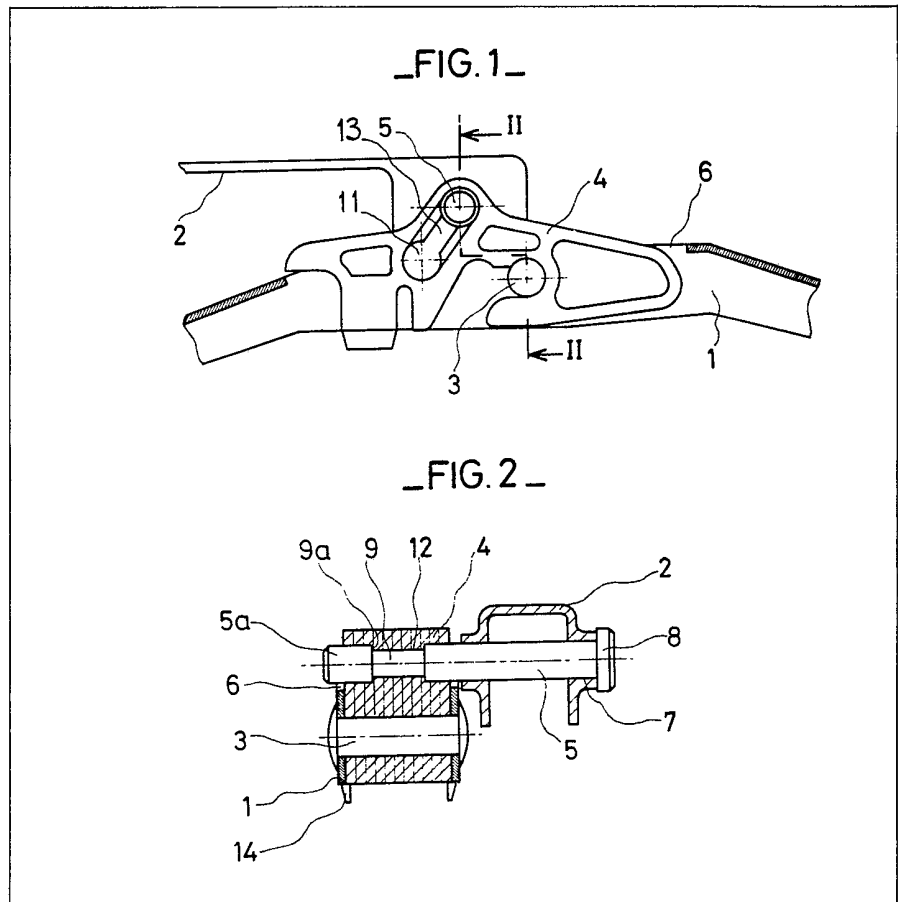


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- (71) Applicants
Ducellier & Cie,
Echat 950,
94024 Creteil Cedex,
France.
- (72) Inventors
Rieu Jean Claude
- (74) Agents
Marks & Clerk

(54) **Windscreen wiper assembly**

(57) A windscreen wiper assembly comprises a main yoke 1 pivotally connected to wiper arm 2 by a pin 5 passing through opening 7 of the wiper arm and a coupling member 4 having a slot 13 communicating with a passage 11 large enough to receive the pin, the slot 13 receiving and being deformed by grooved portion 9 of the pin during translational movement of the grooved portion therealong, the slot resiliently regaining its initial form after passage therethrough of the grooved portion so as to lock the pin therein. The coupling member 4 may also be provided with a catch operatively associated with a spindle 3 on the main yoke, and tongues 14 which snap-engage over the lower portions of the side flanges of the main yoke.



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FIG. 1

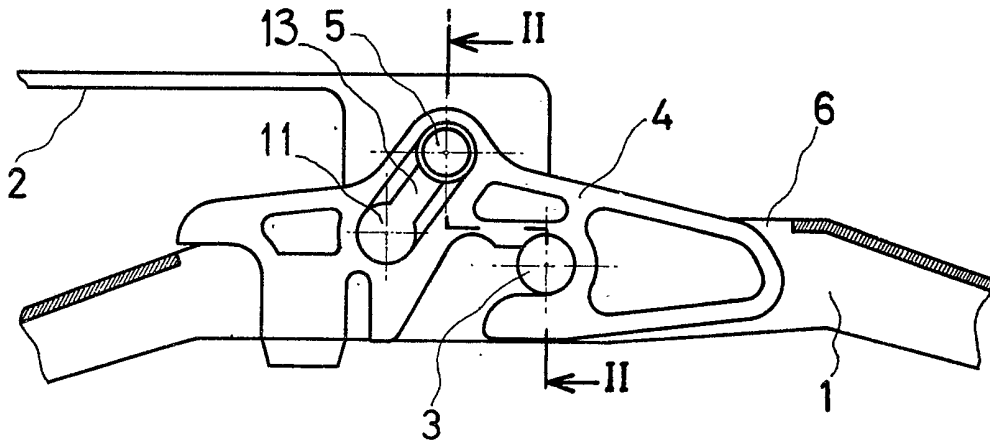


FIG. 2

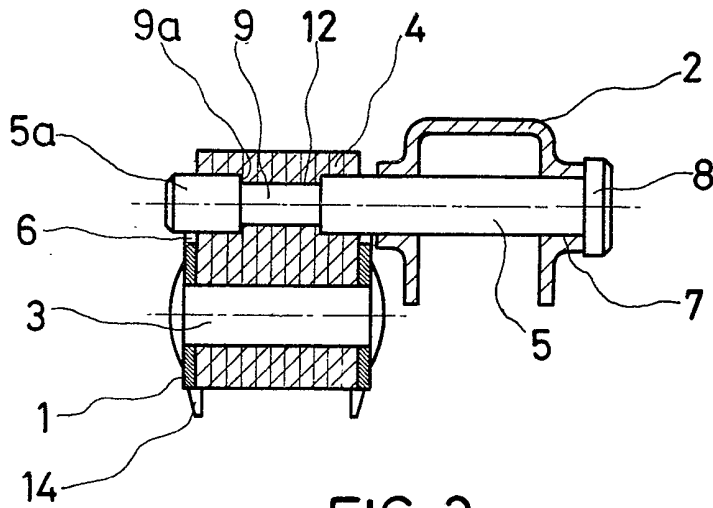
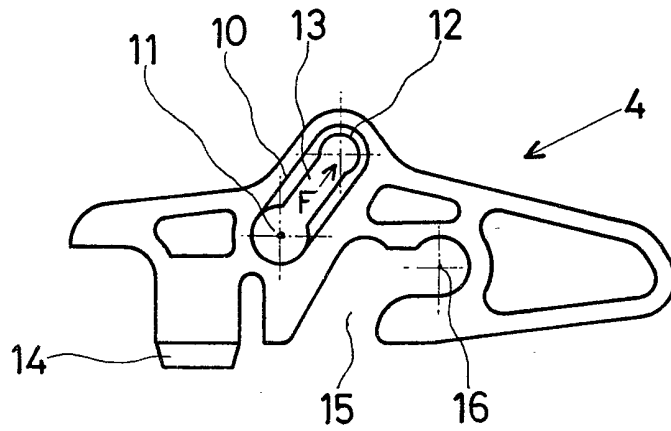


FIG. 3



SPECIFICATION

A wiper assembly useful primarily as a motor vehicle windscreen wiper

5 This invention relates to a wiper assembly useful primarily as a motor vehicle windscreen wiper, and particularly to the retention and articulation of the assembly on a driving arm.

10 An object of the invention is to provide a wiper assembly which employs a minimum of components to connect it to a driving arm and which permits such a connection to be made in a simple and convenient manner.

15 According to the present invention, a wiper assembly useful primarily as a motor vehicle windscreen wiper, comprises a wiper arm adapted for attachment to a flexible wiper blade, and a device for pivotally retaining the wiper arm on a lateral face of one end portion of a driving arm, said device including a pivot pin capable of insertion through a transverse opening in said arm end portion and having abutment means adapted to abut one side of said arm end portion to limit said insertion, said device further including a coupling member having means for resilient locking on to the portion of the pin protruding laterally from one opposite side of said arm, the resilient locking means co-operating with a throat of the pin by relative translational movement between the wiper arm and the pin generally perpendicular to the shaft longitudinal axis so as to retain the wiper arm in pivotal manner on the driving arm.

The invention will now be described, by way of example, with reference to the accompanying drawings in which:-

Figure 1 is a side view of one form of the coupling device of the invention in operative position on a main arm carrying a wiper blade, the main arm being in longitudinal section:

Figure 2 is a view along the section II-II of *Figure 1*, and

Figure 3 is a side view of the coupling member of the invention.

45 The windscreen wiper (not shown) conventionally includes a wiper blade of a resilient rubber or like material connected by the intermediary of secondary arms or yokes to a main yoke 1 itself connected pivotally to a driving arm 2 by means of a coupling member 4 which is engaged in a dorsal opening 6 formed in the main yoke 1 and resiliently locked about a shaft 3 rigid with the main yoke 1. The driving arm 2 conventionally has one end portion of U-section with cylindrical openings 7 formed in the side flange thereof.

The device of the invention for retaining and pivoting the wiper on a side flange of the U-section end portion of the driving lever includes a shaft 5 which co-operates with the coupling member 4, which latter embodies means for resilient locking onto shaft 5. The shaft 5 is in the form of a cylindrical rod which has a head 8 at one end and a throat 9 towards its other end.

The resilient locking means is constituted by an opening in the form of a closed slot 10. The slot 10

has, at one end, a passage 11 which permits the insertion of the free end portion 5a of the shaft 5, and at its other end a rim 12 which forms a shoulder on which bears, at either side, the sides 9a of the throat 9. Between these two parts 11 and 12, the slot includes a narrow portion 13 of width substantially less than the diameter of the end portion 5a of the shaft and of a length equal to the length of said throat 9.

70 In order to assemble the yoke 1 to the driving arm 2, it is sufficient to pass the shaft 5 through the openings 7 of the driving lever 2 until the head 8 of the shaft 5 comes into abutment with the exterior of the appropriate flange of the lever 2. The passage 11 of the coupling device 4 is presented to the end of the shaft 5 which passes easily into this passage. The device 4 is then moved translatorily in the direction of the arrow F (*Figure 3*) so that the throat 9 engages in the narrow portion 13 and deforms it until it abuts the rim 12 of the end of the opening 10. The portion 13 then regains its initial shape and locks said shaft 5 radially, the shaft being axially immobilised by the abutment of the sides of the throat 9 against the rim 12.

90 The windscreen wiper is assembled in the conventional manner described in the Applicant's Patent Application No. 2, 389,519. The coupling member 4 includes an open groove 15 defined by a projecting shoulder on the coupling member which also defines a circular opening 16 in which the cylindrical shaft 3 of the main yoke 1 is resiliently anchored.

In order to eliminate play between the main yoke 1 and the coupling member 4 after assembly, the coupling member is provided with tongues 14 in the form of claws which snap-engage over the lower portions of the side flanges of the main yoke, rendering the member 4 rigid with the main yoke.

The dismounting of the wiper is effected by pinching the tongues 14, causing the coupling device to pivot about the shaft 3 and subsequently pushing the wiper in a manner such that the shaft 3 leaves the groove 15.

CLAIMS

110 1. A wiper assembly, useful primarily as a motor vehicle windscreen wiper, comprising a wiper arm adapted for attachment to a flexible wiper blade, and a device for pivotally retaining the wiper arm on a lateral face of one end portion of a driving arm, said device including a pivot pin capable of insertion through a transverse opening in said arm end portion and having abutment means adapted to abut one side of said arm end portion to limit said insertion, said device further including a coupling member having means for resilient locking on to the portion of the pin protruding laterally from the opposite side of said arm, the resilient locking means co-operating with a throat of the pin by relative translational movement between the wiper arm and the pin generally perpendicular to the shaft longitudinal axis so as to retain the wiper arm in pivotal manner on the driving arm.

125 2. A wiper assembly according to Claim 1, wherein the resilient locking means is constituted by

an opening in the form of a closed slot of which one end is of such dimensions as to permit the passage therethrough of the pivot pin, the other end of the opening including a rim forming a bearing shoulder
5 for the throat of the pin and of which the median portion is of dimensions substantially less than the cross-section of the pin at the throat and deforms resiliently during translational movement of the throat therethrough until said throat is positioned
10 against the bearing shoulder, whereupon said median portion of the opening regains its initial form and resiliently locks the pin axially and transversely.

3. A wiper assembly according to Claim , wherein the coupling member is provided with a resilient
15 tongue which forms a resilient locking connection with a pin of the wiper arm

4. A wiper assembly according to any one of the preceding claims wherein the wiper arm is of generally U-shaped cross-section and the coupling
20 member is partially received therein, protruding through a dorsal opening of the wiper arm for co-operation with the pin of the pivotal retention device.

5. A wiper assembly according to any one of the preceding claims adapted for use with a driving arm
25 having an end portion of U-shaped cross-section, the opposite sides of said end portion having respective mutually aligned openings through which the pivot pin of the pivotal retention device extends to span
30 the U-shaped arm end portion and to extend from one side thereof for co-operation with the coupling member, whereby the abutment means of the pivot pin abuts against one of the arm portion exterior sides and the wiper arm is retained against the other
35 arm portion exterior side.

6. A wiper assembly, primarily for a motor vehicle windscreen substantially as hereinbefore described with reference to the accompanying drawings.