

Systems and Methods For Deploying and Securing Endotracheal Tubes

ID# 2022-5192

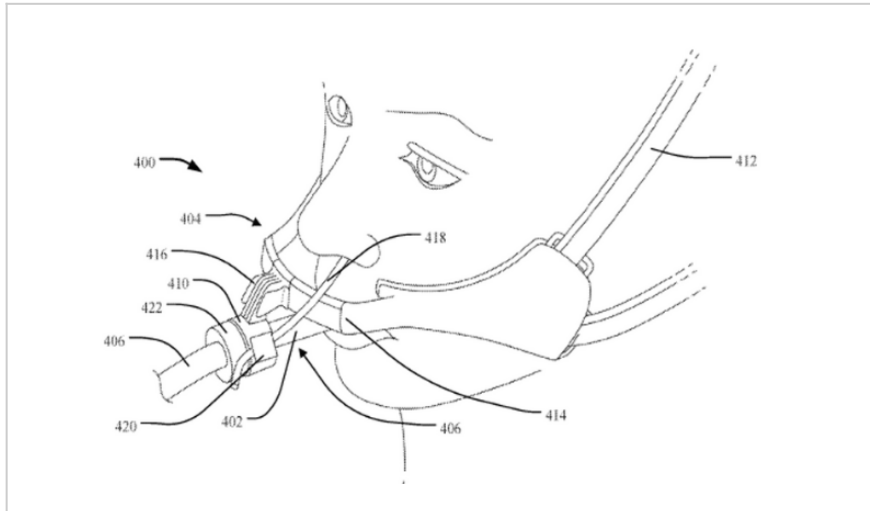


Figure 1: Endotracheal Tube System attached to patient

Technology Summary

While the use of endotracheal tubes can be extremely helpful in establishing and maintaining a patient's airway, in some cases, patients can inadvertently remove the endotracheal tube, thereby compromising the established airway. Unplanned extubations occur frequently in the medical setting, and have high mortality risks associated therewith. However, there are few devices available that can mitigate the removal of a deployed endotracheal tube. Thus, a system and method of deploying and securing an endotracheal tube has been proposed such that it would minimize the chance of dislodging.

Application & Market Utility

As of 2023, the market for endotracheal tubes is estimated to be \$2.3 billion. There is projected growth with the market expected to reach \$4.5 billion by 2033. In addition to a favorable Compound Annual Growth Rate (CAGR) and existing market, the patient outcome improvements realized from a medical device that can decrease the incidence of patient harm and death as a result of UE cannot be understated. The proposed invention addresses some of the issues with current endotracheal tubes and aims to increase patient safety from inadvertent complications.

Next Steps

The researchers are seeking development and collaboration opportunities, focusing on engineering support for rapid design and prototyping, and planning to use the future prototype for usability studies.

TECHNOLOGY READINESS LEVEL

4

Seeking

Investment | Licensing |

Keywords

- Endotracheal Tubes
- Safety
- Airway

Researchers

Sprague Hazard, MD

Assistant Professor of Anesthesiology Director;
Neuroanesthesia

David Goldenberg, MD, FACS

Professor and Chair, Department of Otolaryngology
- Head and Neck Surgery

John McGinn, MD, FACS

Professor and Vice Chair, Department of
Otolaryngology - Head and Neck Surgery

Neerav Goyal, MD, MPH, FACS

Associate Professor of Otolaryngology Head and
Neck Surgery, Surgery, Neurosurgery and Public
Health Sciences

Originating College

College of Medicine

Office of Technology Management Contact

Suzanne Kijewski
sdk5252@psu.edu
814-863-7070