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

(11) EP 0 987 395 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
02.11.2006 Bulletin 2006/44

(21) Application number: **99306029.2**

(22) Date of filing: **29.07.1999**

(51) Int Cl.:
E05D 11/10 *(2006.01)* ***A47C 1/026*** *(2006.01)*
A01K 97/10 *(2006.01)*

(54) **Pivot assembly**

Scharnieranordnung

Ensemble de charnière

(84) Designated Contracting States:
BE DE FR GB IT NL

(30) Priority: **17.09.1998 GB 9820296**

(43) Date of publication of application:
22.03.2000 Bulletin 2000/12

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EP 0 987 395 B1

Printed by Jouve, 75001 PARIS (FR)

Description

[0001] The present invention is directed to a bank stick or rod support for use in angling having at least one leg which can be shifted from a storage position in which it is folded-up against another part of the support, and a position for use in which it extends outwardly from that part of the support, the leg and that other part of the support being held together by a pivot assembly.

[0002] US-A-3,026,161 discloses a pivoted table top-carried leg which is swingable from a depending operative position to a position underlying the table top. It has a bracket for attachment to the underside of the table top and has a depending wall providing inner, bottom and outer edge portions. There are means horizontally pivoting the leg to the wall adjacent the upper end of the wall between the inner and outer edge portions, and a transversely extending abutment carried by the lower outer portion of the wall and positioned outwardly of the plane of the pivot means to intercept the leg to prevent outward movement thereof past an operative table-supporting position. The leg is inclined at an outward angle with respect to the table top. A movable spring-actuated stop is carried by the leg and is arranged to engage opposed bottom and inner edge portions of the depending bracket wall in the movement of the leg to and from operative position. The wall has a bottom edge-provided cam portion in inwardly spaced functional opposition to the abutment and engages the leg-carried spring-actuated stop to releasably retain the leg in engagement with the abutment to cooperate with the table top weight in retaining the leg in its outwardly inclined operative position.

[0003] US-A-1,809,564 discloses a folding table having a top provided with a depending flange arranged to form a housing, a leg hinged in the housing, and shiftable means carried by the leg and formed to embrace the housing to positively lock said leg in fixed position in the housing.

[0004] US-A-3,305,204 discloses a pivotally mounted support means comprising a U-shaped bracket having a base portion adapted to be mounted on a vertical wall, and outwardly projecting supporting flanges extending normally thereto. It is further provided with a support housing having top, side and rear walls. The rear wall has integral rearwardly extending flanges overlapping said first named flanges and pivotally secured thereto for relative movement about a vertical axis, a tubular support member closely received between the side walls and pivoted thereto on a transverse axis for downward swinging movement relative thereto, the housing having an integral outwardly extending curved flange. The axis of the curved flange is in intersecting alignment with and normal to the transverse axis. Sleeve means on the tubular member cooperate with the curved flange to hold the tubular member in a horizontal operative position.

[0005] In another previously proposed construction, a detent comprising a sleeve with an internal screw threading engages an external screw threading on one of the said two parts, these screw threads engaging one another so that the movement of the detent is effected by rotating the two screw threads relative to one another.

[0006] In a further previously proposed such construction of pivot assembly, a sector plate is fixed to one of the said two parts and has a plurality of holes spaced apart around an arc close to the periphery of the sector plate. A pin on the other of the said two parts can be moved, in a direction parallel to the pivot axis, into engagement with any selective one of these holes.

[0007] A disadvantage of these foregoing constructions is that they are relatively difficult to effect engagement of the detent. A further disadvantage associated with the foregoing constructions is that they do not fix the said two parts relative to one another particularly well even when the detent is duly engaged.

[0008] The present invention seeks to obviate one or more of the foregoing disadvantages.

[0009] Accordingly, the present invention is directed to a bank stick or rod support for use in angling having at least one leg which can be shifted from a storage position in which it is folded-up against another part of the support, and a position for use in which it extends outwardly from that part of the support, the leg and that other part of the support being held together by a pivot assembly comprising two parts, one of which comprises the leg or the said other part, the said two parts being connected to one another by means of a pivot so that one is pivotable relative to the other, and a movable detent on one of the said two parts which can be moved into engagement with the other to retain the two parts in a predetermined relative angular position relative to one another, and out of such engagement to enable subsequent relative pivotal movement between the two parts, the detent being slidable towards and away from the pivot for such engagement and disengagement of the detent with the said other part, in which the detent has a flat surface which contacts a flat surface on the other of the said two parts when the detent is in such engagement, in which the detent is provided with a portion which is received in a hole or recess in the said other of the two parts, and in which the said portion extends from the flat surface on the detent which contacts the flat surface on the said other of the two parts when the detent is in such engagement.

[0010] Preferably, the detent is in the form of a sleeve which surrounds a portion of the said one of the two parts adjacent to the pivot end thereof.

[0011] Preferably, the detent is spring biased in a direction which urges it towards such engagement. In this case the spring may be a helical spring surrounding one of the said two parts, in which case the latter may be provided with a shoulder to act as an abutment for one end of the helical spring.

[0012] Examples of a bank stick or rod support embodying the present invention will now be described with reference to the accompanying drawings, in which:

Figure 1 shows a perspective view of a support for

two bank sticks for use in angling;

Figure 2 shows the support of Figure 1 in a condition ready for storage;

Figure 3 shows one end of the arrangement shown in Figure 2, on a larger scale;

Figure 4 shows the same end of the support of Figure 3, from the other side;

Figure 5 shows, on a larger scale still, parts of the support as shown in Figure 4;

Figure 6 shows, on a larger scale still, parts of the support as shown in Figure 3;

Figure 7 shows a perspective view of a modified form of support;

Figure 8 shows, on a larger scale and in part sectional view, parts of the support shown in Figure 7 constituting a pivot assembly;

Figure 9 shows the parts illustrated in Figure 8 in a condition ready for storage;

Figure 10 shows a part perspective, part sectional side view of a further modified form of pivot assembly for use with a bank stick or rod support in accordance with the present invention;

Figure 11 shows further details of the pivot assembly shown in Figure 10; and

Figure 12 shows a plan view of the assembly shown in Figures 10 and 11 with further parts connected thereto.

[0013] The bank stick support 10 shown in Figure 1 comprises a crossbar 12 to the ends of which are connected two pivot blocks 14 respectively. Two support legs 16 extend downwardly from each pivot block 14 in respective directions which are spaced apart from one another and from the crossbar 12. A bank stick receiving tube 18 extends centrally through each pivot block 14. The upper ends of the tubes 18 are each provided with a sleeve 20 and a locking screw and screw head 22 which passes transversely through the sleeve 20. This enables a bank stick to be inserted downwardly into a tube 18 to a desired height, whereupon the locking screw 22 can be rotated to fix the relative height of the bank stick. Each tube 18 is held in place itself by means of a locking screw 23 with entends through the pivot block 14.

[0014] The crossbar 12 may be telescopic so that its length can be adjusted, for which purpose a further sleeve 24 may be provided at one of the ends of the crossbar 12 provided with a locking screw (not shown) like the one 22, to secure two parts of the crossbar 12 at a selected length.

[0015] After use, the crossbar 12, the two legs 16 and the tube 18 can all be brought parallel and adjacent to one another by adjusting the pivot block 14 so that they are positioned relative to one another as shown in Figure 2 for storage purposes.

[0016] The manner in which the relative positions of the leg 16, the tube 18 and the crossbar 12 can be altered, is more readily apparent from Figures 3 to 6. Thus, each of the legs 16 and the crossbar 12 are reduced in thickness at their pivot ends, the latter thereby being relatively flat and tongue-shaped. One tongue-shaped end of the crossbar 12 is labelled 25 in Figures 4 and 5, and one tongue-shaped end of a leg 16 is labelled 26 in Figure 6.

[0017] The tongue-shaped end 25, or 26, is secured internally in the block 14 by means of a pivot pin 28 so that the leg or crossbar can pivot relative to the block 14 about the pin 28. Slots 30 and 32 are provided in the block to facilitate such pivoting and enable the tongue 25 or 26 to project outwardly from the block 14 at any angle in the range from a direction which is parallel to the tube 18 to one which is substantially at right angles thereto.

[0018] Each block 14 is generally cylindrical, the height of the cylinder being relatively short compared to its diameter. Its intended lower periphery is chamfered to create a frustoconical surface 34 which is at about 30° to the cylindrical outer surface of the block. A generally circular hole or recess 36 is formed in the frustoconical surface 34 in registration with each slot 32 for each leg 16. Threaded on to each leg 16 adjacent to the pivot end thereof, and surrounding the leg at that location, there is a sleeve 38 having an internal diameter which slightly exceeds the external diameter of the leg 16 so that the sleeve 38 can slide longitudinally of the leg 16 in both directions. The sleeve 38 has an end 40 which abuts the tongue 26 and is formed with a generally circular projection 42. The latter engages the circular recess 36 as a close fit.

[0019] The helical spring 43 extends within the sleeve 38 between an abutment shoulder 44 of the leg 16 and the internal side of the other end of the sleeve 38. It thereby urges the sleeve 38 towards the pivot 28. In the condition ready for storage, shown in Figure 2, the end of the sleeve which is close to the pivot 26 abuts against the smaller of the flat main circular faces of the block 14.

[0020] To change the position of the leg 16 to its position ready for use, it is simply pivoted about the pivot 28. The sleeve 38 as a result rides up the leg 16 against the force of the spring 43 until it clears the intended lower rim of the block 14, whereupon it starts to slide back towards the pivot. Directly the projection 42 is in registration with the recess 36, the action of the spring 43 is such as to snap the projection 42 into the recess 36. This releasably locks the leg 16 in a position relative to the block 14 in such a manner that the leg 16 is substantially 30° to the main flat surfaces of the block 14.

[0021] The construction of the pivot connection between the crossbar 12 and the block 14 is precisely the same as between one of the legs 16 and the block 14, excepting only that the hole or recess 46 is in the cylindrical surface of the block 14 rather than in the frustoconical surface thereof, so that when the support is in a condition ready for use, it is generally parallel to the main flat surfaces of the block 14, and perpendicular to each tube 18. This bank stick or rod support in its condition ready for use can now be placed on the ground with the crossbar 12 generally horizontal, the tubes 18 generally

vertically arranged and the leg 16 sloping downwardly, diverging from one another and from the crossbar 12 in the manner shown in Figure 1.

[0022] To fold the bank stick or rod support up for storage as shown in Figure 2, the sleeves 38 are each lifted in turn away from their associated rests 36 or 46, and the legs 16 and crossbar 12 are pivoted about their pivot pins 28 until they become parallel with the tube 18.

[0023] The modified form of bank stick or rod support shown in Figure 7 has a block 14 which differs from that of the construction shown in Figures 1 to 6 with a view to reducing the total amount of material needed to make it. Thus, in the Figure 7 embodiment, the modified block 14 comprises a sleeve portion 70 which receives one end of the crossbar 12 as a tight fit. The modified block also has a through hole 72 through which the associated tube 18 extends, locked at a selected height when the rod support is in use by means of the locking screw 74. For connecting the legs 16, a pair of lugs 76 extend in a downward sloping direction away from the sleeve portion 70 for one of the legs 16, and a further pair of lugs 76 slope in a downward direction away from the sleeve portion 70, in such a manner that the block 14 is symmetrical about the intended vertical bisecting plane which passes through the axis of the sleeve portion 70. Recesses 78 are formed in the flat end faces 20 of each lug 76, and these recesses 78 correspond to the recesses 36 in the block 14 of the Figure 1 construction. Otherwise, the pivot construction of the block 14 in the Figure 7 construction is the same in every respect to that shown in the Figure 1 construction, with the pivot pins 28 extending between the lugs 76. It will be appreciated in this respect that the block 14 in the Figure 7 construction is not pivoted relative to the crossbar 12 to obtain the storage condition. Rather, the legs 16 are pivoted into a position where they are parallel to and adjacent to the crossbar 12, and the tubes 18 are simply removed from the blocks 14.

[0024] The Figure 7 construction of the block 14 and the parts attached thereto is shown more clearly in Figures 8 and 9. Figure 8 shows how the block 14 is strengthened by means of webs 82 between the sleeve portion 70 and each lug 76. It will be appreciated that in Figures 8 and 9, only one of each pair of lugs 76 is shown, being the rearmost one of the pair viewing the block 14 in the direction of these Figures.

[0025] The modified block 14 shown in Figures 10 to 12 is constructed for a rod support. Instead of a sleeve portion 70, it has a lug 100 which forms a tight fit within a tubular crossbar 12. Instead of a hole 72 for receiving a tube 18, it is formed with an upright lug 102. This extends in an intended upright direction at right angles to the lug 100. It may be generally U-shaped as viewed from above, as shown in Figure 12. A bank stick 104 is pivotally attached to the lug 102 in the same way as the leg 16 is attached to the pair of lugs 76. If the lug 102 is generally circular in cross-section, it may have an external screw thread 106 formed around its outside which is engaged, when the rod support is in use by an internal screw thread 108 of a locking sleeve 110. The locking sleeve 110 when engaging the screw threads of the lug 102, encloses the sleeve 38, and the sleeve 110 has a substantially closed end 112 which forms a sliding fit with the bank stick 104. An O-ring, or split collar, 114 is positioned between the sleeve 110 and the bank stick 104 at the closed end 112, and abuts the upper or outer end of the sleeve 38 when the screw threading 106 and 108 are fully engaged, to fix the position of the bank stick 104 even more securely. However, to prepare the rod support ready for storage, the bank stick 104 can be readily brought parallel to and adjacent to the crossbar 12 firstly by unscrewing the sleeve 110 from the lug 102, lifting that sleeve 110, and then lifting the sleeve 38 so that the projection 40 is taken clear of the hole or recess 36.

[0026] It will be seen from Figure 12 that each pair of lugs 76 in this construction are formed on a separate block portion, and that these block portions are held together by means of a locking screw 120 which passes through the various block portions.

[0027] It will be appreciated that an outer sleeve 110 could be provided to surround the sleeves 38 for each of the legs 16, as in the construction shown for the bank stick 104. Thus, numerous variations and modifications to the illustrated embodiments can be made without taking the resulting construction outside the scope of the present invention, as laid down in the annexed claims.

Claims

1. A bank stick or rod support (10) for use in angling having at least one leg (16) which can be shifted from a storage position in which it is folded-up against another part (12) of the support (10), and a position for use in which it extends outwardly from that part (12) of the support (10), the leg (16) and that other part (12) of the support (10) being held together by a pivot assembly comprising two parts (14,12; 14,16), one of which comprises the leg (16) or the said other part (12), the said two parts being connected to one another by means of a pivot so that one is pivotable relative to the other, and a movable detent (38) on one of the said two parts (12; 16) which can be moved into engagement with the other (14) to retain the two parts (14,12; 14, 16) in a predetermined relative angular position relative to one another, and out of such engagement to enable subsequent relative pivotal movement between the two parts (14,12; 14,16), the detent (38) being slidable towards and away from the pivot for such engagement and disengagement of the detent (38) with the said other part (14), in which the detent (38) has a flat surface which contacts a flat surface on the other of the said two parts (14) when the detent (38) is in such engagement, in which the detent (38) is provided with a portion (42) which is received in a hole or recess (36) in the said other of the two parts (14),

and in which the said portion (42) extends from the flat surface on the detent (38) which contacts the flat surface on the said other of the two parts (14) when the detent (38) is in such engagement.

2. A pivot assembly according to claim 1, **characterised in that** the detent (38) is in the form of a sleeve (38) which surrounds a portion of the said one of the two parts (12; 16) adjacent to the pivot end thereof.

3. A pivot assembly according to claim 1 or claim 2, **characterised in that** the detent (38) is spring biased in a direction which urges it towards such engagement.

4. A pivot assembly according to claim 3, **characterised in that** the spring is a helical spring (43) surrounding one of the said two parts (12; 16).

5. A pivot assembly according to claim 4, **characterised in that** the said one of the said two parts (12; 16) is provided with a shoulder (44) to act as an abutment for one end of the helical spring (43).

Patentansprüche

1. Bank-Stick- oder Bank-Rod-Träger (10) zur Verwendung beim Angeln, mit wenigstens einem Bein (16), das aus einer Aufbewahrungsposition, in der es gegen einen weiteren Teil (12) des Trägers (10) hochgeklappt ist, und einer Verwendungsposition, in der es sich von jenem Teil (12) des Trägers (10) nach außen erstreckt, verschoben werden kann, wobei das Bein (16) und jener andere Teil (12) des Trägers (10) durch eine Schwenkbaueinheit zusammengehalten werden, die zwei Teile (14, 12; 4, 16) besitzt, wovon eine das Bein (10) oder das andere Teil (12) besitzt, wobei die zwei Teile miteinander durch ein Gelenk verbunden sind, so dass eines relativ zu dem anderen schwenkbar ist, und eine bewegliche Arretierung (38) an dem einen der zwei Teile (12; 16) umfasst, die in einen Eingriff mit dem jeweils anderen (14) bewegt werden kann, um die beiden Teile (14, 12; 14, 16) in einer vorgegebenen relativen Winkelstellung relativ zueinander zu halten, und aus einem solchen Eingriff bewegt werden kann, um eine anschließende relative Schwenkbewegung zwischen den beiden Teilen (14, 12; 14, 16) zu ermöglichen, wobei die Arretierung (38) zu dem Scharnier hin und von ihm weg gleiten kann, um einen Eingriff zwischen der Arretierung (38) und dem anderen Teil (14) herzustellen bzw. zu lösen, wobei die Arretierung (38) eine ebene Oberfläche besitzt, die mit einer ebenen Oberfläche am anderen der zwei Teile (14) in Kontakt ist, wenn die Arretierung (38) in einem solchen Eingriff ist, wobei die Arretierung (38) mit einem Abschnitt (42) versehen ist, der in einem Loch oder einer Aussparung (36) in dem anderen der beiden Teile (14) aufgenommen ist, und wobei sich der Abschnitt (42) von der ebenen Oberfläche an der Arretierung (38), die mit der ebenen Oberfläche an dem anderen der beiden Teile (14) in Kontakt ist, erstreckt, wenn die Arretierung (38) in einem solchen Eingriff ist.

2. Scharnierbaueinheit nach Anspruch 1, **dadurch gekennzeichnet, dass** die Arretierung (38) die Form einer Hülse (38) hat, die einen Abschnitt des einen der zwei Teile (12; 16) angrenzend an das schwenkende Ende hiervon umgibt.

3. Schwenkbaueinheit nach Anspruch 1 oder Anspruch 2, **dadurch gekennzeichnet, dass** die Arretierung (38) in eine Richtung, in der sie in einen solchen Eingriff gedrängt wird, federvorbelastet ist.

4. Schwenkbaueinheit nach Anspruch 3, **dadurch gekennzeichnet, dass** die Feder eine Schraubenfeder (43) ist, die eines der beiden Teile (12; 16) umgibt.

5. Schwenkbaueinheit nach Anspruch 4, **dadurch gekennzeichnet, dass** das eine der beiden Teile (12; 14) mit einer Schulter (44) versehen ist, der als ein Anschlag für ein Ende der Schraubenfeder (43) dient.

Revendications

1. Un piquet de berge ou support de canne (10), pour utilisation dans la pêche, ayant au moins une patte (16) pouvant être décalée d'une position de stockage à laquelle elle est repliée contre une autre partie (12) du support (10) et une position d'utilisation à laquelle elle s'étend vers l'extérieur depuis cette partie (12) du support (10), la patte (16) et cette autre partie (12) du support (10) étant maintenues ensemble par un ensemble de charnière comprenant deux parties (14,12 ; 14,16), dont l'une comprend la patte (16) ou ladite autre partie (12), lesdites deux parties étant connectées l'une à l'autre au moyen d'une charnière, de manière que l'une puisse pivoter par rapport à l'autre, et une détente mobile (38) sur l'une desdites deux parties (12 ; 16), qui peut être déplacée pour être mise en prise avec l'autre (14) pour retenir les deux parties (14,12 ; 14,16) en une position angulaire relative prédéterminée l'une par rapport à l'autre, et mise hors d'une telle prise, pour permettre un mouvement de pivotement relatif subséquent entre les deux parties (14,12 ; 14,16), la détente (38) étant susceptible de coulisser en rapprochement et en éloignement de la charnière pour une telle mise en prise et hors de prise de la détente (38) avec ladite autre partie (14), dans lequel la détente (38)

présente une surface plate entrant en contact avec une surface plate de l'autre desdites deux parties (14) lorsque la détente (38) est en une telle mise en prise, dans lequel la détente (38) est munie d'une partie (42) logée dans un trou ou une cavité (36) ménagée dans l'autre des deux parties (14), et dans lequel ladite partie (42) s'étend depuis la surface plate sur la détente (38), qui entre en contact avec la surface plate de ladite autre des deux parties (14) lorsque la détente (38) est en telle mise en prise.

2. Un ensemble de charnière selon la revendication 1, **caractérisé en ce que** la détente (38) se présente sous la forme d'une douille (38), entourant une partie de ladite une des deux parties (12 ; 16) adjacente à son extrémité de pivotement.

3. Un ensemble de charnière selon la revendication 1 ou la revendication 2, **caractérisé en ce que** la détente (38) est sollicitée élastiquement dans un sens qui la fait se déplacer vers une telle mise en prise.

4. Un ensemble de charnière selon la revendication 3, **caractérisé en ce que** le ressort est un ressort hélicoïdal (43), entourant l'une desdites deux parties (12 ; 16).

5. Un ensemble de charnière selon la revendication 4, **caractérisé en ce que** ladite une des desdites deux parties (12 ; 16) est munie d'un épaulement (44), pour agir en tant que butée pour une extrémité du ressort hélicoïdal (43).

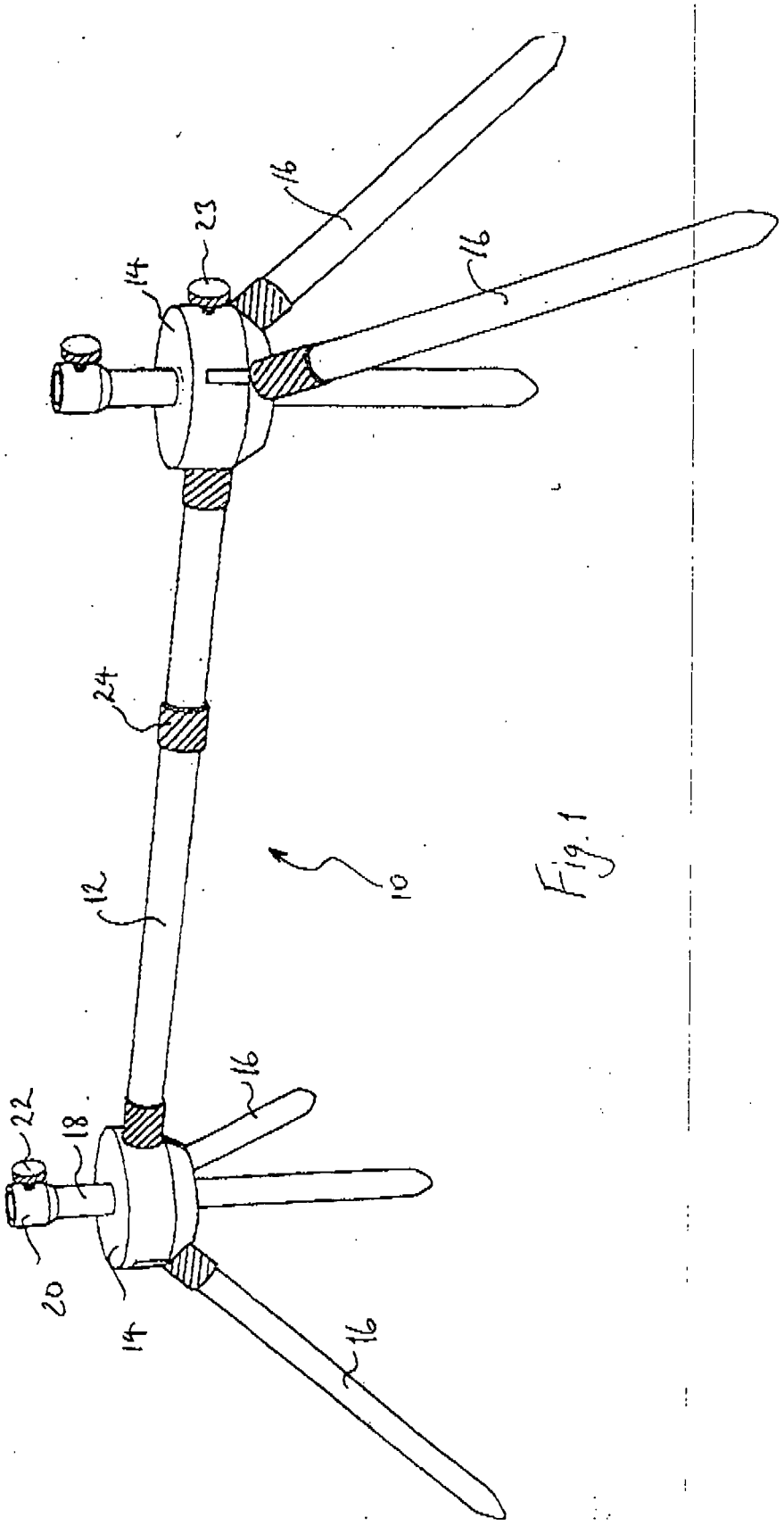

Fig. 1

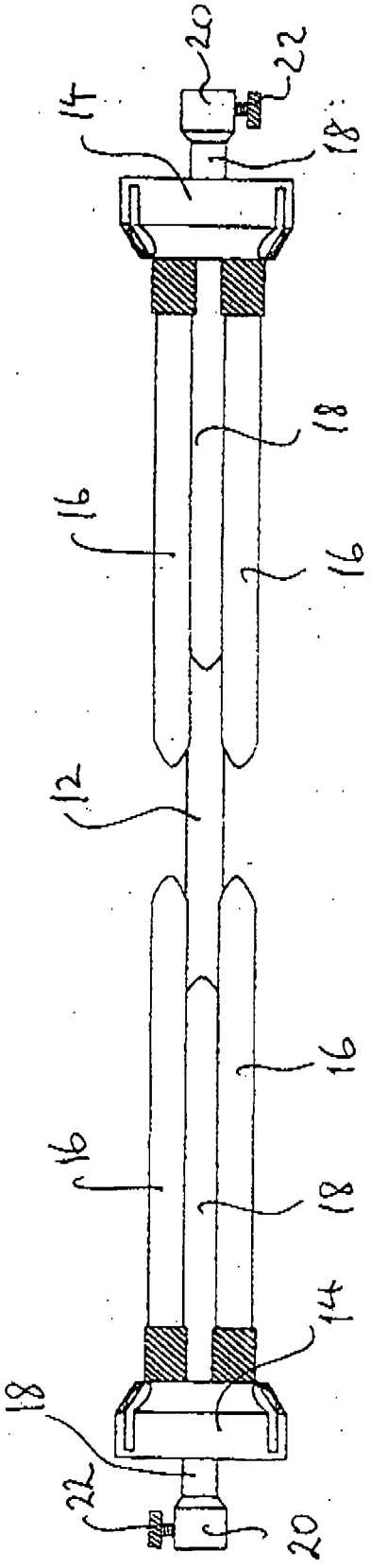

Fig. 2

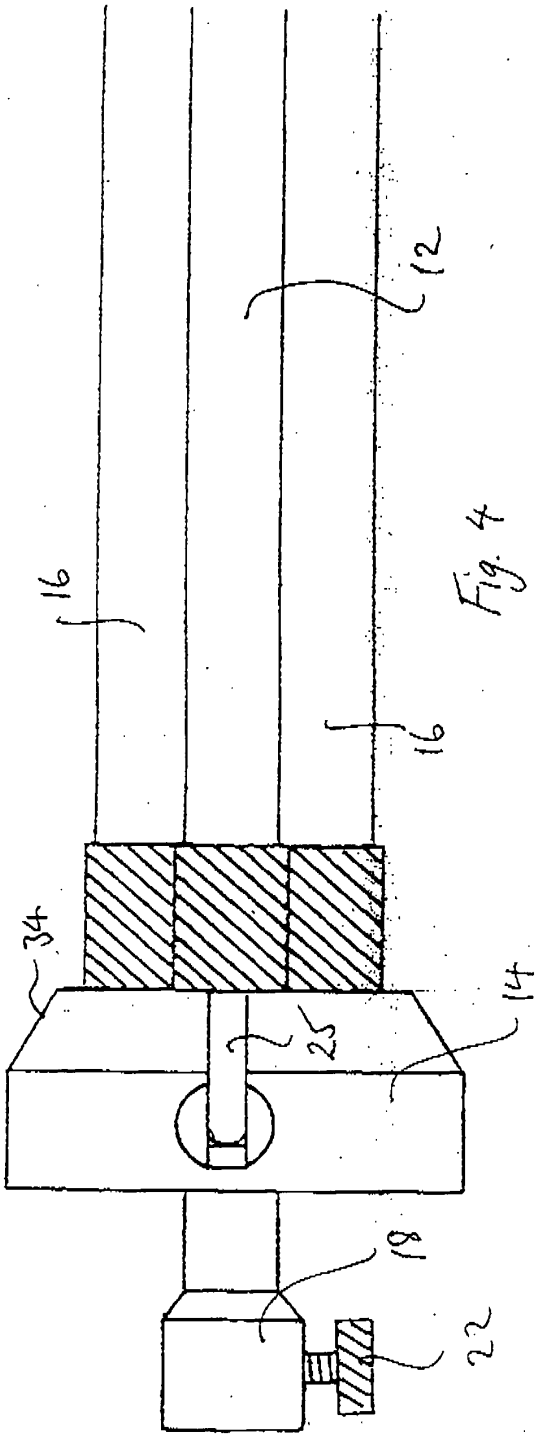

Fig. 4

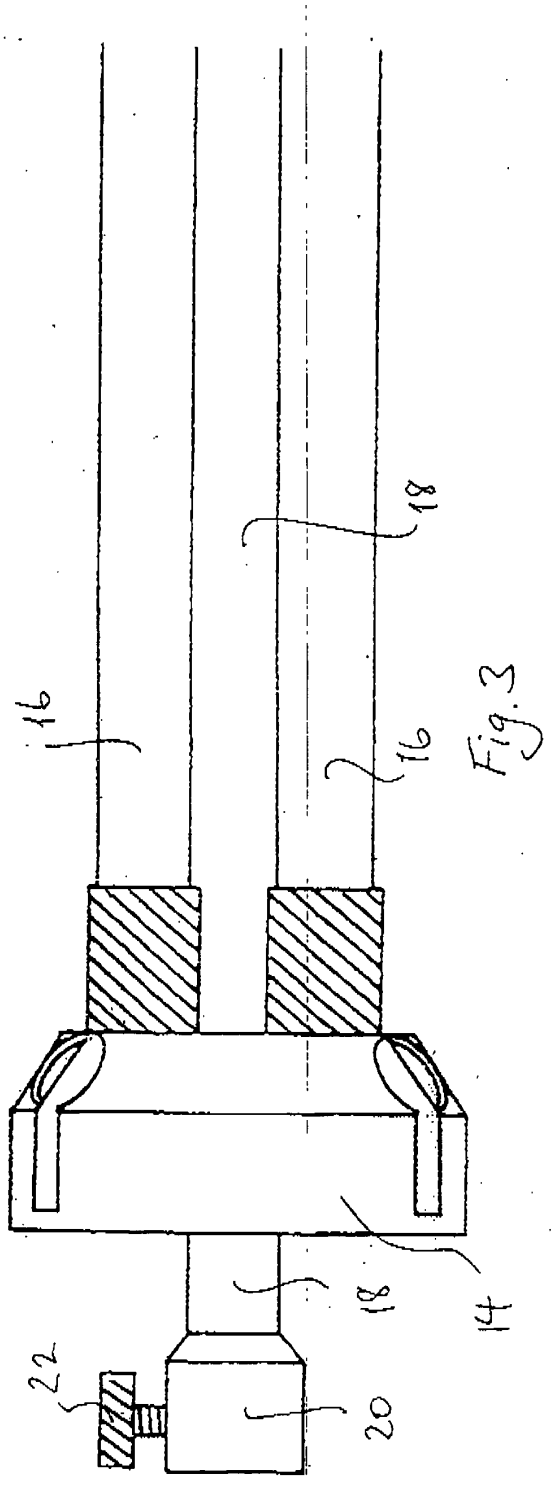

Fig. 3

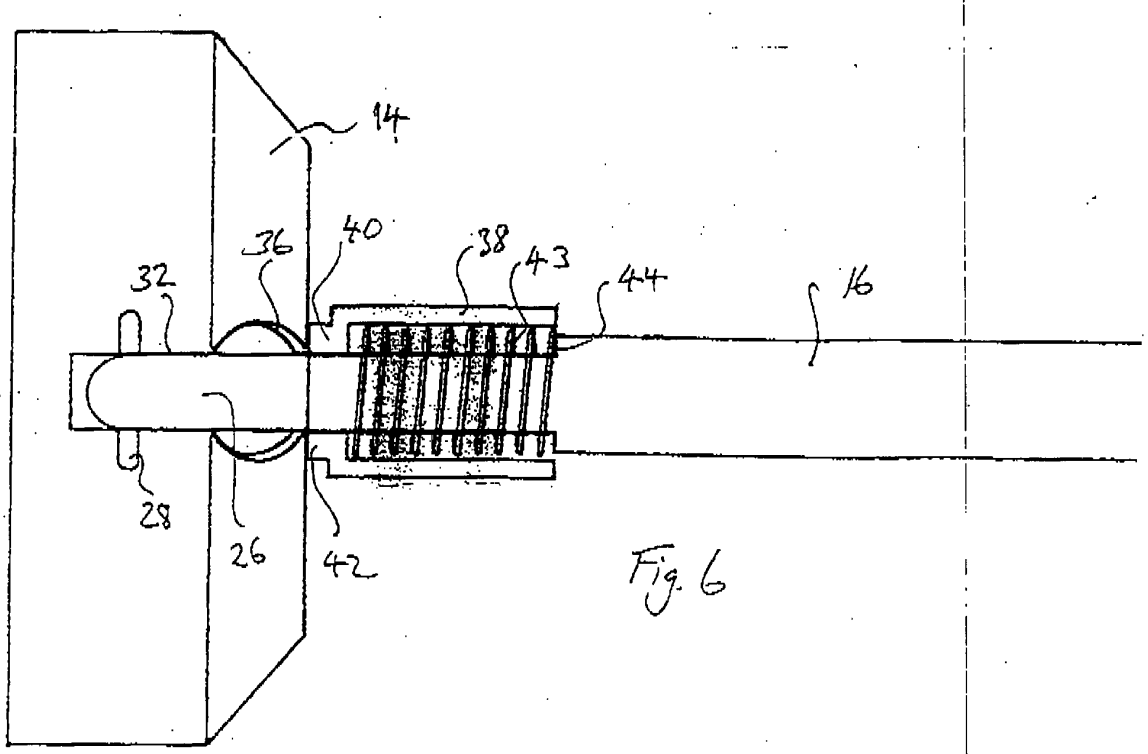

Fig. 6

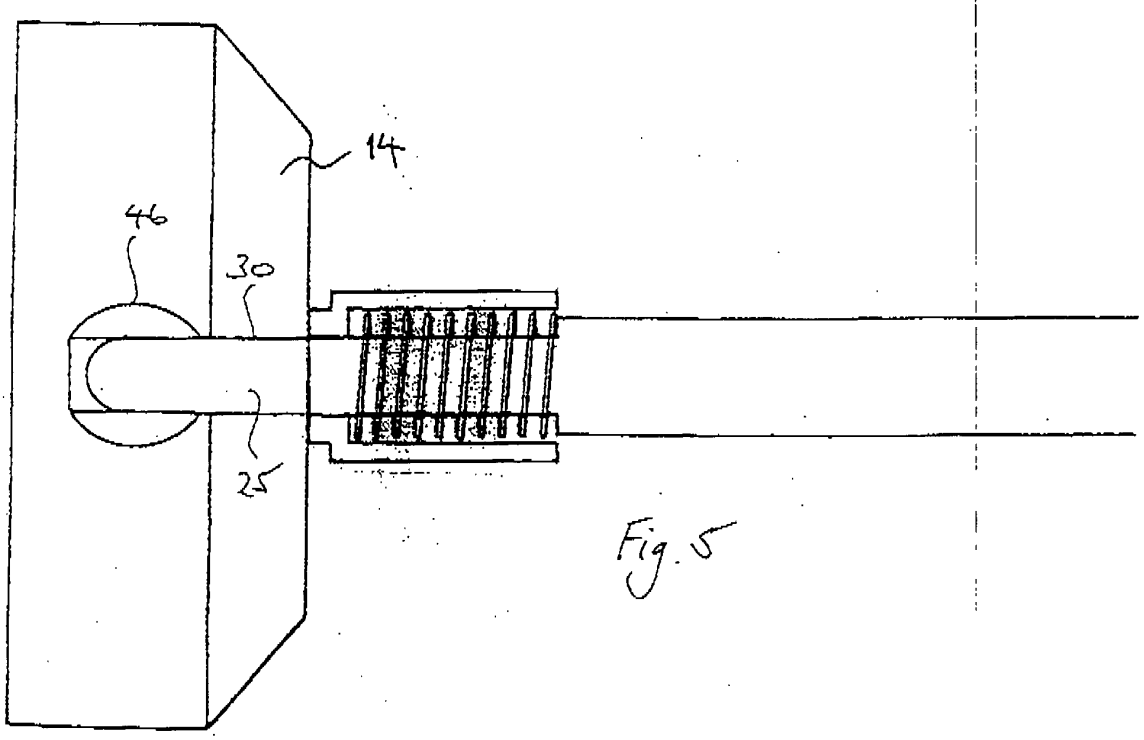

Fig. 5

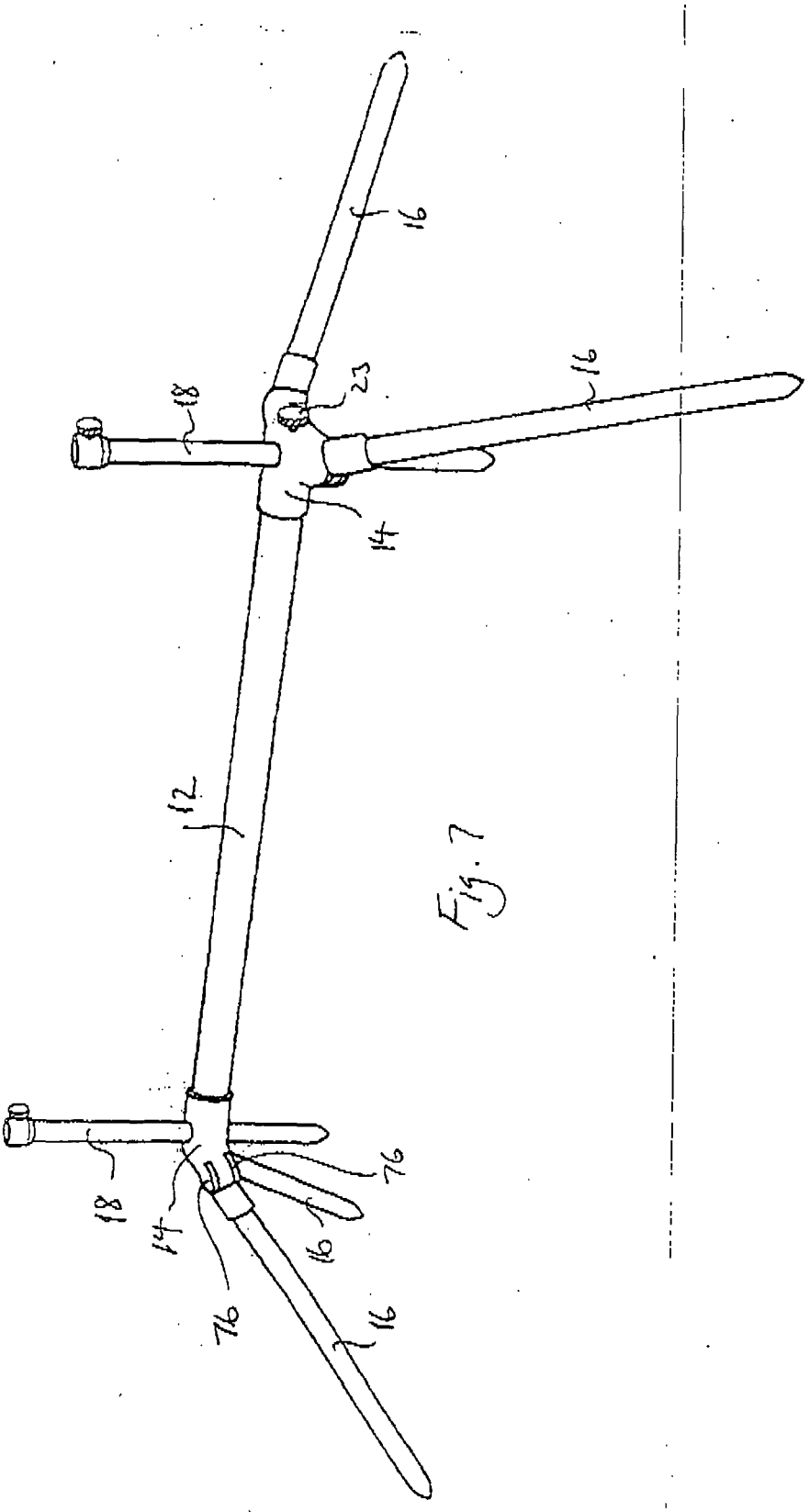

Fig. 7

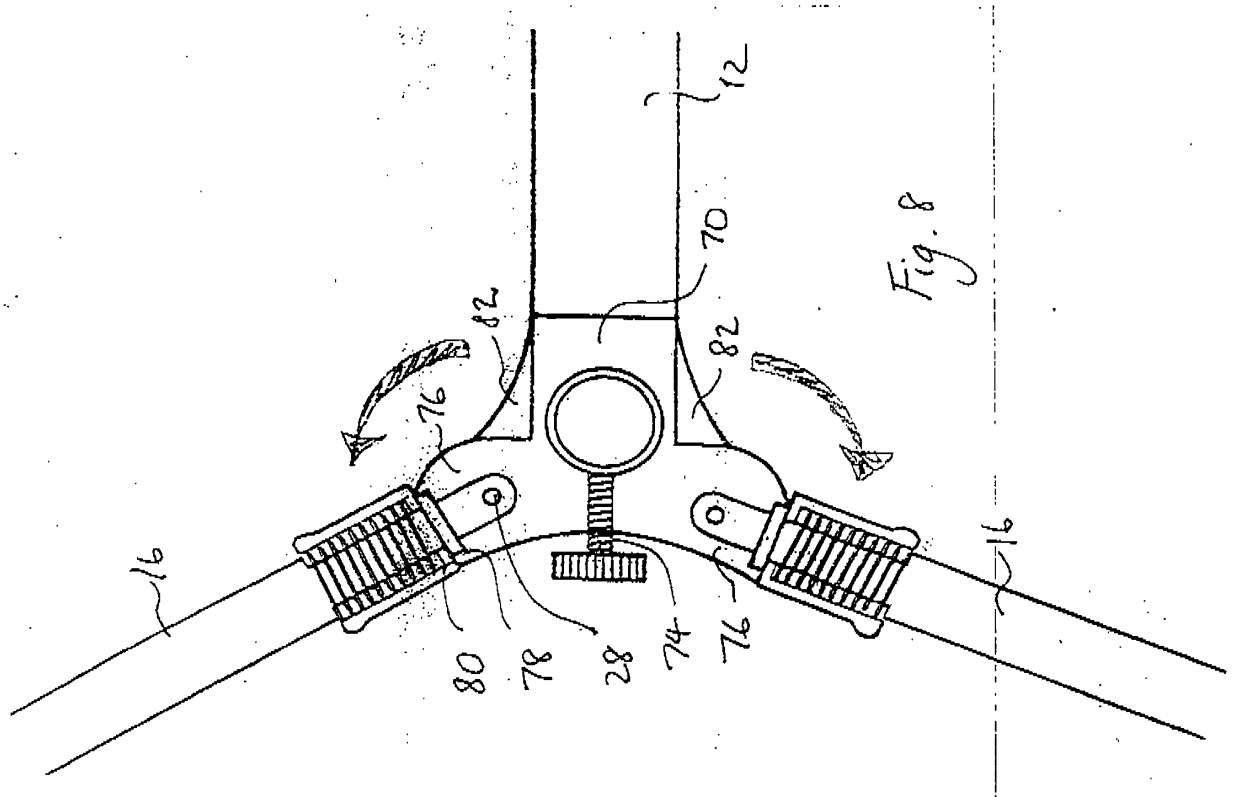

Fig. 8

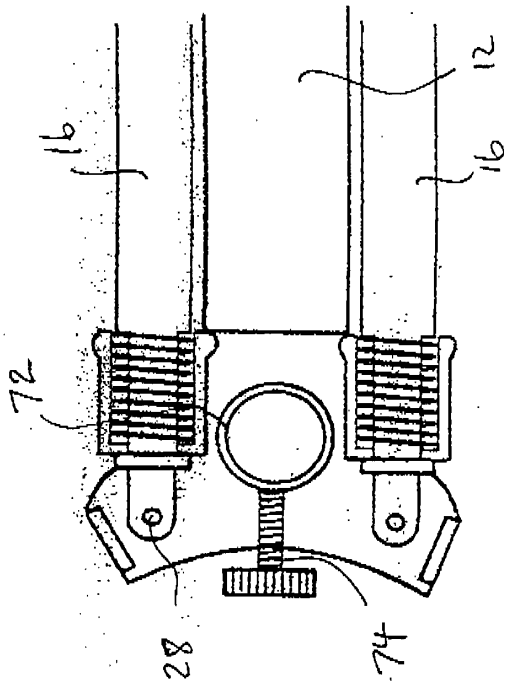

Fig. 9

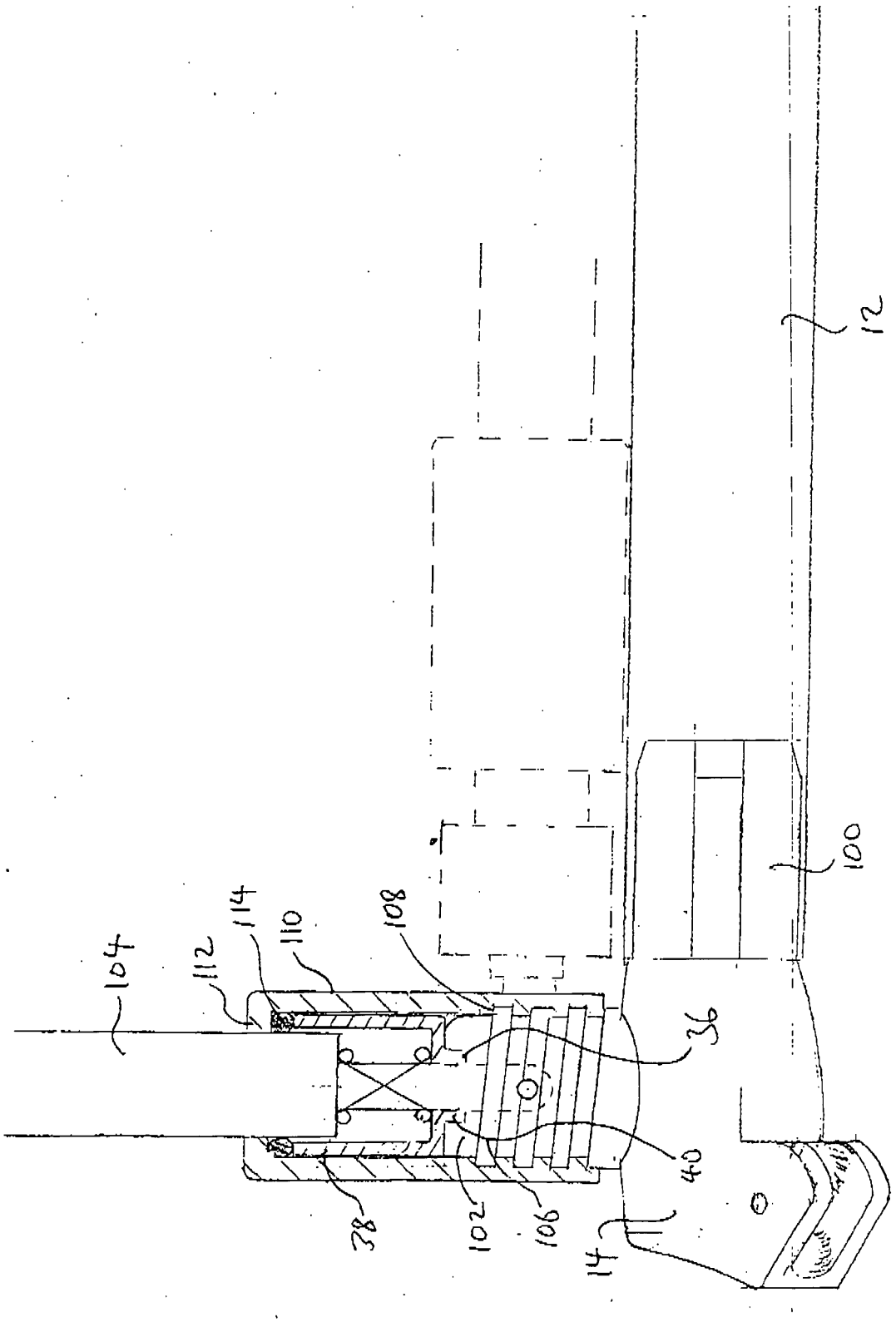

Fig. 10

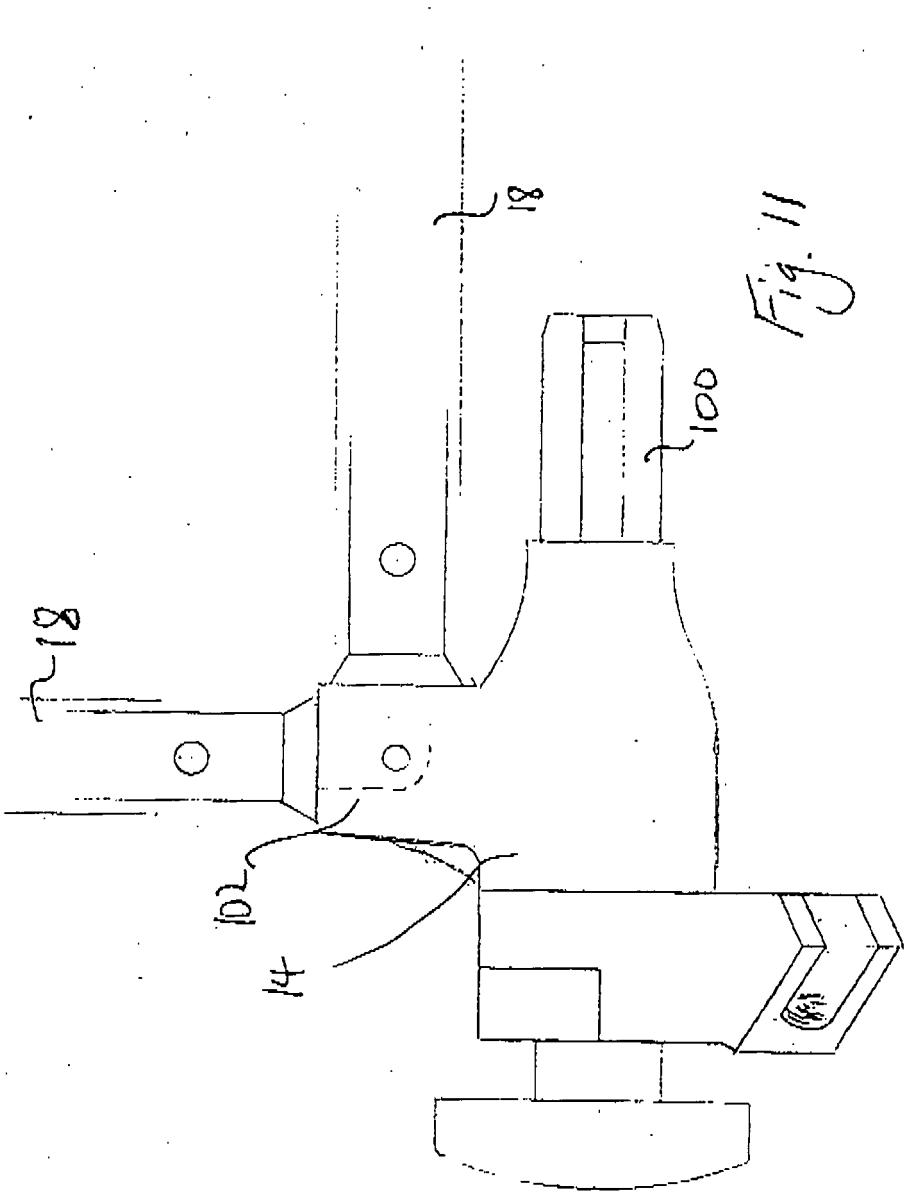

Fig. 11

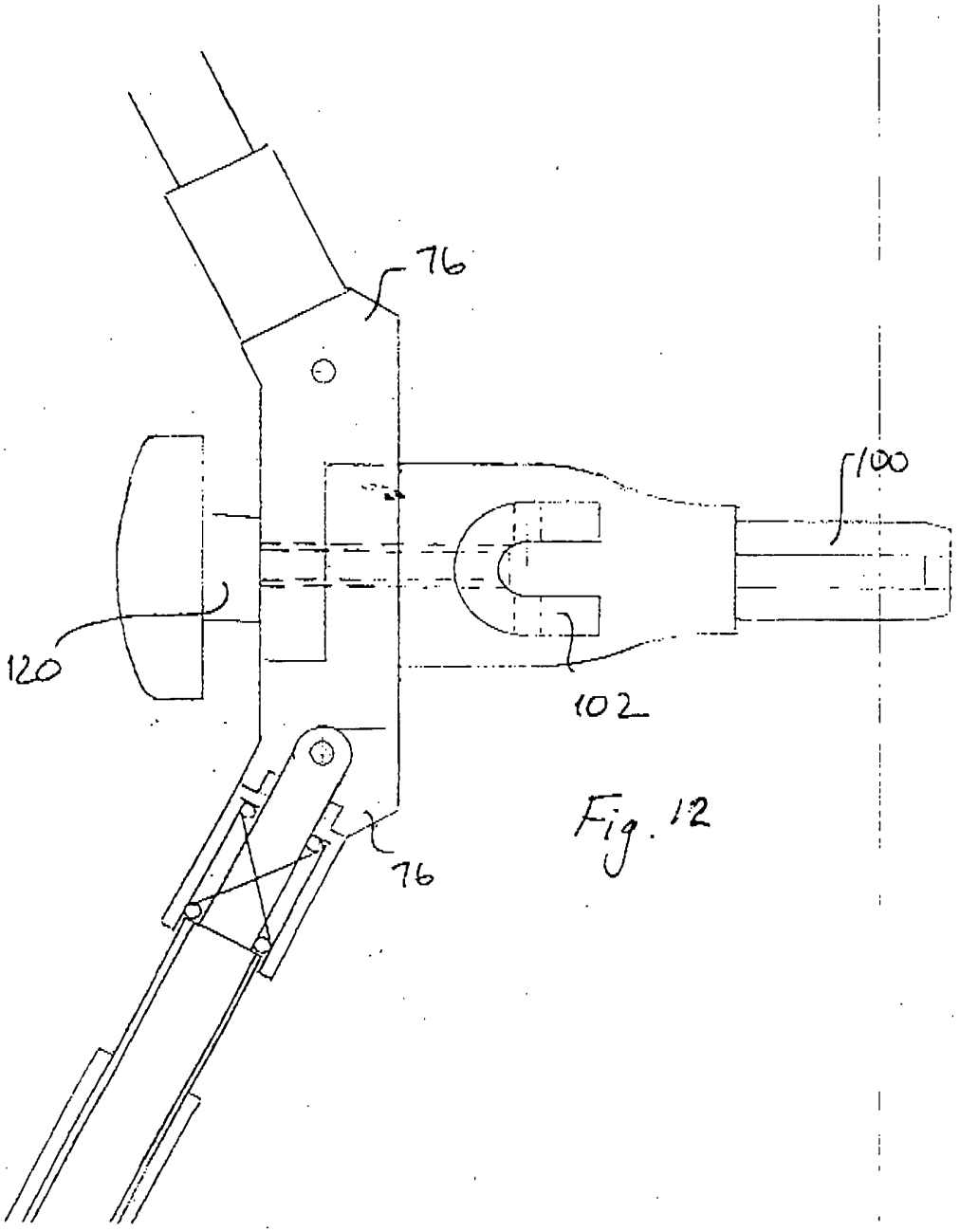

Fig. 12