

SWAY, 2016

By Rafael Lozano-Hemmer



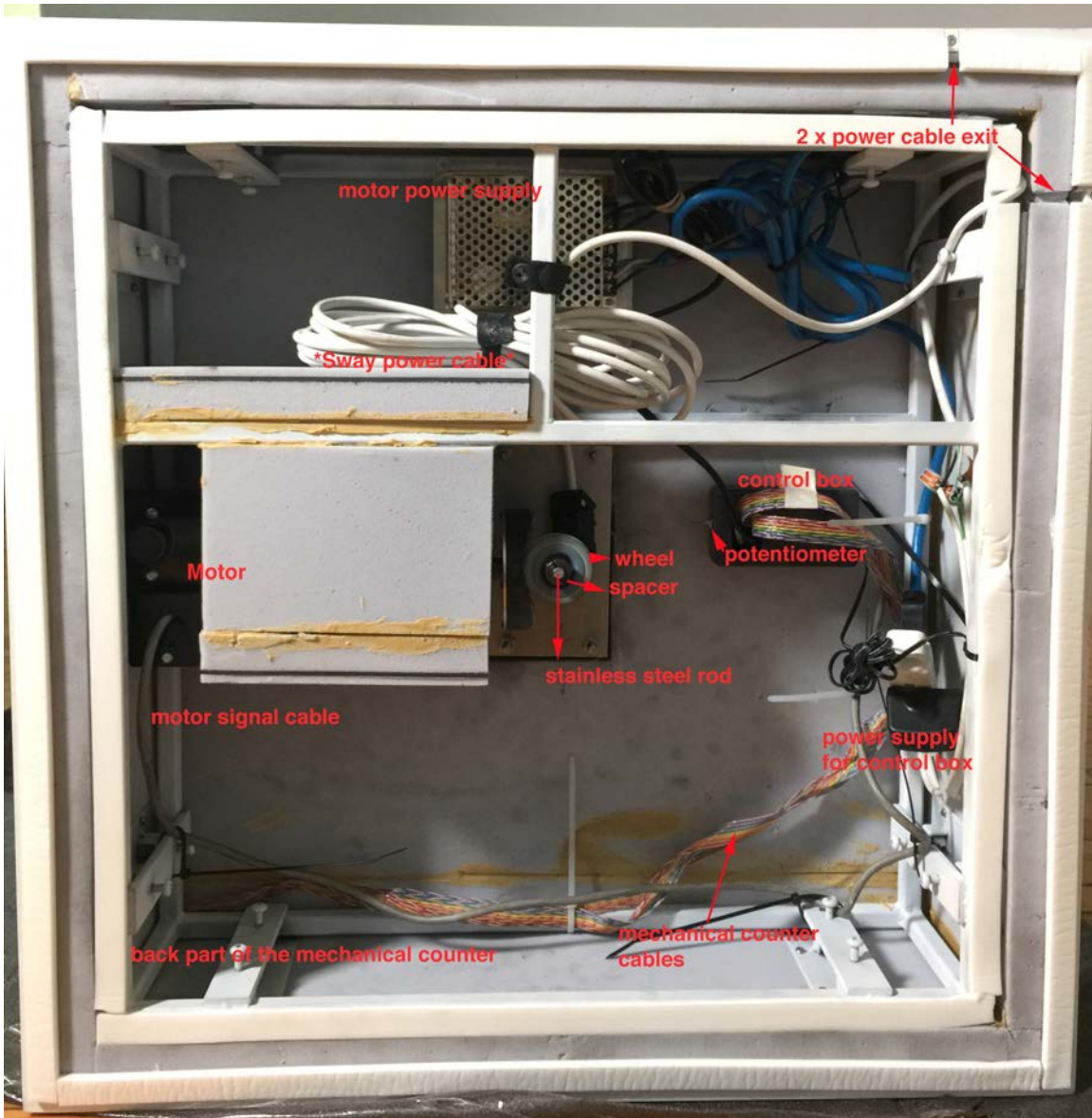
“Sway” (2016), is a kinetic sculpture of an upside-down noose. The rope was braided onto a thin vertical steel rod to make it stand upright and the floor rope acts as a free-standing base. The piece stands on a wooden plinth, which contains a motor and a small electrical circuit, which make the noose sway and pendulate almost imperceptibly from time to time. The sway adds to the trompe l’oeil effect of the rope hanging upside-down. The collector or curator may choose the frequency with which the rope sways, with the default value being around once every 40 to 60 seconds, which represents the rate of homicides in the World.

Dimensions: 72 x 72 x 210 cm

Technical: Rope, steel rod, low gear motor, electronics, mechanical counter, wood plinth.



The plinth



Close-up:
Power cable
exits



Crate:

Dimension: 263 x 85 x 50 cm

Weight: 115kg



Content:

- Plinth with attached motor
- Rope (Sway)
- Extra regular rope with no metal core
- Installation kit:

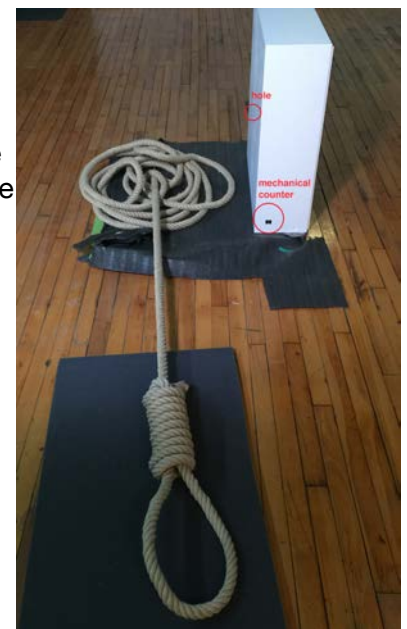
(Allen keys, spacers, wheels, adaptor and a toothbrush)

**Installation:**

First of all, make sure you have a very clean space, or that you have blankets or other clean material on the floor to deposit the rope when uncrating. Every person manipulating the piece should be wearing gloves. *2 people minimum are needed for this installation

1) Once you have taken all the plastic layers of protection out of the crate, place the rope on the ground over a clean surface. Then place the plinth vertically beside it. To make sure the plinth is on the right side, be assured that the **mechanical counter** is located on the bottom right when facing the plinth. (see the black square on the picture on the right. **No weight should never be put on it.)

Also, when you have a closer look at the hole in the middle of the front surface, you'll see a little red line on the top of it. The metal rod coming out the rope also has a red line on it, those 2 will have to be aligned when you insert it inside. (see details on the images on the next page)





2) One person should be holding the knot, while the other person holds the bottom part of the sculpture and inserts the metal rod inside the hole of the plinth. Once inside, slowly push until it is fully in. (*Watch the video: Sway01 to see how it's done*)

3) Find a support of the same height as the rope in order to rest the other extremity (knot) of the sculpture while you work on attaching the 2 pieces together: rope and plinth.



(Watch the video Sway02 for more details on steps 4 to 7)

4) From the installation kit, take one wheel, 2 spacers and one Allen key.

5) Go at the back of the plinth. You will see the rod coming out very close to the motor. You will have to place 1-a spacer 2-a wheel 3-and the other spacer. First spacer should be pushed until it gets to the blue line drawn on the rod. Then lightly screw it with the Allen key. You can readjust it once the wheel is perfectly in place.

6) The correct position of the wheel is very important since it is what generates the movement of the sculpture. Make sure it touches the black support (motor) on it's left. When you did find the right position for it, you can adjust the spacer at the back and tighten it to limit the movement to this exact location.

7) Add the last spacer. Be sure to leave no space in between the two spacers and the wheel.



8) Before tilting the piece to its final position, determine where it will be powered. Ideally it would be right under the plinth. In this case, you can leave the cable in the position that you found it when unpacking.

Otherwise, if it receives its power somewhere else in the room, you can use one of the 2 exits that have been prepared for it. Delicately unscrew one of the tiny wood pieces that you choose. When you do put it back, please don't screw it to tight.

9) Then finally, you can tilt the piece up. *(Watch the video Sway03 for a demonstration)* You need to hold the rope and the plinth while you slowly bring it down to its final position. The piece is now standing.

Last step: Make it look beautiful and natural!

Placing the rope on the plinth. *(Watch the video Sway04)*

We found a way to place the rope in the most natural way possible. Since it has a metal core inside, it keeps its position, but since it is flexible, it is also possible that it gets deform during transportation. Use the visual as a reference to try to make it look similar.

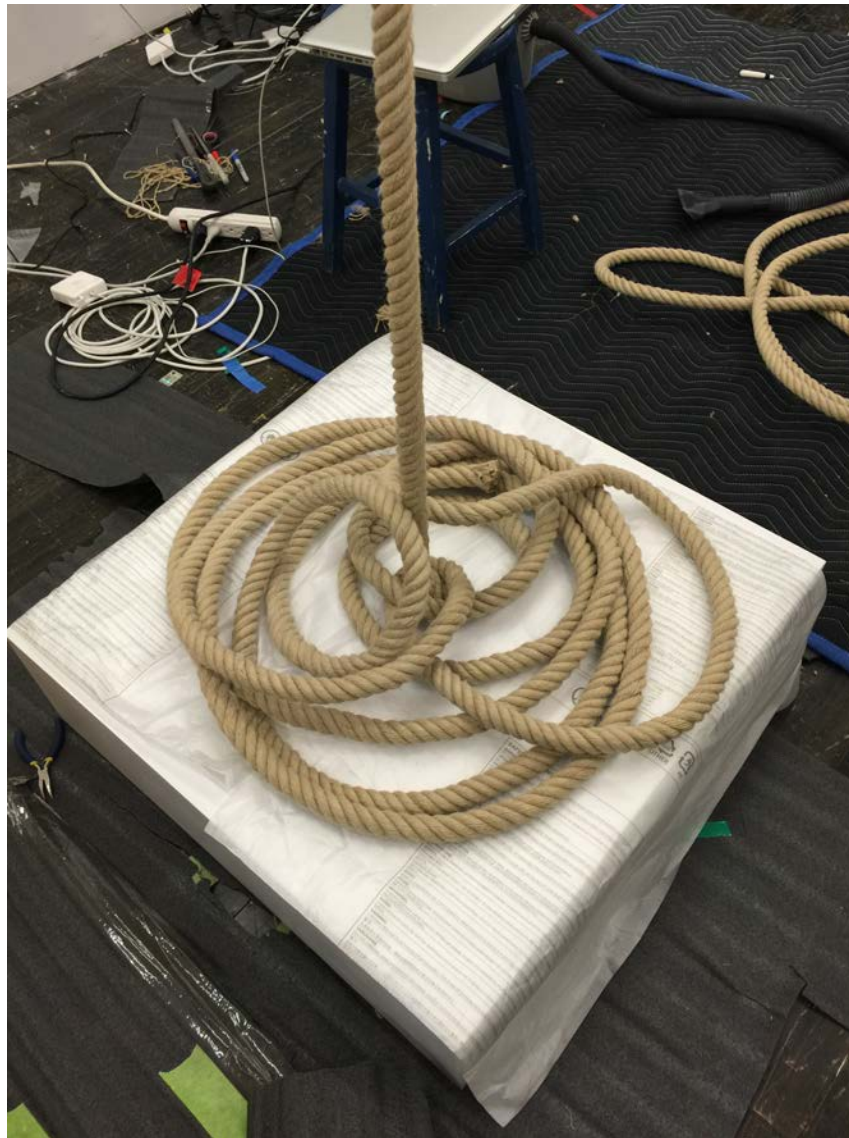
We had to sew together various specific points so you can easily place the base properly and achieve the same shape you see in the Sway's pictures. These joints will help you to adjust the folding and the draping of the rope if need it. Some of these fastened points will cover and hide specific areas of the base and sculpture such as, the base of the main vertical rod and the joint of two ropes on the base.



EXTRA ROPE:

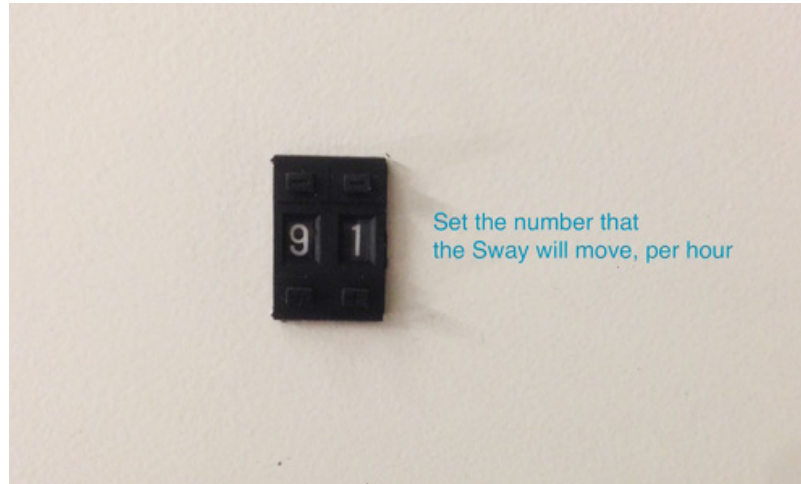
As the final touch, in order to find the natural curve of the rope, we suggest you use the extra rope that was put into the crate to manipulate and sculpt it. To do this, place the extra rope side by side each curve on the base of the sculpture and simulate the curve. By doing this, you will be able to model and adjust the shape with your hands. The extra rope will show you how the natural rope folds and drapes on the plinth. The metal core on the base is very malleable; therefore, you won't need to put too much pressure on it. Make sure the outer area of the rope base is always touching the plinth; otherwise, the rope will look fake. (*Watch the video Sway05*)

****If you feel that the sculpture is a little off centered, you can gently move it from one side to another by pushing the rod slowly until you find the right center.**



Mechanical Counter

Once the piece is nicely installed and powered, it will start moving. A Teensy 3.0 controls the movement. You can set the number of times that you want the sculpture to move by using the mechanical counter located on the bottom right of the plinth.



The number must be set according to the specific metrics. For example, if the value of the current rate of homicides worldwide is 51, then the counter should be set to 51. Every time there is a change of number, a new hour begins. You can change it when the power is on or when the piece is disconnected. Although, we suggest to set the mechanical counter before connecting the power. In order to synchronize the digital hour that is calculated by the microprocessor with the actual hour, you should plug it right on the exact hour.

The sway moves a specific amount of times per hour according to the number set on the mechanical counter (between 0-99). However, an algorithm calculates the intervals between each movement randomly.

$$\text{maximum_wait} = ((3600 - (\text{counter_number} * \text{t_min_duration}^{**}) / \text{counter_number}))$$
$$\text{minimum_wait} = (\text{maximum_wait} / 4)$$

*counter_number is the number from the mechanical counter

**t_min_move_duration is the number we get from the potentiometer

If you wish to change the duration of the movement, please contact us at the studio and we'll explain you step by step how to proceed.

Maintenance:

To clean the rope: use the toothbrush that you'll find in the installation kit, and brush the rope in one direction only. *Important: never use water, soap or any other cleaning product on the rope.

To clean the plinth: use water with a little bit of dish soap on a sponge and delicately swipe the surface.



For any questions, please contact our studio:

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