MODIFYING STANDARD LGB COUPLINGS FOR MAGNETIC DELAYED ACTION UNCOUPLING

By David Goldsworthy

THE APPLICATION

I am in the process of constructing *Gernise End* the rural terminus of *The Claptowte Railway.* This is to be a freelance British outline 'portable' indoor exhibition layout in G Scale (1/22.5). It is essentially a shunting layout with the track plan incorporating a copy of the well known shunting puzzle, Inglenook Sidings.

In order to operate such a layout I have need of a flexible automatic uncoupling system that operates in a similar fashion to the Kaydee knuckle coupler. That system allows the couplings to be uncoupled by a magnet set unobtrusively between the running rails. Once the wagons are uncoupled they can obviously be drawn apart. In addition the most important feature is that the wagons can also be pushed along, without the couplers re-engaging, to any position on the layout and deposited there. I did not want to fit my stock with knuckle couplers for reasons of cost and appearance and as far as I am aware there is no propriety European style 'Hook & Bar' coupling that operates in a similar way.

For many years modellers in the smaller scales have relied upon a coupling system that operates in just the manner described above. It is the Sprat & Winkle Autocoupling which these days is manufactured by Model Signal Engineering of Barton upon Humber, England.

It is available in N, OO and O scales. Their details can be found on www.modelsignals.com . The couplings are supplied as an etched brass fret that only requires removal from the fret and a simple bend in order to assemble. It occurred to me that it should be possible to modify the standard LGB hook & bar coupling by removing the hook and replacing it with an O scale (7mm) Sprat & Winkle (S & W) hook.

I set about experimenting and came up with what I consider to be an extremely simple and effective modification that fulfils all of my requirements. When set against the cost of Kaydee knuckle couplers it is also extremely cost effective. At the time of writing a kit containing a fret of 22 Autocouplings, with all the necessary fixing and operating wire and 2 uncoupling magnets, is priced at £15.00 (as at 24.5.15).

A word of caution, while the system I am about to describe is eminently suitable for an indoor layout that is level I doubt that it would not prove robust enough for the rigours of a garden railway particularly over undulating track. That said, in the intended indoor environment it should work faultlessly as it has done in the smaller scales for many years, and should fully satisfy my personal requirement.

I do not claim to have invented this modification for it appears to me to be such a logical and simple application that I feel sure that some one else must have come up with the same idea and be using this system somewhere. It is just that I have never seen it applied elsewhere in G Scale or 16mm and I have never seen a reference to it in the modelling press. Who knows, if there is sufficient uptake of the idea and the demand is there, perhaps Model Signal Engineering might feel it was profitable to produce a larger, heavier version more suitable for mainstream G Scale and/or 16mm use.

If running fixed rakes of coaching stock or even freight wagons there would be no need to modify intermediate couplings it would only be necessary to modify the couplings on the locomotive and at each end of the rake. This would enable, for example, a fixed rake of coaching stock to be uncoupled and run around at a terminus station. I appreciate that it would be possible to do this with unmodified LGB couplings and an LGB uncoupling ramp but this system has more operating potential and is smaller and less obtrusive, a more fine scale approach.

THE MODIFICATION

Please note that the diagrams are not to scale and that the positions of any holes etc are only approximate, I am not a draughtsman.

First take one pair of standard LGB European style hook & bar couplings with a hook on one coupling only (fig.1). It does not matter if both couplings have hooks as the first step is to dismantle the coupling to remove the hook (fig.2).

fig.1

fig.2

Turning one of the couplings upside down use a razor saw or similar tool to cut off the peg that supports the LGB hook (fig.3a) then use a scalpel or craft knife to clean up the profile (fig.3b). It is only necessary to remove this peg from one of the pair. If at some time in the future you wish to convert back to standard LGB couplings then the LGB hook can be re-attached to the second coupling which does not need to be modified in this way.

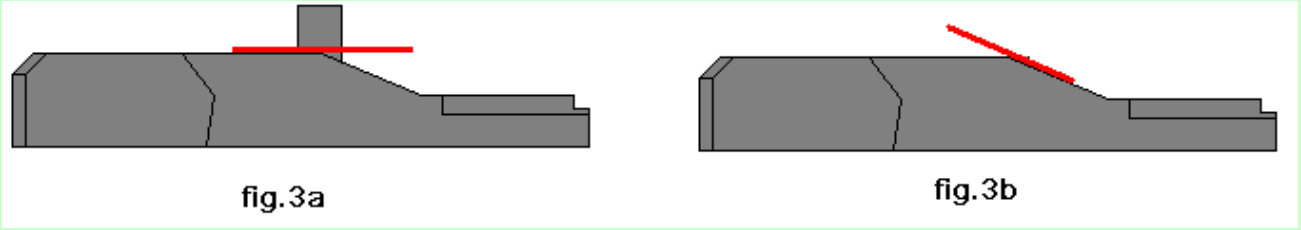


fig.3a fig.3b

Remove a Sprat & Winkle coupling from the fret and remove the burrs, where it was attached, with a small file. If you intend to paint your couplings black or some other dark colour in order to make them less obtrusive it might be an idea to spray the whole fret with a matt or satin car spray before removing any couplings from the fret. Any subsequent scratches or chips can be retouched after assembly. When I was experimenting with this system I painted the S & W hook after I fitted it. The paint gummed up the works a bit. I found that brushing a little talcum powder into the affected area dried up any residual stickiness in the paint and lubricated the action so that it worked perfectly.

Follow the instructions and twist the paddle 90 degrees to the hook. There is no need to make any of the other bends required to assemble the coupling for O gauge use. Offer up the S & W coupling to the correct position on the underside of the LGB coupling. Use a small drill, to suit the size of the nickel silver wire supplied, pass it through the two holes in the paddle and mark the position of the two holes (fig.4a). The paddle can then be removed and two holes drilled right through the LGB coupling (fig.4b). I used a hand held pin drill but no doubt a Dremel or similar miniature electric drill would speed up the process. Make sure that the holes are drilled straight to avoid them breaking into the large round hole on the top surface. That hole fits over the peg on the vehicle and if that is obstructed in any way you will be unable to re-fit the coupling (at least not without carving away part of the peg).

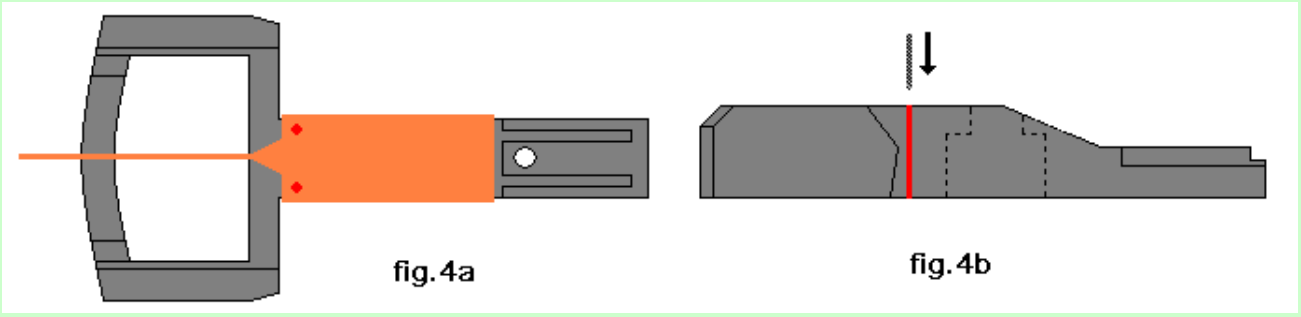


fig.4a fig.4b

Cut and bend a length of the nickel silver wire into a long legged staple and attach the paddle by passing the staple through the paddle and the underside of the LGB coupling. Snip off the excess wire and fix with two drops of superglue (figs.5).

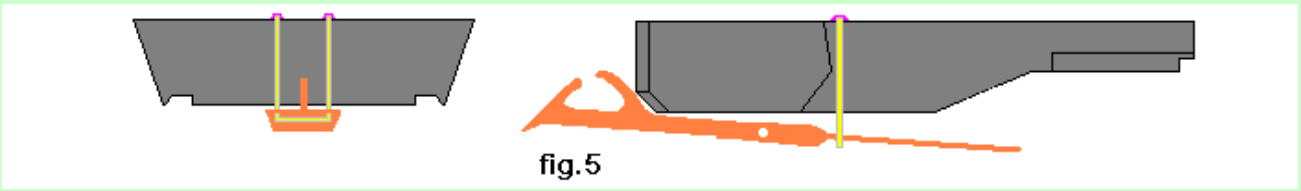
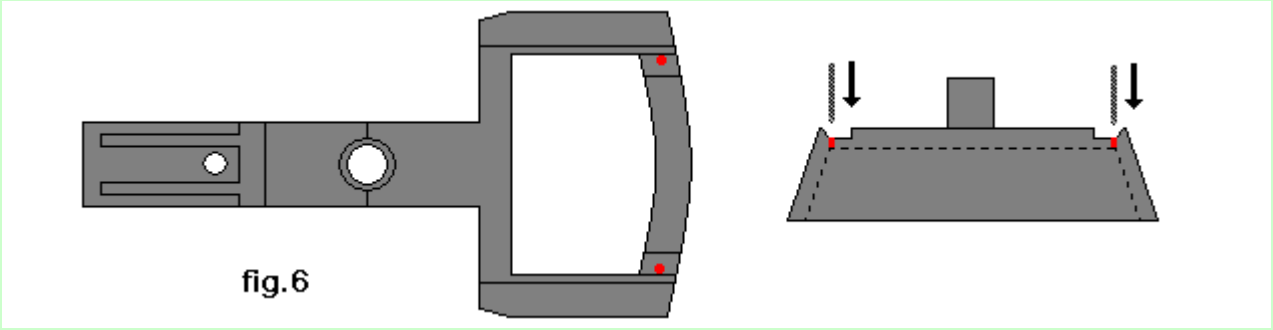


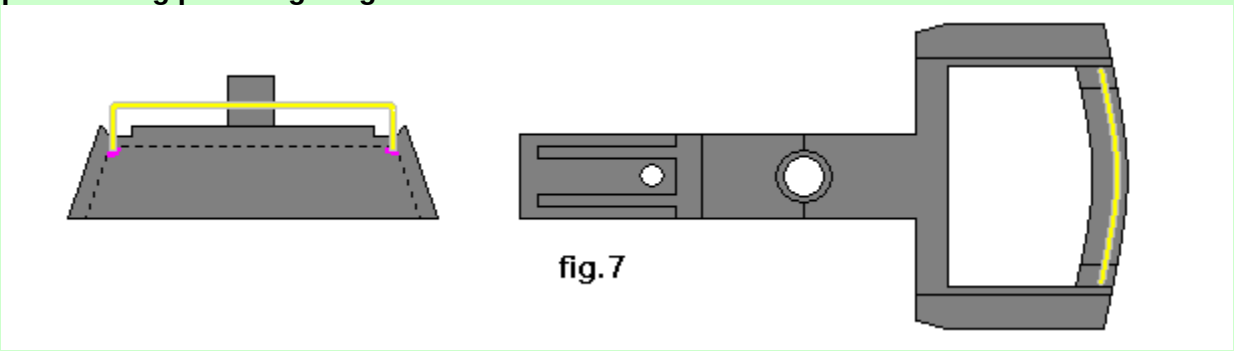
fig.5

Apart from forming the dropper chain, made from the soft iron wire, and attaching it to the S & W hook the coupling is complete.

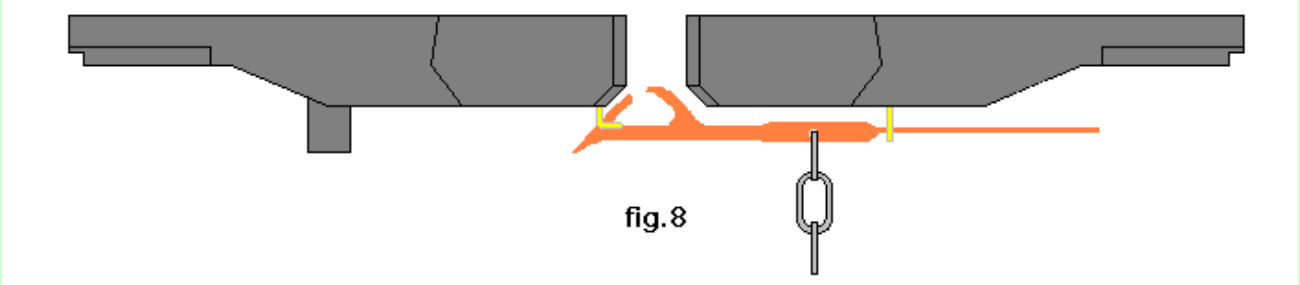
The modification to the second coupling is far simpler. Again with the coupling upside down drill two holes at the extreme width of the coupling bar (fig.6). The full width is required to allow for sideways movement of the hook when the stock is negotiating small radius curves and pointwork particularly where reverse curves are encountered. Do not be tempted to reduce the width for cosmetic reasons.



Take another length of the nickel silver wire and bend another staple shape to span the two holes. It will need to be curved to follow the contour of the front of the coupling (fig.7). Snip off any excess on the inside and secure with two drops of superglue. I cannot give you measurements for the height of the wire coupling bar but it can easily be found by experimenting prior to gluing.



Your two modified couplings are now complete (fig.8). If at any time in the future you wish to revert to Standard LGB Couplings all that is required is to either pull out or snip off the nickel silver wires and re-attach the LGB hook to the post on the unmodified coupling. If you decided you were 'never going back' you could remove the post on the second coupling for a neater, less obtrusive appearance.



OPERATION

Set the magnet between the running rails at a suitable location. A single magnet could be used to operate a whole 'fan' of sidings in a goods yard. Stock can be pulled or pushed over the magnet without effect, it is only when a coupling is stopped over the magnet that the soft iron wire chain is pulled down by the attraction of the magnet and uncoupling is effected (fig.9). Stock can then be drawn apart. In order to re-engage the coupling it is necessary to push the stock beyond the magnet so that it no longer exerts any influence on the hook (fig.10). In practice the hook snaps up and down in a very positive manner.

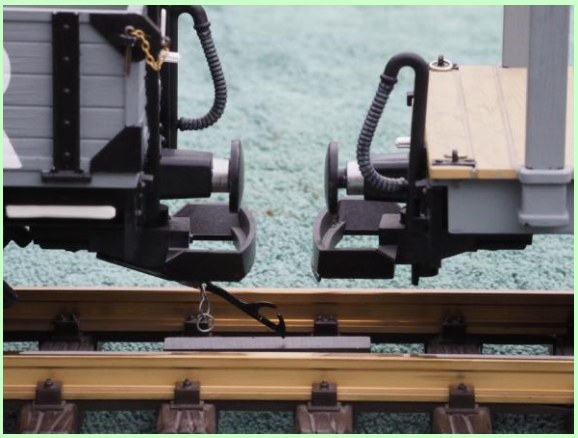


fig.9

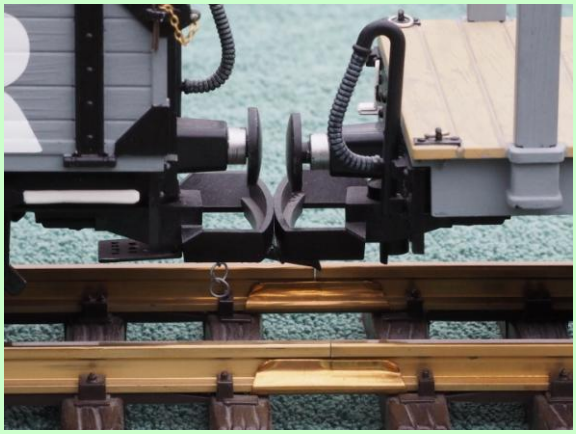


fig.10

By withdrawing slightly, to allow the hook to fully return to the 'engage' position, and then buffering up, the coupling will re-engage and the stock can be drawn away. The hook will not engage until you have drawn away slightly, this means that after stopping over a magnet and uncoupling the stock can be pushed forward to any position you like. When you withdraw the coupling will not re-engage and stock is left behind (fig.11). Buffering up in the normal fashion will then re-engage the coupling (fig.12).

fig.11

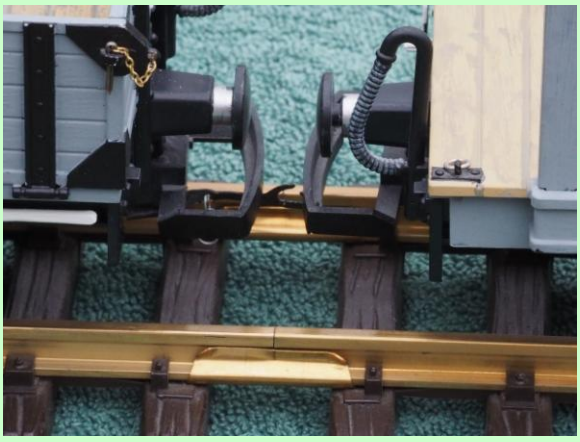


fig.12

<u>IMPORTANT NOTE ON POINTWORK</u>

I have found from experience that this system does not work well with Radius 1 (2 Feet) points. For this reason i would suggest the use of Radius 3 points. I have had to redraw my own track plane to incorporate Radius 3 pointwork as a result.

VARIATION

The system as described relies on a hook at one end of the item of stock only as with normal LGB practice. I would suggest, although I have not experimented further myself, that the system could be made more robust if hooks were placed at both ends of the vehicle. Two hooks would double the number of attachment points and therefore the security of the coupling. It would mean of course removing the pegs from both LGB couplings so that there would be no possibility of re-fitting the LGB hook at a later date. Both hooks would be uncoupled by stopping over the magnet and the system would operate in the same way. This is common practice in the smaller scales that the S & W couplings were designed for. The limiting factor that would determine whether or not this would be practical would be the radius of any curves or pointwork to be negotiated. The hooks would have to be slightly offset as per the S & W instruction leaflet and this would restrict the radius of operation in the same way that fitting a too narrow wire bar might.

I hope I have covered all the angles and pitfalls of this conversion, as I have said I accept that it is unlikely to suit those who operate G Scale (or 16mm) in the garden but for an indoor layout, especially where the emphasis is on shunting then I believe it has a lot to commend it. Who knows it might inspire some one reading this to build a shunting layout who had not previously considered it.

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September 2005
(updated 24.5.2015)