

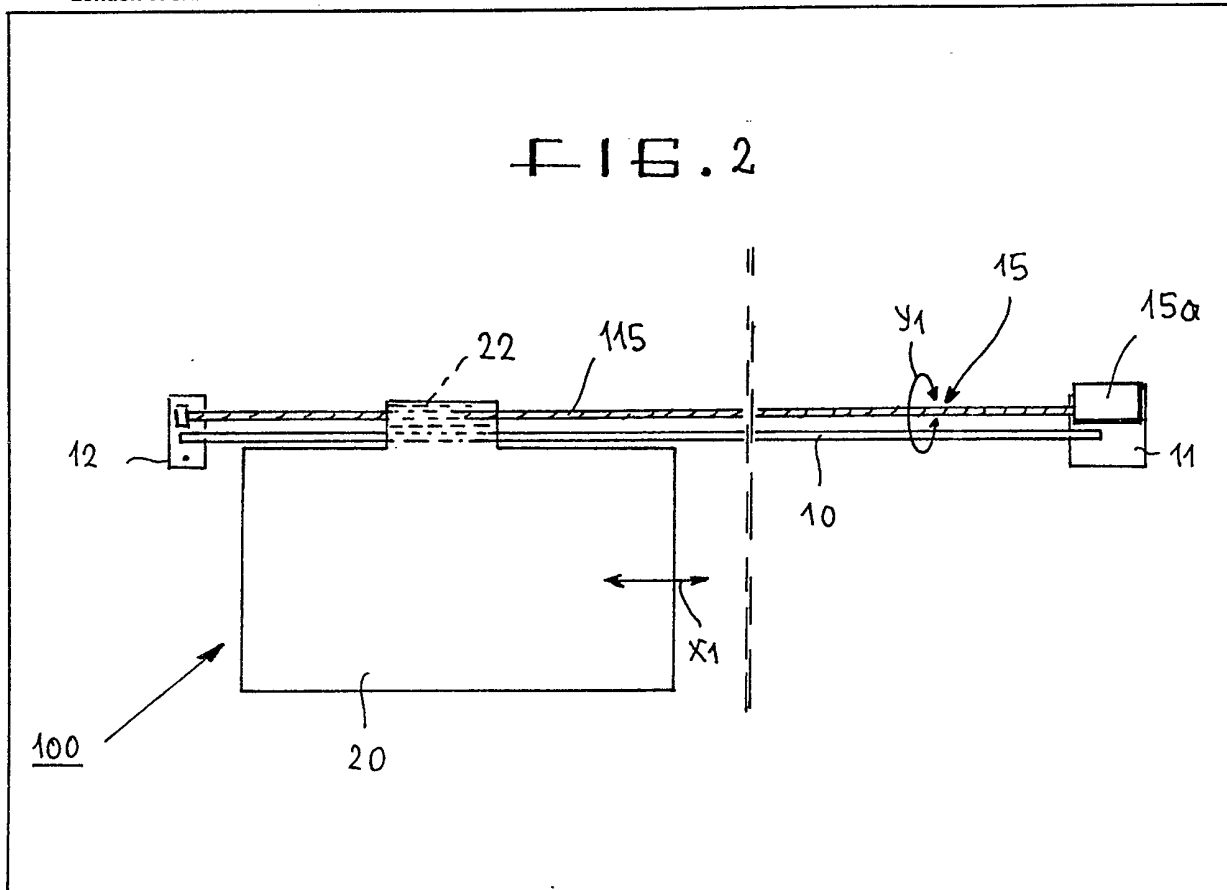
(12) UK Patent Application (19) GB (11) 2 090 570 A

(21) Application No 8200253
(22) Date of filing 6 Jan 1982
(30) Priority data
(31) 8100164U
(32) 7 Jan 1981
(33) Fed. Rep. of Germany (DE)
(43) Application published
14 Jul 1982
(51) INT CL³
B60J 3/02
(52) Domestic classification
B7J 63
(56) Documents cited
GB 929667
GB 499444
GB 392028
(58) Field of search
B7J
(71) Applicant
Reinhold Haardt,
D—2381 Stolk, Federal
Republic of Germany
(72) Inventor
Reinhold Haardt
(74) Agents
Fitzpatricks,
Kern House, 61/62
Lincoln's Inn Fields,
London WC2B 6EX

(54) Solar radiation induced glare protection system for motor vehicles

(57) A sun visor 20 is mounted for longitudinal movement along a support and guide rod 10 disposable interiorally above a vehicle windscreen. The visor is pivotable about the longitudinal axis of the support rod and lockable in any position to which it may be pivoted. In addition the visor is automatically movable on the support rod into a glare-eliminating position by means of a motor drive mechanism 15 disposed

at one of the two ends of the rod. One or each end of the rod is provided with a photoelectric cell adapted to receive solar radiation and to act as a control means for the drive mechanism. The visor comprises a base unit having segmentally or telescopically, manually or automatically retractable and extensible anti-glare sections provided on one and/or both sides and/or at the bottom thereof. The drive mechanisms for the visor may be a drive spindle disposed in parallel relationship to the guide rod and co-operating with the visor or alternatively may comprise a drive cable coupled to the visor.



GB 2 090 570 A

FIG. 1

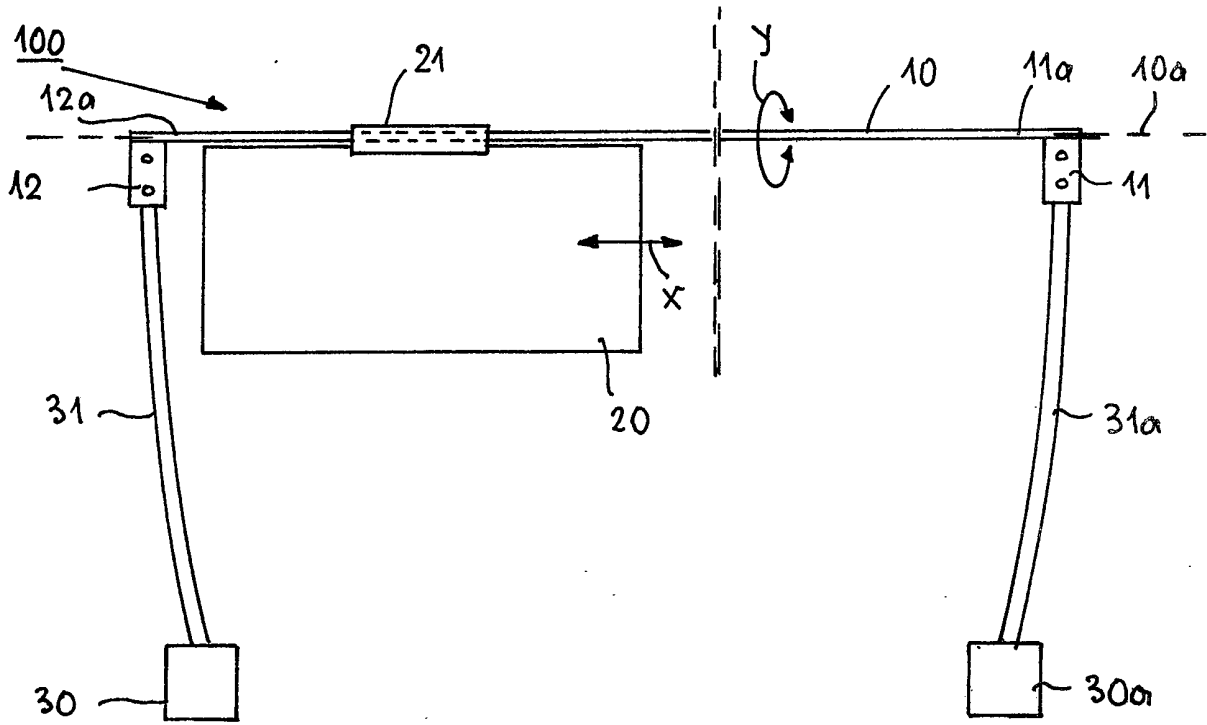


FIG. 2

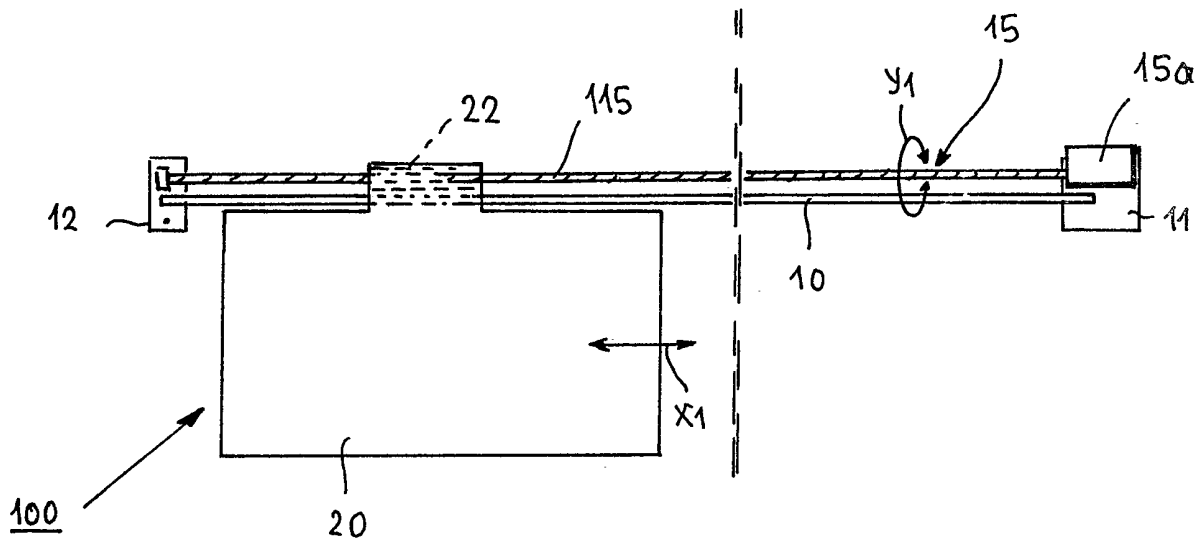


FIG. 3

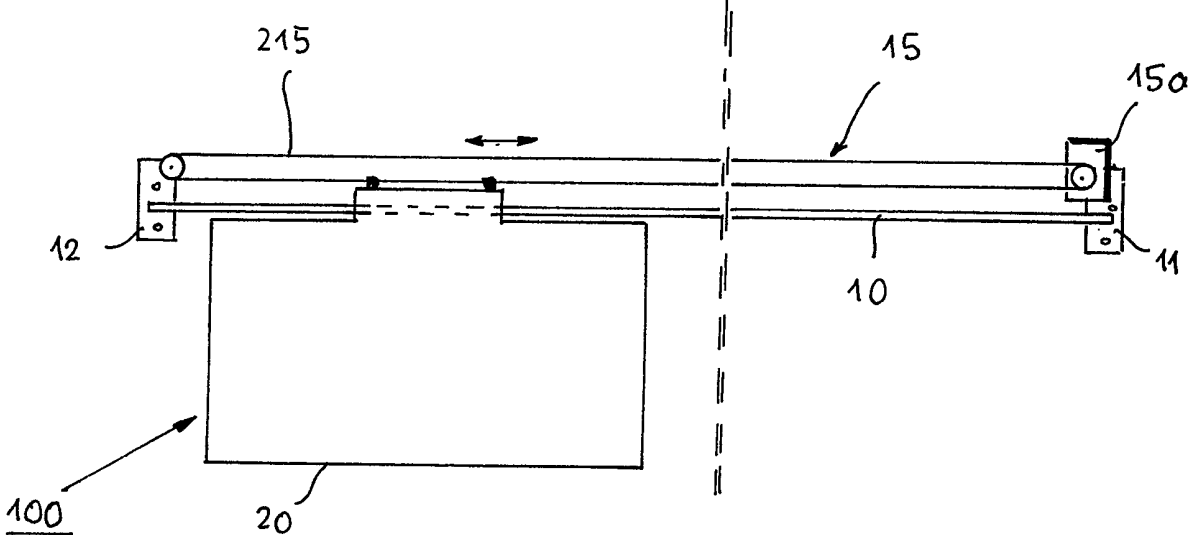
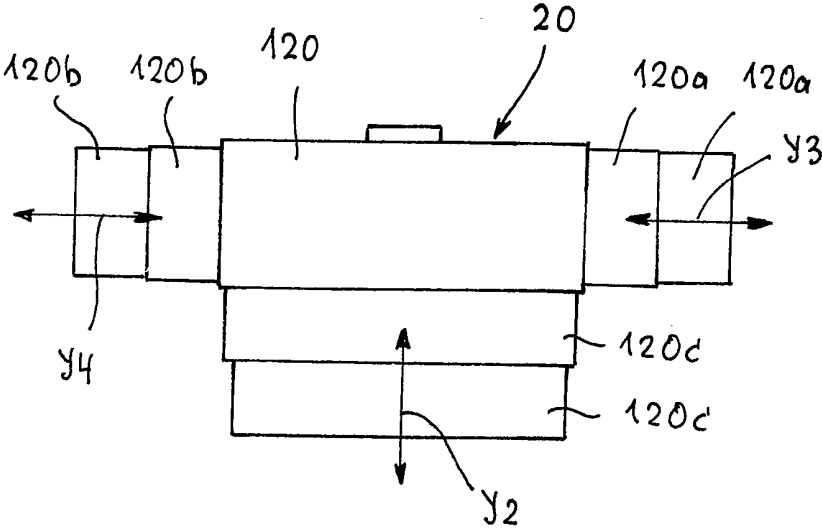


FIG. 4



SPECIFICATION

Solar radiation induced glare protection system for motor vehicles

5 This invention relates to a system for protecting a driver and/or co-driver, more particularly of motor vehicles, from glare due to solar radiation.

10 In order to protect a driver and/or co-driver of a motor vehicle from the action of the sun's rays in order to prevent glare, visors are disposed on the inside of the vehicle in the region of the top of the windscreen and can be swung into the field of view by the driver or the co-driver in such a manner as to eliminate any glare, without the driver's view being impaired. When not in use, the visors are swung up so that they bear against the vehicle roof. A disadvantage of these known visors is that since they are of predetermined size, their size cannot be altered so that frequently a slight glare from solar radiation at a specific angle means that a large section of the windscreen has to be covered by the visor although the driver would like to have the maximum possible field of view available. In such cases, the visor is swung down only partly, so that it projects into the interior of the vehicle as a result of its inclined position, and in the event of an accident the driver or co-driver can easily be injured if the visor is not sufficiently padded. In addition, the space between the driver's and the co-driver's sun visors cannot be covered by means of the existing visors. A third small visor has been provided in the space between the two existing visors for this purpose but the technical outlay required is considerable.

25 The object of this invention, therefore, is to provide an anti-glare system which can be individually adjusted to the driver and/or co-driver of a motor vehicle to provide optimum glare elimination without impairing the driver's field of view.

40 To this end, the invention proposes an anti-glare system for drivers and/or co-drivers, the system being characterised according to the invention by a horizontally extending support and guide rod having a sun visor longitudinally movable thereon and pivotable and lockable about the rod longitudinal axis.

45 This construction gives the occupants of a motor vehicle, and more particularly the driver and/or co-driver, anti-glare protection which can be adapted individually to the glare by both the driver and the co-driver. Since the visor is movable along the support and guide rod, which can be secured by fixings above the windscreen inside a motor vehicle, the driver and the co-driver both have the opportunity of putting the visor wherever there is the maximum solar radiation and hence glare, since there are often cases in which only the co-driver experiences glare, and not the driver, so that in such cases the visor can be moved along the rod to the co-driver's field of view so that the vehicle driver has the full area of vision available. Conversely, the visor can be moved into the driver's area. Even areas which otherwise could not be covered with the known visors can be

65 covered and shielded by means of the anti-glare system according to the invention as a result of the longitudinal movability of the visor.

70 Other advantageous embodiments of the invention will be apparent from the sub-claims, a particularly advantageous embodiment being one in which the visor is moved on its rod fully automatically and, in addition, under the control of one or more photoelectric cells, while in addition in order to enlarge its area the visor consists of a basic unit having segmentally or telescopically manually or automatically retractable and extensible anti-glare sections provided on one and/or both sides and/or at the bottom, which can be actuated appropriately by the vehicle driver or co-driver whenever it is required to increase or reduce the size of the visor. An additional advantage of this embodiment is that when the visor consists of a basic unit with anti-glare sections extensible at the bottom, the visor can be of small dimensions as regards the basic unit but can be increased for adjustment to the required anti-glare effect as a result of a plurality of retractable and extensible anti-glare sections.

85 The subject of the matter invention is illustrated by way of example in the drawing wherein:

90 Figure 1 is a front elevation of an anti-glare system consisting of a support and guide rod and a sun visor movable therealong.

95 Figure 2 is a front elevation of an anti-glare system with a motor-driven visor.

Figure 3 is a front elevation of another embodiment of a drive mechanism for moving the visor along the support and guide rod, and

100 Figure 4 is a plan view of a visor having retractable and extensible anti-glare sections in order to increase its area.

105 The sun visor 100 illustrated in Figure 1 consists of a horizontally extending support and guide rod or bar 10, the two ends 11a and 12a which are provided with fixings 11 and 12 by means of which the said rod can be secured above the windscreen of a motor vehicle not shown in the drawing.

110 A sun visor 20 is disposed on the rod 10 so as to be movable in the direction of arrow X. The sun visor 20 may be of any desired length. It may be approximately half the length of the windscreen so that either the driver's side or the co-driver's side can be screened optionally by means of the visor. Visor 20 is held and guided on rod 10 by means of a mount 21. Visor 20 is also pivotable about the longitudinal axis 10a of the rod 10 as shown by arrow Y in Figure 1. In this way it is possible to swing the visor up against the vehicle roof when not in use, and bring it into the required anti-glare position when in use.

125 The visor 20 can be moved along the rod 10 manually, but it is possible to move the visor 20 by a suitable drive means 15. Various types of drive can be used for this purpose. In the exemplified embodiment shown in Figure 2, a drive spindle 115 is disposed in parallel relationship to the rod 10 and is mounted on the fixings 11, 12 by its ends. Spindle 115 is connected to an electric

motor drive shown at 15a. Visor 20 has an internally screwthreaded guide bush 22 moving along the spindle 115 so that when the latter is rotated in the direction of the arrow Y1 visor 20 is moved in the direction of the arrow X1.

Referring to Figure 3, a cable drive 215 may be used as the drive mechanism 15. The two fixings 11, 12 bearing the visor rod 10 then have reversing pulleys for an endless cable, one of said pulleys being connected to and driven by the electric motor drive 15a while the rear edge of the visor 20 is secured to one of the two runs of the cable. The visor 20 is moved according to the direction in which the cable is moved by the electric motor drive 15a.

The rod 10, visor 20 and drive 15 constitute a unit.

The electric motor drive 15a of the mechanism 15 for moving the visor 20 is actuated by means of a control button (not shown) or some other suitable control means of appropriate construction, so that the electric motor drive 15a is started and the visor 20 moved in the required direction only when the button is actuated. The drive mechanism 15 can be actuated either by the driver or by the co-driver.

The drive mechanism 15 may be started and the visor 20 moved automatically, depending upon the amount of glare from the sun. In this embodiment, photoelectric cells 30 and 30a are disposed on arms 31 on the fixings 11, 12 for the rod 10 and are so disposed in the windscreen area that when subjected to solar irradiation the electric motor drive 15a is started and the visor is moved into the area required to eliminate glare. Alternatively, a plurality of photoelectric cells may be disposed along the rod 10 so that the visor 20 is controlled and moved into the correct area at any time by way of and depending upon which of the photoelectric cells receives the sunlight. The photoelectric cells 30, 30a are integrated in the complete system but it is alternatively possible to provide just a single photoelectric cell in such a manner that after the anti-glare system has been mounted inside the motor vehicle the photoelectric cell occupies a position in which it really can be operative. The photoelectric cell 30 or cells 30, 30a thus act as a control means for the electric motor drive 15a of the mechanism 15 for moving the visor 20 (Figure 1).

The visor 20 disposed movably on the rod 10 may have a predetermined size or alternatively it may be provided with a plurality of individual anti-glare sections which, in order to enlarge the anti-glare surface, are pulled out of the actual visor, which then form the basic unit. Figure 4 shows a visor of this kind comprising a basic unit 120 which, as described above, is movable on the rod 10. Visor 120 is advantageously in the form of a flat housing accommodating a plurality of anti-glare sections 120c which can be pulled out downwardly in the direction of arrow Y2 to cover the anti-glare area required at any time. On analogy with the downwardly extending sections, unit 120 may have additional sections 120a and

120b which are extensible on either or both sides from the basic unit 120 in the direction of arrows Y3 and Y4 whenever it is required to increase the length of the visor. The sections 120a, 120b and 120c may consist of individual plates which are telescopically retractable and extensible. While the basic unit may consist of opaque material, the sections 120a, 120b, 120c may consist of tinted and transparent plastics, although other suitable materials may be used. The anti-glare sections may also be in the form of opaque segments. Instead of anti-glare segments, the basic unit 120 of the visor 20 may be of louvred construction.

The sections 120a, 120b and 120c may be extended and retracted manually or alternatively the extension or retraction can be derived from the electric motor drive 15a. The photoelectric cells 30 or 30a can also be used for control purposes for extending and retracting the anti-glare sections.

The invention is not restricted to the above-described embodiments illustrated in the drawing. Different designs of the supporting and guide rod and the visor 20 come within the scope of the invention as does the use of drive mechanisms of other kinds, and the sun visor used may also be of a different design. The anti-glare sections for increasing the area of the visor 20 may be so constructed that the free corner surfaces are also covered by the top laterally extending anti-glare sections 120a, 120b. The anti-glare system can be used wherever it is desirable to protect people from glare, so that its use is not restricted to motor vehicles.

100 CLAIMS

1. A system for protecting a driver and/or co-driver, more particularly of motor vehicles, from glare due to solar radiation, comprising a sun visor mounted for longitudinal movement on a horizontally extending support and guide rod disposable above the windscreen of a motor vehicle on the interior thereof and which has end fixings, the visor being pivotable automatically against the windscreen about the longitudinal axis of the support and guide rod and lockable in any position to which it is pivoted and automatically movable on the support and guide rod into a glare-eliminating position by means of a motor drive mechanism disposed at one of the two ends of the rod, one or each end of the support and guide rod being provided with a photoelectric cell adapted to receive solar radiation and to act as a control means for the drive mechanism, and wherein the visor comprises a basic unit having segmentally or telescopically, manually or automatically retractable and extensible anti-glare sections provided on one and/or both sides and/or at the bottom thereof.

2. A system according to Claim 1, wherein the drive mechanism for the visor is a drive spindle disposed in parallel relationship to the support and guide rod and co-operating with the visor.

3. A system according to Claim 1, wherein the

drive mechanism for moving the visor is a drive cable.

4. A system for protecting a driver and/or co-

driver of a motor vehicle substantially as herein described with reference to the accompanying drawings.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1982. Published by the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.