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(54) A mounting arrangement for a wiper

(57) The wiper mounting arrangement
ır a wiper bar (1) held in a resilient
iper holder (2) consists of a leaf spring
) which is inserted in a guide slot in
ıe wiper holder. The leaf spring is
cked in grooves (7) in a side wall of
ıe guide slot by projections or cams (8)
ue to flexing of the resilient wiper
ɔlder when the wiper bar is mounted
ıereon. This locking effect is released
y the wiper holder returning to an
ıflexed state after removal of the
iper bar.

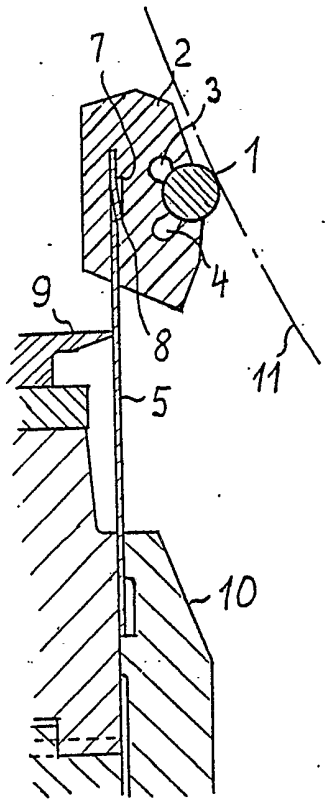

Fig. 1

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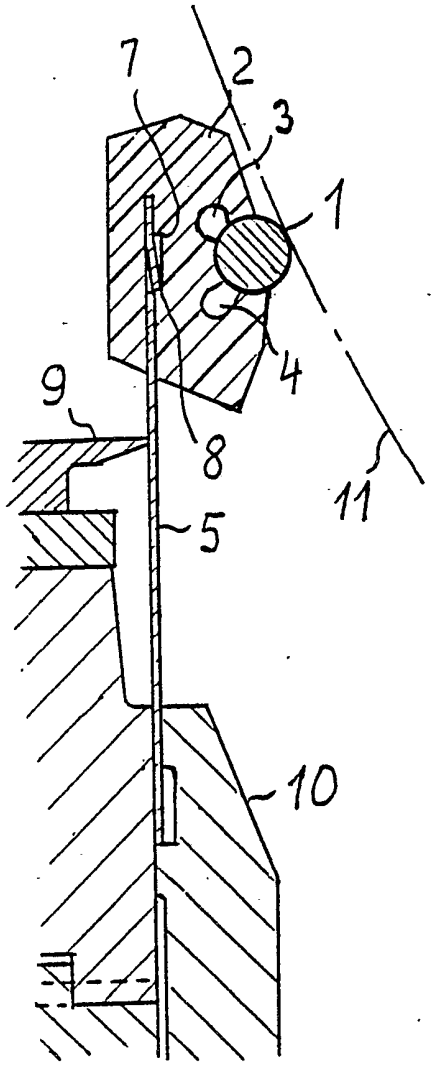

Fig. 1

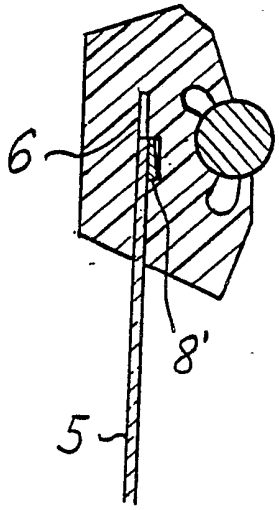

Fig. 2

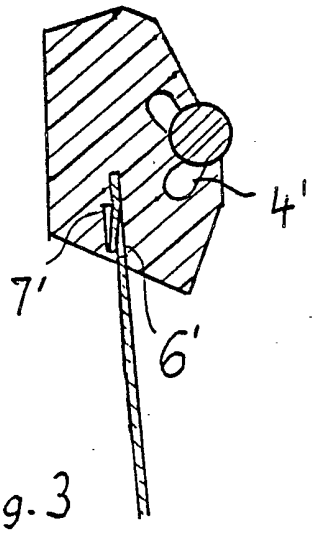

Fig. 3

SPECIFICATION

A mounting arrangement for a wiper

The invention relates to a wiper mounting arrangement of the kind with a wiper holder made of a rubber-elastic material, particularly plastics, in which a cylindrical wiper bar is held by the spring force of the rubber-elastic material and which is mounted by means of a leaf spring engaging in a guide slot in the wiper holder, and which has at least one groove extending substantially parallel to the wiper bar and open towards the wiper bar.

A wiper mounting arrangement of this kind is disclosed in German Patent Specification No. 20 26 334.

In the said German Patent specification the arrangement is such that the plane through the guide slot for the leaf spring intersects the wiper bar approximately in the middle. Furthermore, provision is made for the wiper holder to have a cambered surface which is developed over a supporting strip. With this arrangement it is not possible to displace the wiper bar holder on the leaf spring, at least not sufficiently to influence the functioning capacity of the device in operation. Moreover, in this case there is apparently no continuous groove provided at the wiper bar, extending axially along the wiper bar holder. On the contrary, flushing water is supplied to the wiper bar only through a widened bore.

It is an object of this invention to provide a wiper mounting arrangement which is simple to produce and reliable in operation.

According to this invention, a wiper mounting arrangement of the above-mentioned kind is characterised by the features set out in Patent Claims 1. Further subsidiary characteristics which are important to the invention are indicated in the subsidiary Claims, especially in Claims 2 to 5. The wiper mounting arrangement according to the invention is intended particularly for apparatus wherein the contact pressure of the wiper bar acts in the direction of the web which is to be coated, perpendicularly to the leaf spring. In the case of the prior art described in the introduction, the effective direction of this pressure is in fact perpendicular to this, i.e. substantially in the plane of the leaf spring. However, present-day modern apparatus is designed so that, as shown on the following drawing, the pressure acts as stated, perpendicular to the leaf spring. It was therefore an important object of the invention to find a practicable, simple and operationally reliable solution for such equipment.

In the following the invention is described with reference to the embodiment examples shown on the drawing.

On the drawing, Figure 1 shows schematically a section perpendicular to the wiper bar and the wiper holder, while Figures 2 and 3 show modified versions of the arrangement shown in Figure 1, in the form of details.

In Figure 1 the wiper holder which bears the cylindrical wiper bar 1 is designated 2. By means of a pressure strip 9 the wiper holder and the wiper bar are pressed via the leaf spring 5 against the web of material indicated diagramatically by the broken line 11. This web of material 11 generally runs over a counter-roller which is disposed parallel to the wiper bar 1. Cooling and lubricating groovs 3 and 4 respectively are provided at the wiper bar 1, being open in the direction thereof. Generally, water is conducted through these grooves. laterally offset outside the cross-section of the wiper bar a guide slot 6 in which the leaf spring 5 is held is machined into the wiper holder 2, as shown in Figures 1 and 2. These leaf springs are relatively thin, there wall thickness amounting to between 0.3 and 1.0 mm. They also extend over the whole length of the wiper bar, i.e. substantially across the web of material 11. One end of the leaf spring 5 is clamped into the machine frame by means of one or more pressure parts 10. The leaf spring 5 is secured in position by the projections 8 and 8' in a wider section 7 of the guide slot 6. In the embodiment shown in Figure 1 and Figure 2, between the inner end of the guide slot 6 disposed in the wiper holder 2 and the upper cooling groove 3 the thickness of the wiper holder material is only sufficient for a flexible point to be created there. It must of course be ensured that the wiper holder is made of a rubber-elastic material with a Shore hardness of between approximately 85° and 100°. After the wiper bar 1 has been removed the leaf spring 5 can be positioned in or removed from the wiper holder, since when the leaf spring is bent the wiper holder flexes at the flexible point and the projection 8 therefore springs out of the wider groove section 7.

In the case of Figure 3 the arrangement is such that the flexible point is made between the lower groove 4' and the guide slot 6'. In this instance the wider groove section 7' of the guide slot 6' which is furthest away from the wiper bar 1. Again in this instance, after the wiper bar 1 has been removed the projection can be released from the wider groove section 7' and the wiper holder can thus be released or secured. However, the geometrical relationships are not so favourable in this case as in the case of Figure 1 or Figure 2, so that the former versions are to be preferred. Based on the abovementioned Shore hardnesses the thickness of the flexible point should generally be between approximately 3 and 10 mm, and preferably between 3 and 8 mm.

In every case, a very simple, operationally reliable and economical means for securing a wiper holder on a leaf spring is provided by the described arrangement.

CLAIMS

1. A wiper mounting arrangement with a wiper holder made of rubber-elastic material in which a cylindrical wiper bar is held by the spring force of the rubber-elastic material and which is mounted by means of a leaf spring engaging in a guide slot in the wiper holder, and which has at least one groove extending substantially parallel to the wiper bar and open towards the wiper-bar, characterised in that the leaf spring (5) is locked in the guide slot (6) by projections or cams (8 or 8') fitting into a groove (7 or 7') in a side wall of said guide slot, in that the

locking is effected by appropriate flexing of said rubber-elastic material when the wiper bar (1) is mounted thereon, this locking effect being released by the rubber-elastic material returning to an unflexed state when the wiper bar is removed.

2. A wiper mounting arrangement according to Claim 1, characterised by the following features:

a) the centre line of the opening located at the wiper bar (1) of at least one groove (3, 4) in the wiper holder (2) is disposed, viewed from the entrance end of the guide slot (6) for the leaf spring (5), at least approximately on a level with the centre axis of the wiper bar (1);

b) the wiper bar (1) is laterally displaced to a considerable extent from the plane of the guide slot (6) for the leaf spring (5);

c) the guide slot (6) for the leaf spring (5) extends for such a distance into the wiper holder (2), and passes at such a distance by the groove (3) in the wiper holder (2) which lies nearest to the inner end of the guide slot (6), that between this groove (3) and the guide slot (6) a flexible point is created, extending continuously substantially across the whole of the roller wiper holder;

d) the leaf spring (5) has projections (8), cams or beading which engage in a wider groove section (7) which is located on the side of the guide slot (6) for the leaf spring (5) nearest to the wiper bar (1) and extends parallel to the wiper bar (1) substantially through the entire wiper holder (2).

3. A wiper mounting arrangement according to Claim 1 characterised by the following features:

a) the wiper bar (1) is laterally displaced to a considerable extent from the plane of the guide slot (6) for the leaf spring (5);

b) a groove (4) in the wiper holder (2) is disposed, viewed from the entrance end of the guide slot (6) for the leaf spring (5), in the vicinity of or in front of the centre line of the wiper bar (1);

c) the leaf spring (5) has projections (8), cams or beading which engage in a groove (7') which is disposed in the wiper holder (2) on the side of the guide slot (6') for the leaf spring (5) which is furthest from the wiper bar (1);

d) the guide slot (6') for the leaf spring (5) is formed at a distance from the groove (4) disposed nearest to the entrance end of the guid slot (6') at the roller wiper bar (1) such that between this groove (4) and the guide slot (6') a flexible point is created, extending substantially parallel to the wiper bar (1) over the entire length of the wiper holder (2).

4. A wiper mounting arrangement according to Claim 1 2 or 3, characterised in that the Shore hardness of the wiper holder (2) is between 60° and 100°.

5. A wiper mounting arrangement according to Claim 4, characterised in that the Shore hardness of the wiper holder (2) is between 85° and 100°.

6. A wiper mounting arrangement according to any one of Claims 1 to 5, characterised in that the projections on the leaf spring (5) are formed by tongues (8) stamped out of the leaf spring (5).

7. A wiper mounting arrangement according to any one of Claims 1 to 5, characterised in that the projections are formed by strips (8') which are welded, soldered or glued on the leaf spring (5).

8. A wiper mounting arrangement constructed, arranged and adapted for use substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

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