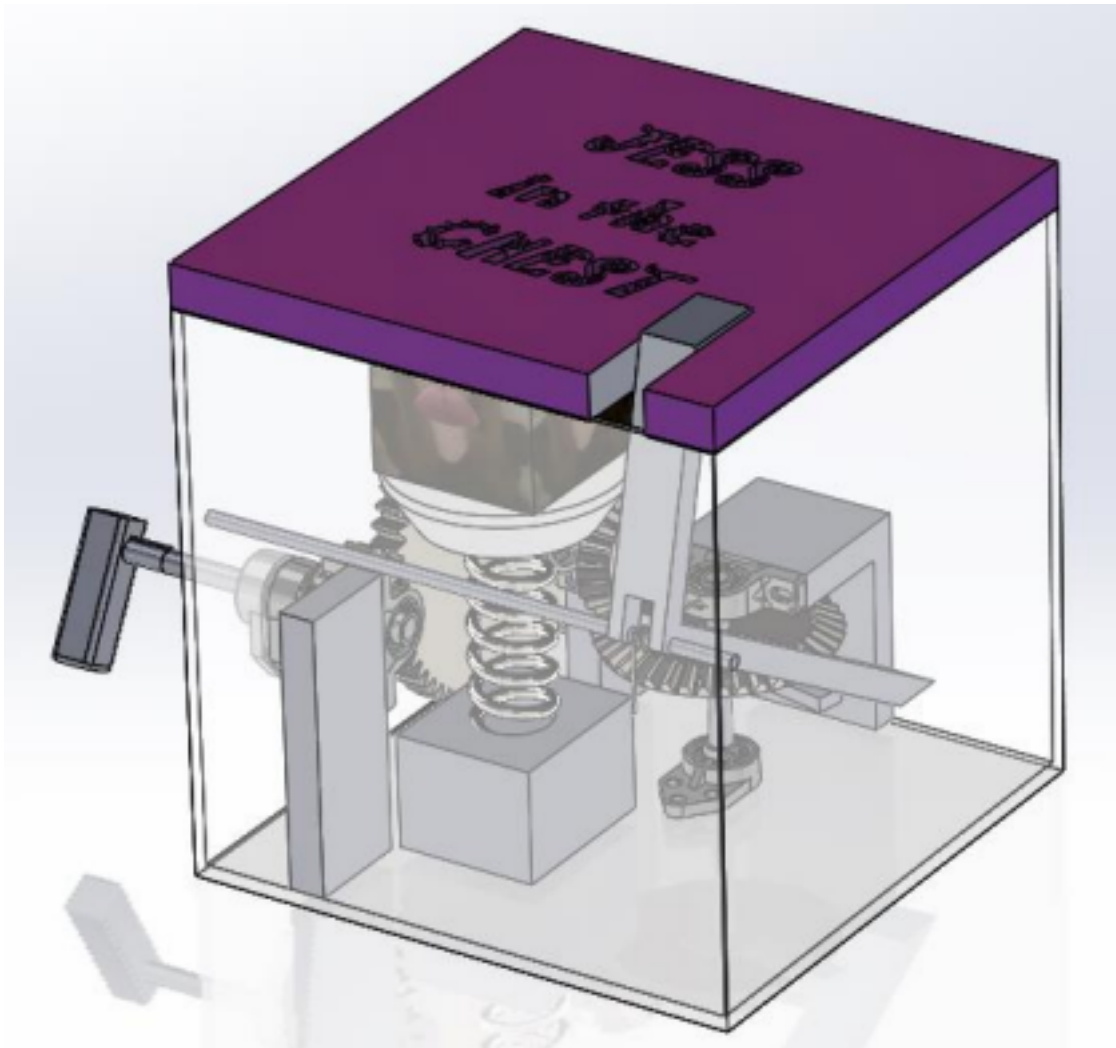


3671 Design Project: Jess in the Chest

Date: 13 April 2019



Animation Video:

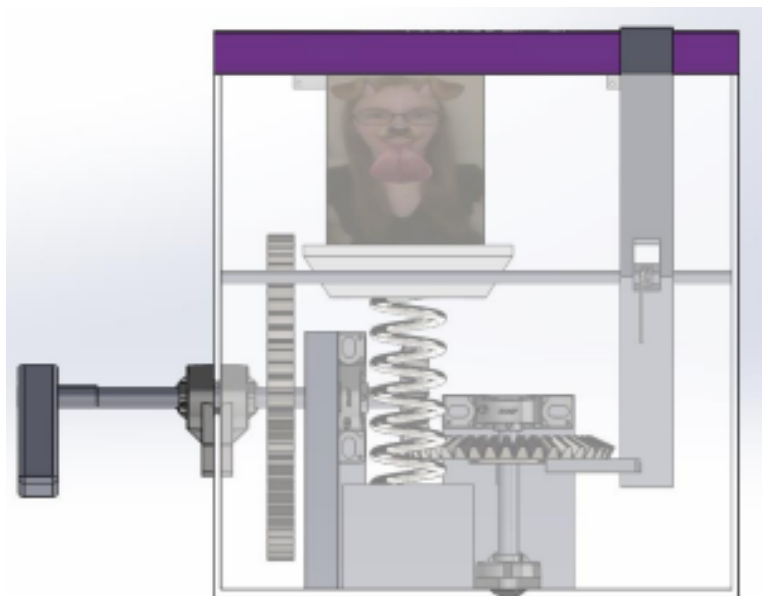
<https://youtu.be/4Y9HU8U0QRo>

I. Overview

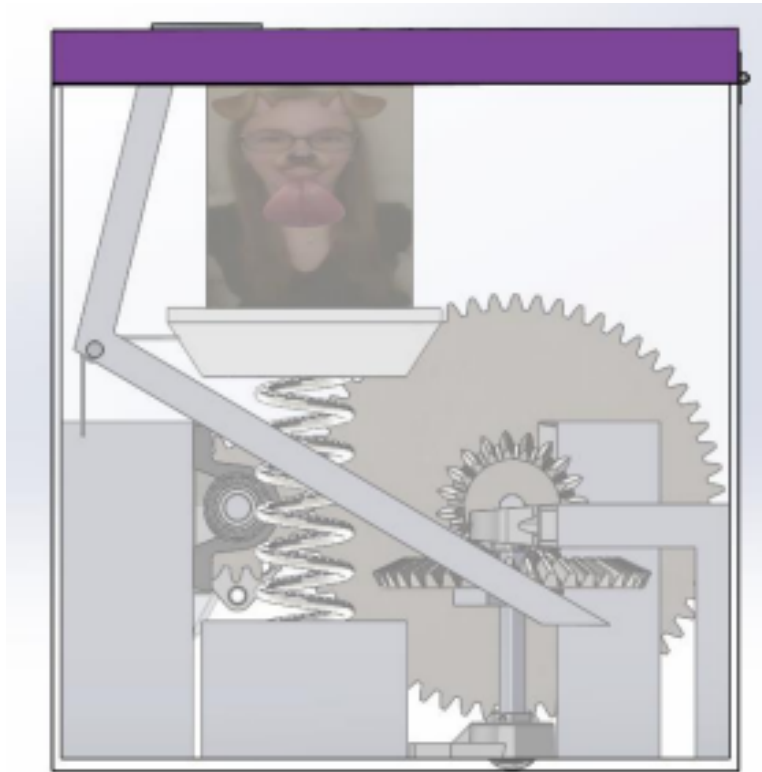
The Jess-in-the-Chest works as follows:

1. The user turns the **crank**.
2. The **crank** moves the **first spur gear** since they're on the same shaft.
3. The **first spur gear** moves a **second (larger) spur gear** since they're meshed.
4. The **second (larger) spur gear** moves the **first bevel gear** since they're on the same shaft.
5. The **first bevel gear** moves a **second bevel gear** since they're meshed at a 90° angle.
6. The **second bevel gear** moves a **rod** that is attached beneath it.
7. When the **rod** hits the **lever arm**, the lever arm overcomes the force exerted by the **torsional spring**. The lever arm rotates backward, releasing its hold on the **lid**.
8. The force of the **compression spring** causes the **puppet** to burst out.

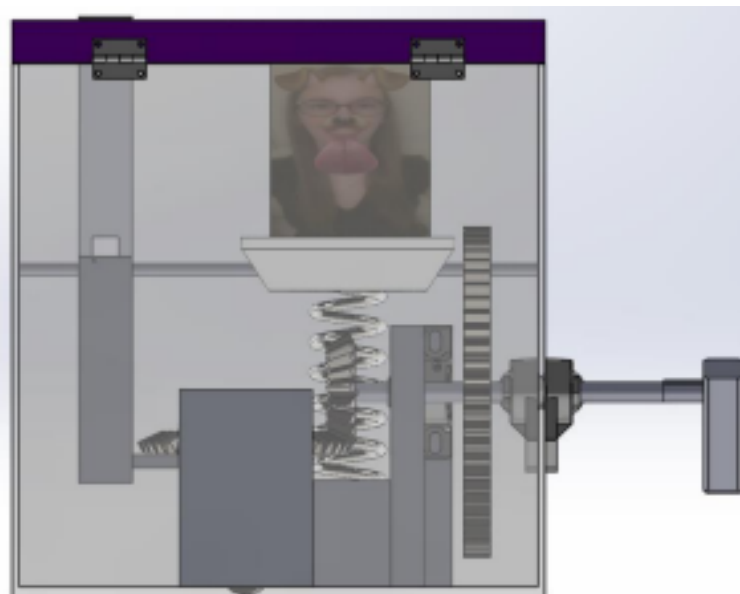
II. Final CAD Design



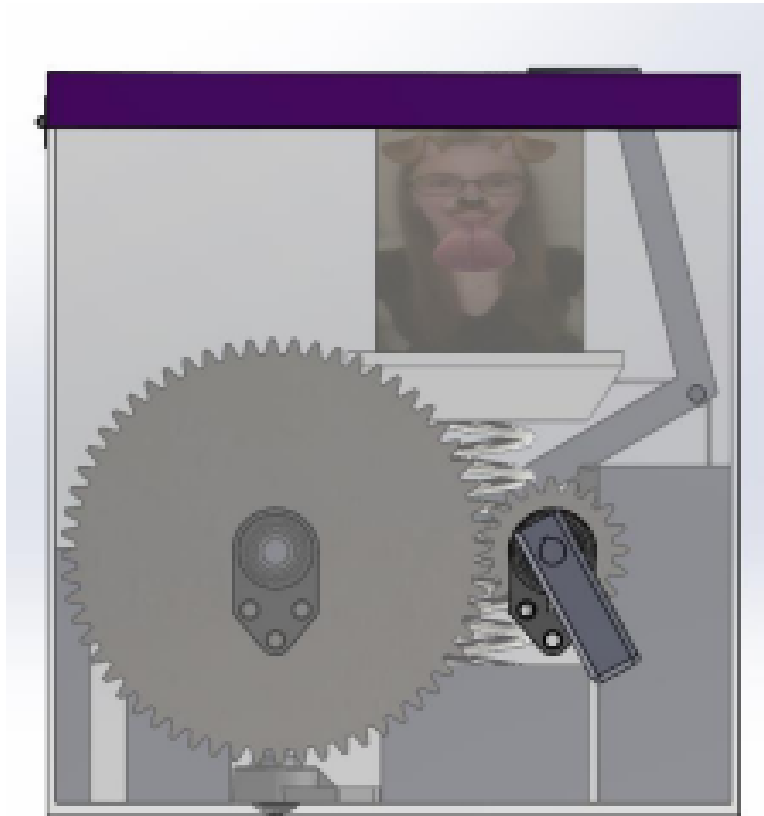
Front view, highlighting the compression spring



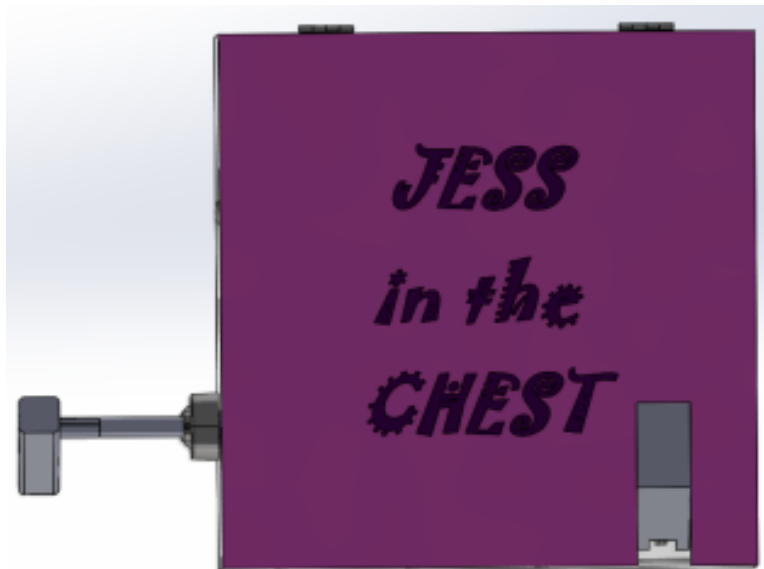
Right side view, highlighting the lever arm and gears



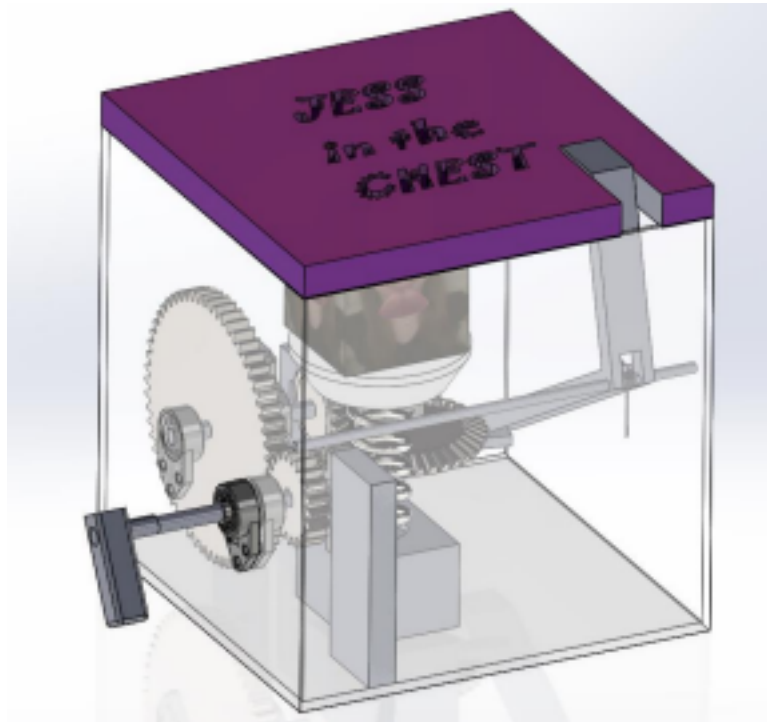
Back view, highlighting the gear supports and box hinges



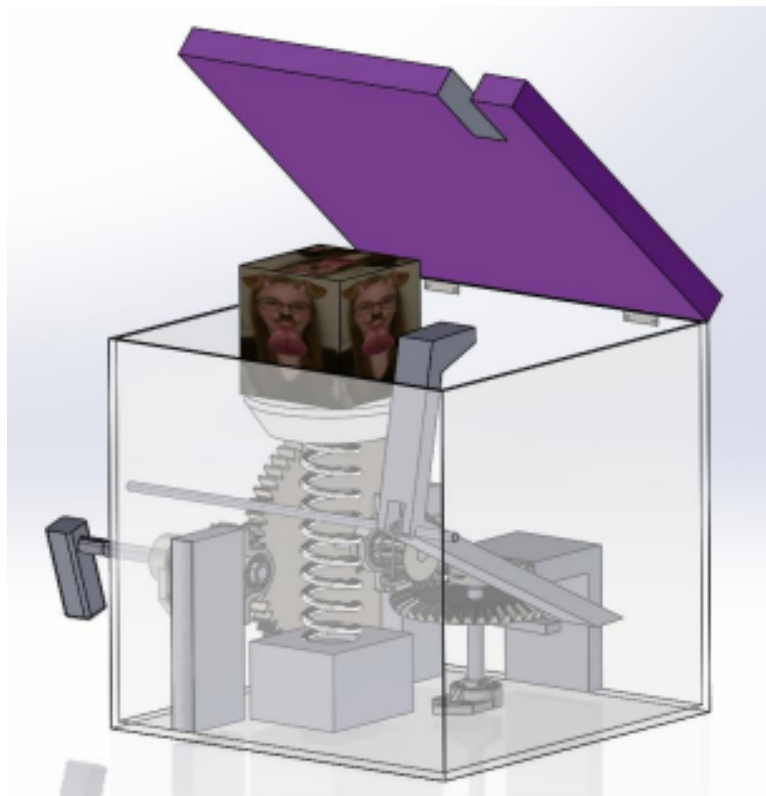
Left side view, highlighting the spur gears



Top view, highlighting the latch in the lid



Isometric view, from the front-left corner with the lid closed



Isometric view, from the front-right corner with the lid open