



## **Mortise Channel Anti-Ligature Doorframe Assembly (VA Reference No. 12-027)**

*Novel design for a door latch mortise to prevent the use of the door latch mortise assembly for suicide or bodily harm.*

### **Technology**

Door latch mortise and tri-beveled door latch for suicide prevention

### **Inventor**

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### **Key Features**

- Prevents ligature attachment in the door latch mortise
- Design includes a unique mortise channel and a tri-beveled door latch
- Can be used with existing doors and locking mechanisms
- Provides a high level of privacy and security for patients

### **Stage of Development**

Conceptual stage

### **Keywords**

Suicide prevention  
Anti-ligature  
Door latch mortise  
Door frame  
Tri-leveled door latch

### **Patent Status**

Patent pending

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### **Technology**

The Department of Veterans Affairs has developed a unique design for a door latch mortise that would prevent ligature attachment and therefore prevent the use of the door latch mortise assembly for suicide or bodily harm. The novel assembly is comprised of a doorframe that has a unique mortise channel that runs vertically the length of the doorframe on the door latch side and replaces the standard doorframe mortise indentation. In addition, the novel assembly consists of a beveled edge that also runs vertically the length of the frame on the door latch side, which replaces the standard door striker plate.

The design includes a tri-beveled door latch that includes a taper along the superior aspect, along the inferior aspect, and a vertical taper. The assembly could be used with existing door designs including doors with standard locking mechanisms and/or deadbolt locking mechanisms. The doorframe assembly concept could be used commercially in psychiatric institutions and medical institutions, or residential use in households with at-risk individuals.

### **Opportunity**

Annually, there are over 30,000 deaths due to suicide in the United States. More than 90 percent of people who commit suicide have a diagnosable mental disorder, most commonly a depressive disorder or a substance abuse disorder. Startling figures have revealed that United States servicemen and women are far more likely to commit suicide once they have left the forces than are killed in battle. While only 1 percent of Americans serve in the military, the suicide rate of veterans accounts for a fifth of the overall total in the United States.

### **Competitive Advantage**

There are a number of advantages of the unique door assembly. The primary advantage is the doorframe would allow the use of existing doors in institutions and could be used with both a standard locking mechanism and a deadbolt locking mechanism. In addition, the design of the doorframe is such that it provides the highest degree of patient privacy when compared to commercially available doors. Furthermore, the design also provides a high level of safety to the patients in the prevention of suicide or self-injury.

### **Status**

The Department of Veterans Affairs is looking for a partner for further development and commercialization of this technology through a license, and the VA inventors are available to collaborate with interested companies through a Cooperative Research and Development Agreement (CRADA).