Build a track-cleaning vehicle

This battery-powered car requires little attention

by Bruce Jahn | Livermore, California | Photos by the author

When I first thought of building a track cleaner, I felt the machine had to get itself around the track via battery power. I often let my rails get pretty tarnished, so the machine would need to make several laps before you could even see what the rails were made of. However, I don't have a background in electronics so the solution had to be simple.

Building the vehicle

I had gotten used to cleaning the rails with a drywall sander on a pole, and knew that method was effective, so that type of sanding sheet formed the basis of my cleaner. I had scratchbuilt a locomotive using a power truck from an Aristo-Craft diesel, so had a spare motor block just waiting for this project.

I had a 12V, 1.4 amp hour, lead-acid battery with lots of recharges left, which seemed about the right size to power my rig. I enjoy working with acrylic plastic, so I made a quick sketch, dug through the scrap box, then moved to the saw.

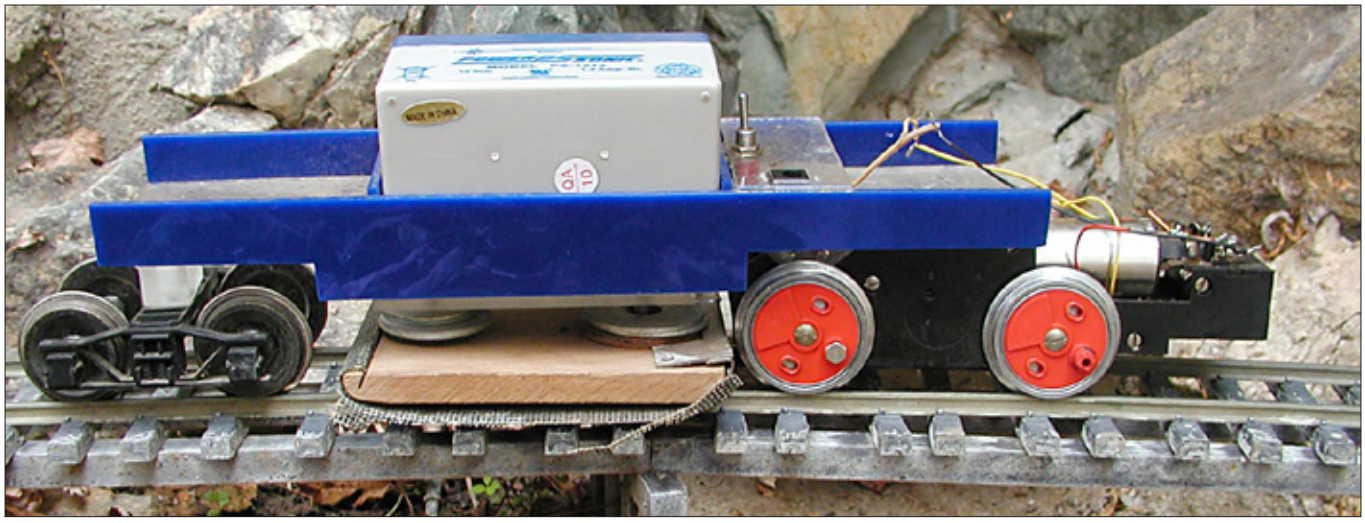
A GARDEN RAILWAYS PROJECT BEGINNER

The actual cleaning surface uses half of a sanding sheet, as one would purchase in the home-improvement store. I used a ⅜" thick x 4½" long x 3½" wide piece of wood as a sanding block, rounding its ends with sandpaper so the sanding sheet wouldn't snag on anything. Using a razor saw, I cut an angled slot in the top of the wood on one end to slide the sanding sheet into, then wrapped the sheet around the bottom of the curved block. A little padding seemed appropriate, so I laid in a sheet of compressed sponge.

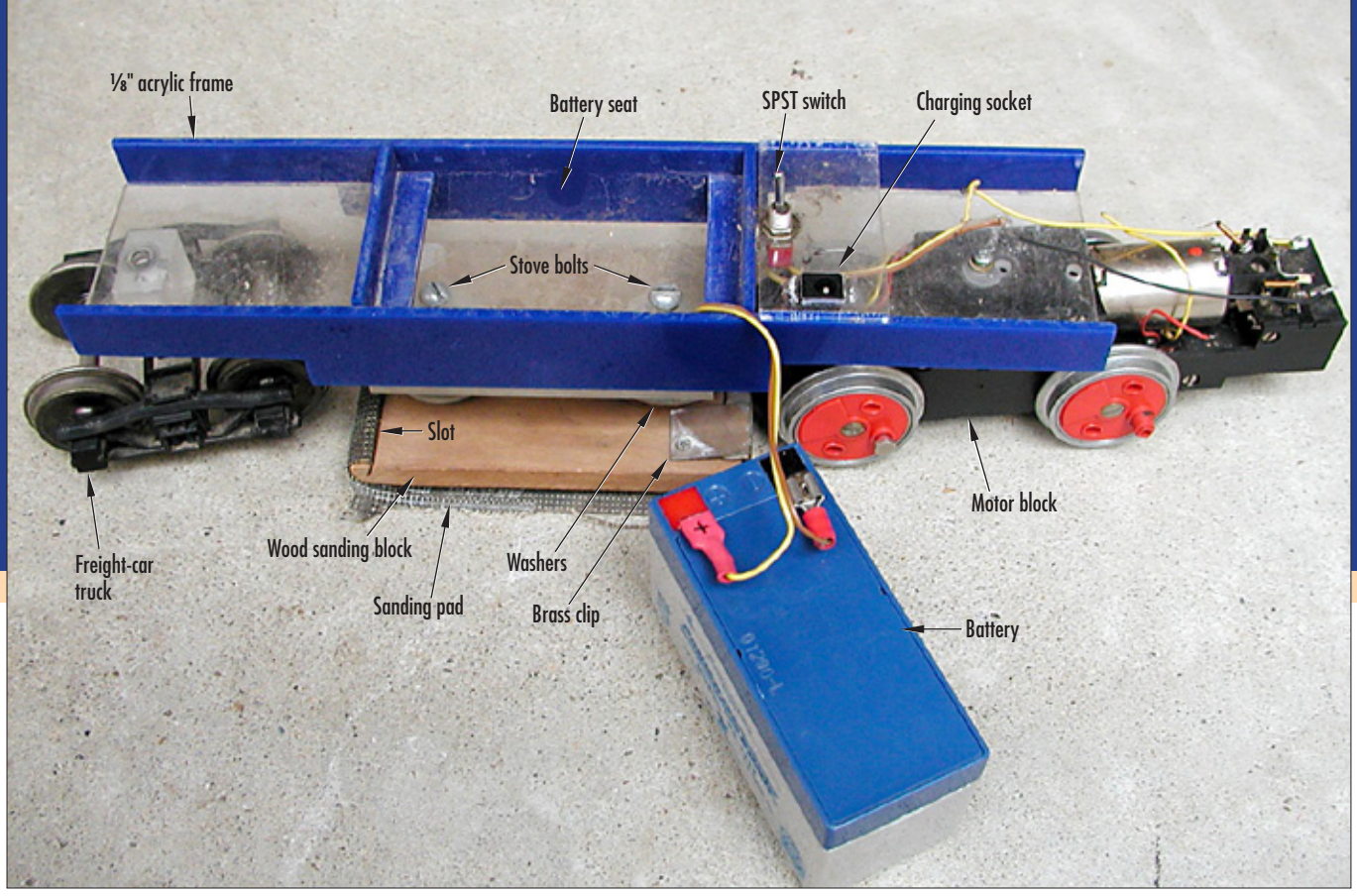
To hold the sheet at the other end, I cut a length of ¼" brass angle stock and soldered on a couple of tabs with holes for #2 wood screws. I then sandwiched the sheet between the brass and wood.

A pair of #10 stove bolts, screwed into the wood, are the connections that drag the block along the track. I used the "trial-and-error" method to determine the number of big washers to weigh the block down onto the rails.

I cut ⅛"-thick acrylic plastic to bring everything together, using acrylic cement to adhere the pieces (if none is handy, CA cement works, too). My acrylic frame is 2½" wide and about 11", long but you could make yours to suit—the dimensions are not critical.



The author's scratchbuilt track-cleaning car. He turns it on and forgets it while it cleans the track on his railway.

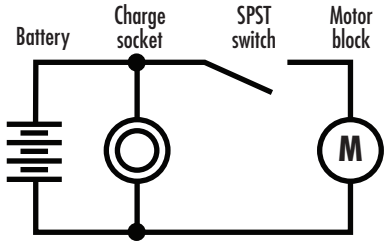


Components of the car. Dimensions are not critical and a similar unit could be made of plastic, wood, or metal.

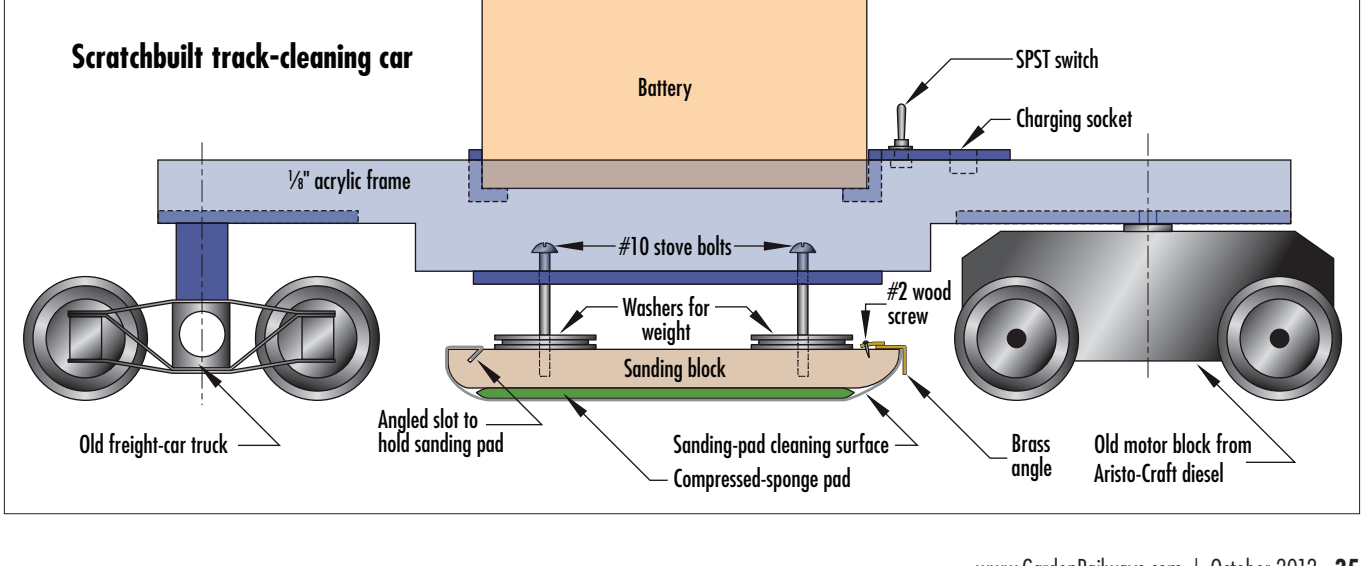
Using the cleaner

For cleaning, I typically put the vehicle on the track, turn the switch on, and walk away, often forgetting it's even there. In a couple of hours (or sometimes the next day) I search the railway for the stopped cleaner (of course the battery will have run down), take it back into the garage, and recharge the battery. A good-quality battery should take several hundred charges before showing any sign of giving up, and my two-stage charger ensures the battery won't be over-charged or heat up.

I've been using this cleaner both on my home railroad and on our modular display for about 15 years. That first motor block finally wore out, so I replaced it with another from my parts box. Except for the need to change the sanding sheet once in a while, the unit just keeps on cleaning while I'm doing more interesting things than cleaning track, which includes almost everything.



Circuit diagram for track-cleaning car



ILLUSTRATIONS BY MARC HOROVITZ