Sundry Snippets 9 - about Springing Mike Sharman

I have just had an entertaining time building my first fully sprung locomotive. Because it is difficult to produce springs with identical loadings, especially on the small, light models I build, I usually stay with compensation, but some very good drawings of a French 0-6-0 tender locomotive of the *Bourbonnais* class turned up. It looked heavy, so I decided to have a go.

So, what can we use for the springs? I tried all kinds of materials and combinations, with all kinds of adjustable mountings, but with very little success, until I settled on a single spring of steel piano wire –or Banjo wire – sold in various thicknesses. Mine are some lengths of wire that were sold for the old *Mercontrol* push/pull points system. So, now I had a spring that had the right "feel" to it, but how to fix it and adjust it?

I made the hornblocks and mounted them in the horn guides in the chassis in the normal way, using the coupling rods to set the wheelbase. Then I started on a range of convoluted, Heath Robinson ideas to mount and adjust the springs – all of which took up much too much space, and did not work anyway. Eventually I soldered a mounting up solid, and tried bending the springs, which seemed feasible until you tried to do it on all six!

What happens is that every time you bend the wire you cause stresses in the material. These alter its rating and weaken it a bit more each time. Eventually, I teased the slight curve out of some new wire, and cut six dead straight bits of the same length, and mounted one end of each in tightly fitting brass blocks. Then, with the horn block at the bottom of its travel, I fed the wire into the horn block, and soldered the mounting block to the chassis frames. Each mounting block has to be at the same position and angle.

After weighting the model with all the solid brass cylinders, sand box, and dome – plus some lead –I had a reasonable result. It is still not "dead" right, as it tends to pitch a little around the centre: I realised – with hindsight ,when it was too late to alter – that I should have had less weight on the centre axle. It weighs about 18 oz., by the way!

You can see the design in the drawings opposite.

Next time I will stick to *Flexichas*!

Mike's drawings and photographs of his 1/76 model to S4 standards of *Mélange* are on the opposite page.

The photographs are by courtesy of *Loco Revue* and Iain Rice.

Spring, sprang, sprung

For any members new to S4, a bit on definitions. The main types of suspensions available to us are:

- **Spring – assisted** These are the hornblocks with the tiny coil springs. They are designed to push a wheel down into any dips in the track in order to maintain good pick up. This works very well, but will not distribute the load.
- **Compensation** Here the load is distributed, by the use of beams and pivots, and of course the pick up is fine.
- **Fully-sprung** This means that a hornblock must be able to move equally above or below a centre line, with the values of the spring having been adjusted to the spacing

and purpose of the wheels. The locomotive should then sit on the centre line when fully loaded.