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## **Ergonomic mouse with 180-degree freedom of clockwise palm rotation**

### **ABSTRACT**

A standard mouse supports hand postures that allow only a limited fixed range of hand motion. Repetitive movements within these allowable set of hand postures can result in wrist pain upon frequent use. This disclosure describes the design for an electronic mouse that allows the user to operate it with a hand motion that provides 180-degree freedom of clockwise rotation. As such, the user can operate the mouse with hand positions from a traditional palm-down posture all the way clockwise to a palm-up position. The design consists of a base and a handle joined by a groove and a tongue. Users use the handle to rest their hands and operate the mouse.

### **KEYWORDS**

- Ergonomic mouse
- 180-degree freedom
- Palm-up position
- Repetitive Stress Injury (RSI)
- Wrist pain
- Mouse handle
- Mouse base
- Palm rotation

### **BACKGROUND**

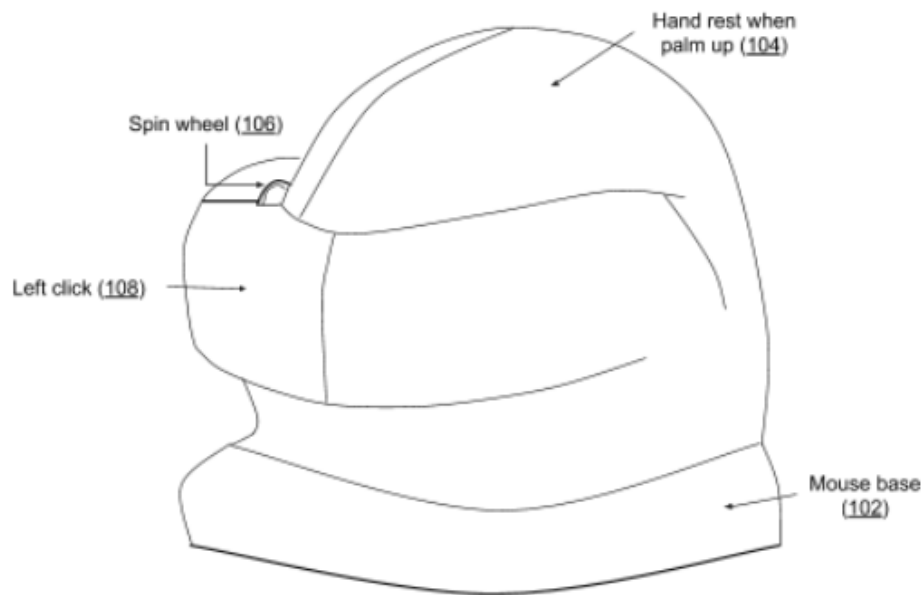
An electronic mouse is one of the most commonly used input devices. A standard mouse supports hand postures that allow only a limited fixed range of hand motion. Repetitive movements within these allowable set of hand postures can result in wrist pain upon frequent use. Many office workers whose duties involve heavy use of the mouse are often affected by

such wrist pain or repetitive stress injury (RSI). To alleviate such pain and discomfort, users need to take frequent breaks and perform hand stretching exercises. More serious cases may require medical attention and use of external aids, such as hand braces.

Some mouse designs aim for better ergonomics to address these issues. Yet, these ergonomic designs often provide limited improvement because they either adopt a fixed vertical design or offer limited adjustment range.

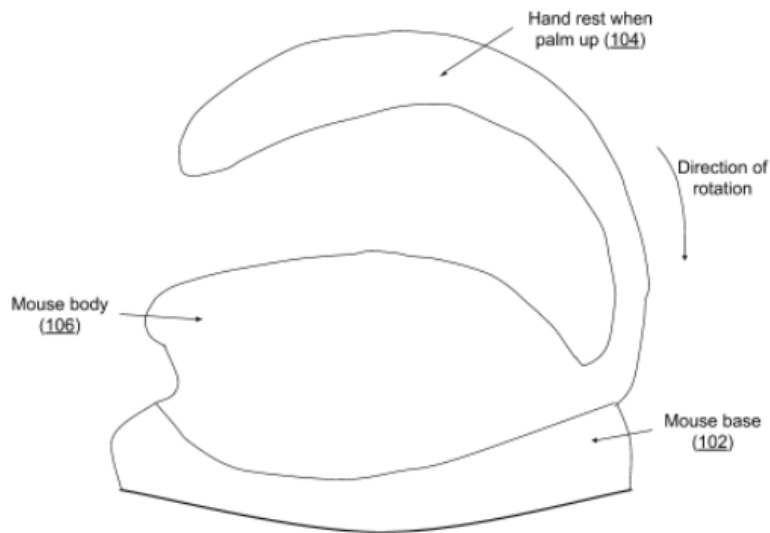
### DESCRIPTION

This disclosure describes a design for an electronic mouse that allows the user to operate it with a hand motion that provides 180-degree freedom of clockwise rotation. As such, the user can operate the mouse with hand positions from a traditional palm-down posture all the way clockwise to a palm-up position. The design for the mouse consists of two separate parts: a base that is flat at the bottom and convex on top; and a handle where users rest their hand and operate the mouse. The two parts are joined by a groove and a tongue.



**Fig. 1: Front view of the mouse design**

Fig. 1 shows a front view of the mouse design. The design includes a base (102) that is flat at the bottom and convex at the top. The handle is connected to the base by a groove and a tongue. Users rests their hand with the palm up on the hand rest handle (104). Mouse operations are performed as with a normal mouse via spin wheel (106) and left click button (108).



**Fig. 2: Rear view of the mouse design**

Fig. 2 shows a rear view of the mouse design showing the base (102), body (106), and the hand rest handle (104). Fig. 2 further shows the direction in which the user can rotate the handle to operate the mouse. The rotation capability as shown provides the user's hand 180-degree freedom of clockwise rotation from palm-down to palm-up position.

The design provides a more comfortable experience for operations that require the use of a mouse. The design enables the use of the mouse for longer periods of time without the pain and discomfort associated with using a typical mouse.

## CONCLUSION

This disclosure describes the design for an electronic mouse that allows the user to operate it with a hand motion that provides 180-degree freedom of clockwise rotation. As such,

the user can operate the mouse with hand positions from a traditional palm-down posture all the way clockwise to a palm-up position. The design consists of a base and a handle joined by a groove and a tongue. Users use the handle to rest their hands and operate the mouse.

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