MUSICAL SCULPTURE -- The Secretary's Nightmare

by **Thinkenstein** on July 6, 2009

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intro: MUSICAL SCULPTURE -- The Secretary's Nightmare

"The Secretary's Nightmare" is a musical sculpture, a sculpture that makes interesting sounds when struck. It evolved out of a mirror-like hollow steel ball I found washed up on a beach and some antique typewriter parts.

Trying to type anything on it would be a nightmare.

Although you can play The Secretary's Nightmare in different ways, such as by dragging pieces of mattress foam over it, my favorite way is to strike it with a ping pong ball on a string. The old "Follow the bouncing ball" song cartoons come to mind as the ball ricochets off the typewriter parts.

The music it makes is always somewhat out of control and random. Because the sounds it makes are low-volume, I use a stethoscope as a means of amplification. Playing it is a very personal experience. People without the stethoscope only hear a weak suggestion of what goes on inside it.

Be sure to listen to the audio file in the last step of this instructable to here what The Secretary's Nightmare sounds like.

step 1: THE HOLLOW STEEL BALL

When I first found the hollow steel ball, it was washed up on a beach. The ball was chrome plated, like a mirror and very light weight. It was perfectly made. I couldn't find any seam on it where two halves had been joined. I have no idea where the mystery ball came from; perhaps a scientific instrument.

Unfortunately, during the process of welding on the typewriter parts, the mirror plating was damaged. The surface now is painted.

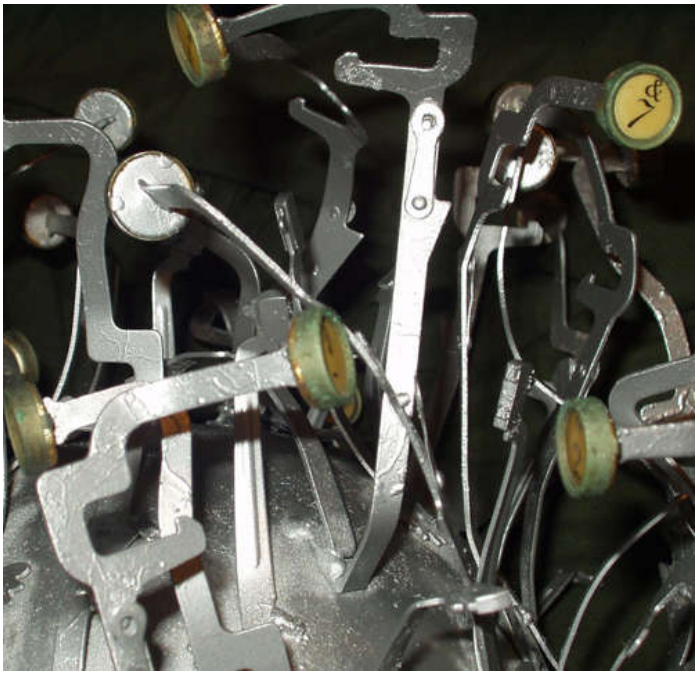
For some reason, the notes made by The Secretary's Nightmare linger a long time. I don't know if the sphere shape has anything to do with that, but it might.

step 2: THE TYPEWRITER PARTS

All of the typewriter parts have different shapes, lengths, and weights. Because of that, they vibrate at different frequencies and produce different notes.

Other factors such as diameter being the same, a short rod will vibrate faster and create a note of higher pitch than a long rod will. The same holds true of strings on string instruments.

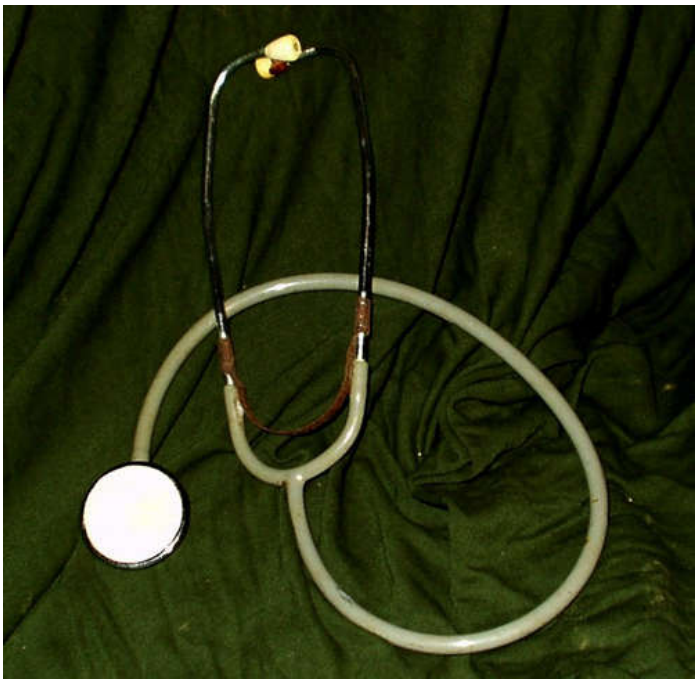
The parts started out basically flat. I bent them in different ways to make them more visually interesting and welded them with an oxyacetylene torch to the hollow steel ball I found. It reminds me of a round head with a crazy hairdo.

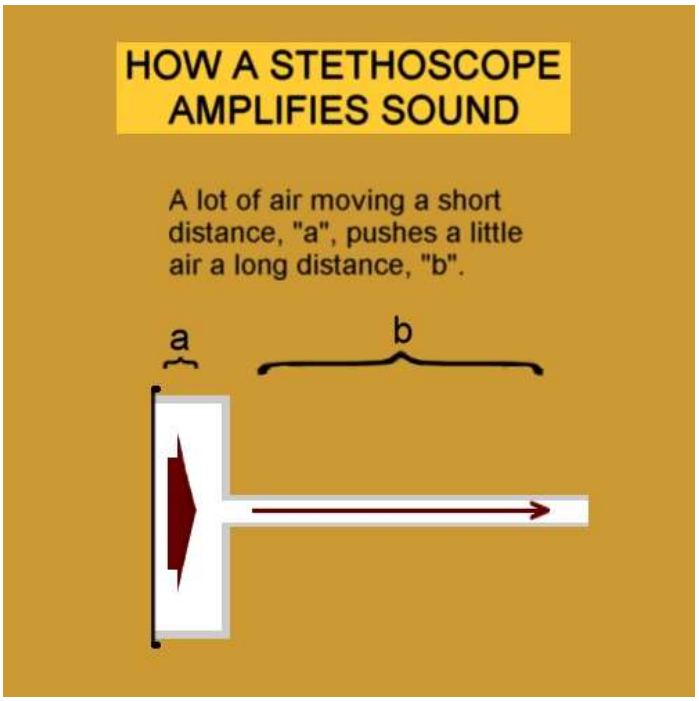


step 3: THE STETHOSCOPE

A stethoscope amplifies sound when the membrane at the end of it picks up vibrations through contact with an object. The membrane is of relatively large diameter, compared to the diameter of the stethoscope hose. Slight movement of the membrane causes air inside the stethoscope head to move. A little bit of motion of the air inside the large diameter head will result in a larger movement of air inside the small diameter hose. When you put your ear next to the end of the hose, the amplified movement of air results in amplified sound.

When you start listening to the world through a stethoscope, you hear all sorts of things you never were aware of.





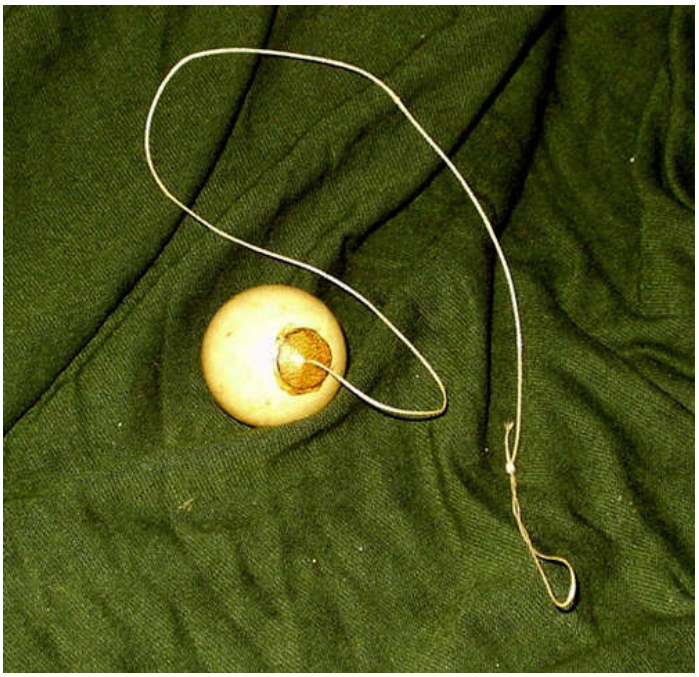
step 4: THE BOUNCING BALL

The plastic of the ping-pong ball is relatively hard, compared to a rubber ball. A soft striking material makes a softer sound than a hard one does. The hardness of the ping-pong ball and the short duration of contact with the typewriter parts results in a crisp sound.

The way the ball ricochets off the keys, rapidly striking more than one key, and the slow fade-away of each note allows notes to pile up on one another. The result is a rich complexity of sound.

Since the ball is somewhat out of control, it is virtually impossible to repeat the same music a second time. That makes each time you hear the instrument a unique and special experience.

To strengthen the attachment point of the string to the ping-pong ball, I used a small vinyl patch that the string passes through. It covers a tangle of string glued to the ball and provides more surface area for the glue to adhere to than the string alone provides.



step 5: THE BASE

Since the bottom of The Secretary's Nightmare is a round ball, I made this cylindrical base to set it on. The base is just a section of PVC sewer pipe.

step 6: PLAYING THE SECRETARY'S NIGHTMARE

To play the instrument, plug the stethoscope ear pieces in your ears and place the stethoscope in one hand, membrane up. Balance the hollow steel ball on the stethoscope membrane and dangle the ping-pong ball among the typewriter keys.

step 7: VARIATIONS ON THE STETHOSCOPE INSTRUMENT THEME

What you put together depends on what you find to work with. You will probably not find the same ball and typewriter parts, but a different combination of things can be just as interesting.

The attached photos are of stethoscope sculptures I made many years ago.

The one on the truck bed had the stethoscope listening to the pipe, an old drive shaft. It had an acoustic "microphone" that conducted the voice to the inside of the pipe. One flat array of rods of different lengths was struck with small drumsticks. A curved array of rods was played with a violin bow and sounded like electronic feedback. There was also a set of strings attached to the base pipe that sounded like a harp.

The other instrument, played by a friend, had a gurgle sound made by blowing air into a reservoir of liquid inside it. A "dandelion" shape of rods on top sounded similar to The Secretary's Nightmare. It also had a squeaky wheel.

step 8: LISTEN TO "THE SECRETARY'S NIGHTMARE"

Click on the mp3 file image and you should be able to download a recording of "The Secretary's Nightmare".

File Downloads

SECRET NIGHT.mp3 (770 KB)
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'SECRET NIGHT.mp3']

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