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Nested Bladeless Fans on VR Backpack or System for Wind Haptic Experience

Abstract: A nested bladeless fan set on a VR backpack or system enhances the immersive experience for VR and AR by providing a wind sense.

This disclosure relates to the field of virtual reality.

A technique is disclosed that enhances the immersive experience for VR and AR via a wind sense.

Haptic sense is important to enhance the immersive experience for VR and AR. Wind is one of the senses which is important for gaming and/or movie experiences. Currently there are few actuators which simulate this sense, and those are largely unsatisfactory. For example, multi air tubes can simulate a very simple wind sense, but they are not rotatable and their air flow is very limited.

According to the present disclosure, and as understood with reference to the Figure, a nested bladeless fan set on a VR backpack or system improves the wind haptic experience of a user.

The disclosed technique employs one or more nested bladeless fan systems 10, implemented on a VR backpack 5 and/or other similar system. The nested bladeless fan system can generate various air flows as specified by the controls.

Each fan system 10 includes an outer air loop amplifier 20 and an inner air loop amplifier 30. Each air loop amplifier 20, 30 controls wind flow and rotation. Each air loop amplifier 20, 30 has a corresponding air flow channel and motor rotator 40, 50. A central air impeller 60 feeds both loop amplifiers 20, 30.

The two air loop amplifiers 20, 30 can be operated independently, as illustrated by example in configurations 80 and 90. In this way, individualized control of the strength, direction, and turbulence of the air flow from each fan system 10 is achieved.

In other configurations, a fan system can include more than two nested air loop amplifiers.

The disclosed technique advantageously generates a much more realistic wind haptic experience because it allows multiple kinds of air flow strength and direction to be mimicked using a compact and simple system. It is also more compact than a blade fan system for the desired packaging configurations.

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