



# Ronald Ratgan and the Invisible Paw

Tags	trickle down economics
Created by	 Darwin Do
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The 1980 election of Ronald Ratgan in the United States of Micerica has completely demolished the middle class. This kinetic sculpture shows the forces of the free market upon the everyday rat citizen. If the user-inputted stock has a negative close for the day, the rats are punished by the knife wielded by the “invisible paw”. The worse the stock performed during market hours, the more intense the pain will be... However, as long as regulatory bodies such as the Consumer Financial Protection Bureau receive funding, the rat citizens may be relieved from their torture.

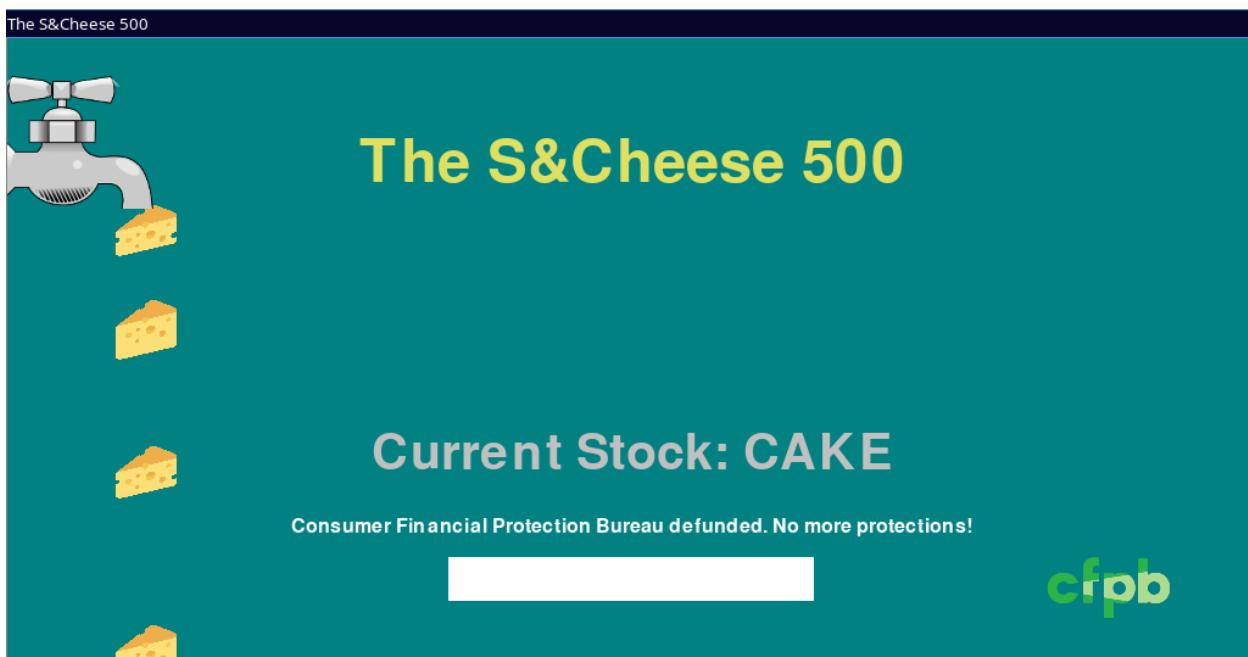
<https://www.youtube.com/watch?v=CRRM5PzwWc0>

## Overview

This device features two knitted mice strapped down on a circular plate attached to a stepper motor. Above the mice lies a cardboard knife attached to a servo. These devices lie on top of a rectangular box that houses the ESP32 and other electronics. One side of the box allows the 5v power adapter cable and ESP32 USB into the box while the other side has a photoresistor facing outwards.

## Pygame / Feature Richness

I wrote a complementary Pygame program to interface with the behavior of the sculpture over WiFi. This program features a text input that allows users to enter a stock symbol listed on any US stock exchange. If the entered stock's most recent close price is lower than the preceding open price, the knife will be activated. The frequency of the stabs is proportional to the percent loss rate of the stock. Clicking on the background will spawn a piece of currency (cheese) that falls to the ground. If any cheese hits the CFPB logo on the right side of the screen, the Consumer Financial Protection Bureau will be funded for an additional 10 seconds. As long as the CFPB is funded, the knife will **not** move. This is one way a user can prevent the mice from being tortured.



*Notice the cheese trickling down out of the leaky faucet into the void.*

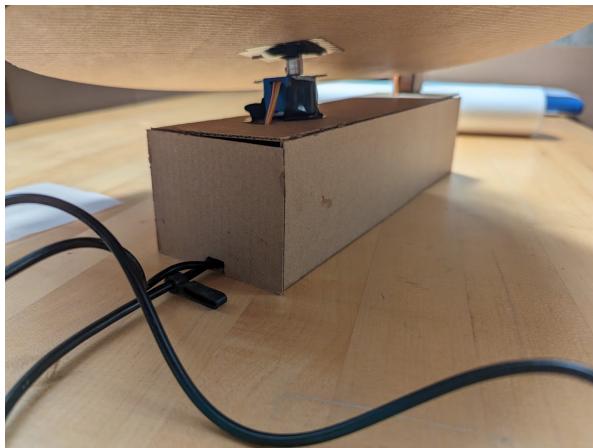
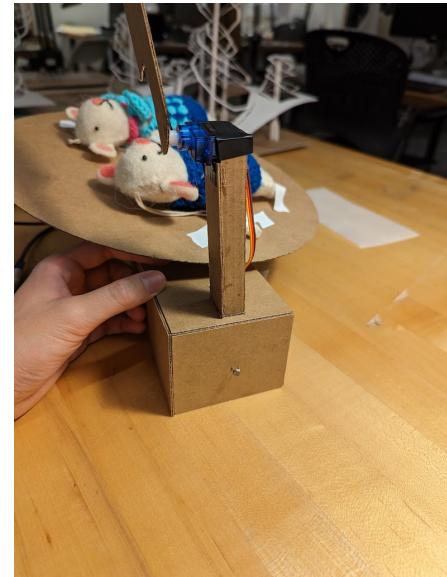
## Spinning / Motors

To mimic the idea that the machine is only active during the open market trading window, the speed of the spinning disc is affected by the level of light as detected by the photoresistor. If the light level drops below a certain threshold, the entire machine stops and the knife will not stab, regardless of the performance of the current stock.

The stepper motor was chosen for the plate as I wanted a controlled spin that was powerful enough to support the weight of the two mice. The servo was chosen for the knife as it needs to swing into precise down and up positions.

# Enclosure

The enclosure is made from cardboard and super glue. I wanted the base to be as small as possible with the spinning platter the main spectacle of the device. The rats are visibly taped down to the plate to signify that they are bound against their will.



# Code

<https://github.com/dsmaugy/cpsc334/tree/main/module4/task2>