

## Locking Hinge

The invention consists of a main part ("slotted frame") and one or more hinged parts ("hinge").

The slotted frame consists of:

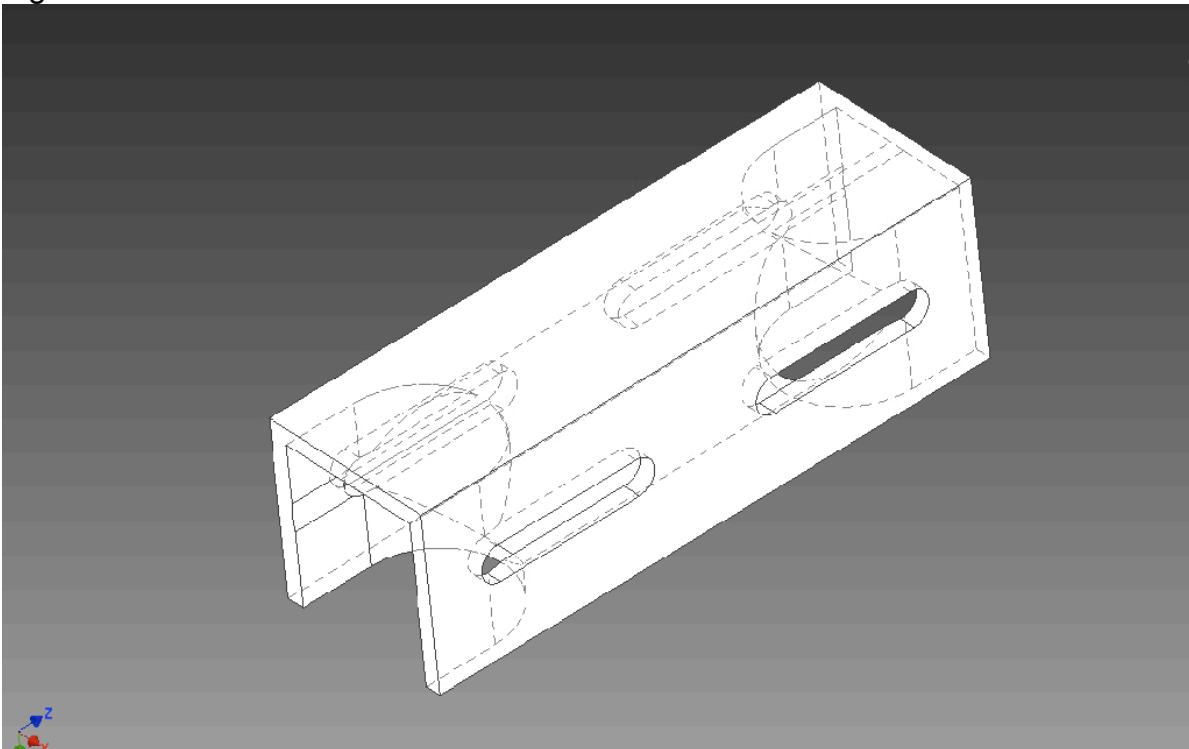
1. slots cut through the slotted frame along the slotted frame's long axis.
2. openings on a side of each end of the slotted frame which allow rotation of the hinge.
3. a central cavity with similar or larger cross section as the hinge, which "locks" (prevents rotation) the hinge when the hinge is slid toward the center of the slotted frame.

The hinge consists of:

1. a axle hole.
  2. a rounded end which provides clearance when the hinge is rotating in the slotted frame.
- The hinge is clearance-fitted onto the slotted frame with an axle or bolt which allows the hinge to both rotate and slide laterally along the slot in the slotted frame.

ILLUSTRATIONS (figures 4-6 show the sequential operation of the invention).

Figure 1 shows a version drawn in CAD software of the slotted frame.



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Figure 2 shows an exploded view of the slotted frame and two hinges (bolts not shown).

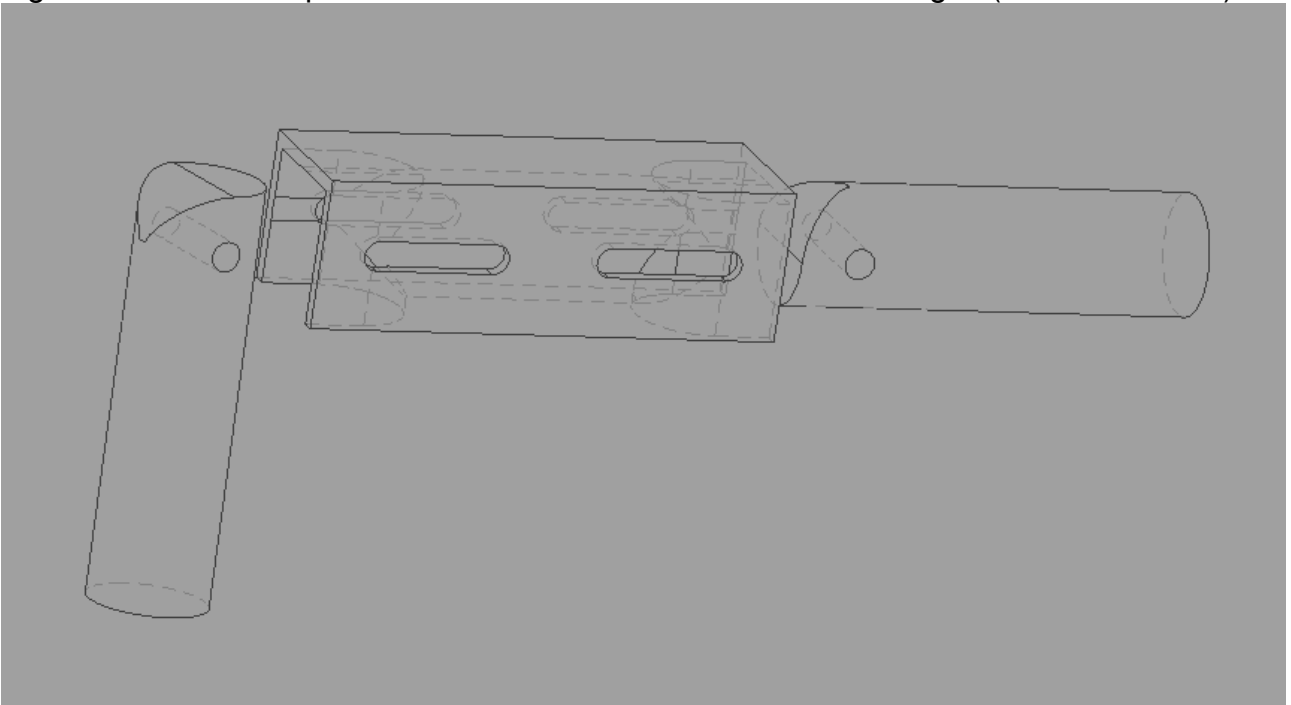
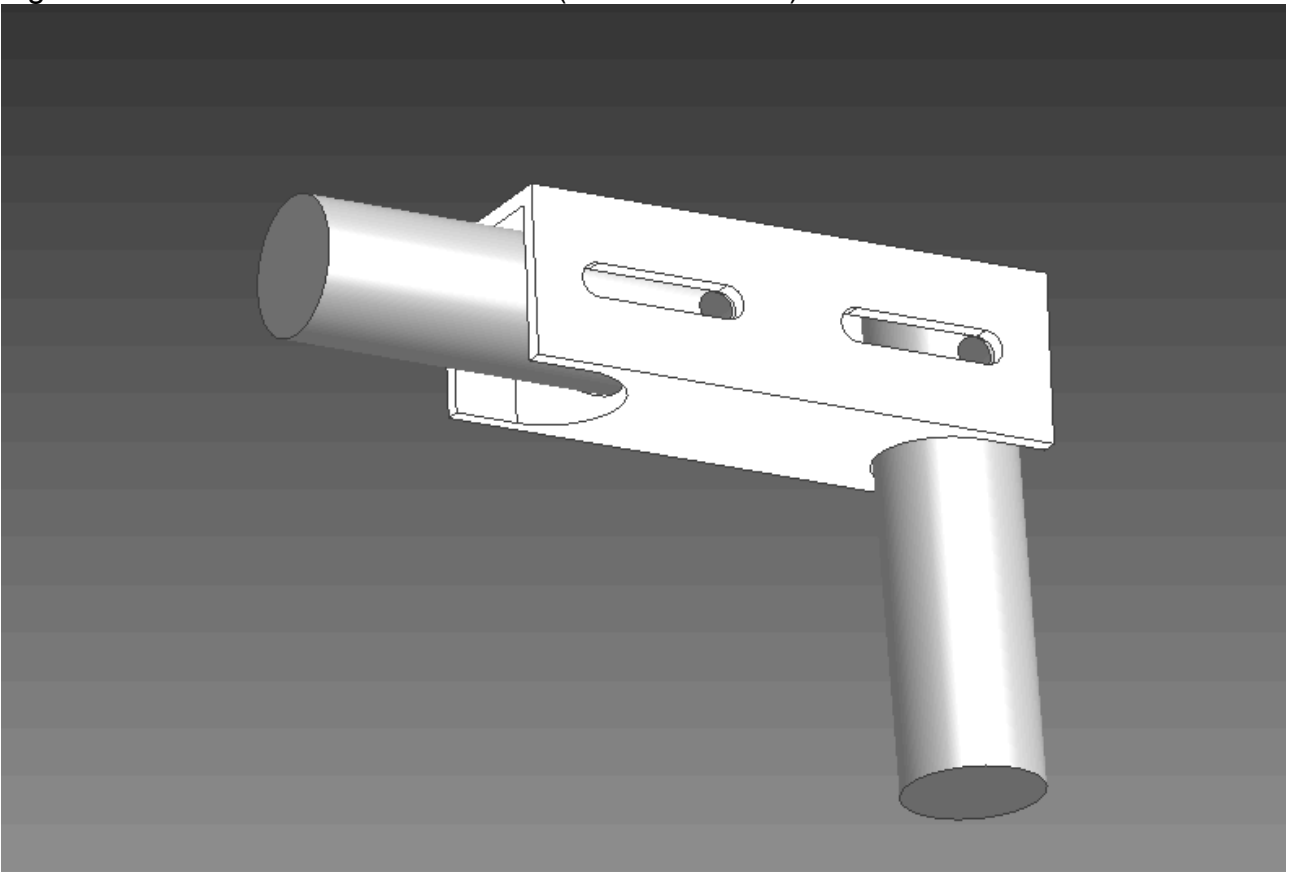


Figure 3. shows an assembled version (bolts not shown).



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Figure 4 depicts an x-ray view of the invention with the right hinge locked in place, and the left hinge rotated ("folded") and at its leftmost position along the slot on the slotted frame.

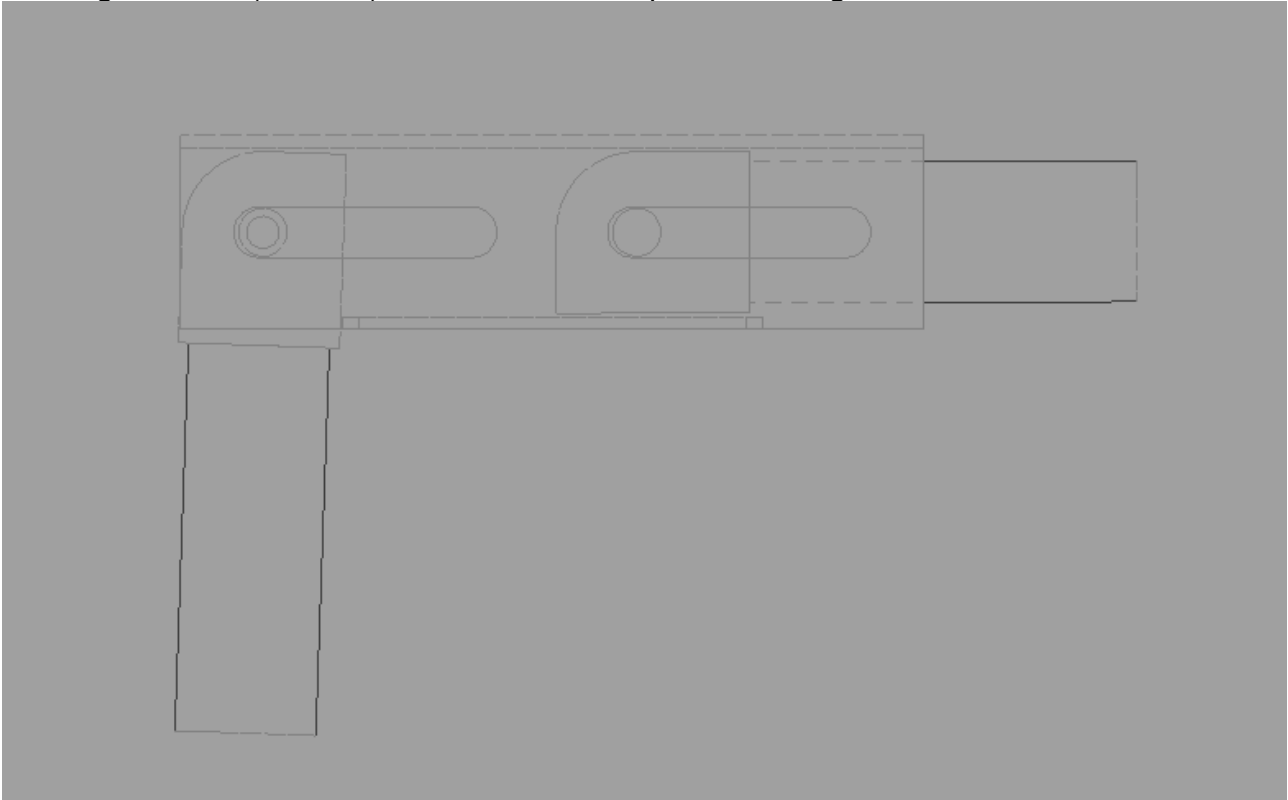
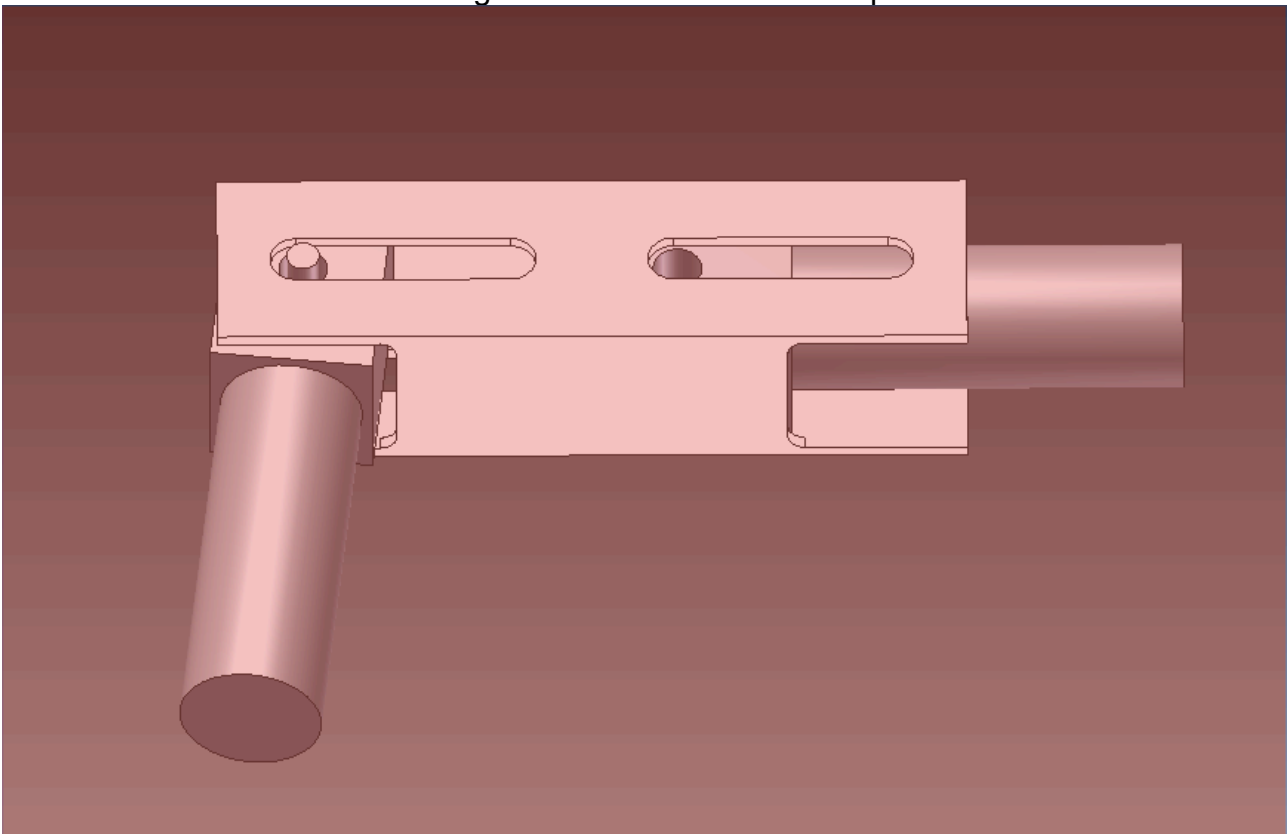


Figure 4a is an isometric view of the invention showing the openings in the slotted frame which allow rotation of the left hinge when it is at the leftmost position on the slotted frame.



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Figure 5 show the left hinge rotated 90 degrees when the hinge is still at its leftmost position along the slot on the slotted frame.

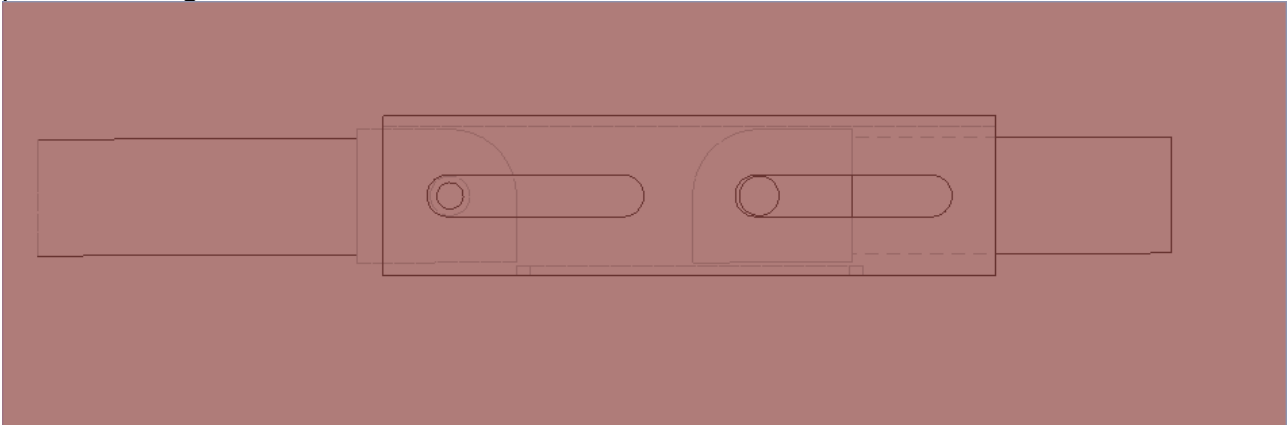
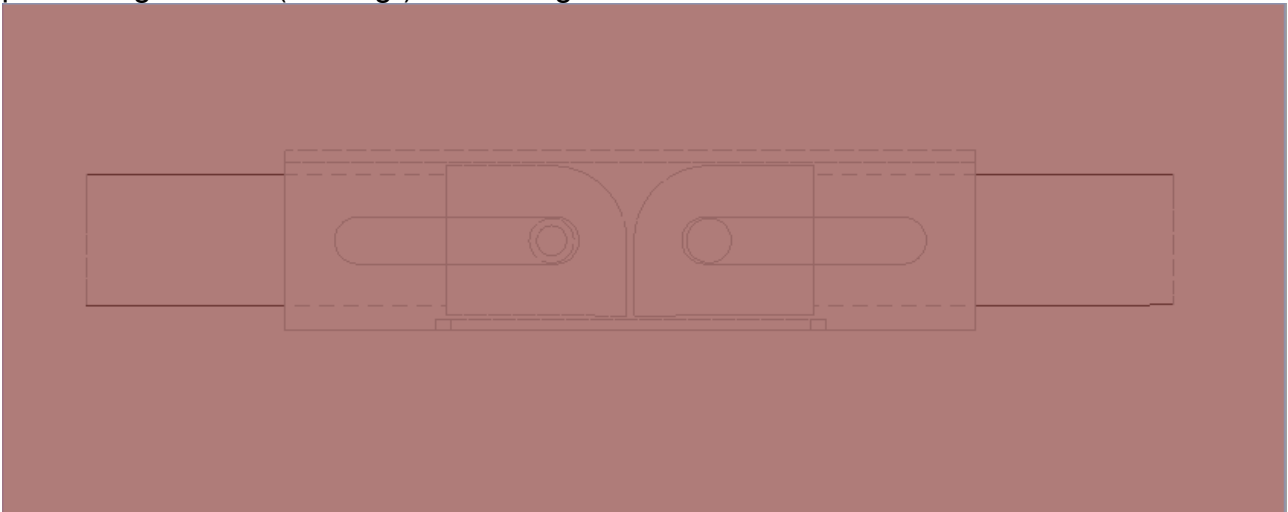


Figure 6 shows the left hinge slid to the right and into the cavity in the slotted frame, preventing rotation ("folding") of the hinge.



The invention is a strong, simple, and a novel way to create a locking hinge and is especially applicable for structural applications where the hinges will be in relative compression to each other when a device is assembled.