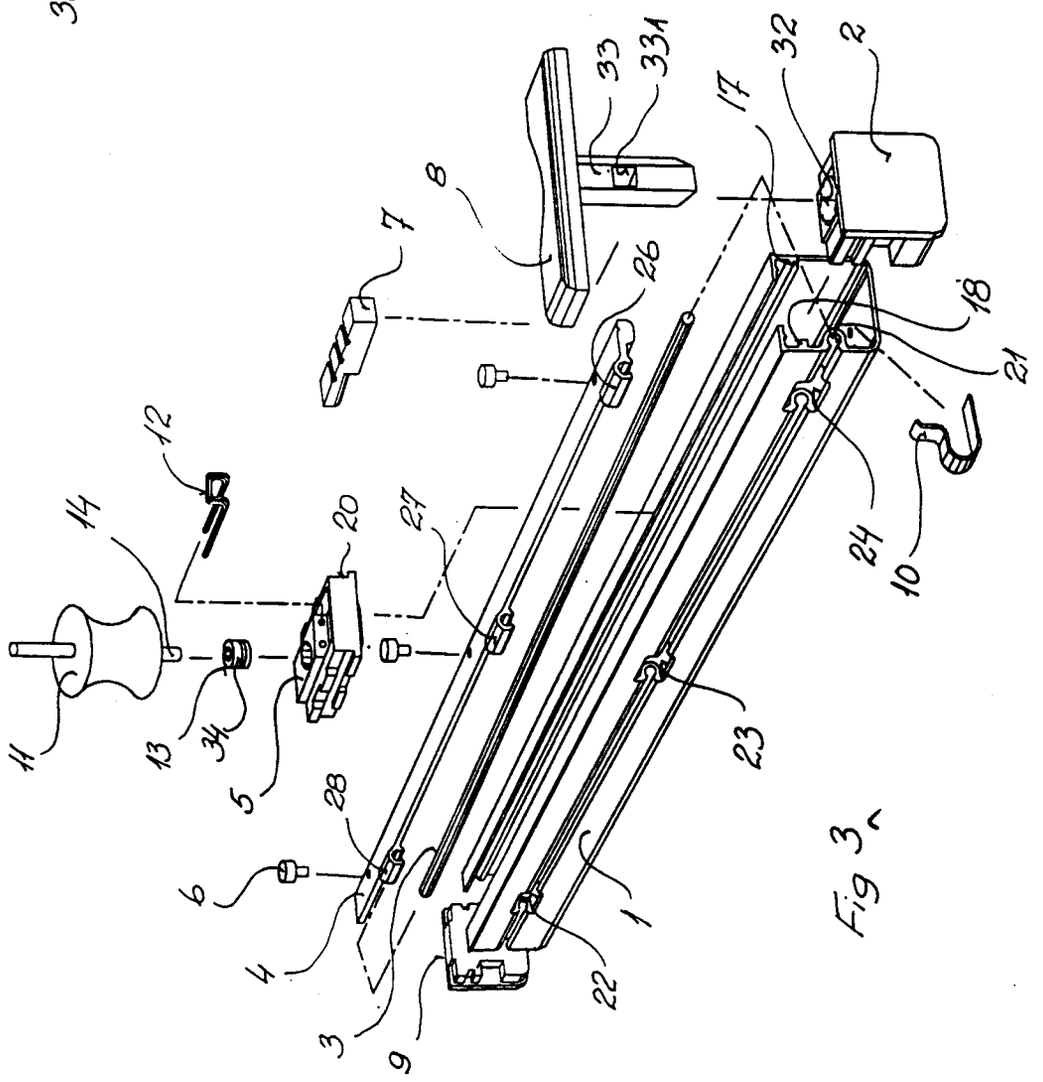
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Fig 3