

# IRIS-SEALING MASK FOR THE MITIGATION OF THE SPREAD OF PATIENT AEROSOLS UNDERGOING INTUBATION, EXTUBATION, AND RESPIRATORY SUPPORT

<u>Cashin, John, Zayed, Mohamed</u> <u>Weilbaecher, Craig</u>

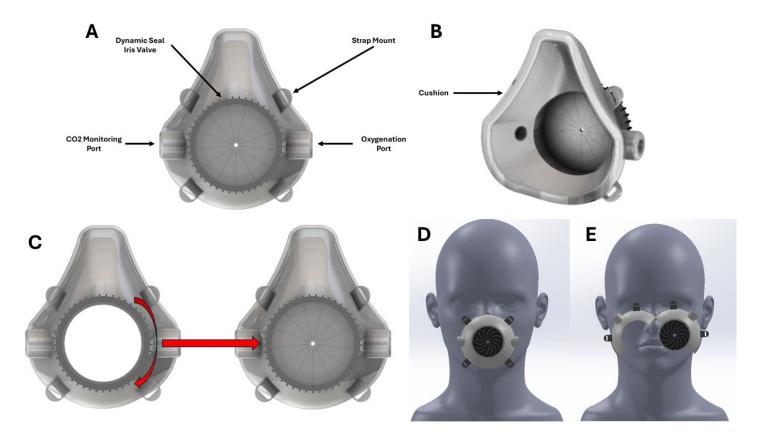
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**Value Proposition:** Masking device designed to provide protection for healthcare professionals from the spread of respiratory droplets during the extubation, intubation, and ongoing respiratory support of patients.

# **Technology Description**

Researchers at Washington University in St. Louis have developed a masking device designed to protect healthcare professionals during intubation, extubation, and respiratory supplementation through the mitigation of the spread of a patient's respiratory droplets. This mask uses a large centrally located rotary "iris" (Dynamic Seal) valve to allow for the passage of intubating hardware through an emplaced mask (A). This Dynamic Seal valve forms a conforming seal about intubation hardware over the patient's oro-nasal region (D) following intubation, supplementing the anchoring of intubation hardware, may be quickly released to access the patient's oro-nasal region (C).

The mask may take a variety of shapes to best suit the desired application of the healthcare team and may also be hinged to facilitate emergency access to the patient's oro-nasal region, while retaining the conforming seal about the intubation hardware (E). The mask may also incorporate integral ports, which allow for the connection of Oxygen supplementation/monitoring and/or CO2 monitoring hardware (A).



A. Front of Dynamic Seal mask. (B) Rear of Dynamic Seal mask. (C) Closing/opening of Dynamic Seal valve using a rotary motion of the outer ring. (D) Placement of Dynamic Seal mask over patient's oro-nasal region. The shape of the mask may be vary based on the needs of the medical team. (E) Illustration of a possibly incorporated hinge in the design of the Dynamic Seal mask, which may facilitate access to the patient's oro-nasal region without disengaging the Dynamic Seal.

# **Applications**

- The mitigation of the spread of a patient's respiratory droplets while undergoing:
  - Intubation
  - Respiratory supplementation
  - Ongoing patient respiratory monitoring

## **Key Advantages**

- Large, centrally located Dynamic Seal valve allows for the rapid forming of a conforming protective seal about intubation hardware, which may be easily and rapidly released if desired.
- Protects health care professionals against patient respiratory droplets during intubation, extubation, and ongoing respiratory support.
- Integral ports allow for the incorporation of hardware which may monitor/supplement patient O2 and/or monitor patient CO2.
- Hinged mask design may be incorporated to more readily facilitate access to the patient's oro-nasal region if desired by the healthcare team, while retaining the conforming seal about intubation hardware.

### **Patents**

### Patent application filed



Related Web Links - Mohamed Zayed profile; Zayed Lab