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(54) **Sunshade.**

(57) The invention relates to a sunshade provided with support means (2) to be connected to a wall of a building, with a cloth roll rotatably supported about its central axis, and with a protective casing (1) accommodating said cloth roll. The supporting means (2) are coupled to the ends of folding arms (9, 10) consisting of two pivotally coupled folding arm parts (9', 9'', 10', 10'') by means of first upwardly sloping pivot axes extending at least substantially perpendicularly to the longitudinal direction of the folding arms (9, 10), about which pivot axes said folding arms (9, 10) are pivotable for opening and closing the sunshade. A cloth beam (8) is coupled to the ends of the folding arms (9, 10) remote from the

support means (2) by means of further pivot axes, which extend at least substantially parallel to said first pivot axes in the open position of the sunshade, and the folding arms (9, 10) are adjustable relative to the support means (2) about an adjusting axis extending at least substantially parallel to or coinciding with the central axis of the cloth roll. The ends of the folding arms (9, 10) remote from the support means (2) are coupled to the cloth beam by coupling means which are pivotable relative to the folding arms (9, 10) about pivot axes extending in the longitudinal direction of the folding arms (9, 10).

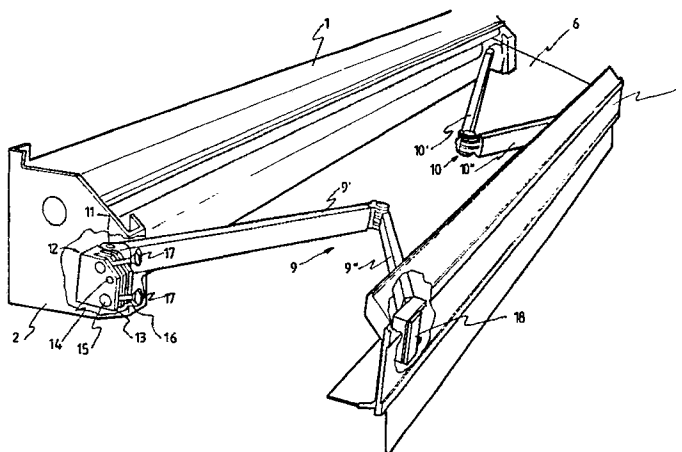


Fig1

EP 0 422 720 A1

SUNSHADE

The invention relates to a sunshade provided with support means to be connected to a wall of a building, with a cloth roll rotatably supported about its central axis, and with a protective casing accommodating said cloth roll, whereby said supporting means are coupled to the ends of folding arms consisting of two pivotally coupled folding arm parts by means of first upwardly sloping pivot axes extending at least substantially perpendicularly to the longitudinal direction of the folding arms, about which pivot axes said folding arms are pivotable for opening and closing the sunshade, whilst a cloth beam is coupled to the ends of the folding arms remote from the support means by means of further pivot axes, which extend at least substantially parallel to said first pivot axes in the open position of the sunshade, and the folding arms are adjustable relative to the support means about an adjusting axis extending at least substantially parallel to or coinciding with the central axis of the cloth roll.

By adjusting the folding arms about the adjusting axis it is possible to adjust the inclination of the cloth with respect to the horizontal in the extended position of the sunshade. However, this also involves an adjustment of the position of the cloth beam that is coupled to the free ends of the folding arms. In the closed position of the sunshade it is desirable, however, that at all times the cloth beam has a fixed position with respect to the protective casing accommodating the cloth roll, in order to shut off the front side of the protective casing in the required manner.

The object of the invention is to obtain a sunshade of the above kind, wherein it can be realised in a simple manner that in the closed position of the sunshade the cloth beam joins up with the protective casing accommodating the cloth roll in the desired manner at all times.

According to the invention this can be accomplished in that the ends of the folding arms remote from the support means are coupled to a cloth beam by coupling means which are pivotable relative to the folding arms about pivot axes extending in the longitudinal direction of the folding arms.

In the closed position of the sunshade the folding arms extend at least substantially parallel to the axis of rotation of the cloth roll, and the cloth beam can pivot into the required position about the pivot axes also extending parallel to the central axis of the cloth roll, in order to take up a correct position with respect to the protective casing accommodating the cloth roll. In the open position of the sunshade the pivot axes formed by the coupling means between the folding arms and the cloth beam will extend transversely to the longitudi-

nal direction of the cloth beam, so that in that case the cloth beam will take up a fixed position with respect to the folding arms.

The invention will be further explained with reference to an embodiment of the construction according to the invention diagrammatically illustrated in the accompanying Figures.

Figure 1 is a diagrammatic, perspective view of a sunshade according to the invention in partially extended position.

Figure 2 is a cross-section of the sunshade in the completely closed position.

Figure 3 shows, partly in section and partly in elevation, the arrangement of a support means for a folding arm.

Figure 4 is a perspective view, with the various parts illustrated spaced apart, for the connection of the free end of a folding arm to the cloth beam.

Figure 5 is a section of Figure 3.

As is illustrated in Figures 1 and 2 the sunshade comprises a protective casing 1, which is provided between two support means 2 to be fixed to the wall of a building or the like. The protective casing has a substantially U-shaped section, a downwardly extending cover plate 3 joining up with the upper edge thereof, and a forwardly extending cover plate 4 being provided on the upper front edge of the cover plate 3.

Inside the protective casing a cloth roll 5 is conventionally journaled, in such a manner that said cloth roll is rotatable about its normally horizontally disposed central axis in order to wind and unwind a cloth 6 connected to the cloth roll 5.

The free end of the cloth 6 is conventionally coupled, by means of a connecting wire 7 inserted in the cloth roll, to a cloth beam 8.

As is apparent in particular from Figure 2 an upwardly sloping part of the cloth beam 8 is located under the cover plate 4 and abuts against the cover plate 3 in the completely rolled-up position of the cloth, whilst a substantially horizontally extending lower part of the cloth beam 8 joins up with the free lower end of the protective casing 1, so that in the closed position of the sunshade the protective casing 1 and the cloth beam 8 together form a more or less shut-off space.

The cloth beam 8 is mounted on the ends of two folding arms 9 and respectively, each consisting of a pair of folding arm parts 9', 9'' and 10', 10'' respectively.

The ends of the folding arms 9 and 10 located near the protective casing 1 are pivotally coupled, by means of pivot pins 11 extending upwardly and perpendicularly to the longitudinal direction of the

folding arms, to coupling blocks 12, which comprise a few ribs 13 extending parallel to each other. Said coupling blocks 12 are pivotally coupled to the support means 2 by means of coaxial pivot pins 14.

For this purpose the support means 2 forming the sides of the protective casing are U-shaped at their free ends, in order to form two parallel legs 2' and 2'', in which the pivot pin 14 is journaled. This provides an effective support for the block 12, independent of the adjusting means for the block to be discussed hereinafter. Since the leg 2' is located in a recess between two ribs 13 provided in the block 12, the leg 12' at the same time prevents that the block 12 moves sideways.

In each coupling block there are furthermore accommodated, on both sides of the pivot pin 14, a pair of pins 15 extending parallel to the pivot pin 14, in such a manner that said pins are journaled, freely rotatably about their longitudinal axes, in the coupling block. In each pin 15 there is provided a threaded hole, which extends perpendicularly to the longitudinal axis of the pin 15 in question. In each of these threaded holes provided in the two pins there is screwed an adjusting screw 16. Said adjusting screws 16 are thereby passed through holes provided in the support means 2 and the heads 17 of the adjusting screws 16 are supported on the support means 2.

It will be seen that by adjusting the adjusting screws 16 the coupling blocks 12 supporting the two folding arms 9 and 10 can be pivoted with respect to the supporting means 2 about an adjusting axis formed by the co-axial pivot pins 14. Said pivoting of the coupling blocks with the folding arms 9 and 10 coupled thereto about the adjusting axis formed by the pivot pins 14 makes it possible to adjust the inclination of the cloth 6 with respect to the horizontal in the open position of the sunshade.

For the connection of the free end of a folding arm 9 or 10 to the cloth beam use is made of a U-shaped bracket 18 and a coupling plate 19. As will be apparent in particular from Figure 2 the coupling plate 19 abuts against the inner side of the web of the cloth beam, between two profile parts 20' and 21' being integral with the web of the cloth beam 8, which profile parts are provided with cams extending towards one another and which extend along the side of the coupling plate 19 remote from the side of the coupling plate which abuts against the web of the cloth beam 8. It will be seen that the coupling plate will be movable in the longitudinal direction of the cloth beam 8 with respect to the cloth beam.

The U-shaped bracket 18 can be fixed to the cloth beam by means of bolts 22, which can be passed through passages 23 provided in the

Ushaped bracket 18, and which can be screwed into threaded holes 24 in the coupling plate 19, whereby the coupling plate 19 and the U-shaped bracket 18 are clamped against the cams 20' and 21'.

In the parallel legs of the U-shaped bracket 18 there are provided holes 26 for accommodating a pivot pin 27.

As will be apparent from Figure 2 said pivot pin thereby extends at least substantially vertically and perpendicularly to the longitudinal direction of the cloth beam in the closed position of the sunshade.

The pivot pin 27 is passed through a hole 28 which is provided in a pivot pin 29 extending perpendicularly to the pivot pin 27. Said pivot pin 29 is freely rotatably accommodated in a coupling block 30 which is provided with an end plate 31, which is connected to a block 33 by means of two connecting ribs 32. Said block 33 is inserted in the free end of a folding arm part 9" or 10", the end plate 31 abutting against the end of the folding arm part in question.

The pivot pin 27 extends between the end plate 31 and the block 33, and near the pivot pin, in the opposite sides of the end of the folding arm part 9", there are provided slotted holes 34 and 35 in the walls of the tubular profile forming the walls of the folding arm part.

The pivot pins 29 form pivot axes extending in the longitudinal direction of the folding arms which, as will be apparent from Fig. 2, will be located in line, co-axially with the pivot pins 14 and parallel to the longitudinal axis of the protective casing 1 in the closed position of the sunshade, whilst they will extend transversely to the longitudinal direction of the cloth beam 8 in the open position of the sunshade.

In the open position of the sunshade the cloth beam 8 will therefore take up a fixed position relative to the folding arms 9 and 10 at all times, because in the open position of the sunshade the cloth beam can ~~neither pivot~~ about the pivot pins 27, nor about the pivot pins 29. When the cloth 6 is wound on the cloth roll 5 in order to put the sunshade in the closed position the folding arms will be folded over, and near the end of the closing motion, where the folding arm parts 9" and 10" with the pivot pins 29 accommodated therein will at least substantially be in line, part of the cloth beam 8 will come into contact with the protective casing 1 and the cloth beam 8 will be pivoted relative to the folding arms through an angle which is larger or less large, dependent on the adjustment of the folding arms 9 and 10 about the adjusting axis formed by the pivot pins 14, about the pivot axes formed by the coaxial central axes of the pivot pins 29, in order to eventually achieve abutment against the protective casing 1 in the position illustrated in

Figure 1.

It will be seen, therefore, that by using the pivoting connection effected between the free ends of the folding arm parts 9' 1 and 10'' and the cloth beam 8, said cloth beam can adjust itself with respect to the folding arms when the sunshade is being closed, in order to effect that, independent of the position of the cloth with respect to the horizontal in the open position of the sunshade, the protective casing 1 and the cloth beam 8 will at all times form a substantially shut off space when the sunshade is in its closed position, whereby the cloth beam 8 abuts against the casing in the same required manner at all times.

Claims

1. A sunshade provided with support means to be connected to a wall of a building, with a cloth roll rotatably supported about its central axis, and with a protective casing accommodating said cloth roll, whereby said supporting means are coupled to the ends of folding arms consisting of two pivotally coupled folding arm parts by means of first upwardly sloping pivot axes extending at least substantially perpendicularly to the longitudinal direction of the folding arms, about which pivot axes said folding arms are pivotable for opening and closing the sunshade, whilst a cloth beam is coupled to the ends of the folding arms remote from the support means by means of further pivot axes, which extend at least substantially parallel to said first pivot axes in the open position of the sunshade, and the folding arms are adjustable relative to the support means about an adjusting axis extending at least substantially parallel to or coinciding with the central axis of the cloth roll, characterized in that the ends of the folding arms remote from the support means are coupled to a cloth beam by coupling means which are pivotable relative to the folding arms about pivot axes extending in the longitudinal direction of the folding arms.

2. A sunshade according to claim 1, characterized in that the end of a folding arm is coupled to the cloth beam by means of two pins extending perpendicularly to each other, one of said pins extending in the longitudinal direction of the folding arm and the other extending perpendicularly to the longitudinal direction of the cloth beam.

3. A sunshade according to claim 1 or 2, characterized in that the pin extending in the longitudinal direction of the folding arm is accommodated in a block provided in the end of the folding arm in question, and that the pin extending perpendicularly to the cloth beam is passed through a hole provided in the pin extending in the longitudinal direction of the folding arm and accommodated

with its ends in a pair of parallel legs of a coupling block secured to the cloth beam.

4. A sunshade according to claim 3, characterized in that the pin which is passed through the pin extending in the longitudinal direction of the folding arm is located near a pair of slotted holes provided opposite each other in the end of the folding arm.

5. A sunshade according to any one of the preceding claims, characterized in that its construction is such that in the closed position of the sunshade the adjusting pin coincides with the pivot pins extending in the longitudinal direction of the folding arms.

6. A sunshade according to any one of the preceding claims, characterized in that a folding arm is coupled to a supporting means by means of a coupling block, which is adjustable with respect to the supporting means about the adjusting axis, by means of bolts engaging the block on both sides of the adjusting pin and being freely rotatably journalled in the supporting means.

7. A sunshade according to any one of the preceding claims, characterized in that a folding arm is coupled to a supporting means by means of a coupling block, which is at least partially located between legs extending parallel to each other of a U-shaped end of the supporting means, a pin forming the adjusting pin about which the coupling block is adjustable being located in said two legs.

8. A sunshade according to claim 7, characterized in that a leg extends into a recess provided in the coupling block.

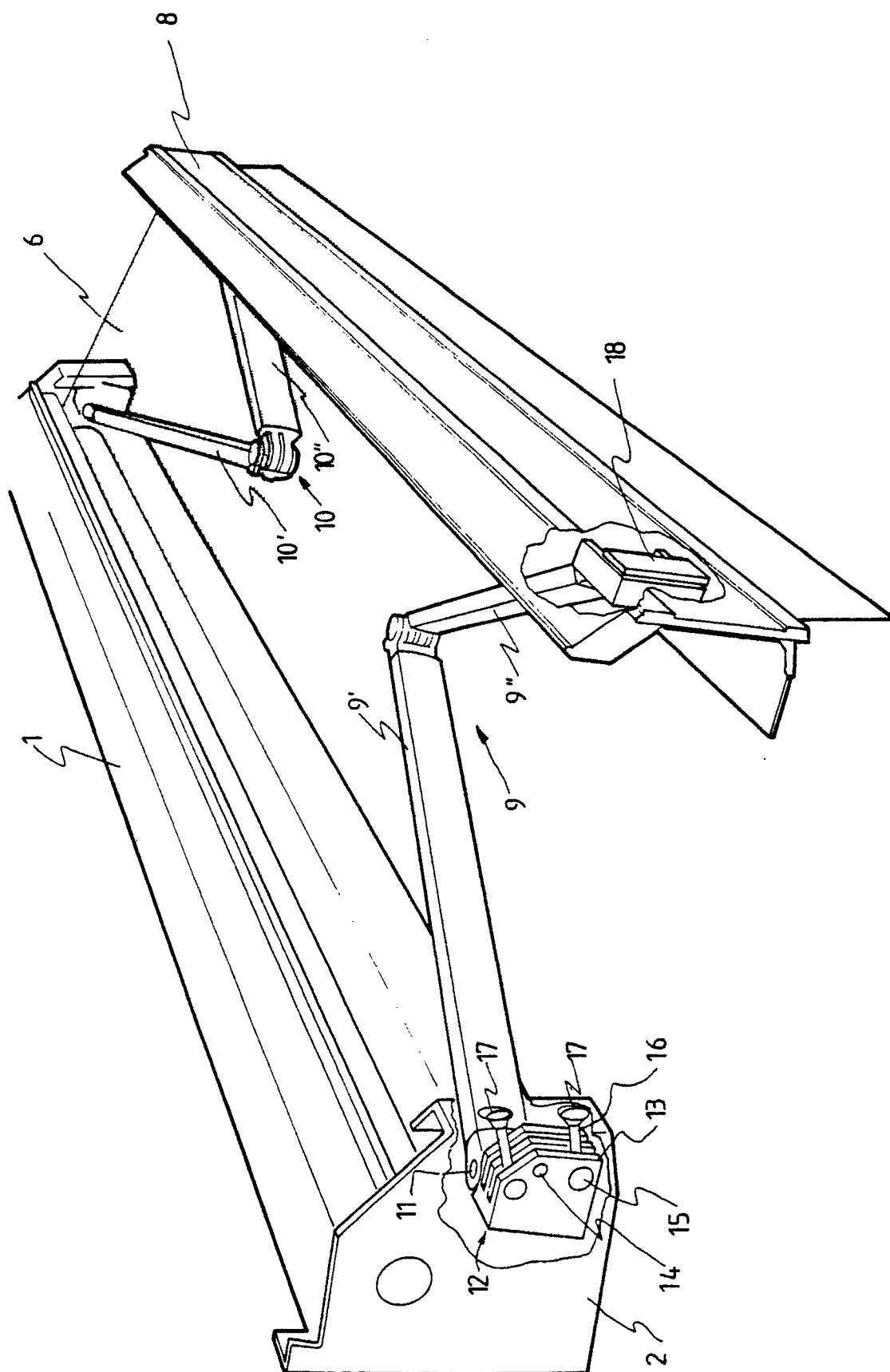


Fig 1

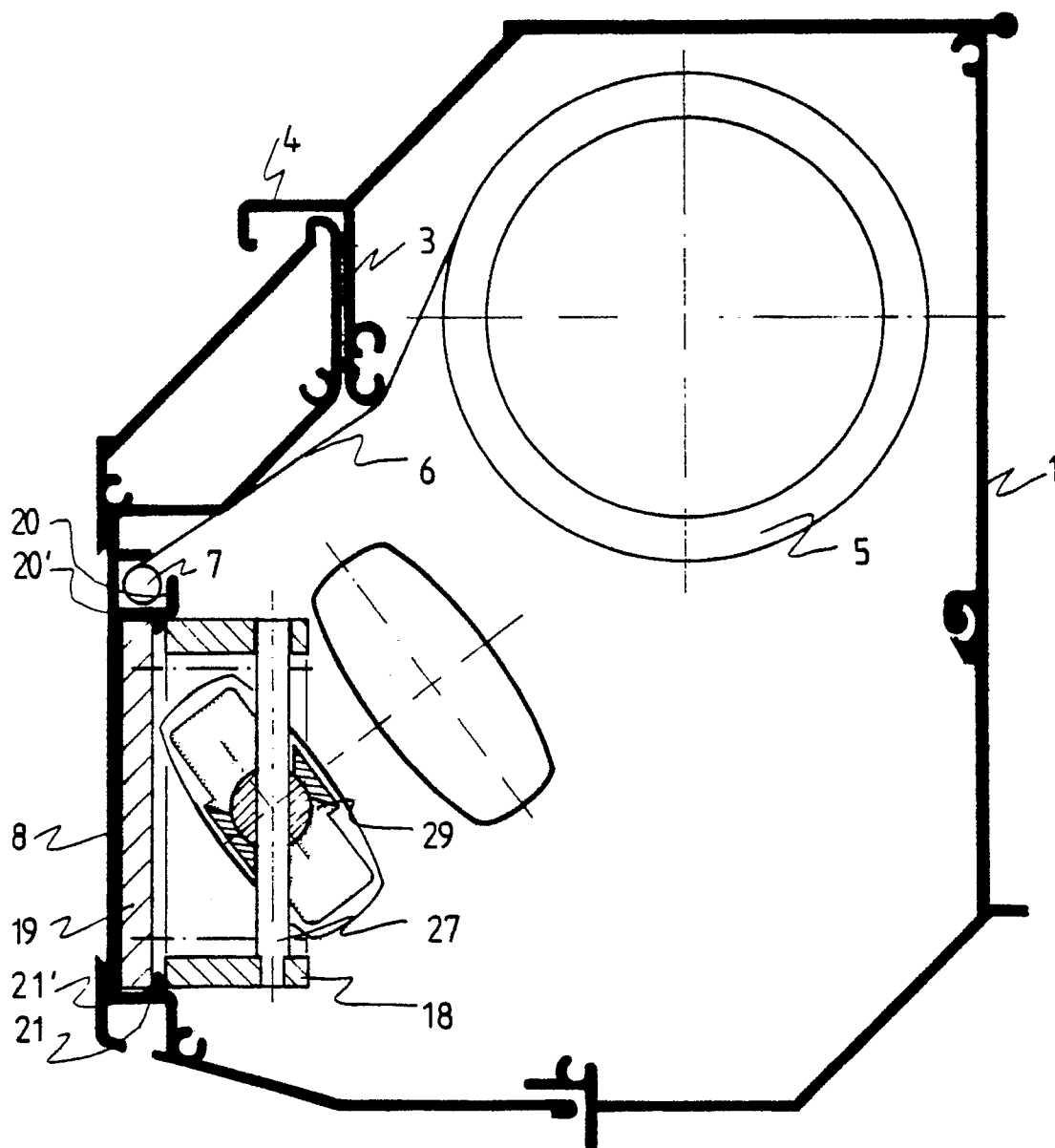


Fig 2

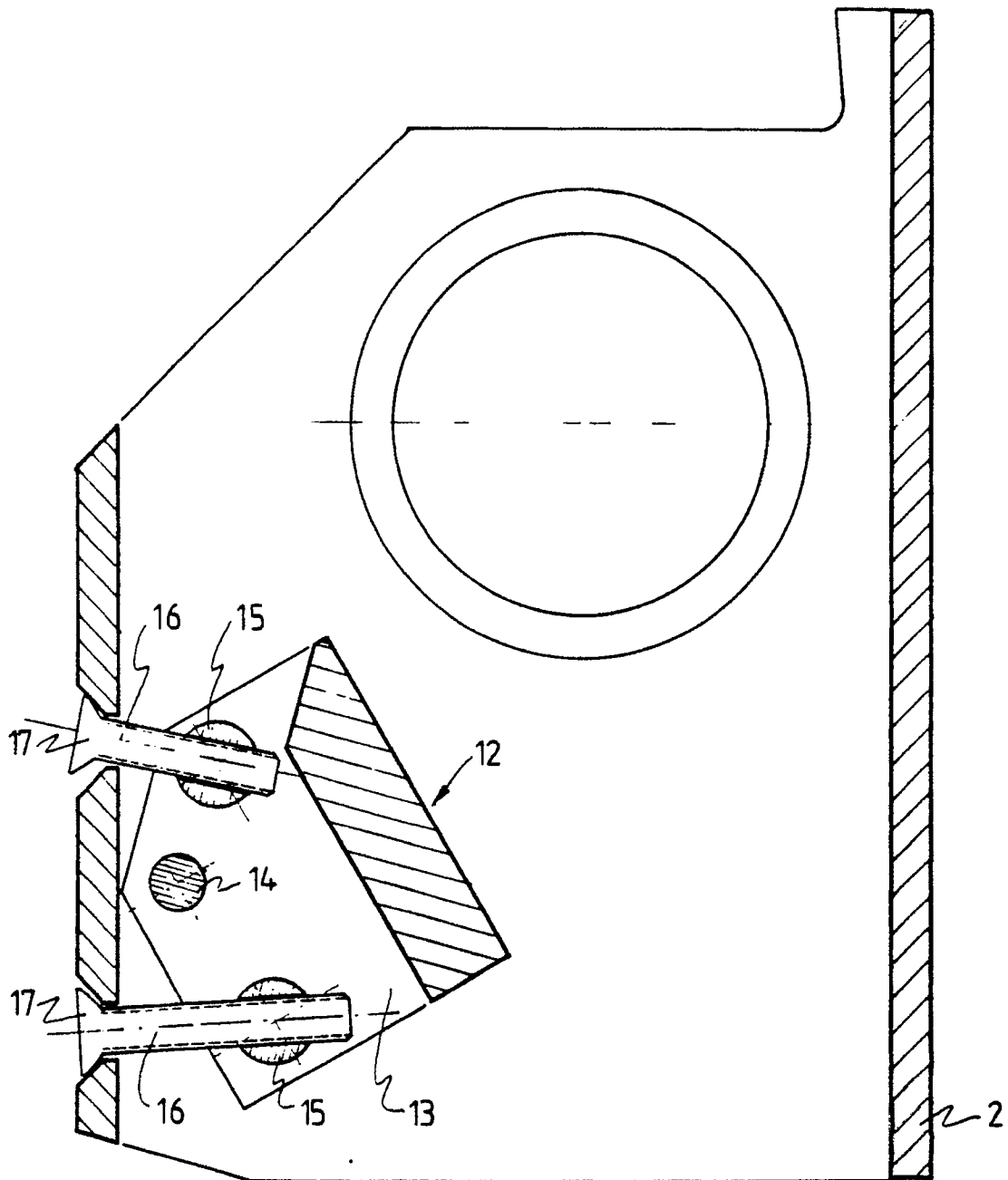


Fig 3

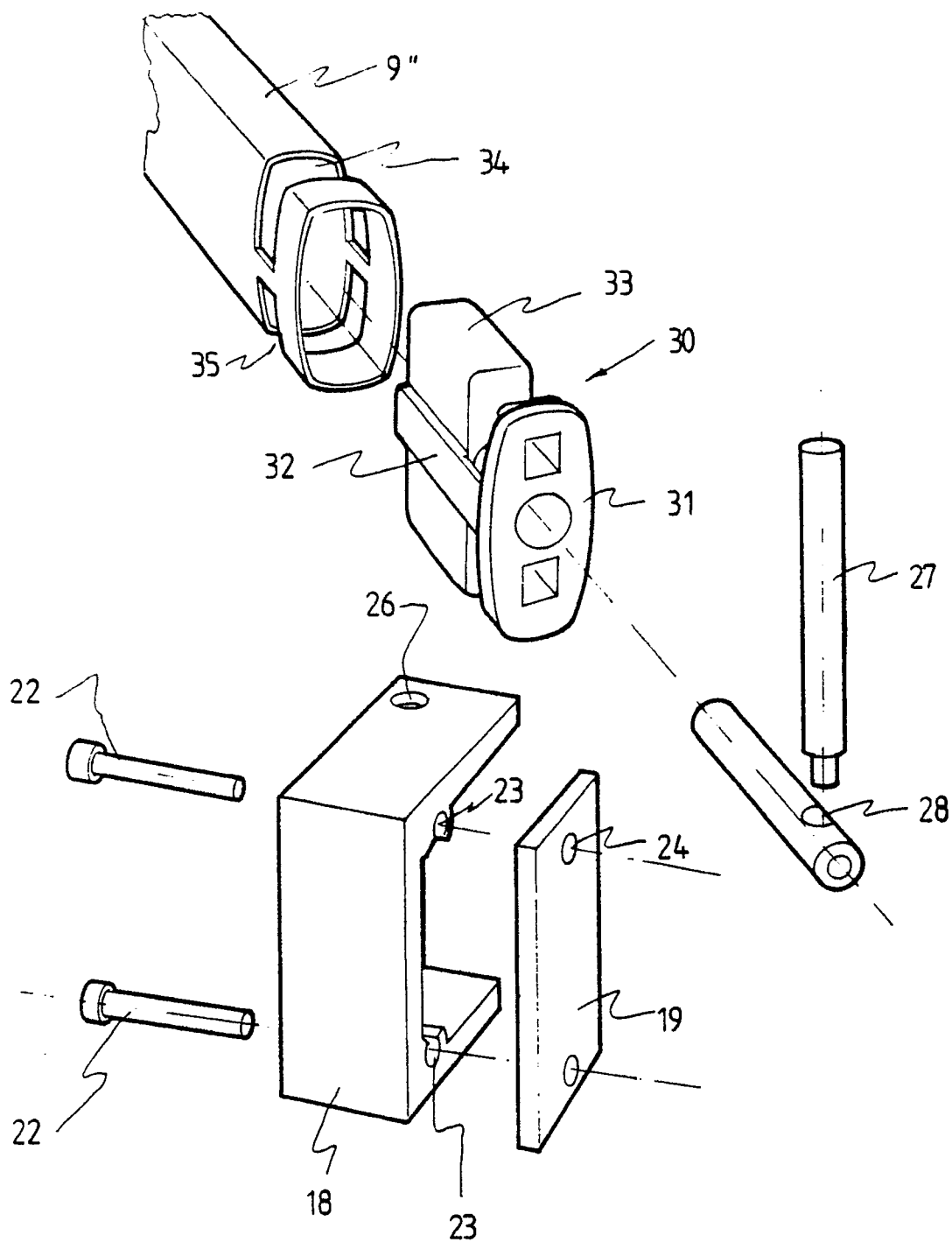


Fig 4

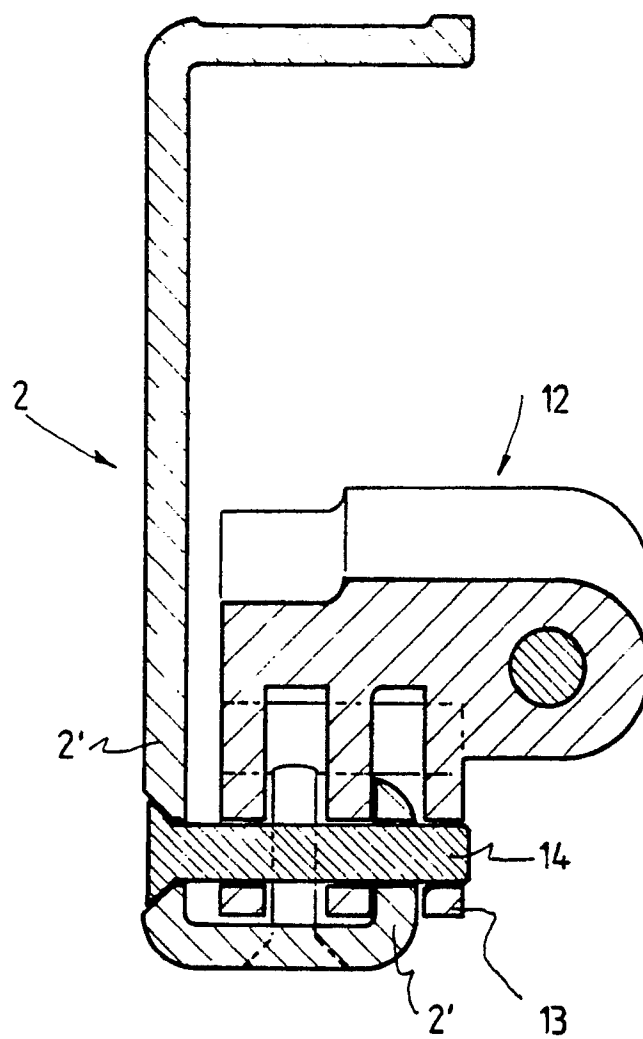


Fig 5



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EUROPEAN SEARCH REPORT

Application Number

EP 90 20 2607

DOCUMENTS CONSIDERED TO BE RELEVANT					
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)		
A	GB-A-5 040 42 (IRVING AND COMPANY) * page 2, line 43 - page 3, line 28; figures 1-15 * - - -	1,2	E 04 F 10/06		
A	DE-A-2 753 959 (ROLLADEN-SPETTMANN) * page 8, line 9 - page 10, line 23; figures 1-3 * - - -	1,2			
A	US-A-4 020 888 (UPTON ET AL.) * column 5, lines 21 - 61; figures 5, 8 * - - -	1,2			
A	FR-E-9 399 6 (HERSCOVICI) * page 1, left-hand column, line 26 - right-hand column, line 23; figure 3 * - - - - -	1,6,7			
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)		
			E 04 F		
The present search report has been drawn up for all claims					
Place of search The Hague		Date of completion of search 03 January 91	Examiner AYITER J.		
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