[16] In this configuration, one end of ring 108 (upper end, towards the suction device side) is not accessible. The assembly of ring 108 on brake head 103 is then not possible.

Description of the invention

Summary

[17] The present disclosure aims to remedy these disadvantages.

[17a] In an aspect, the present disclosure refers to a friction assembly for a braking system for railway rolling stock, said friction assembly comprising:

a brake head comprising a lower face, an upper face, and at least one secondary channel having a central axis A, the at least one secondary channel connecting connects said lower face and an upper face;

at least one plate made of a friction material and comprising a first face which is the friction face, a second face which is adapted to be fixed on said lower face by a fixing mechanism, and at least one primary channel, wherein the at least one primary channel connects said first face to said second face;

at least one connecting ring, a respective ring of the at least one connecting ring being arranged in a respective secondary channel of said at least one secondary channel;

a manifold block connected to a suction device and being integral with the manifold block at said upper face, said manifold block having a cavity which is connected to the suction device and which comprises at least one hole, the at least one hole connecting said cavity to said upper face, and a respective hole of the at least one hole being aligned with a respective secondary channel of the at least one secondary channel, wherein a respective connecting ring of the at least one ring is configured to slide in a respective hole of the at least one hole; and

a securing mechanism for securing said at least one connecting ring to said manifold block when said at least one connecting ring is arranged in said at least one hole and in said at least one secondary channel.

[17b] In an aspect, the present disclosure refers to a method for securing at least one connecting ring mounted on a brake head to a manifold block connected to a suction device, said brake head comprising a lower face, an upper face, and at least one secondary channel having a central axis A, said block forming an integral part of said brake head at said upper face, the brake head and said connecting ring forming part of a friction assembly for a braking system for railway rolling stock, said friction assembly further comprising a plate made of friction material comprising a first face which is the friction face, a second face which is adapted to be fixed to said lower face by a fixing mechanism, and at least one primary channel, the at least one primary channel connecting said first face and said second face, said at least one connecting ring being arranged in said at least one secondary channel,

said method comprising the following steps:

providing said manifold block with a cavity which is connected to the suction device, and with at least one hole which connects said cavity to said upper face and which is aligned with said at least one secondary channel and in which said at least one connecting ring is adapted to slide;

positioning said at least one connecting ring in said at least one hole and in said at least one secondary channel by sliding the at least one connecting ring along the central axis A from said lower face;

securing said at least one connecting ring to said manifold block by means of a securing mechanism;

assembling said plate onto said brake head until said plate covers said at least one connecting ring.

[18] The present disclosure aims to propose, in an example, a friction assembly for a railway braking system in which the manifold block which is connected to a suction system, for example a pneumatic manifold block, is an integral part of the brake head, which allows mounting on the brake head a connecting ring which allows particles emitted by plate wear to be expelled towards the suction device.

[19] This goal is achieved due to the fact that the block has a cavity and at least one hole which connects the cavity and the upper face and which is aligned with the at least one secondary channel and in which the connecting ring is able to slide, the cavity being connected by a circuit to the suction device; and the fact that it comprises a securing mechanism for securing the at least one connecting ring to the block when the at least one connecting ring is arranged in the at least one hole and in the at least one secondary channel.

[20] By means of these arrangements, each connecting ring is adapted to be inserted into the hole and into the secondary channel so as to place the plate in communication with the suction device. The connecting ring is then secured to the block by the securing mechanism. The ring is thus kept secured to the brake head so that, during operation, the discharge of particles from the plate towards the suction device is reliably achieved.

[21] For example, the at least one connecting ring comprises a body and a flange at a first end of the body, the distal end of the body carrying tabs which extend radially outwards in the cavity, and the securing mechanism comprises the flange, the tabs, and the internal edge of the at least one hole of the cavity.

[22] The securing of the connecting ring(s) to the block is thus achieved by a simple snap-fit.

[23] For example, the at least one connecting ring comprises a body and a flange at a first end of the body, the distal end of the body carrying tabs which are plastically deformed radially outwards in the cavity, and the securing mechanism comprises the flange, the tabs, and the internal edge of the at least one hole of the cavity.

[24] Separating the connecting ring(s) from the block by plastic deformation of the tabs is thus less easy.

[25] For example, the at least one connecting ring comprises a body and a flange at a first end of the body, the distal end of the body carrying at least one protuberance which extends radially outwards in the cavity, the at least one hole carrying at least one groove within which the at least one protuberance is adapted to slide, the internal edge of the at least one hole of the cavity comprising a housing adapted to receive the protuberance, and the securing mechanism comprises the flange, the protuberance, and the housing.

[26] Thus, the securing of the connecting ring(s) to the block is carried out by a bayonet movement of the ring, and is removable by performing the opposite movement.

[27] For example, the friction assembly further comprises a return mechanism which is adapted to press the ring against the second face.

[28] Thus, the seal between the connecting rings and the plate, on the discharge path of the particles released by the plate, is improved.

[29] For example, the fixing mechanism comprises a receiving slide which is formed on the lower face, and a dovetail section which is formed on the second face and which is configured to engage with the receiving slide.

[30] The fixing of the plate to the brake head is thus facilitated since it is achieved by sliding, and furthermore is removable.

[31] The present disclosure also relates in an example to a method for securing a connecting ring mounted on a brake head to a manifold block connected to a suction device, the brake head comprising a lower face, an upper face, and at least one secondary channel (38) of central axis A, the block forming an integral part of the brake head at the upper face, the brake head and the connecting ring forming part of a friction

assembly for a braking system for railway rolling stock, the friction assembly further comprising a plate made of friction material comprising a first face which is the friction face, a second face which is adapted to be fixed to the lower face by a fixing mechanism, and at least one primary channel which connects the first face and the second face, the at least one connecting ring being arranged in the at least one secondary channel and establishing a connection with the at least one primary channel when the at least one primary channel is aligned with one of the at least one secondary channel(s).

[32] According to an example, the method comprises the following steps:

(a) The block is provided with a cavity which is connected by a circuit to the suction device, and with at least one hole which connects the cavity and the upper face and which is aligned with the at least one secondary channel and in which the at least one connecting ring is adapted to slide;

(b) The at least one connecting ring is arranged in the at least one hole and in the at least one secondary channel by sliding it along axis A from the lower face;

(c) The at least one connecting ring is secured to the block by means of a securing mechanism;

(d) Assembly of the plate onto the brake head is carried out until the plate covers the at least one connecting ring.

[33] For example, the at least one connecting ring comprises a body and a flange at a first end of the body, the distal end of the body carrying tabs which extend radially outwards in their rest positions, such that, in step (b), the tabs approach each other elastically when the body slides in said at least one hole and in said at least one secondary channel, and such that, in step (c), the tabs return to their rest positions and are able to bear against the internal edge of the at least one hole of the cavity, the securing mechanism comprising the flange, the tabs, and the internal edge of the at least one hole.

[34] For example, the at least one connecting ring comprises a body and a flange at a first end of the body, the distal end of the body carrying tabs which extend substantially as an extension of the body in their rest positions, such that, in step (b), the body slides freely in the at least one hole and in the at least one secondary channel, and such that, in step (c), the tabs are crushed against the bottom of the