

A Novel Concept of Air Blade Rain Hat

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Abstract: It has come to my mind for a long time to design a type of Air Blade Umbrella so people can liberate their hands and the new type of Air Blade Umbrella works better in shielding people in a rainy day. Diagram attached is the structure design of this device. As it will be worn on top of peoples' head, like a hat, so all the materials will be the lightest, and to make it affordable to people, like plastics. We also want the device to be low-noise as people wear it in rain, so the electric motor to motivate the fan and axis will all be the most up-to-date silent modes, the installation will also be based on a elastic sound proof basis.

Keywords: Air Blade Umbrella, structure design.

1. INTRODUCTION

Diagram attached is the structure design of this device. As it will be worn on top of peoples' head, like a hat, so all the materials will be the lightest, and to make it affordable to people, like plastics. We also want the device to be low-noise as people wear it in rain, so the electric motor to motivate the fan and axis will all be the most up-to-date silent modes, the installation will also be based on a elastic sound proof basis.

2. METHODS

As shown in the diagram (Fig.1), the raised lining will be the part where touches head, the inside will be nicely covered with soft materials so people can wear the device comfortably, a fasten string (not shown in the diagram) can be used to fasten the device to make sure it doesn't fall off when people bend.

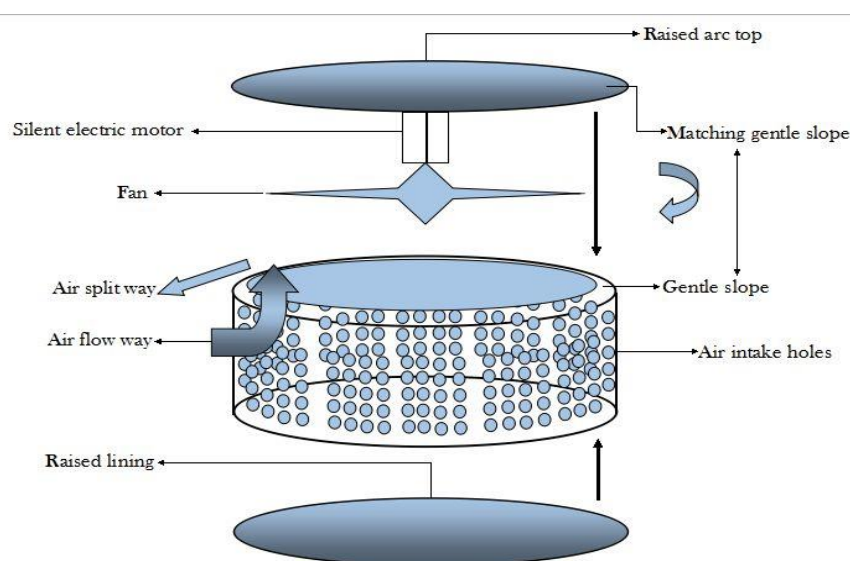


Fig.1 The structure of a novel concept of air blade rain hat

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Air flow will come into the device through the air intake holes around the side surface. The air will be speeded up by the fan in the device and left up to the top part of the device, the raised arc top. There will be a thin gap between the raised arc top and the main part below it where the speed up air can be outlet to form the air blade shield so the rain drops above can not fall through the air shield. There is a matching gentle slope on the edge of both raised arc top and main part of the device so the air blade will be formed as pointing down to the ground to further shield the rain coming from sideways.

The fan has several rotate speed levels so the user can control the strength of the air blade shield to tackle with different level of rains (small rains, big rains, pouring, etc). In future, we can install a sensor on the raised arc top to detect the level of rain and it can adjust the fan rotate speed automatically. The silent electric motor will be powered by a long lasting rechargeable battery like Li-con battery, customer can take the battery out and recharge it with home electricity supply.

3. CONCLUSION

The novel designed concept changing air blade rain hat has been testified with phenotypes (Chongqing, China) and proved to be effective and convenient as it was meant to be. Now we are working towards attaching intelligent and smart technologies to it to make the device more user-friendly and we are also using lighter materials to make the device lighter so it won't commit a burden to the customers.

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