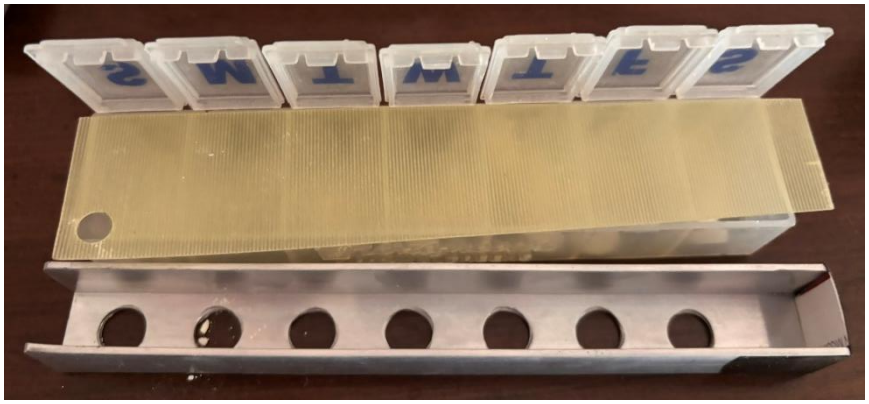
Pillbox Filler Tool, Version 1.5

By R. G. Sparber

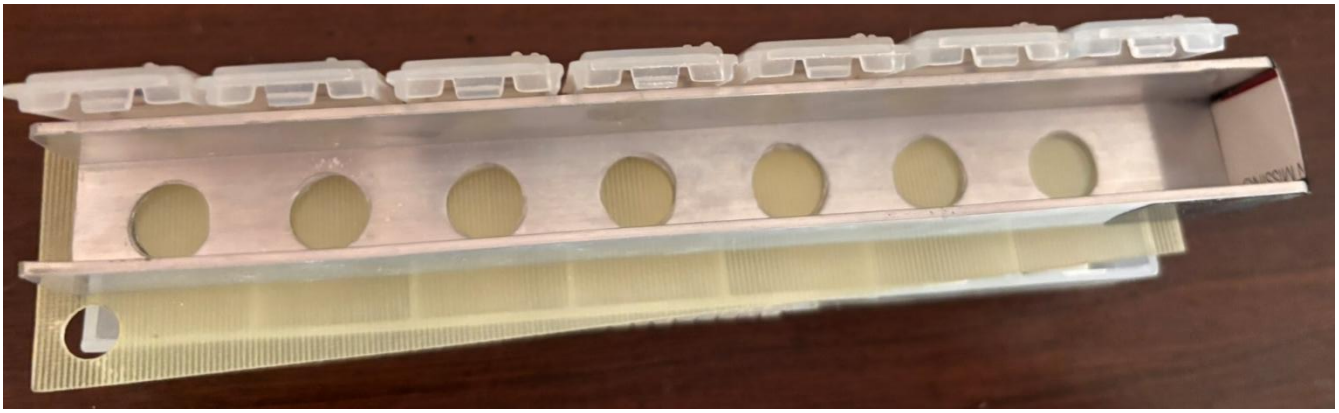
With age come pills. I have two pill boxes, each holding a week's worth of pills, so the task of filling these boxes occurs twice a month.

To reduce boredom, I have developed a tool that lets me place one pill from a bottle into each compartment with minimal fumbling.

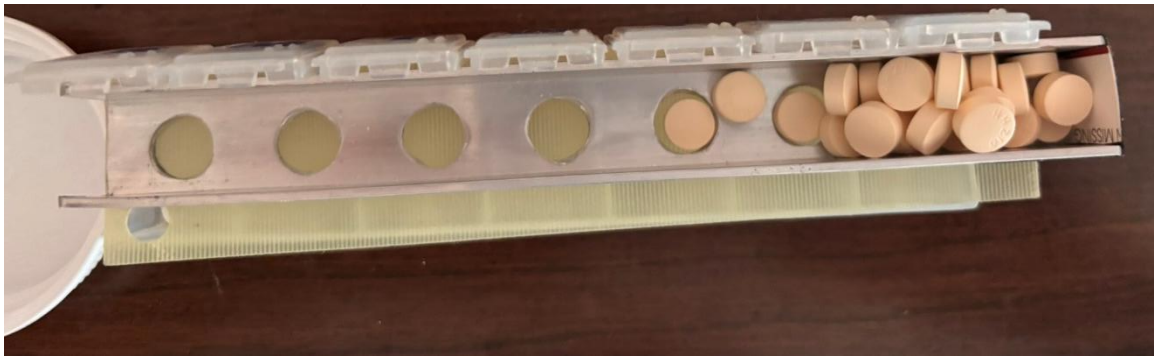
The tool is a proof of concept, so there is plenty of room to make it look more professional.



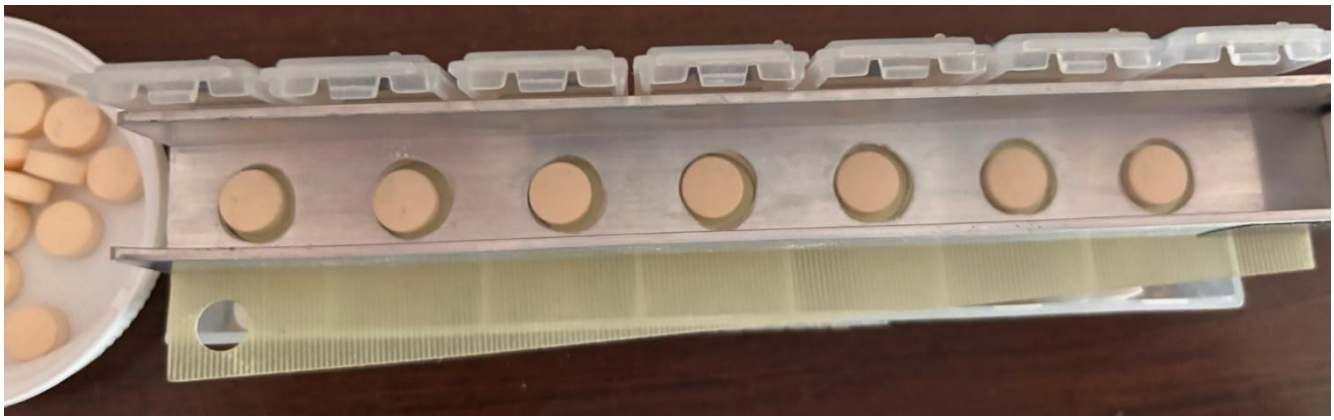
I place a thin piece of plastic over the pill chambers.



The channel goes down next. I roughly align the holes in the channel with the centers of the chambers.



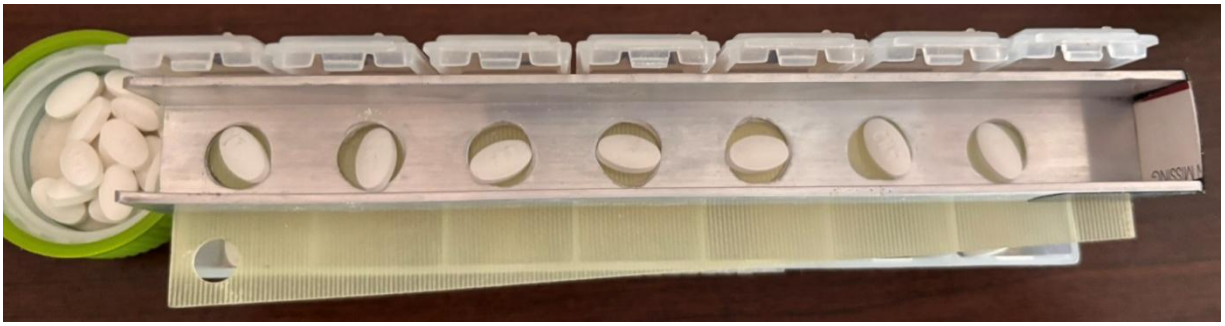
Next, I pour pills into the closed-off end of the channel and sweep the pile to the left using my finger. As pills encounter an open hole, they drop in.



The excess falls into the cap from the bottle. As I slide the plastic sheet forward, the pills drop into their chambers.

Elliptical pills take a little more fiddling.

As I sweep these pills down the channel, they do fall into the holes the same as with round pills.



With the plastic removed, two of the pills fell into their chambers, but five did not.

A gentle poke caused the stuck pills to drop. Notice that the pills' alignment is random, so simply cutting close-fitting elliptical holes will probably not solve this minor problem. However, larger holes might do the trick.

I measured the major diameter of the pill and enlarged the hole to the next larger diameter – 7/16".

Now the pills cleanly fall out.

I do have one bottle filled with capsules. They must be hand-sorted into the chambers.

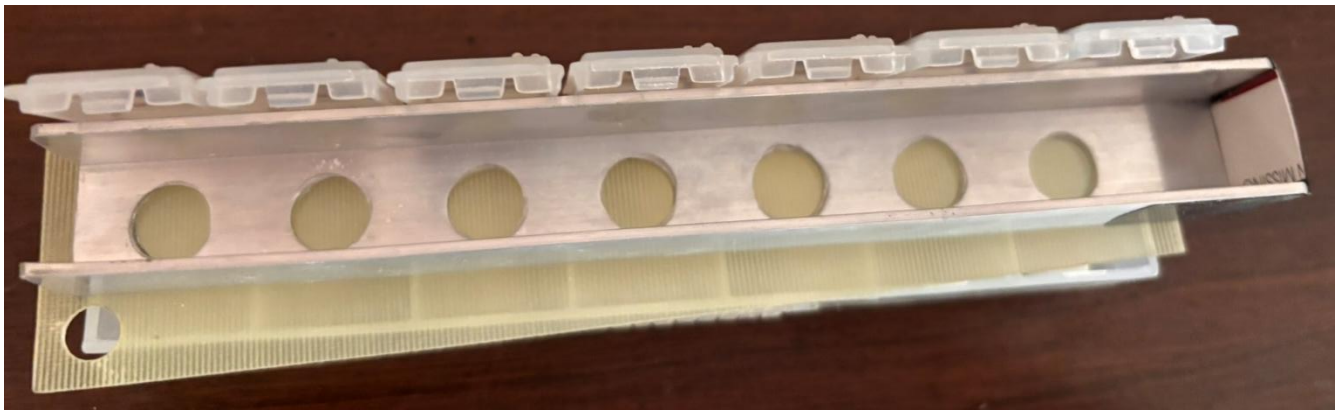
I determined the tool's size by the size of my largest pill, the pill box's length and width, and the width of my finger.

In my proof-of-concept, I sealed off one end with tape. The finished tool would likely have the end blocked by forming the end.

I would make two cuts, shown in red, each about half the channel's width.

Fold the tabs over to close off the end. Then cut the excess floor away and deburr.

I also plan to lengthen the open end to make it easier to position the cap, which catches the excess pills. But then I realized I had closed off the wrong end. In the above picture, the correct end has been closed off.



I made the tool from aluminum and a plastic sheet so it would be easy to wash. I do not recommend 3D printing it because the surfaces are difficult to clean.

I hope you will suggest ways to improve this tool. I will include your ideas in this article so we may all benefit. All of us are smarter than any one of us.

Marv Klotz

Marv Klotz suggested an alternate configuration. He described it in words:

"Imagine a flat comb-like structure made of seven, evenly spaced, strips of flat material (wood, plastic, cardboard) held together with arches so that pills not caught on the V-shaped ends of these strips can pass between the strips as the strip "comb" sweeps through a cluster of pills scattered on a smooth, flat surface.

The edge of the flat surface lies over the open pill box. As the comb reaches the edge, the pills drop into the seven containers.

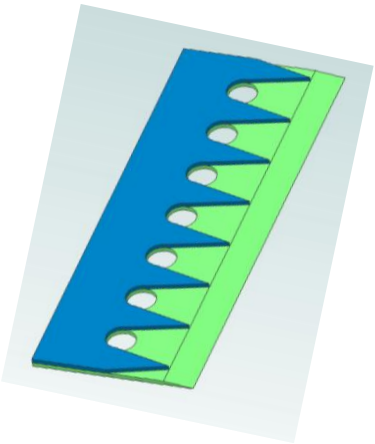
The other edges of the surface have low walls arranged into a funnel-like configuration so that, once the pill box is loaded, the surface can be tilted to funnel the remaining pills back into the container from which they came.

Adapting a pill counter, e.g....

https://www.amazon.com/Right-Hand-Pi...s%2C222&sr=8-6

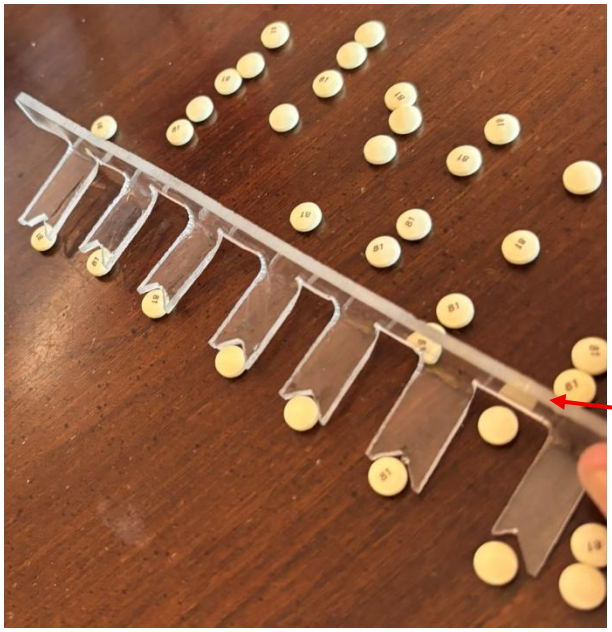
to be the flat surface may save some fabrication time since it's already set up to funnel the excess pills back into their container."

which is always risky, and I have drawn up what those words conjured up in my mind:



Later, Marv supplied a drawing, and I was able to build a model from it.

First, I arranged the pills so the tool would pick them up.



Then I slid the tool into the pills and, as Marv had intended, one pill was caught in each V while the rest were left behind.

The tool tended to fall backward, but this can be fixed by making the fingers longer and the back bar shorter.

Next, I tried elliptical pills. You can see that in 4 of the 7 cases, more than one pill was caught in the V.

Marv then suggested I make a pill-sorting plate with seven V-grooves. Elliptical pills will align along their major axes in these grooves. Then, a means will be needed to separate the first pill in each groove from the rest.

Comparing the comb with the channel with holes design, I have a few observations.

- The comb requires the pills to be spread out over an area as wide as the pill box. Once this is done, the tool easily isolates the seven round pills.
- The channel with holes requires the round pills to be dumped into the tool and then spread across. Excess pills fall out of the open end.

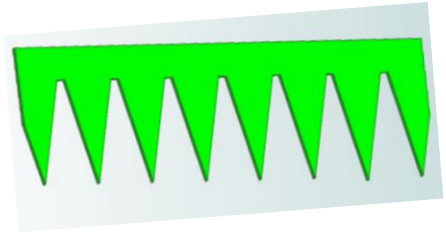
- The channel tool now handles elliptical pills well. The comb tool has a problem, but work continues.
- Capsules clearly do not cooperate with either tool.
- Spherical pills should work fine with both tools.

"Bony"

"Bony" proposed the following:

"I think many of us older folk have the same boring job to do regularly. As drugs are usually dispensed in lots of 30 (well at least they are in Australia), I have 5 pill boxes and the chore of filling them is limited to a monthly excercise. This makes it much more tolerable.
It occurs to me that to make the depth of the V in Marv's comb idea adjustable will overcome the difficulty of sorting pills of different sizes, and save having to use several different trays. (Some of mine are oblong shaped which is another problem.)
The best way of picturing my suggestion is to consider two sets of combs, one on top of the other which are allowed to slide over each other. Think of this like the cutting surfaces of hair clippers, the Vs closing together to cut hair.
Why not use this principle of closing Vs to provide adjustment to accommodate sorting pills of different sizes.

That's my suggestion for part of the problem anyway."



I drew up this model, which has fixed Vs but otherwise accomplishes what Bony suggests. The first pill to enter the V may get stuck. Subsequent pills will be blocked from wedging. After the comb is filled, we move it over the pill box and flex it to release the pills.

I took some 0.1" thick Plexiglas and cut a model. It works well for all sizes and shapes of flat-surface pills, but we usually get more than one pill in each V, so further fiddling is required.

I see no clear winner, so I hope you smart and creative readers will provide more good ideas.

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