

Cardstock Animation Assembly Guide

1. Bend the Tabs Up

After cutting the pieces of the animation assembly out of cardstock, place the side of the box flat on the work surface such that the holes are at opposite sides. Then, bend the tabs up (Figure 1). This will help ensure that the later parts align properly.

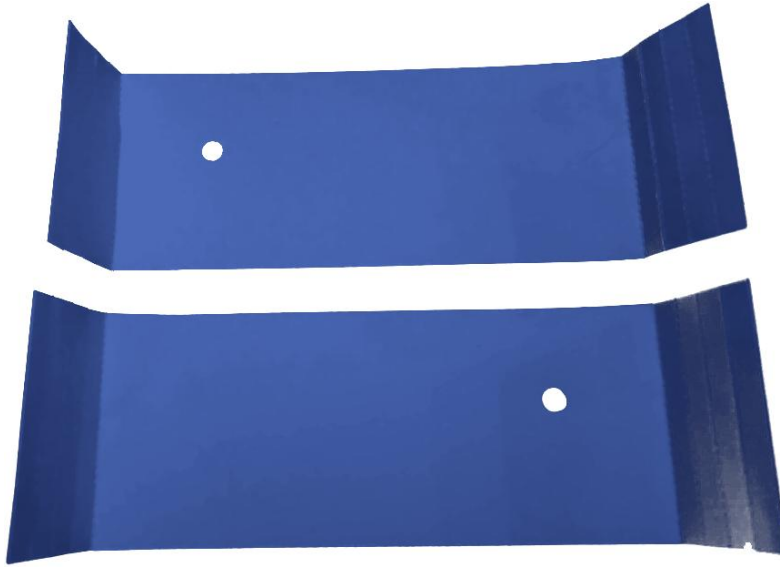


Figure 1. The Automata Sides

2. Glue the Top to the First Side

Glue the top to one side as shown in Figure 2. The hole in the box side should be at the free end of the lever and slightly closer to the top of the box than to the bottom. A thin film of PVA glue works if glue stick is not available.

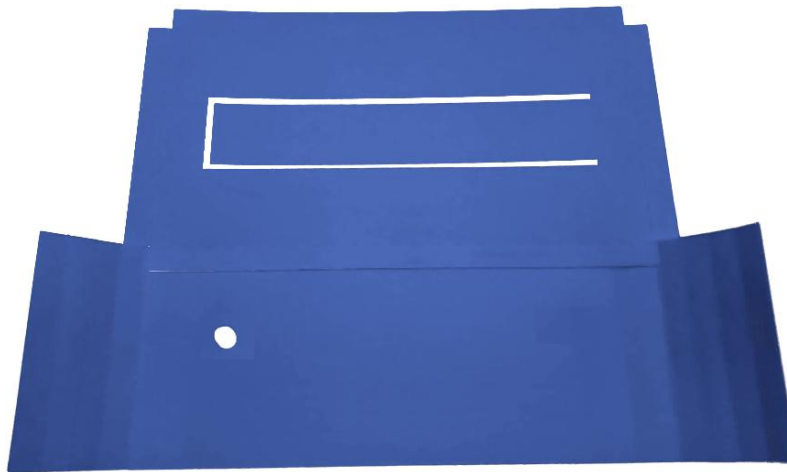


Figure 2. Gluing the Top to the Side

3. Roll the Support Pillars

Fold the tabs on either side inwards, rolling them into boxes and gluing them in place (Figure 3). These will provide pillars of support for the automata box. It may help to insert a thin piece of wood into the rolled pillar to help press down and glue the last tab into place.

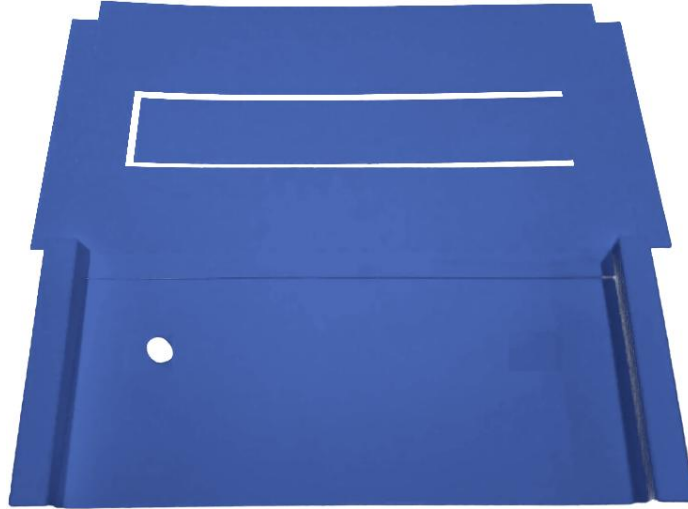


Figure 3. Creating the Support Pillars

4. Repeat for the Second Side

Rotate the other side of the automata box so that both holes are at the same end. Repeat steps 1 through 3 with the second side of the box (Figure 4).



Figure 4. Both Sides Attached to the Box Top

5. Glue the Box Ends to the Top

Glue the ends of the box onto the top's remaining fold tabs (Figure 5).

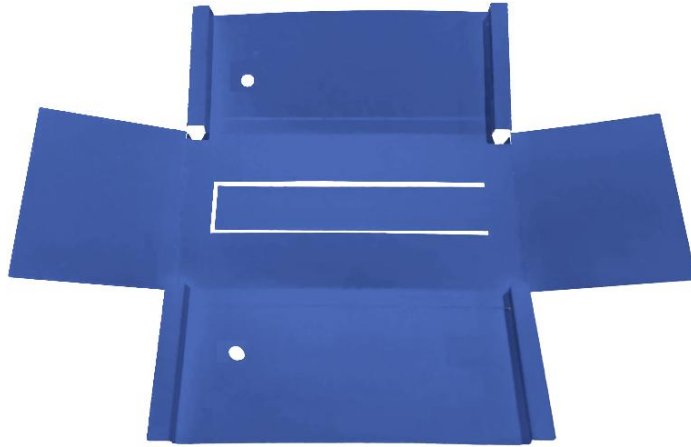


Figure 5. The Box Ends Glued to the Top's Remaining Tabs

6. Fold the Ends Up

Fold the ends of the box up and glue them to the support pillars (Figure 6). Repeat this for both sides of the box.

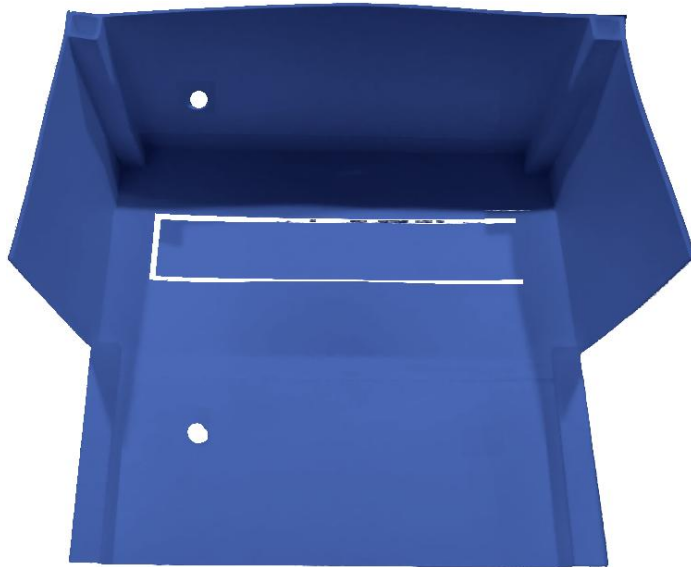


Figure 6. The Box Ends Folded Up Against the Support Pillars

7. Stiffen the Lever

Fold the lever down. Glue the two extra lever layers to the underside of the lever (Figure 7).



Figure 7. The Lever with Its Two Stiffening Layers

8. Fold the Axle

Fold the axle into a rectangular tube and glue it in place using the same technique used to glue together the support pillars (Figure 8).



Figure 8. The Axle Folded into a Rectangular Tube

9. Glue the Cam Disks to the Axle

Slide the cam disks onto the axle one at a time. Glue each disk to the one next to it. This will provide a rigid mechanism for controlling the lever (Figure 9).

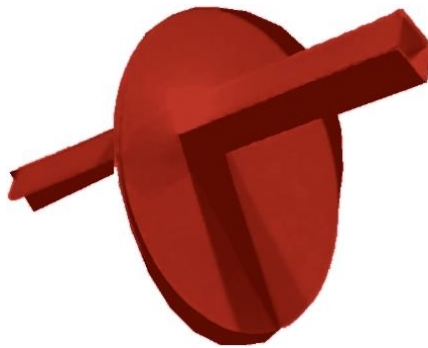


Figure 9. The Cam Disks Glued onto the Axle

10. Fit the Axle and the Drive

Finally, insert the axle into the box between the holes in the sides. Slide a stick or a rolled piece of cardstock through the assembled pieces. It should fit tightly enough to rotate the cam when turned. It may be necessary to glue the axle to the drive.

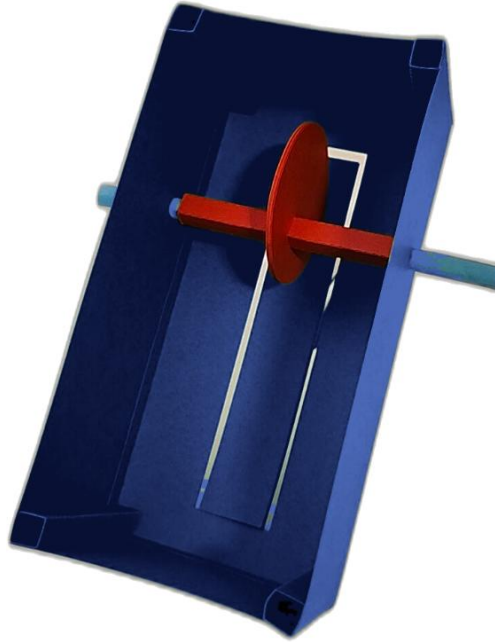


Figure 10. The Axle and Cam Inside the Box, with the Lever Resting on the Cam

11. Test the Mechanism

Leave one end of the drive extending beyond the side of the box to serve as the crank. Turn it slowly. The cam should turn with the axle, and the lever should rise as the wide part of the cam passes beneath it and fall back as the narrow part follows. If the lever catches, widen the slot in the box top slightly or trim the edge of the cam.

12. Attach the Figure

Glue the figure to the top of the lever where it emerges through the slot in the box top (Figure 11). Turning the crank now raises and lowers the figure.



Figure 11. The Finished Automaton: Turning the Crank Raises and Lowers the Crane