**[6]** In fact, particles and dust continue to escape in undesirable amounts during the braking phases.

## Summary

[6a] In an aspect, the present disclosure refers to a braking system comprising a brake pad, said pad comprising a backing plate with a first face and a second face, and a lining made of friction material and fixed to said first face, the lining being delimited by a friction face, a mounting face, an inner edge, an outer edge, a rear edge, and a front edge, said lining being provided with at least one collection groove which is open to the friction face, which extends at ~~its~~ a first end towards said inner edge and which has an opening at ~~its~~ a second end towards said outer edge, ~~said braking system being~~ characterized in that ~~it~~ said braking system further comprises a collection system which comprises a collection pipe through which air is able to flow, ~~the~~ an air inlet orifice of said collection pipe being located opposite said second end, and in that said collection groove has an opening onto said outer edge at ~~its~~ said second end.

## Description of the invention

**[7]** This invention aims to remedy these disadvantages.

**[8]** The invention aims to provide a braking system for which the capture of particles and dust emitted by the lining and rotating element is optimized, and for which the construction is as simple as possible.

**[9]** This aim is achieved by virtue of the fact that the braking system further comprises a collection system which comprises a collection pipe through which air is able to flow, the air inlet orifice of the collection pipe being located opposite the second end, and the fact that the collection groove has an opening onto the outer edge at its second end.

**[10]** Due to these arrangements, the collection of particles and dust by the collection system is more efficient, as the air flows in the groove from the inner edge to the outer edge of the lining. Since this direction is the natural direction (without suction) of the air flow in the groove under the effect of centrifugal force,

# Claims

**1.** Braking system comprising a brake pad, said pad comprising a backing plate with a first face and a second face, and a lining made of friction material and fixed to said first face, the lining being delimited by a friction face, a mounting face, an inner edge, an outer edge, a rear edge, and a front edge, said lining being provided with at least one collection groove which is open to the friction face, which extends at ~~its~~ a first end towards said inner edge and which has an opening at ~~its~~ a second end towards said outer edge, ~~said braking system being~~ **characterized in that** ~~it~~ said braking system further comprises a collection system which comprises a collection pipe through which air is able to flow, ~~the~~ an air inlet orifice of said collection pipe being located opposite said second end, and in that said collection groove has an opening onto said outer edge at ~~its~~ said second end.

**2.** Braking system according to claim 1, wherein the collection pipe is not in contact with said lining.

**3.** Braking system according to claim 1 or 2, wherein said backing plate is continuous for ~~the~~ an entire length of said at least one groove.

**4.** Braking system according to any one of claims 1 to 3, wherein said at least one groove has an opening at ~~its~~ said first end towards said inner edge.

**5.** Braking system according to any one of claims 1 to 4, wherein said at least one groove is located near said rear edge.

**6.** Braking system according to claim 5, wherein said lining is provided with a second groove located substantially midway between said front edge and said rear edge.

**7.** Braking system according to claim 5 or 6, wherein said lining is provided with an additional groove located near said front edge.

**8.** Braking system according to any one of the preceding claims, wherein said collection system comprises a suction mechanism which is able to suck the air from said at least one collection groove into said collection pipe.