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⑤④ **Sunshade.**

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Description

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 pivot means defining axes of rotation extending at least substantially perpendicularly to the longitudinal direction of the folding arms, about which axes of rotation said folding arms are pivotable for opening and closing the sunshade, whilst a cloth support beam is coupled to the ends of the folding arms remote from the support means by means of further pivot means defining, further axes of rotation which extend at least substantially parallel to said first cited axes of rotation 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. (GB-A-504,042)

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 support 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 support 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 support 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 the cloth support beam by coupling means which are pivotable relative to the outer parts of the folding arms about pivot axes extending in the longitudinal direction of the outer parts 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 support 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 outer ends of the folding arms and the cloth sup-

port beam will extend transversely to the longitudinal direction of the cloth support beam, so that in that case the cloth support 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 support 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 support beam 8.

As is apparent in particular from Figure 2 an upwardly sloping part of the cloth support 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 support 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 support beam 8 together form a more or less shut-off space.

The cloth support beam 8 is mounted on the ends of two folding arms 9 and 10 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 co-axial 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 support beam, between two profile parts 20' and 21' being integral with the web of the cloth support 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 support beam 8. It will be seen that the coupling plate will be movable in the longitudinal direction of the cloth support beam 8 with respect to the cloth support beam.

The U-shaped bracket 18 can be fixed to the cloth support beam by means of bolts 22, which can be passed through passages 23 provided in the U-shaped 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 support 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 support beam 8 in the open position of the sunshade.

In the open position of the sunshade the cloth support 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 support 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 support beam 8 will come into contact with the protective casing 1 and the cloth support 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 co-axial 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" and 10" and the cloth support beam 8, said cloth support 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 support beam 8 will at all times form a substantially shut off space when the sunshade is in its closed position, whereby the cloth support beam 8 abuts against the casing in the same required manner at all times.

Claims

1. A sunshade provided with support means (2) to be connected to a wall of a building, with a cloth roll (5) rotatably supported about its central axis, and with a protective casing (1) accommodating said cloth roll (5), whereby said 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 pivot means defining axes of rotation (11) extending at least substantially perpendicularly to the longitudinal direction of the folding arms, about which axes of rotation (11) said folding arms (9, 10) are pivotable for opening and closing the sunshade, whilst a cloth support beam (8) is coupled to the ends of the folding arms (9, 10) remote from the support means (2) by means of further pivot means, defining further axes of rotation (27), which extend at least substantially parallel to said first cited axes of rotation (11) in the open position of the sunshade, and the folding arms (9, 10) are adjustable relative to the support means (2) about adjusting axes (14) extending at least substantially parallel to or coinciding with the central axis of the cloth roll (5), characterized in that the ends of the folding arms (9, 10) remote from the support means (2) are coupled to the cloth support beam (8) by coupling means (18, 19) which are pivotable relative to outer parts (9'', 10'') of the folding arms (9, 10) about pivot axes (29) extending in the longitudinal direction of the outer parts (9'', 10'') of the folding arms (9, 10).
2. A sunshade according to claim 1, characterized in that the outer part (9'', 10'') of a folding arm (9, 10) is coupled to the cloth support beam (8) by means of two pins (27, 29) extending perpendicularly to the longitudinal direction of the cloth support beam (8).
3. A sunshade according to claim 1 or 2, characterized in that a pin (29) extending in the longitudinal direction of the outer part (9'', 10'') of the folding arms (9, 10) is accommodated in a block (30) provided in the end of the outer part (9'', 10'') of the folding arm (9, 10) in question, and that a pin (27) extending perpendicularly to the cloth support beam (8) is passed through a hole (28) provided in the pin (29) extending in the longitudinal direc-

tion of the outer parts (9'', 10'') of the folding arm (9, 10) and accommodated with its ends in a pair of parallel legs of a coupling block (18) secured to the cloth support beam (8).

4. A sunshade according to claim 3, characterized in that the pin (27) which is passed through the pin (29) extending in the longitudinal direction of the outer part (9'', 10'') of the folding arm (9, 10) is located near a pair of slotted holes (34, 35) provided opposite each other in the end of the outer part (9'', 10'') of the folding arm (9, 10).
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 axes (14) coincide with the pivot pins extending in the longitudinal direction of the outer parts (9'', 10'') of the folding arms (9, 10).
6. A sunshade according to any one of the preceding claims, characterized in that a folding arm (9) is coupled to a supporting means (2) by means of a coupling block (12), which is adjustable with respect to the supporting means (2) about the adjusting axis (14), by means of bolts (16) engaging the coupling block (12) on both sides of the adjusting axis (14) and being freely rotatable journaled in the supporting means (2).
7. A sunshade according to any one of the preceding claims, characterized in that a folding arm (9) is coupled to a supporting means (2) by means of a coupling block (12), which is at least partially located between legs (2') extending parallel to each other of a U-shaped end of the supporting means (2), a pin (14) forming the adjusting axis about which the coupling block (12) is adjustable being located in said two legs (2').
8. A sunshade according to claim 7, characterized in that a leg (2') extends into a recess provided in the coupling block (12).

Patentansprüche

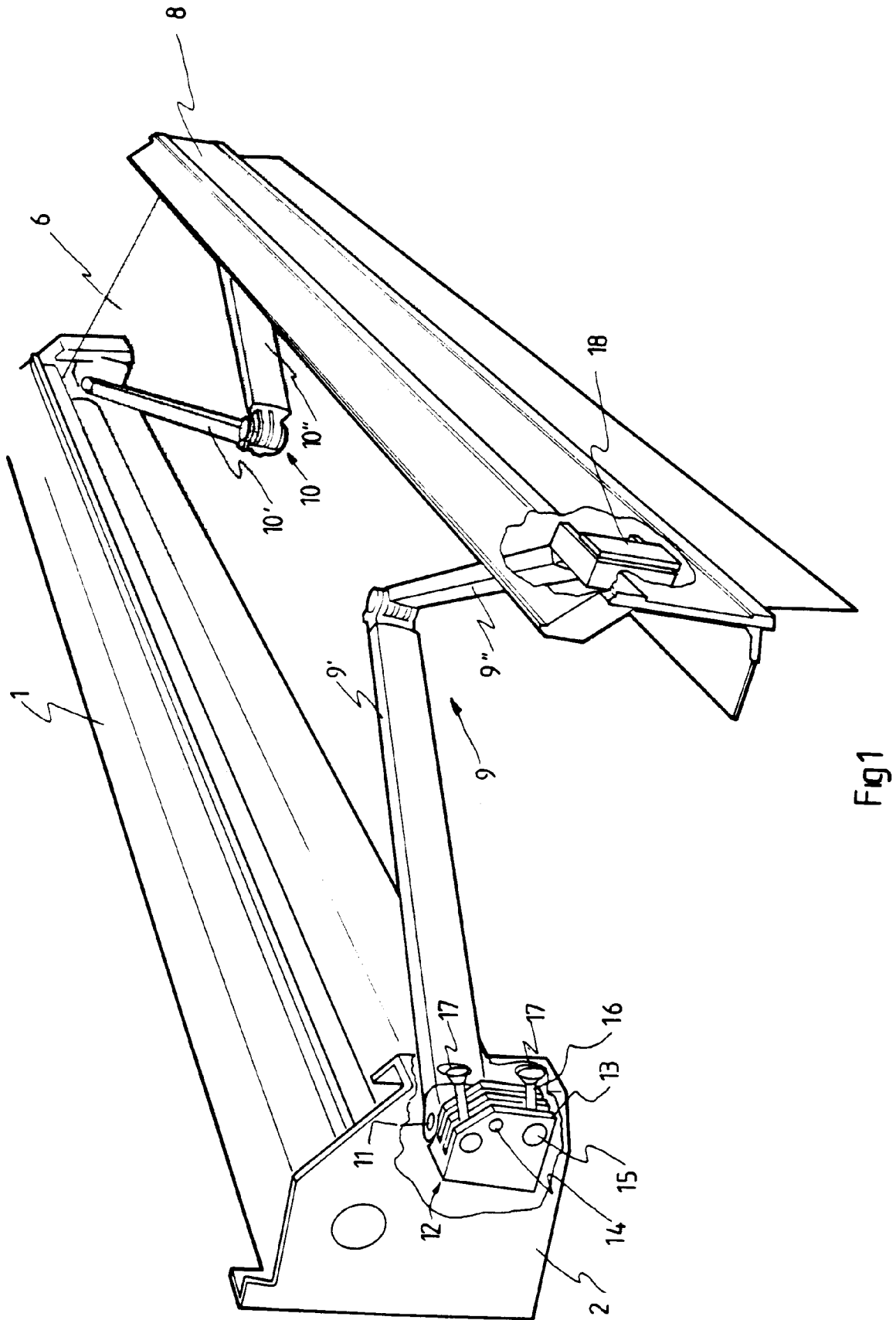
1. Markise, die mit Haltevorrichtungen (2) zur Verbindung mit der Wand eines Gehäuses versehen ist, mit einer drehbar um ihre Längsachse gelagerten Stoffrolle (5), und mit einem die Stoffrolle (5) aufnehmenden Schutzgehäuse (1), wobei die Haltevorrichtungen (2) an den Enden von Klapparmen (9, 10) angekuppelt sind, die aus zwei schwenkbar gekoppelten Klapparmteilen (9', 9'', 10', 10'') bestehen, mittels Schwenkeinrichtungen, welche

- Drehachsen (11) festlegen, die sich zumindest im wesentlichen senkrecht zu der Längsrichtung der Klapparme erstrecken, wobei die Klapparme (9, 10) um diese Drehachsen (11) schwenkbar sind, um die Markise zu öffnen und zu schließen, während ein Stoffhaltebalken (8) entfernt von den Haltevorrichtungen (2) an die Enden der Klapparme (9, 10) durch weitere Schwenkeinrichtungen gekuppelt sind, welche weitere Drehachsen (27) festlegen, die sich zumindest im wesentlichen parallel den ersten genannten Drehachsen (11) in der geöffneten Position der Markise erstrecken, und die Klapparme (9, 10) in Bezug auf die Haltevorrichtungen (2) um Einstellachsen (14) einstellbar sind, die sich zumindest im wesentlichen parallel zur Zentralachse der Stoffrolle (5) erstrecken oder mit dieser zusammenfallen, dadurch gekennzeichnet, daß die Enden der Klapparme (9, 10) entfernt von den Haltevorrichtungen (2) an den Stoffhaltebalken (8) gekuppelt sind durch Kupplungseinrichtungen (18, 19), die in Bezug auf äussere Teile (9'', 10'') der Klapparme (9, 10) um Schwenkachsen (29) verschwenkbar sind, die sich in der Längsrichtung der äußeren Teile (9'', 10'') der Klapparme (9, 10) erstrecken.
2. Markise nach Anspruch 1, dadurch gekennzeichnet, daß der äußere Teil (9'', 10'') eines Klapparms (9, 10) an den Stoffhaltebalken (8) über zwei Zapfen (27, 29) gekuppelt ist, die sich senkrecht zur Längsrichtung des Stoffhaltebalkens (8) erstrecken.
3. Markise nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß ein sich in der Längsrichtung des äußeren Teils (9'', 10'') der Klapparme (9, 10) erstreckender Zapfen (29) in einem Block (30) aufgenommen ist, der in dem Ende des äußeren Teils (9'', 10'') des betreffenden Klapparms (9, 10) vorgesehen ist, und daß ein sich senkrecht zu dem Stoffhaltebalken (8) erstreckender Zapfen (27) durch ein Loch (28) geführt ist, welches in dem Zapfen (29) vorgesehen ist, der sich in der Längsrichtung des äußeren Teils (9'', 10'') des Klapparms (9, 10) erstreckt, und mit seinen Enden in einem Paar paralleler Schenkel eines Kupplungsblocks (18) aufgenommen ist, der an dem Stoffhaltebalken (8) befestigt ist.
4. Markise nach Anspruch 3, dadurch gekennzeichnet, daß der Zapfen (27), der durch den Zapfen (29) geführt ist, der sich in der Längsrichtung des äußeren Teils (9'', 10'') des Klapparms (9, 10) erstreckt, nahe einem Paar geschlitzter Löcher (34, 35) angeordnet ist, die einander gegenüberliegend in dem Ende des äußeren Teils (9'', 10'') des Klapparms (9, 10) vorgesehen sind.
5. Markise nach einem der voranstehenden Ansprüche, dadurch gekennzeichnet, daß sie so aufgebaut ist, daß in der geschlossenen Position der Markise die Einstellachsen (14) mit den Schwenkzapfen zusammenfallen, die sich in der Längsrichtung der äußeren Teile (9'', 10'') der Klapparme (9, 10) erstrecken.
6. Markise nach einem der voranstehenden Ansprüche, dadurch gekennzeichnet, daß ein Klapparm (9) an eine Haltevorrichtung (2) über einen Kupplungsblock (12) gekuppelt ist, welche in Bezug auf die Haltevorrichtung (2) um die Einstellachse (14) einstellbar ist, durch Bolzen (16), die den Kupplungsblock (12) auf beiden Seiten der Einstellachse (14) ergreifen und frei drehbar in der Haltevorrichtung (2) gelagert sind.
7. Markise nach einem der voranstehenden Ansprüche, dadurch gekennzeichnet, daß ein Klapparm (9) an eine Haltevorrichtung (2) über einen Kupplungsblock (9) gekuppelt ist, der zumindest teilweise zwischen Schenkeln (2') angeordnet ist, die sich parallel zueinander erstrecken, eines U-förmigen Endes der Haltevorrichtung (2), wobei ein Zapfen (14) die Einstellachse bildet, um welche herum der Kupplungsblock (12) einstellbar ist, und in den beiden Schenkeln (2') angeordnet ist.
8. Markise nach Anspruch 7, dadurch gekennzeichnet, daß sich ein Schenkel (2') in eine Ausnehmung hinein erstreckt, die in dem Kupplungsblock (12) vorgesehen ist.

Revendications

1. Store pare-soleil muni des moyens de support (2) destiné à être connecté à un mur d'un immeuble, comprenant un rouleau de tissu (5) supporté à rotation autour de son axe central et un boîtier de protection (1) qui reçoit ledit rouleau de tissu (5), dans lequel ledit moyens de support (2) sont couplés aux extrémités de bras pliants (9, 10) constitués par deux parties de bras pliant couplées de façon pivotante (9', 9'', 10', 10'') au moyen des moyens de pivotement qui définissent des axes de rotation (11) s'étendant au moins sensiblement perpendiculairement à la direction longitudinale des bras pliants, axes de rotation (11) autour desquels lesdits bras pliants (9, 10) peuvent pivoter pour ouvrir et fermer le store pare-soleil tandis qu'une poutrelle de support de tissu (8) est couplée aux extrémités des bras pliants (9, 10), à distance des moyens de support (2), au moyen d'un autre moyens de pivotement qui définit d'autres axes de rotation (27), lesquels

- s'étendent au moins sensiblement parallèlement auxdits premiers axes de rotation cités (11) dans la position ouverte du store pare-soleil et les bras pliants (9, 10) sont réglables par rapport au moyens de support (2) autour d'axes de réglage (14) qui s'étendent au moins sensiblement parallèlement à l'axe central du rouleau de tissu (5) ou qui coïncident avec ceci, caractérisé en ce que les extrémités des bras pliants (9, 10) situées à distance du moyens de support (2) sont couplées à la poutrelle de support de tissu (8) par moyens de couplage (18, 19) qui peuvent pivoter par rapport à des parties externes (9'', 10'') des bras pliants (9, 10) autour d'axes de pivotement (29) s'étendant suivant la direction longitudinale des parties externes (9'', 10'') des bras pliants (9, 10).
2. Store pare-soleil selon la revendication 1, caractérisé en ce que la partie externe (9'', 10'') d'un bras pliant (9, 10) est couplée à la poutrelle de support de tissu (8) au moyen de deux broches (27, 29) s'étendant perpendiculairement à la direction longitudinale de la poutrelle de support de tissu (8).
 3. Store pare-soleil selon la revendication 1 ou 2, caractérisé en ce qu'une broche (29) s'étendant suivant la direction longitudinale de la partie externe (9'', 10'') des bras pliants (9, 10) est logée dans un bloc (30) prévu dans l'extrémité de la partie externe (9'', 10'') du bras pliant (9, 10) en question et en ce qu'une broche (27) s'étendant perpendiculairement à la poutrelle de support de tissu (8) traverse un trou (28) ménagé dans la broche (29) s'étendant suivant la direction longitudinale des parties externes (9'', 10'') du bras pliant (9, 10) et est reçue avec ses extrémités dans une paire de jambages parallèles d'un bloc de couplage (18) fixé à la poutrelle de support de tissu (8).
 4. Store pare-soleil selon la revendication 3, caractérisé en ce que la broche (27) qui traverse la broche (29) s'étendant suivant la direction longitudinale de la partie externe (9'', 10'') du bras pliant (9, 10) est positionnée à proximité d'une paire de trous en fente (34, 35) ménagés à l'opposé l'un de l'autre dans l'extrémité de la partie externe (9'', 10'') du bras pliant (9, 10).
 5. Store pare-soleil selon l'une quelconque des revendications précédentes, caractérisé en ce que sa construction est telle que dans la position fermée du store pare-soleil, les axes de réglage (14) coïncident avec les broches de pivotement s'étendant suivant la direction longitudinale des parties externes (9'', 10'') des bras pliants (9, 10).
 6. Store pare-soleil selon l'une quelconque des revendications précédentes, caractérisé en ce qu'un bras pliant (9) est couplé à un moyen de support (2) au moyen d'un bloc de couplage (12), lequel est réglable par rapport au moyen de support (2) autour de l'axe de réglage (14), au moyen de boulons (16) qui se vissent dans le bloc de couplage (12), sur les deux côtés de l'axe de réglage (14), et qui peuvent tourner librement dans le moyen de support (2).
 7. Store pare-soleil selon l'une quelconque des revendications précédentes, caractérisé en ce qu'un bras pliant (9) est couplé à un moyen de support (2) au moyen d'un bloc de couplage (12), lequel est au moins partiellement positionné entre des jambages (2') s'étendant parallèlement l'un à l'autre d'une extrémité en forme de U du moyen de support (2), une broche (14) formant l'axe de réglage autour duquel le bloc de couplage (12) est positionné de façon réglable dans lesdits deux jambages (2').
 8. Store pare-soleil selon la revendication 7, caractérisé en ce qu'un jambage (2') s'étend dans un évidement ménagé dans le bloc de couplage (12).



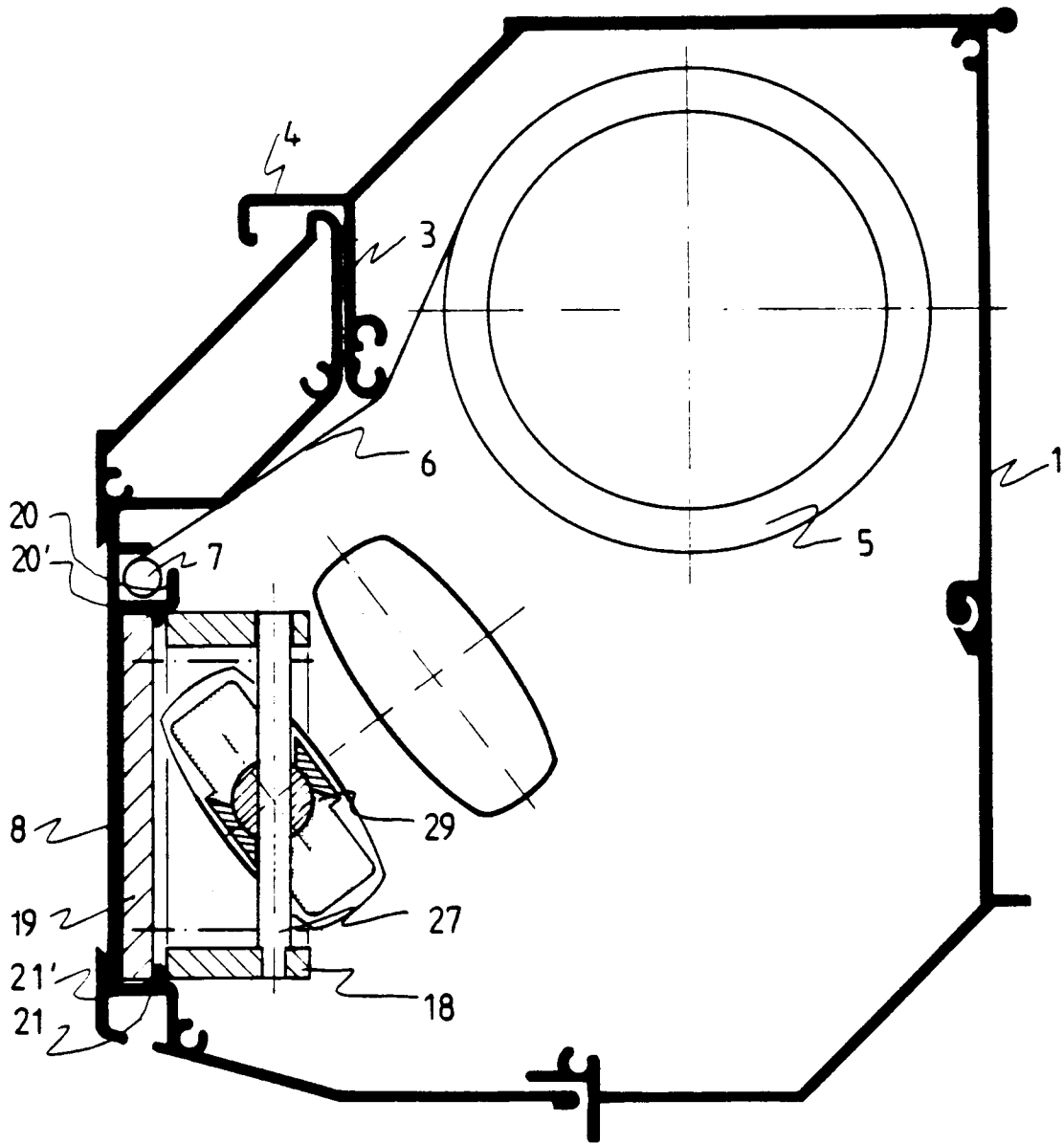


Fig 2

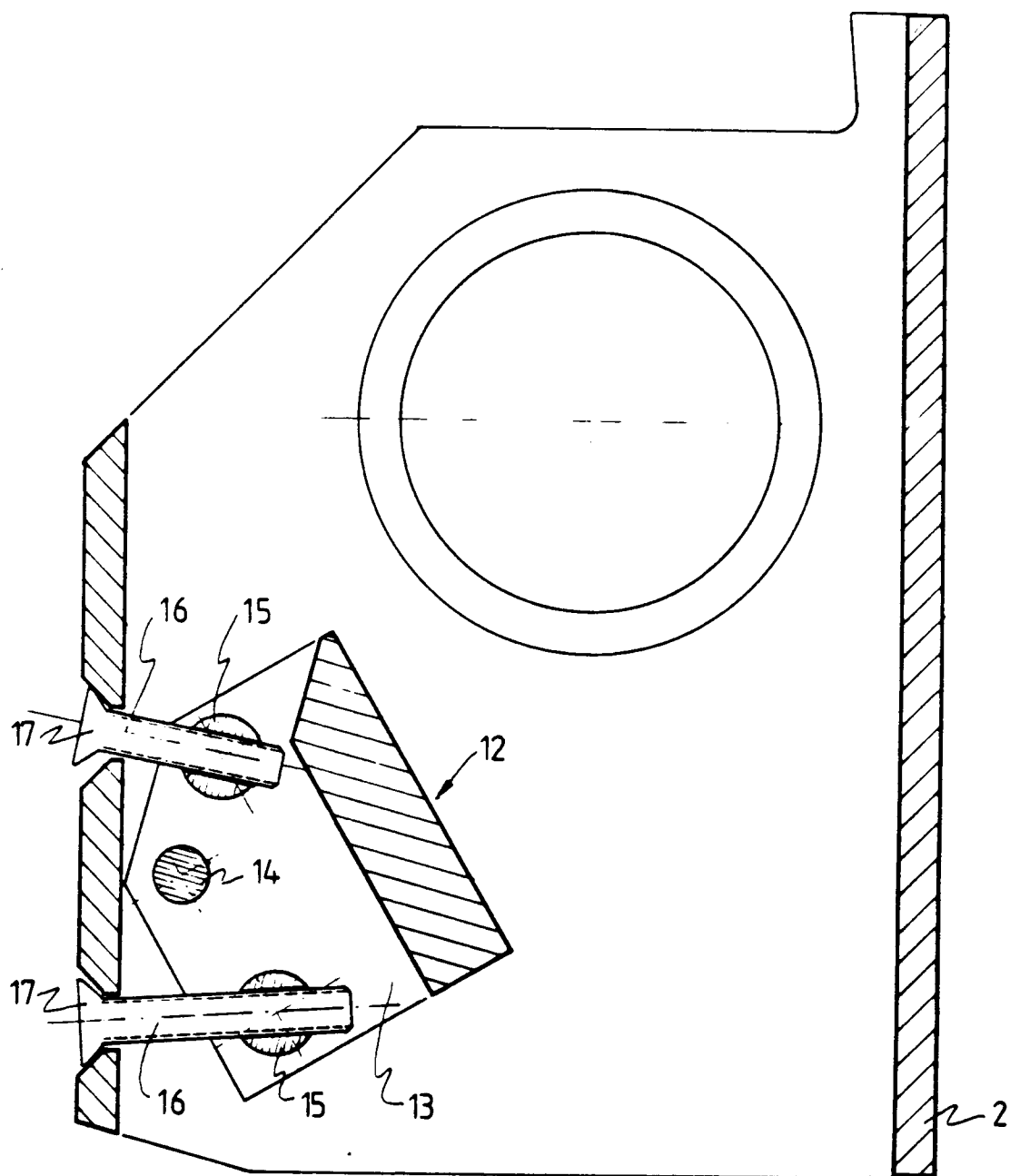


Fig 3

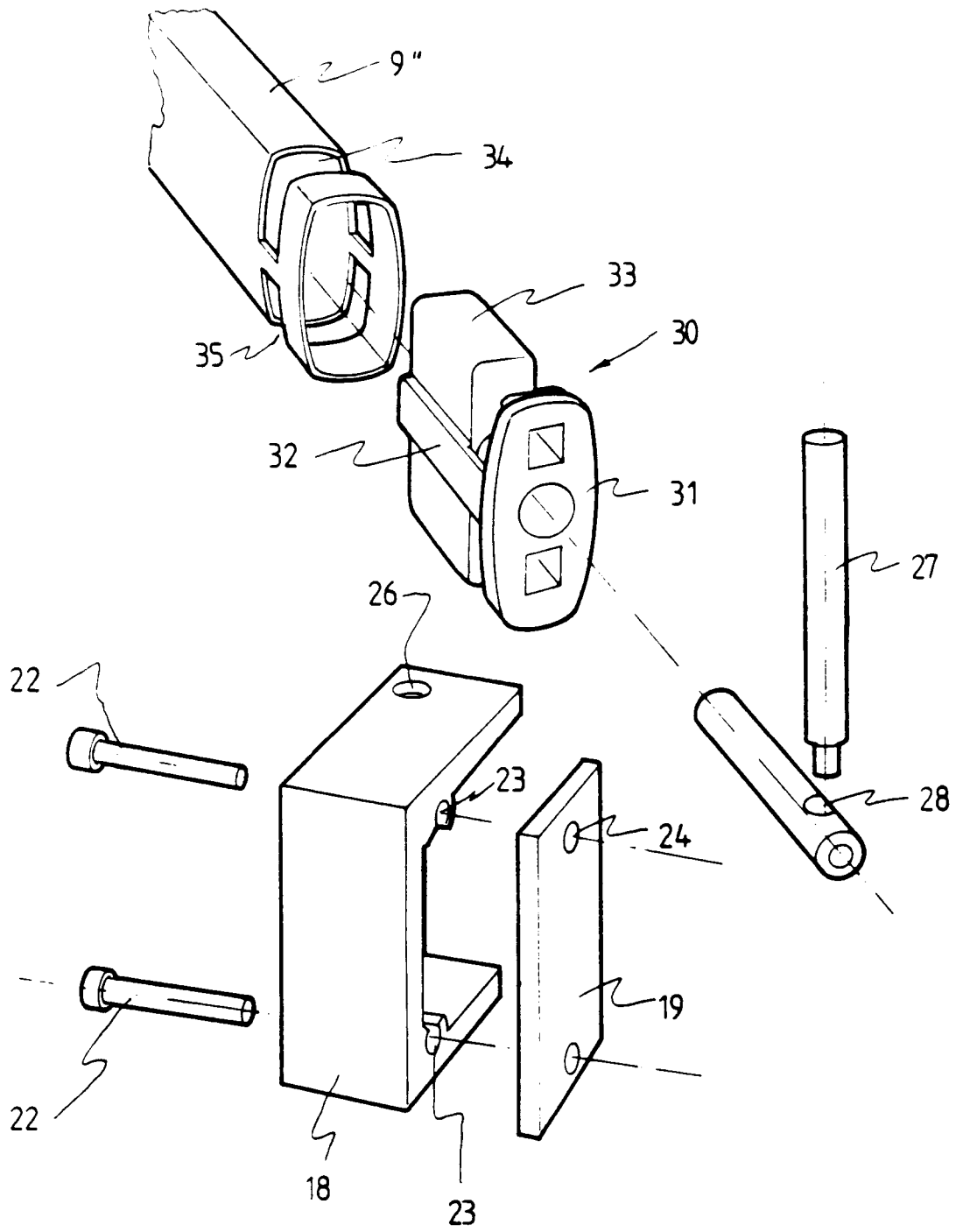


Fig 4

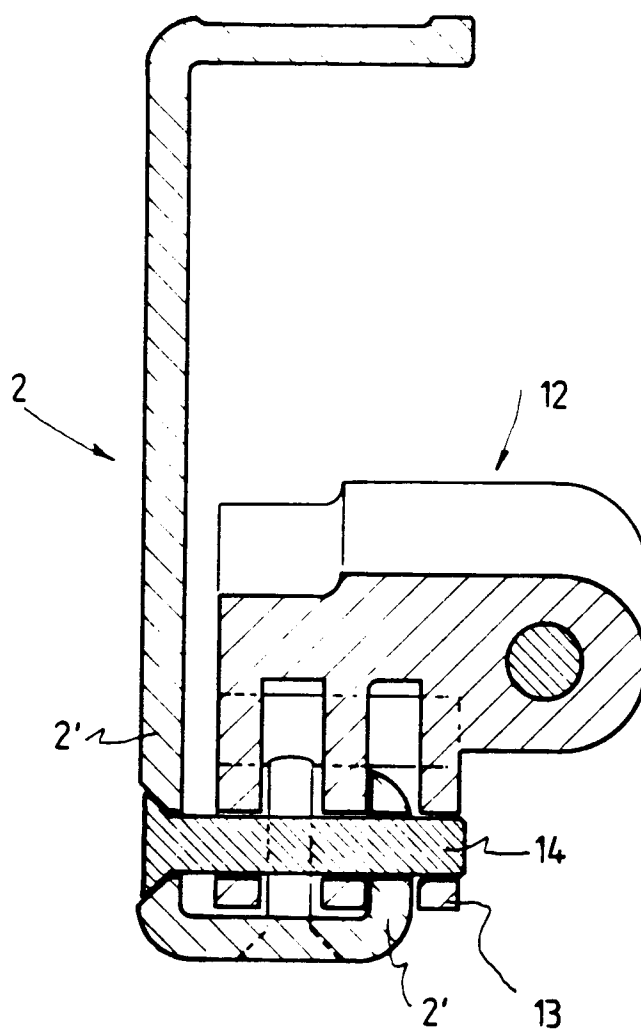


Fig 5