

Nemo Gould

Nemo Gould, born on October 3, 1975, is a contemporary American artist and sculptor from California. He is widely known for his kinetic found-object sculptures that comprise intricate and imaginative designs made from salvaged materials, such as, discarded gadgets, broken tools, outdated machinery, scrap metals and aluminum, and other objects that have lost their value in daily life. He received his BFA from the Kansas City Art Institute in 1998, and his MFA in sculpture from U.C. Berkeley in 2000. Different museums and galleries across the United States as well as national media have featured his signature styled kinetic sculptures that are known to push the limits of found object art and challenge the viewers to experience the art through interaction¹. Some of the museums where his works have been exhibited include the San Jose Museum of Art, Berkeley Art Museum, and the Oakland Museum of California².



Figure 1: Gould's studio full of found and salvaged things

Gould builds each one of his sculptures as unique characters with personalities based on the materials used to build them. These materials are usually obsolete objects that are carefully re-contextualized to be parts of the sculpture. As he deconstructs and reassembles parts of the old objects, he creates a whole of a new character. It is his specialty to create new meaning out of the obsolete and he describes this process as “putting together a puzzle”³. Another special aspect of his sculptures is the interactive element, where he wants his viewers to engage with the artwork. His sculptures include different mechanisms through which the viewers can activate them, such as, the press of a button, the turn of a knob, or through motion detection⁴.

It is interesting to note that Nemo Gould, a master of accumulating materials and building intricate sculptures, is equally a master in a number of skills that are often not associated with what he does, i.e., art making. This, he says, is because of the wide range of things he has at his disposal for the creation of his sculptures⁵. For instance, because he uses a lot of aluminum objects, he has developed the skill of TIG (Tungsten Inert Gas) welding, which he uses to combine various found objects together. He also uses wooden materials, which has enabled him to master the skill of stripping woods of old stains and varnish and resurfacing them. He can also fill holes, mend cracks and remake missing parts from other scraps. Moreover, he has also become very much familiar with electronics and wiring, as he includes discarded electronic devices as well into his sculptures.

¹ <https://nemogould.com/about/>

² https://en.wikipedia.org/wiki/Nemo_Gould

³ <https://museumca.org/on-view/nemo-gould/>

⁴ <https://museumca.org/on-view/nemo-gould/>

⁵ <https://nemogould.com/about/>

Mechanical engineering and machining are also familiar fields as he works to recontextualize old machineries too. With all these skills he has developed over the years, he has an organized system to work with different kinds of materials that he brings to his studio from all kinds of places, including from scrap metal yards, second-hand stores, and dumpsters. He searches for his raw materials in these places and carefully selects what he brings with him. He says that he spends nearly equal amount of time as building a sculpture to select raw materials for it and, clean and sort them⁶.

Nemo Gould's works often explore themes such as creatures, locomotion, and robots, and he has several works produced in large scale i.e., life-size sculptures that look both mysterious and majestic with the unconventional yet unique building materials. Most of his works feature intricate gears, pulleys, cranks and sliders, springs and other mechanical components including motors, which make his sculptures kinetic. In this paper, I will discuss how he builds two of his most famous kinetic sculptures along with the technical details of the mechanisms that he incorporates in them.

One of his most famous artworks is the “Homunculus”, which is a kinetic robot sculpture that moves its head and arms when a specific button on it is pushed. This is a kind of interactive artwork as it requires a button-push from the viewer to start moving. This robot is made of an old wooden voltage meter, which, turned up-side down, looked like a face; its window formed a mouth-like structure, to which Gould added brass keyhole covers as eyes and ukulele knobs as teeth. An old radio tuner, chair legs, and shoe forms made up a torso and legs to support him while brass chandelier pieces formed the arms. The main mechanisms in this piece are in the robot's head and its arms and there is also one inside its belly which has been portrayed as a small engine room with a little engineer in it that looks like it is causing the movement of the robot's arms. However, there are two separate motors that operate the engineer and the arms. For the engineer inside the engine room in the robot's belly, a motor from the bill intake mechanism from an ATM machine has been used. It is attached to some levers inside and as the slider in the motor slides, it pumps the levers up and down. This makes it look like the engineer inside is doing some work. For the movement of the arms as well as the head, he has used a 4.8 RPM motor. The shoulder movement is achieved through little crank attachments connected to the motor causing the back-and-forth movement of the arm pieces while a rotating motor shaft has been used inside the head that makes it swing around a pivot point to achieve the side-to-side tilt⁷.



Figure 2: Homunculus Robot Sculpture

⁶ <https://nemogould.com/about/>

⁷ <https://www.instructables.com/Kinetic-Robot-sculpture-from-found-materials/>



Figure 3: Motors used inside Homunculus

After putting everything together, Gould has further visually enhanced this piece through the use of LEDs. He has mounted red LED lights behind the brass keyholes such that it looks like there is light coming through the eyes of the robot. This makes it look even more interesting and more like a wooden beast. The idea behind this sculpture was to depict little people operating big people⁸ so that a wide range of motion can be observed, from the motion of the tiny vacuum tube headed engineer at work in the brass belly of the robot to that of the giant wooden beast itself.

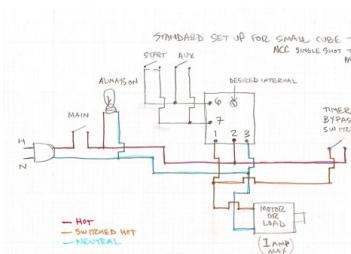


Figure 5: Homunculus Wiring

As mentioned before, this is an interactive artwork that requires a button to be pushed in order for the movements to start. However, once the movement starts, it initially had to be turned off manually. If the viewer simple forgets to turn it off when they are done observing it, it could be a problem as leaving machines like this running for extended periods of time can be a danger to themselves. Hence, a timer was later added to this robot so that remembering to turn it off after finishing viewing it is not required. A simple timing relay has been used to achieve this kind of timed motion which can also be seen in the wiring diagram⁹.

Another one of Gould's popular works is the "Giant Squid", also a kinetic sculpture but themed upon the mysterious sea creature, the giant squid, which was also a long-time fascination of Gould's. This was one of his large-scaled works, which was featured in Robogames, San Francisco in 2007 and got him a gold medal. The sculpture has a somewhat fluid movement as it is a sea monster but has an antiquated machine look, making it



Figure 4: Visual enhancement of Homunculus



Figure 6: Giant Squid Kinetic Sculpture

⁸ <https://nemogould.com/portfolio-item/homunculus/>

⁹ <https://www.instructables.com/Kinetic-Robot-sculpture-from-found-materials/>

unique. Gould has used a simple belt drive mechanism based on some nice old belt wheels to achieve both the movement and the look. This piece is made of large streetlight covers used as the head of the monster, brass chandeliers as the smaller tentacles, and candle sticks and fireplace hardware as the longer tentacles. For this piece, Gould worked backwards from the mechanical portion as it required the most precision¹⁰. For the mechanism to work, one of the major components is the set of belt wheels, as they are the parts majorly responsible for the constant movement of the longer tentacles of the squid, giving the fluid movement Gould had initially intended for the piece. This, in turn, determines the movement of the head in one axis as the tentacles drape down from the head. In order to construct this mechanism, the belt wheels are mounted in a fixed position to each other on bearings welded to stands such that when the tentacles start moving due to the belt drive mechanism, the head winds up at the right height at the right angle. This, then, allows the shorter tentacles to move along with the head. The head also moves on a second axis in a side-to-side motion through an adjustable pivot with spring connections, connected to the motor¹¹. For this, the position of the head was very significant. Nemo Gould experimented with the height and distance of the head from the belt mechanism to get the ideal movements. For all these movements to be smooth, the right motor was also required, and Gould experimented with different kinds of motors as well before he settled on a 6 RPM high torque model to handle the weight resistance of the giant sculpture.

In this piece as well, Gould has used LED lights to visually enhance the piece. Tiny LED mounts are machined behind the eyes to make them glow. The inside of the mouth has also gotten the same treatment. To make the piece more visually appealing, the motor is concealed with the help of lamp pole base covers. Similar to the robot sculpture, a timing device is installed in this sculpture as well for the same purpose, i.e., to keep it from running constantly. Overall, this is a well-built mechanical sculpture that moves in a graceful manner with the help of the motor connected to the belt drive mechanism.



Figure 7: Belt Drive Mechanism

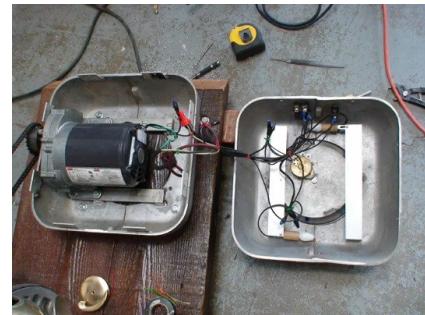


Figure 8: Timing Motor

¹⁰ <https://www.instructables.com/Giant-Squid-kinetic-sculpture-from-found-materials/>

¹¹ <https://www.instructables.com/Giant-Squid-kinetic-sculpture-from-found-materials/>



Figure 9: Quicksilver Retro-Future Scooter

Another interesting work of Nemo Gould themed upon locomotion is the “Quicksilver” Retro-Future Scooter, in which he combines the convenience and reliability of modern engineering of a Honda elite with the class and styling of a vintage machine. This artwork is basically redesigning of a scooter with unused appliances and scrap metal¹². This isn’t an artwork where he builds a mechanism himself, rather transforms a machine that already exists using random objects such as vacuum cleaners, record player tables and streetlamp covers. Thus, I will not discuss this in detail, but I think it is still worth mentioning in the list of his interesting works.

¹² <https://www.instructables.com/Quicksilver-Retro-Future-Scooter-from-appliances/>