Rumney Models – Mineral Wagon Chassis Instructions

Notes

These instructions cover the following chassis kits:

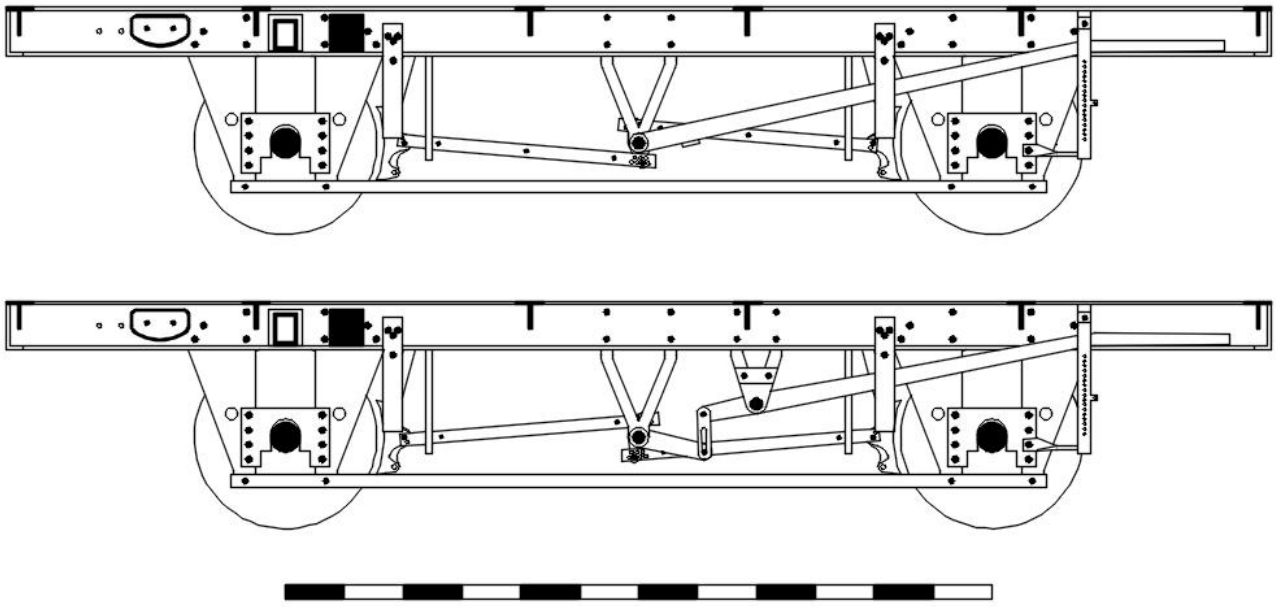
B.21 BR 21/24½T welded body
B.22 BR 21T riveted body
B.23 RCH 20/21T

All the kits are for steel solebar fitted prototypes and provide a complete chassis that can be painted separately from the body. They are all designed around Parkside Dundas bodies except for the RCH 20T type which is designed around both the Parkside LNER kit and Dapol GWR body. Other bodies may be used but I have tailored the side support brackets and door springs to fit these kits so they may not line up completely accurately.

B.21 covers the diagram 1/107 21T welded and diagrams 1/115 and 1/118 24½T types. The Parkside 24½T mineral wagon provides bodies for all three types. The 21T can be made by cutting down the sides and ends, removing the top doors and attaching new bracing to the top of the sides. This conversion was covered by Peter Totman in MRJ 71. The only differences between the 1/115 and 1/118 24½T diagrams was the fitting of roller bearings and double door springs to the later.

B.22 covers the diagram 1/110 21T riveted types. The Parkside 1/110 kit provides the body.

B.23 covers the 20T LNER steel loco coal wagons as depicted by the Parkside kit and the GWR 21T Felix Pole minerals as depicted by the Dapol/Airfix/Hornby body. Handily the Dapol body can be found as an unpainted spare. It lacks internal detail but I might do something to fix this at some point. Other bodies may be suitable.



Construction Notes

Read through the instructions first and familiarise yourself with the components. Drawings and photographs taken during the construction of the test etches are included to attempt to make my waffle clearer. Note that not all the photos are from chassis covered by this set of instructions but they will suitably illustrate the point in question.

All fold lines are through 90° with the fold line on the inside unless stated otherwise.

Everyone has their own soldering methods. I now use a temperature controlled soldering iron with predominantly 145° solder and La-Co paste flux. For a long time I used an Antex 18W soldering iron on virtually everything with few problems.

Check all holes before removing parts from the fret. The drawing process for etching if you use a CAD program as I do is extremely accurate but the actual etching process itself not an exact science. If the fret is slightly over etched then there is no problem but if they are under etched the holes will need enlarging. I find that this is easiest to do before removing parts from the fret. The hole sizes will be noted at the appropriate points.

Technical

The suspension is individual springs made from 0.008" steel guitar wire soldered to the etched spring/bearing carriers. For this you will need a suitable flux. I use Carr's Black label. If the finished vehicle is weighted to 50g with the weight evenly distributed then this will produce a spring deflection of 0.5mm. Don't be tempted to up the gauge of spring wire. Even moving up to 0.009" springs will have a significant effect on the spring deflection. Also don't over weight the wagon or the springs will not have enough upwards movement before they hit the W-Irons. Think of the 50g total as an ideal weight but also a maximum. There are notes on weighting the wagon at the end of the instructions.

The chassis is designed to produce a buffer centre height, when the kit is completed and weighted to 50g of 13.8mm when using Exactoscale wheels. The Exactoscale wheels are 13.4mm (3'1½") in diameter. Different makes of wheel may affect the ride height depending on their diameter.

Materials list

A few different sizes of wire are needed to build the chassis. Eileen's Emporium are good source for these and they do a mixed sizes pack if you don't want to buy large quantities.

0.31mm - Brakegear, tiebars, lever guards
0.8mm - Main brake cross shaft and Morton clutch brake levers
1.0mm - Alignment pins

You will also require items such as wheels, bearings, buffers, axleboxes and springs as well as couplings to complete.

For buffers I would recommend those produced by Lanarkshire Model Supplies. They are by far the best around and a lot of types of buffers are available pre drilled for fitting sprung buffer heads. This service is particularly useful for heavy duty buffers with their large 2.5mm shanks. The quality is excellent. The majority of wagons that are covered by these chassis will have had 1'6" buffers. Lanarkshire Model Supplies do various suitable 2 rib and 4 rib examples. The 1/118 24½T minerals seemed to have a mixture of 1'6" heavy duty buffers and 1'8½" Oleos. As always check your prototype. If you intend to make your buffers sprung then MJT and Wizard models do turned heads and springs.

Axleboxes and spring castings of various types are available from MJT and Wizard models. The MJT 7 leaf springs are pretty good and Wizard Models do a good heavy duty BR two part oil axleboxes along with various roller bearings. Many of the BR built examples were fitted retrofitted with roller bearings in the late fifties/sixties.

For couplings I use Masokits coupling hooks and Exactoscale links either 3 link or instanter. The Exactoscale instanter links are particularly good. These are available through C&L.

Contact details for the above suppliers can be found at the end of these instructions.

Component List

Note: Not all parts are on every chassis kit.

1 - Chassis top plate
2 - Axleguard assembly
3 - Solebars
4 - Solebar overlays

6 - Side support brackets

8 - Brake shoes/push rods
9 - Push rod cranks
10 - Push rod safety loops

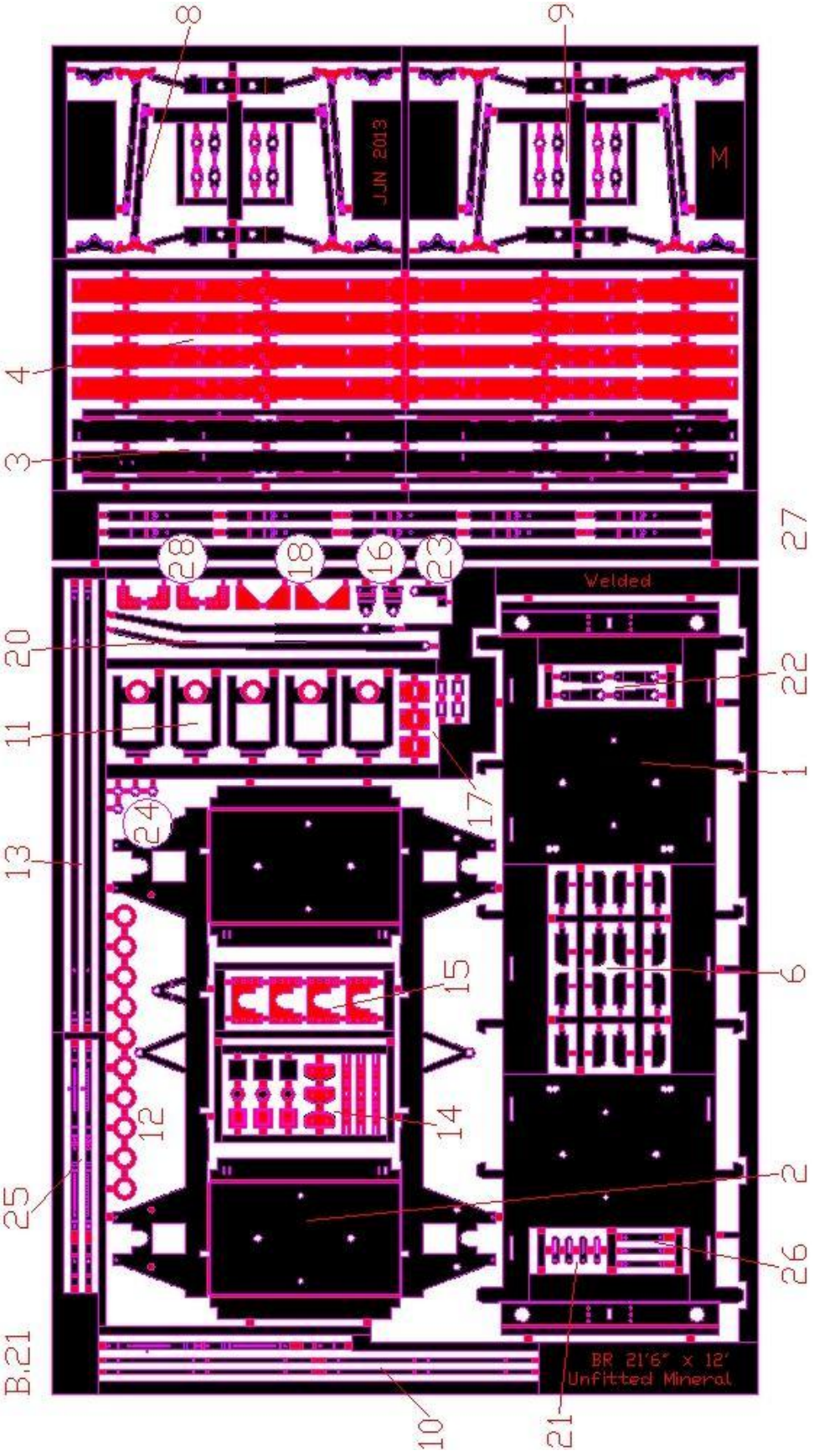
11 - Spring Carriers
12 - Bearing washers
13 - Tiebars

14 - Solebar detailing
15 - Riveted axlebox guide overlay
16 - Secondary brake lever vee overlay
17 - Coupling pocket detail
18 - Solebar/Headstock corner plates
19 - Solebar/Headstock rivet plates (riveted body types)

20 - Brake levers
21 - Lifting links
22 - Lifting link cranks
23 - Brake lever actuator
24 - Brake lever washers
25 - Brake lever guards/brackets
26 - Brake lever guard stays (the stays on B.23 are etched as part of the lever guard)

27 - Door springs
28 - Wagon body top corner plates (riveted body types)

30 - GWR type brake lever guard/bracket/stays (B.23 only)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BR 21'6" x 12'
Unfitted Mineral
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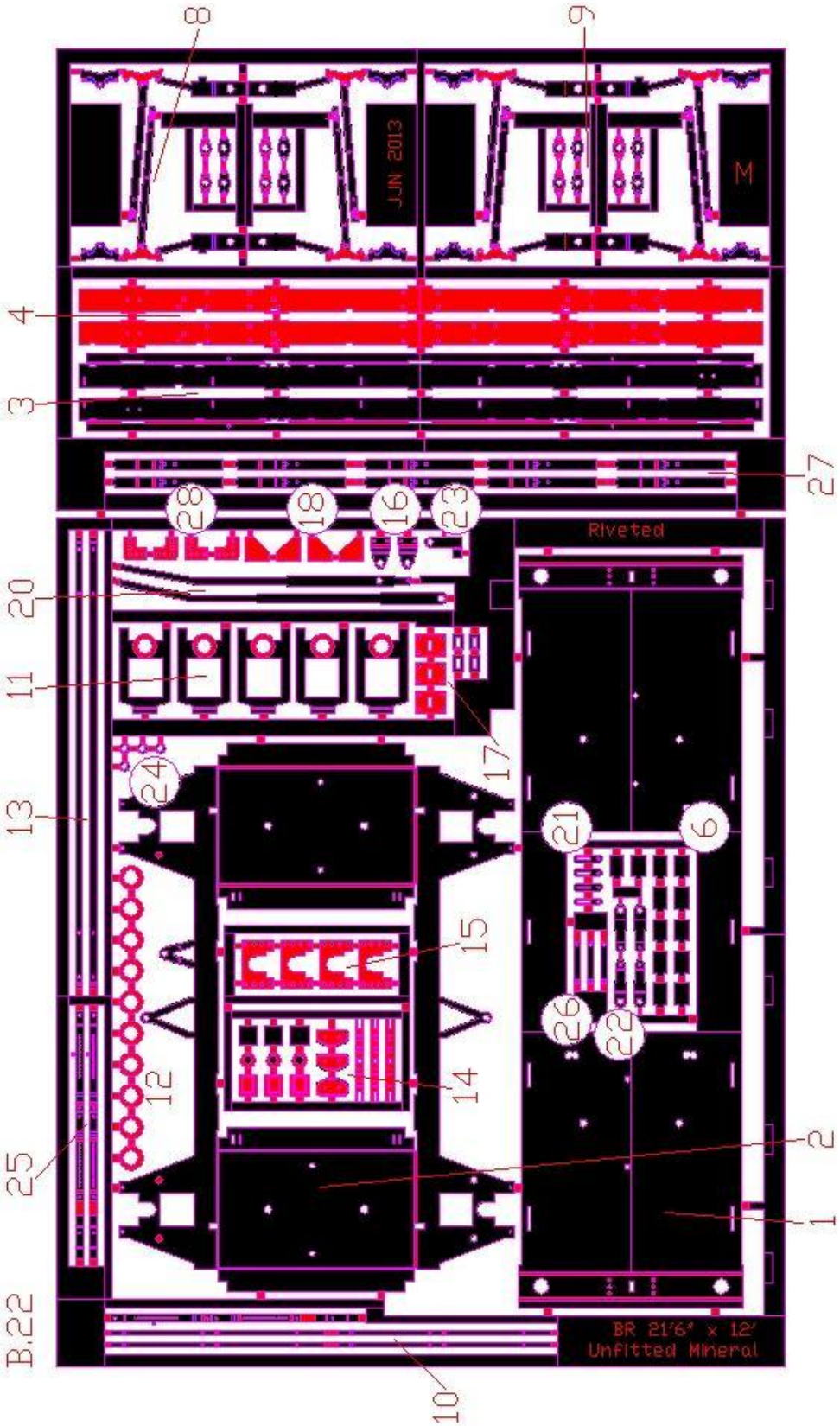
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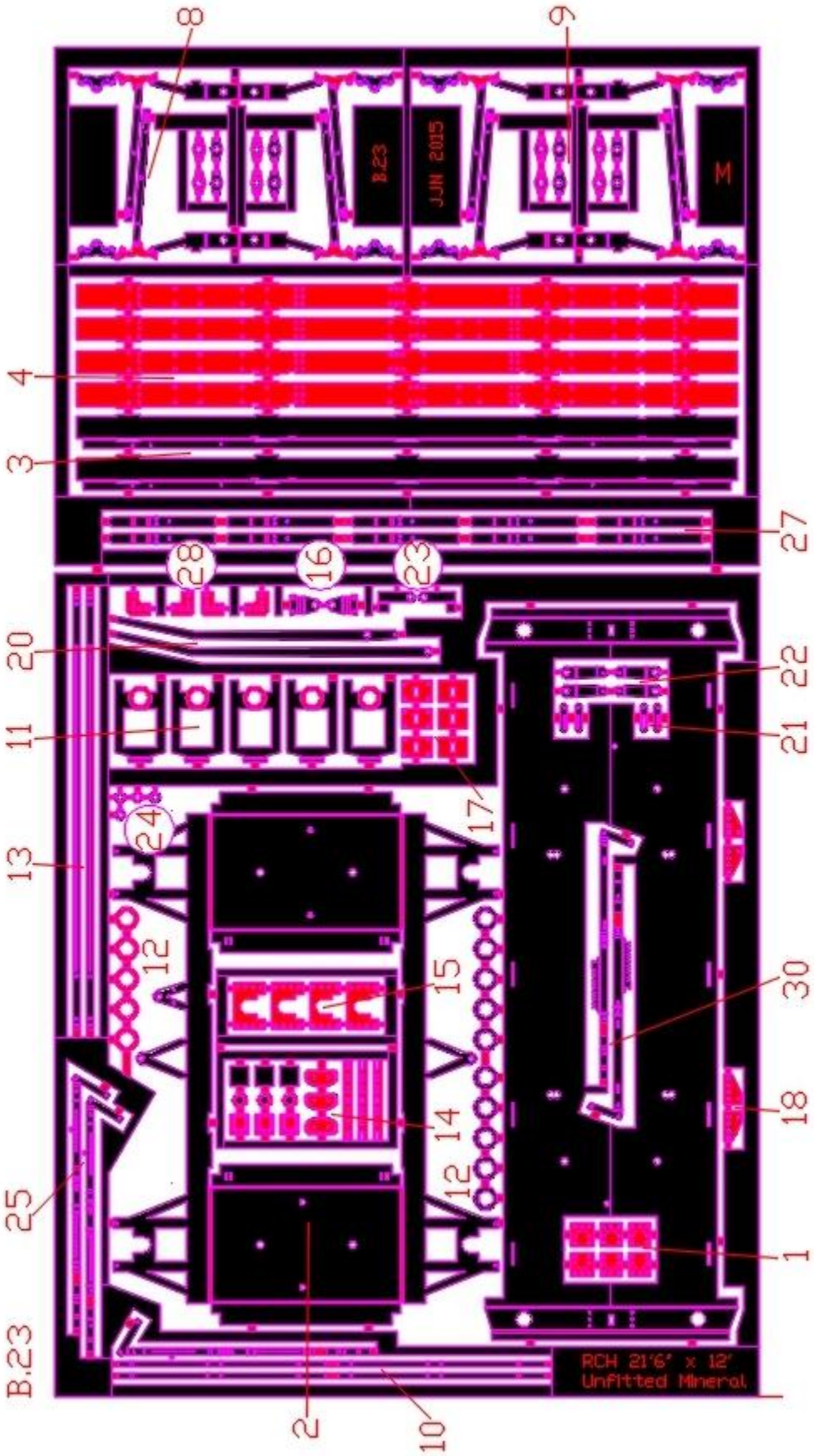
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Unfitted Mineral

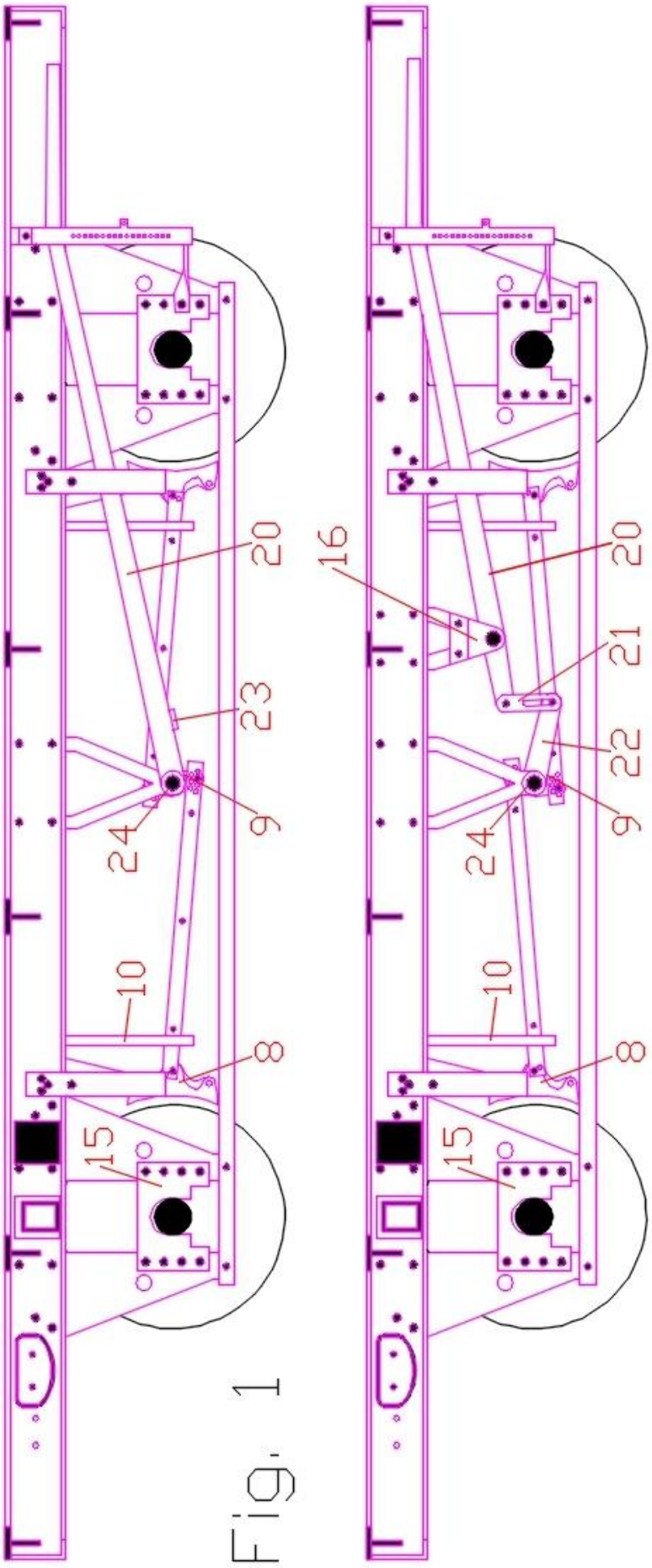


Fig. 1

Construction

Main Chassis

Firstly check the fit of your buffers in their holes in the headstocks. It may sound a bit odd starting with something that usually goes on at the end but it will be much easier to open out the holes now rather than later.

Start with the chassis top plate (1). Push out the half etched rivets on the headstocks if required. Check your prototype. Many welded chassis didn't have them. I find the easiest way to do this is with a drop head rivet press with the fret placed over one of those ubiquitous green cutting mats. Remove from the fret.

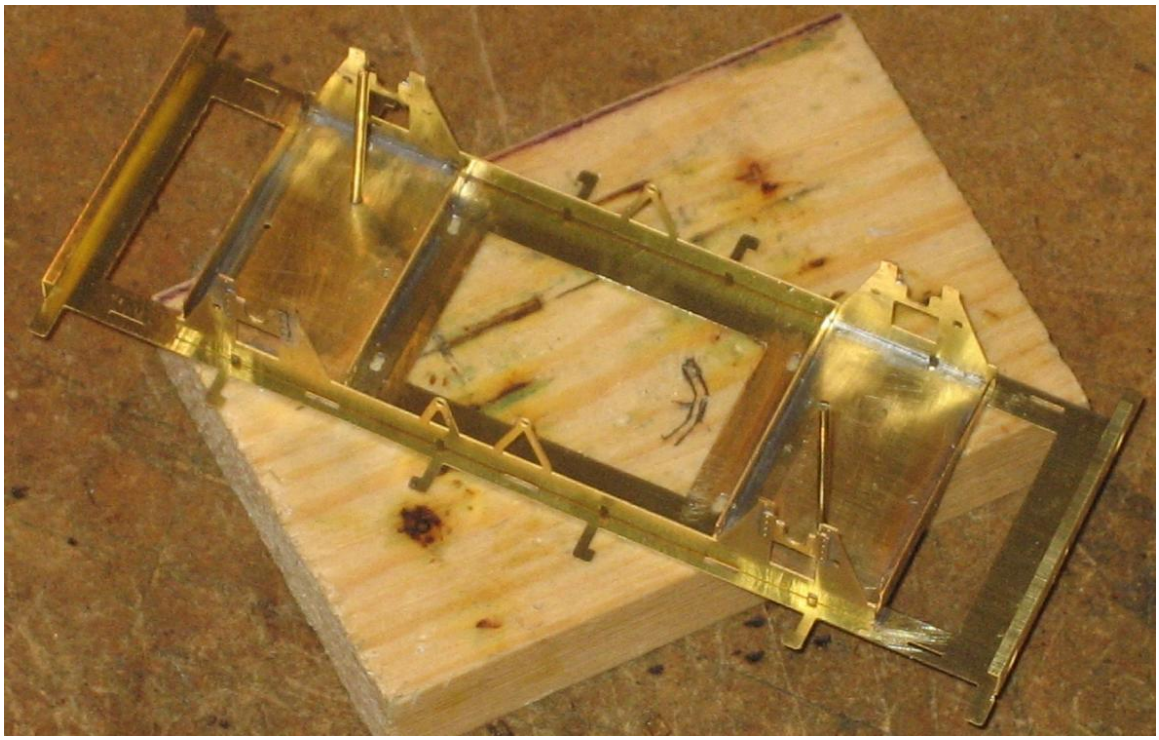
The headstocks need to be folded up. This is best done with the chassis top plate clamped to something or held in a vice to avoid distortion. There are two sets of fold lines as the headstocks need to be folded into a channel. Starting with the outermost parts of the chassis top plate fold through 90°. You can reinforce this fold line of you wish but I haven't found need to do this. Next fold the headstocks through 90° to form a channel. Do not reinforce with solder yet.

Check that all the holes in the in the vees on the axleguard assembly (2) will accept 0.8mm wire. Check that the small holes in the secondary brake lever vee will accept 0.31mm wire. If necessary drill out the holes on the backs of the axleguards as per your prototype (they did vary) using a 0.85mm drill then remove from the fret. Remove the detailing from the middle of the W-Iron assembly and clean up connecting tags.

Etched riveted axlebox guide overlays (15) are included on the fret. If you wish to make use of them now is by far the best time to fit them. Use the slots for the axles as a guide and solder in place. Make sure they will end up on the outside of the axleguard.

Carefully fold up the sides and the four spring supports. Make sure that the sides are at 90° and adjust if necessary. Reinforce the fold lines with solder.

The chassis top plate and the axleguard assembly then need to be soldered together. There are 1mm diameter holes on both the top plate and axleguard assembly to aid location. Using short lengths of 1mm wire with the ends tapered slightly pin the two parts together. You may need to open out the holes slightly but make sure the wire is a tight fit. Solder the two parts together and then remove the locating pins. I have noticed a tendency for the top plate to lift in the centre when the solebars are fitted so make sure area around the vees on the axleguard assembly are soldered to the top plate.



Next remove the solebars (3) from the fret and fold into an L shape. I find the best way to do this is in a vice.

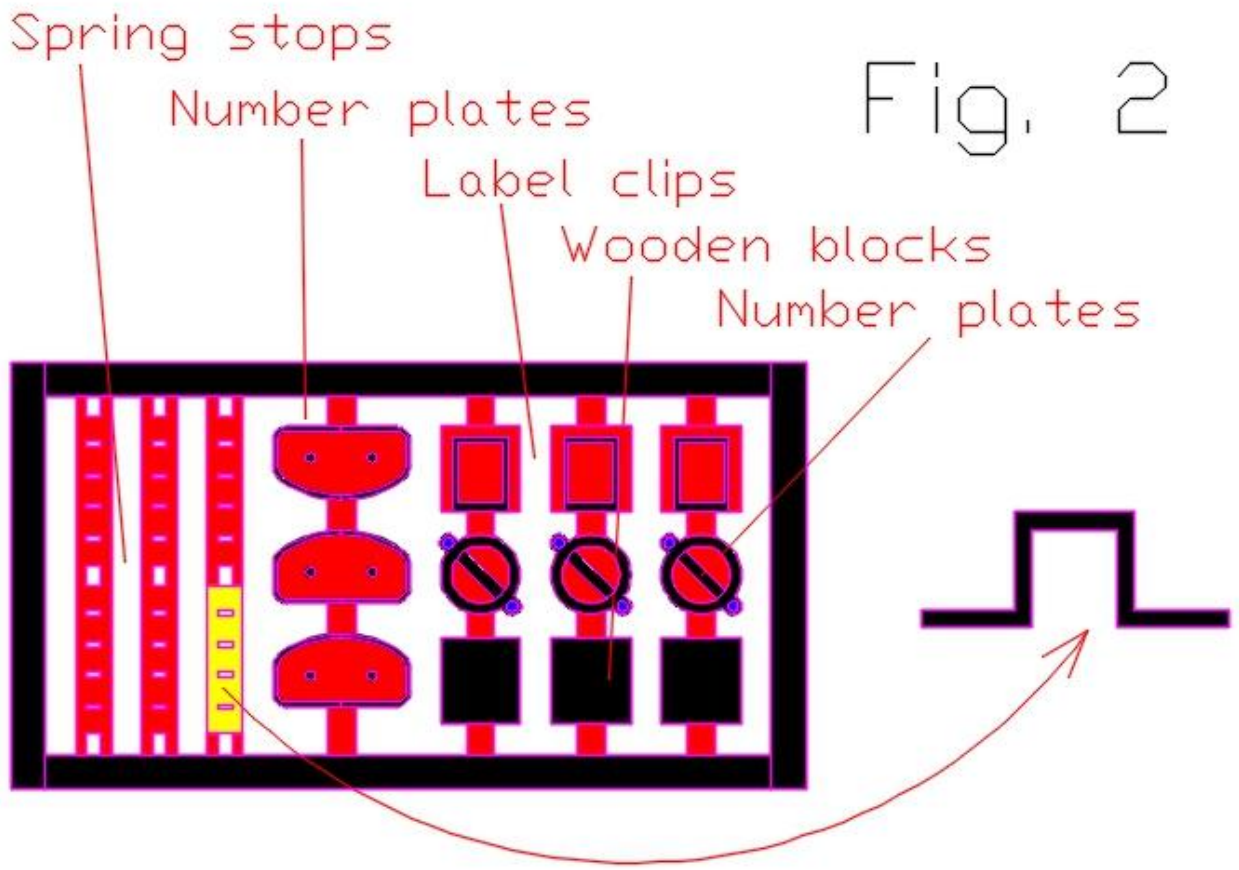
Remove the solebar overlays (4) of your choice, if there is a choice, from the fret. B.22 comes with only one set but B.21 and B.23 come with two. The difference between them is the number and position of the notches etched out for the door springs. Taking B.21 first there is one set with two door spring notches per side for diagram 1/107 21T and diagram 1/115 24½T minerals and one set with four door spring notches per side for 1/118 24½T minerals. B.23 has a choice of a set with no notches for door springs which are intended for those prototypes that didn't have door springs (obviously!) and another with four sets notches per side. The positions of the notches on the later set are optimised for the Dapol GWR N32 Felix Pole mineral. It should be fairly obvious which sets are which on the fret.

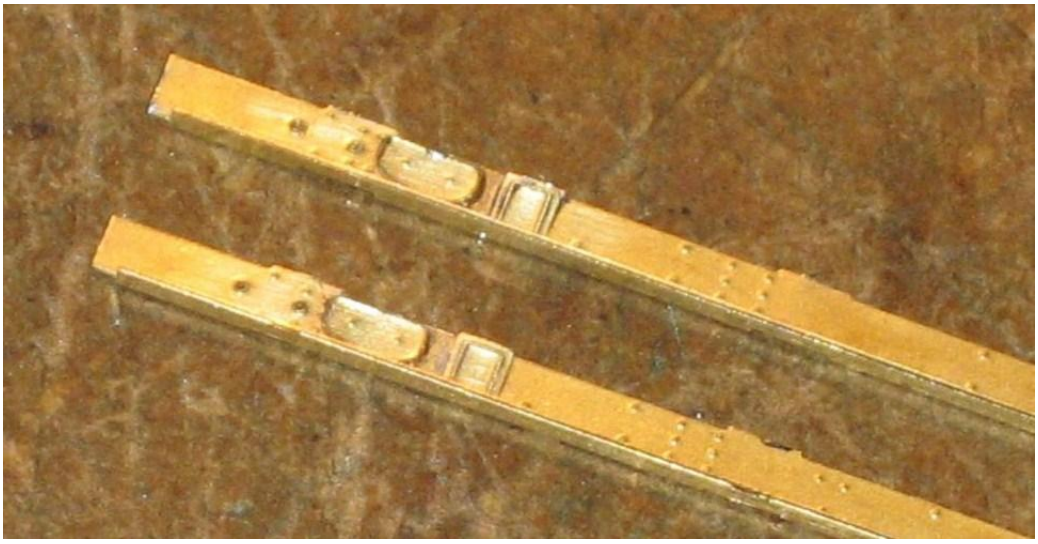
As a result of the etching process there should be a curve through them with the ends closer to you if looking at the rivet detail side. Carefully bend them so that the curve is reversed slightly and that the ends are further away when looking at the rivet detail. This can easily be done between thumb and forefinger but take care not to put any folds into it.

Now is probably the easiest time to attach the solebar detailing to the solebars so I shall cover this now before returning to the business of assembling the chassis.

Solebar detailing

The solebar detailing (13) comes contained in its own little fret. See Fig. 2 below. On it you will find fabricated axle spring stops, two sorts of number plates, label clips and a rectangle that is actually a block of wood on the real thing. I have no idea what the purpose of the last item is but it was quite common. By far the most common type of number plate were the D type but the circular ones could also be found on early build steel minerals. If you're really brave there are half etched holes that can be pressed out to represent the rivets on the round type. The positions of all this stuff varied so check your prototype. The details can be soldered on or glued. If you wish to glue the detail on its best left until the chassis is assembled.





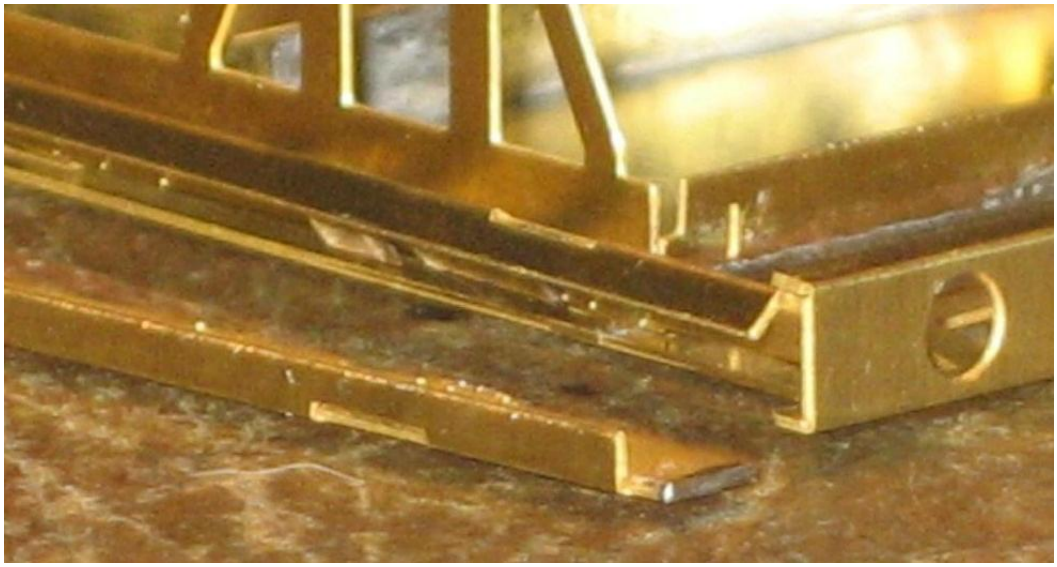
Main Chassis Continued…

The solebar overlays are designed to fit into the slots in the solebars. The completed solebar then locates into the slots in the chassis top plate. Locate the solebar detailing overlay in the solebar and tack solder in pace. Note that there is a right way up for all the overlays (if in doubt the notches for the brake lever guards, side support brackets and door springs should coincide with those in the solebar) and also a correct side for the solebar detailing on chassis, i.e. the rivets in the centre of the detailing should line up with the vees. See Fig. 1 if you are unsure. Do one solebar at a time and lightly solder in place once happy with the fit.

Some early welded chassis had horse hooks despite the holes in the Plate type axleguards as did those fitted with the RCH heavy duty axleguards (B.23). If appropriate there are holes in the solebar that can be used to drill 0.3mm holes through the solebar detailing overlay to locate them.

The solebars can now be fitted to the chassis. There are slots and tabs to aid location and the ends go into the channel that is the headstock. Don't forget that the solebars have a correct side, as outlined above. Once in place then the solebar can be soldered in place. The accessible fold line on the headstock can now be reinforced with solder if you wish though I don't tend to bother doing this.

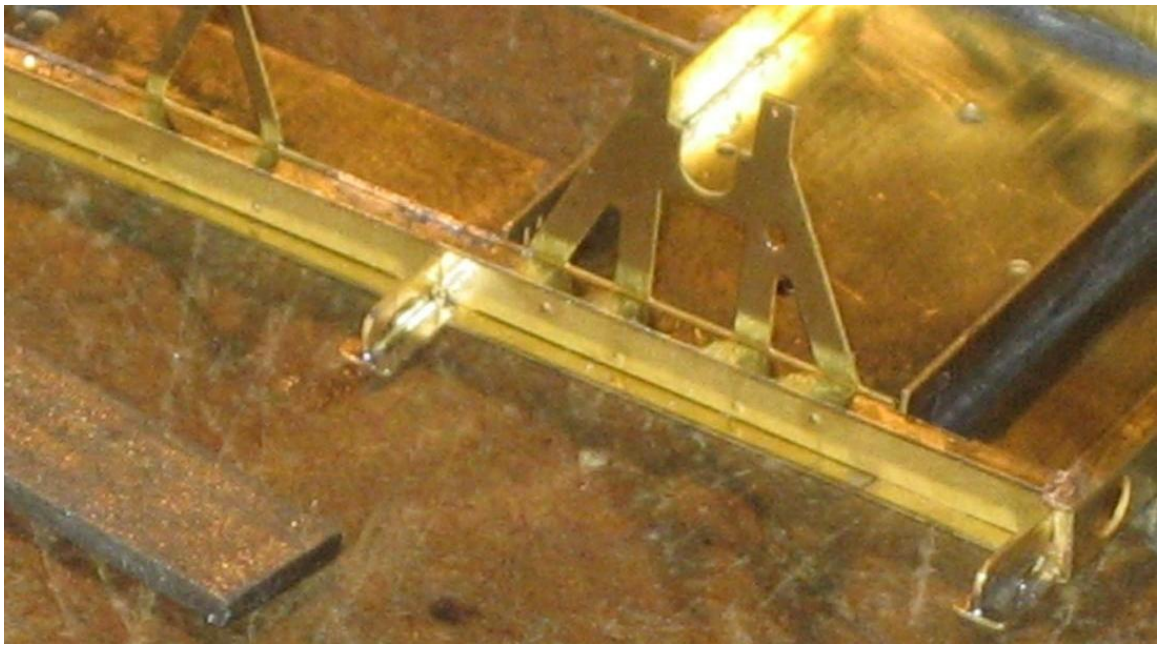
The corner plates (18) can also be added now. They are simply a triangle to reinforce the solebar/headstock joint. The angled part should face towards the inside of the wagon on welded types and towards the outside on riveted.



Wagon side support brackets

There are two types of side support brackets (6) for B.21 and B.22 depending on the whether the vehicle body was of riveted or welded construction. The welded types were formed of T section and this has been replicated by etching the top part of the T on the chassis top plate. The riveted types had brackets that attached to the side stanchions. These are located to the solebar via slots and tabs.

Taking the welded types first. The connecting tags should be removed and then they can be located in the slots through the solebars and solebar detailing. They can be soldered in place making sure that they are square to the top part of the T. The spacing for the support brackets have been arranged to match the models stated in the notes at the beginning of the instructions.



The riveted types are located to the solebar using tabs and slots in a similar manner to the welded types. You need to make sure the connecting tabs are removed completely.

Spring Stops

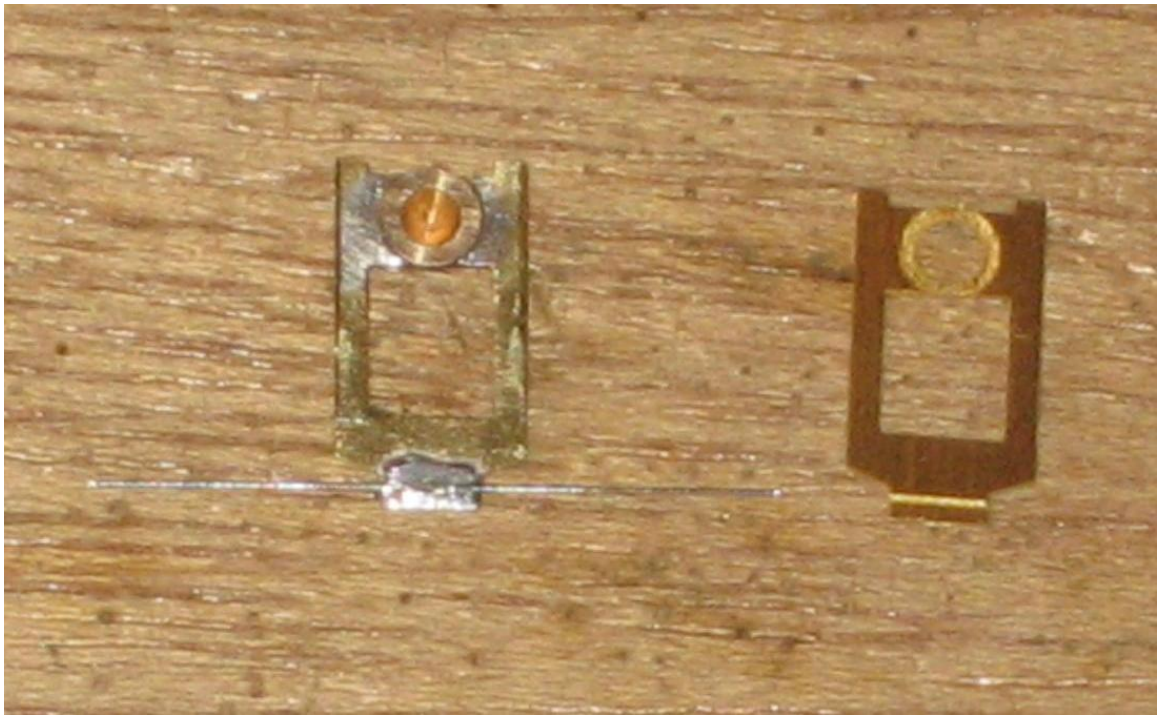
There are 6 fabricated spring stops on the solebar detailing fret (see Fig.2) which can be folded up and then soldered in place. I find a small pair of self closing tweezers good for this. Some wagons had round pattern spring stops. I use 1mm wire for these. I cut almost all the way through the wire with a piercing saw and then solder in place. The cut can then be completed without the soldered joint breaking and the top gently filed flat.

Spring Carriers

The spring carriers (11) can now be assembled. They are designed so that the springing wire is soldered to the carrier using the half etched slot as a guide. As mentioned in the preamble a suitable flux will be necessary. I use Carr's Black Label.

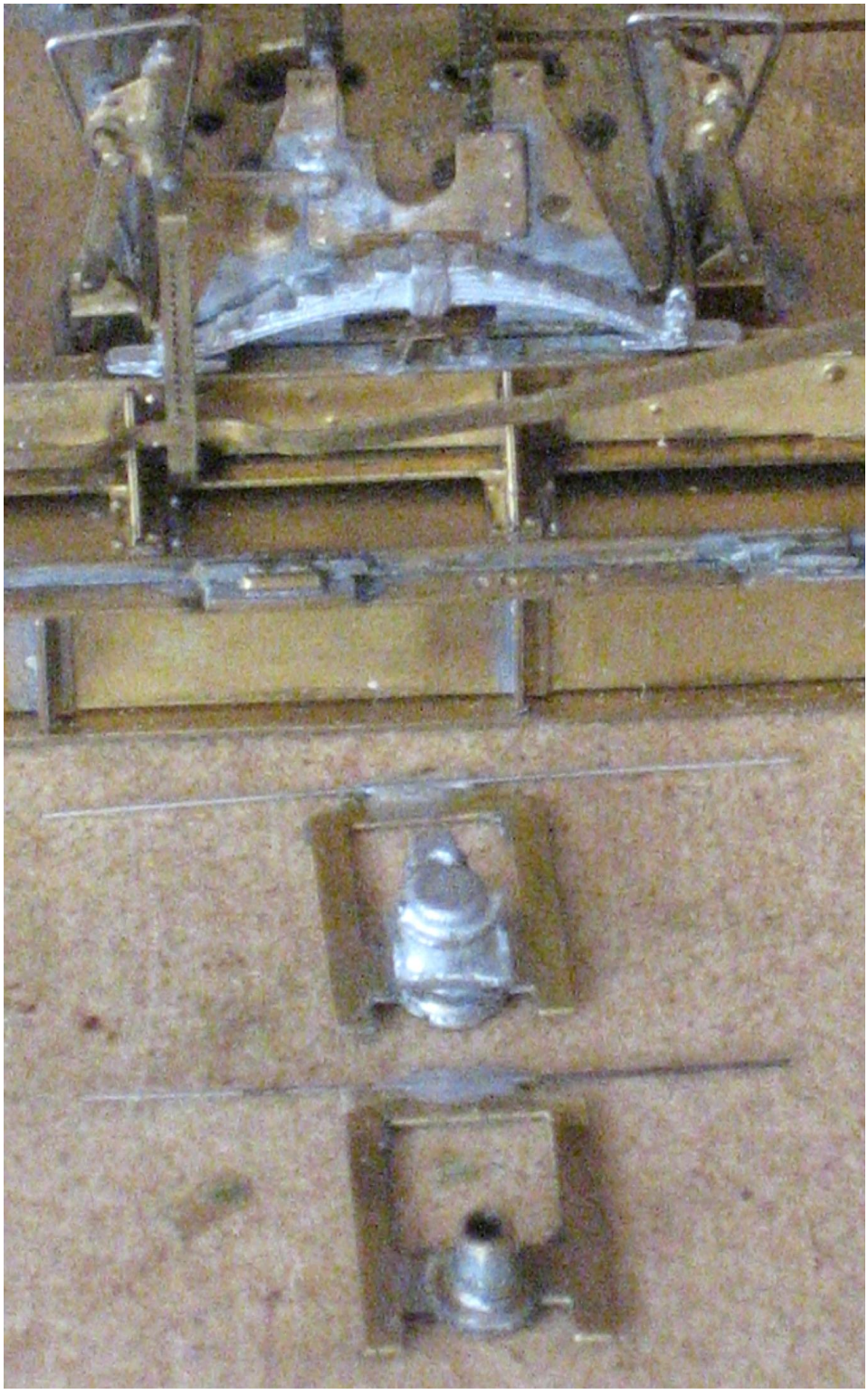
The distance between the backs of the W-Irons is a bit larger when compared with other systems and works out at 24.5mm. This is deliberate and I make no apologies for it. The advantage of this measurement is that if using pin point axles you don't have to hunt around for bearings that are deep enough but you may find that the carriers need packing out a little to take up any slop. Bearing washers (12) are included for this purpose. There should be a good fit between the axles and the bearings with ideally no sideways movement at all. If using pinpoint axles use a waisted type of bearing to avoid having to remove any more material form the cast axleboxes than is necessary. I have used Exactoscale waisted pin point bearings which are just about perfect for the job with only occasional ones that require packing out. Due to the removable nature of the tiebars you can easily use Exactoscale parallel axles and bearings. If doing so then you will need to pack the bearings out on the back of the spring carriers before soldering them in place due to the length of the axle. Use the bearing washers provided. I have built chassis with Exactoscale parallel axles and used one half etched washer and one full width washer to pack the bearing out. This leaves the outer edge of the bearing 0.25mm beyond the W-Iron and provides 1mm of bearing surface for the axle.

I find the easiest way to assemble the spring carriers is to make a small jig consisting of an off cut of wood with a 2mm hole drilled into it. The spring carrier can then be placed so the half etched guide slot for the spring is facing towards you and the bearing locates through the hole in the carrier and the wood. The bearing can then can be soldered in place. The spring wire can then be located in its half etched guide slot and soldered in place using a suitable flux. I use Carr's black label. The spring wire needs to extend at least 7mm either side of the point where it is attached to the carrier.



Spring carriers (11)

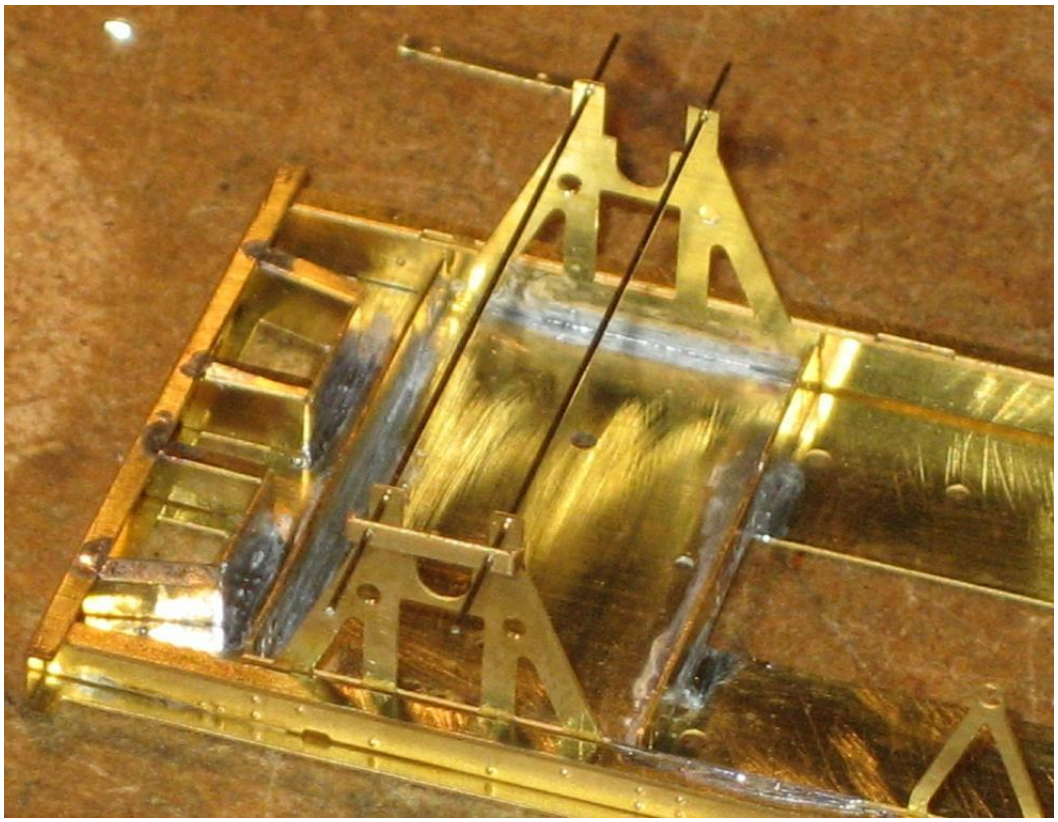
A note on roller bearings: These were fitted to diagram 1/118 24½T wagons and were retrofitted to some 1/107 and 1/110 21T wagons. My preferred method of doing this that is to extend a parallel bearing using a length of 1.5mm x 1mm brass tube approximately 2mm long and then gluing the axlebox casting to this. The axlebox will then move up and down with the spring carrier. If you use this method you will need to make sure there is sufficient clearance between the axlebox and spring castings and will need to make the tiebars removable if you ever want to get the wheels out again. Wizard Models make a suitable hooded type roller bearing axlebox casting as well as other non-hooded types. The type used varied so check your prototype.



Tiebars

There are tiebars (13) included which are designed to be removable if you wish in order to allow the wheel sets to be easily dropped out. They can be soldered permanently in place but either way you will need to make sure the holes will accept 0.31mm wire before removing them from the fret.

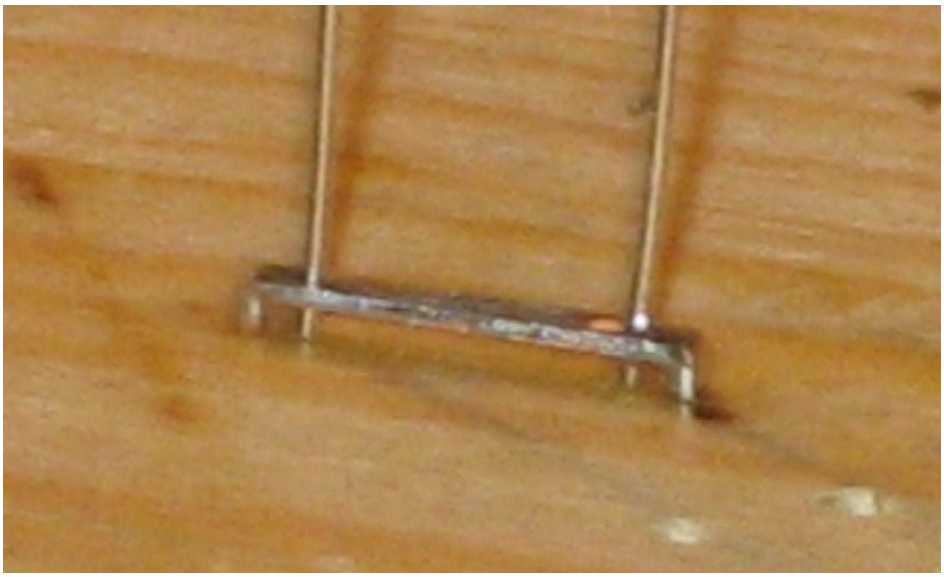
If you are not planning on making them removable then they can be pinned and soldered to the axleguards. Remove from the fret and fold the ends up. Thread lengths of 0.31mm wire through the tiebar and holes in the axleguard and the corresponding holes on the opposite axleguard. Solder in place. Fit the other axle guard and solder in place. Trim the wire so that it represents bolt heads on the tiebars but extends approximately 0.5mm from the back of the axleguard. These pins will prevent the springs from becoming disengaged from their slots.



If you want to make them removable to allow the axles to be dropped out then you will need to solder 0.31mm pins through the holes in the tiebars. I find the easiest way of doing this is to use one pair of holes as a jig and drill a pair of 0.3mm holes into a piece of scrap wood. Short lengths of 0.31mm wire can then be threaded through the axle guards locating into the holes in the wood. These can then be soldered in place and filled back to represent bolt heads before folding up the ends.

Fold the ends and locate two short lengths of 0.31mm wire through the holes and into the holes drilled into the wood. Solder the wire in place and whilst still pinned to the wood file the wire back to represent bolt heads. Remove and trim the other end of the wire. You will need to make sure there is at least 0.75mm of wire projecting from the back of the tiebars otherwise the spring carriers will be able to fall out of place when everything is assembled. It is also a good idea to leave at least one of the pins in the axle guard as long as possible to give you somewhere to hold them when painting. Once the teibars and the chassis are painted they can be tack glued together on final assembly.

The glued joint can be broken and the tie bars removed if you find it necessary to remove the wheels at any point.



I find long tiebars are quite fragile on their own and so reinforce the back of mine with 0.31mm wire. There are slots etch on the back of the tiebars in B.23 to help with this. This makes for a much stronger part.

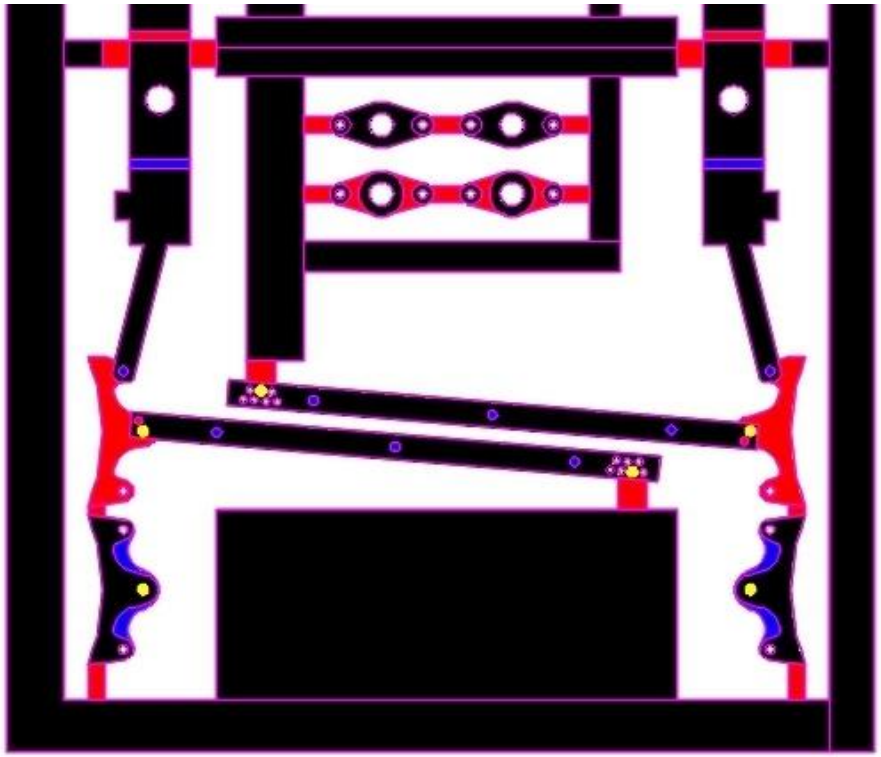
Brake shoes and brakegear

The brake shoes (8) are etched with integral push rods are designed to be folded up as one piece, soldered together and then tidied up afterwards. The cranks can then be added and the whole assembly soldered to the chassis. They are rather delicate until folded up and soldered together so take care. Once assembled though they are quite robust so don't be afraid to tweak them to get them to line up properly on the chassis. The shoes are deigned to be in line with the edge of the flange on Exactoscale wheels.

You need to make sure the appropriate holes in the brake shoes can accept 0.31mm wire as this will be used to align/pin everything. Refer to Fig. 4. The holes that need to be able to accept the wire are marked in yellow. I have shown one side of the Morton cam set and non- Morton cam or independent set. The other side is simply a mirror image.

It is best to do one set at a time leaving the others on the fret. This will avoid mixing parts up. Those sets intended for the lifting link side of wagons are marked on the fret with a big M.

If you wish press out the half etched rivets at the top of the hanger bracket. I use a drop head rivet press for this with the parts held on one of those ubiquitous green cutting mats. This will distort the push rod so you will need to straighten it once you've removed the part from the fret.



Non-Morton clutch
or non-lifting link side

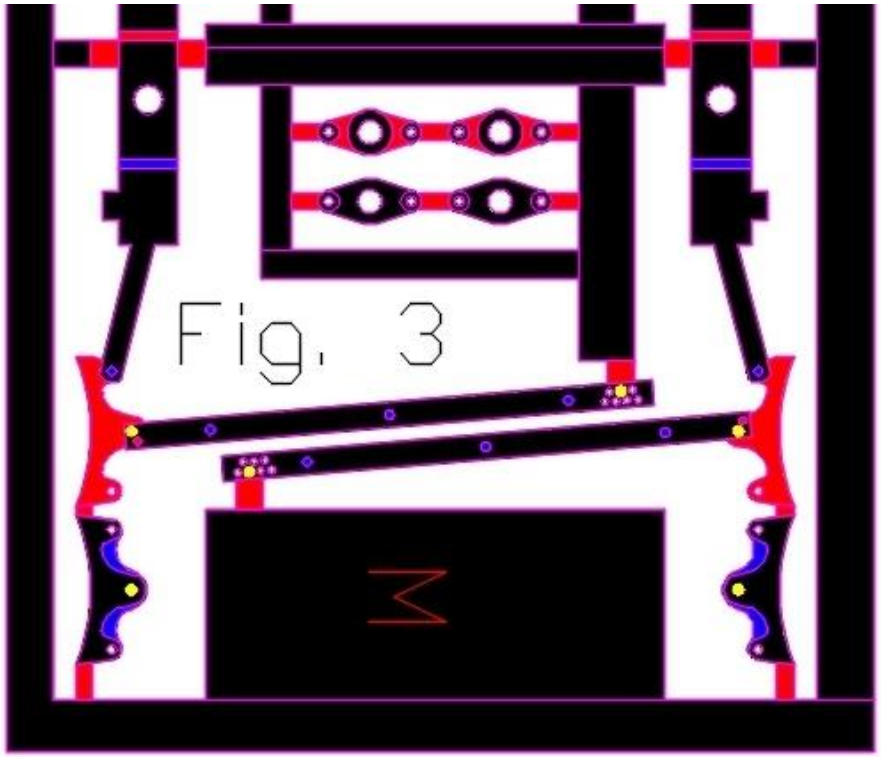
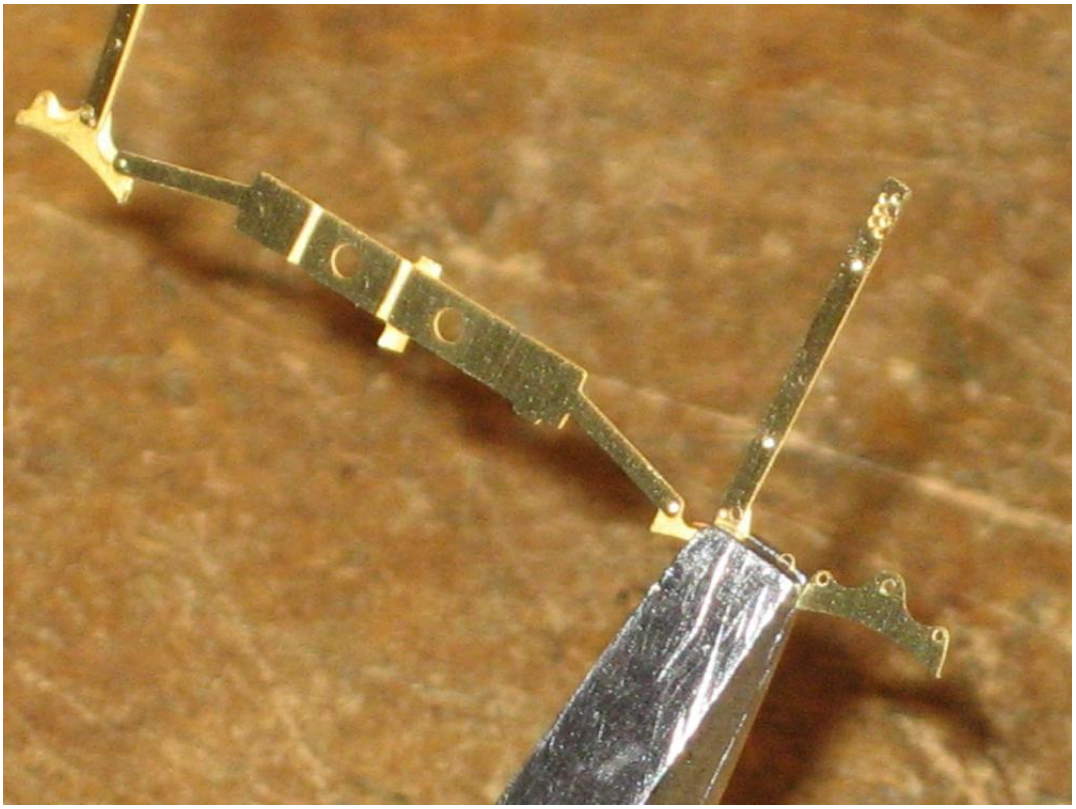


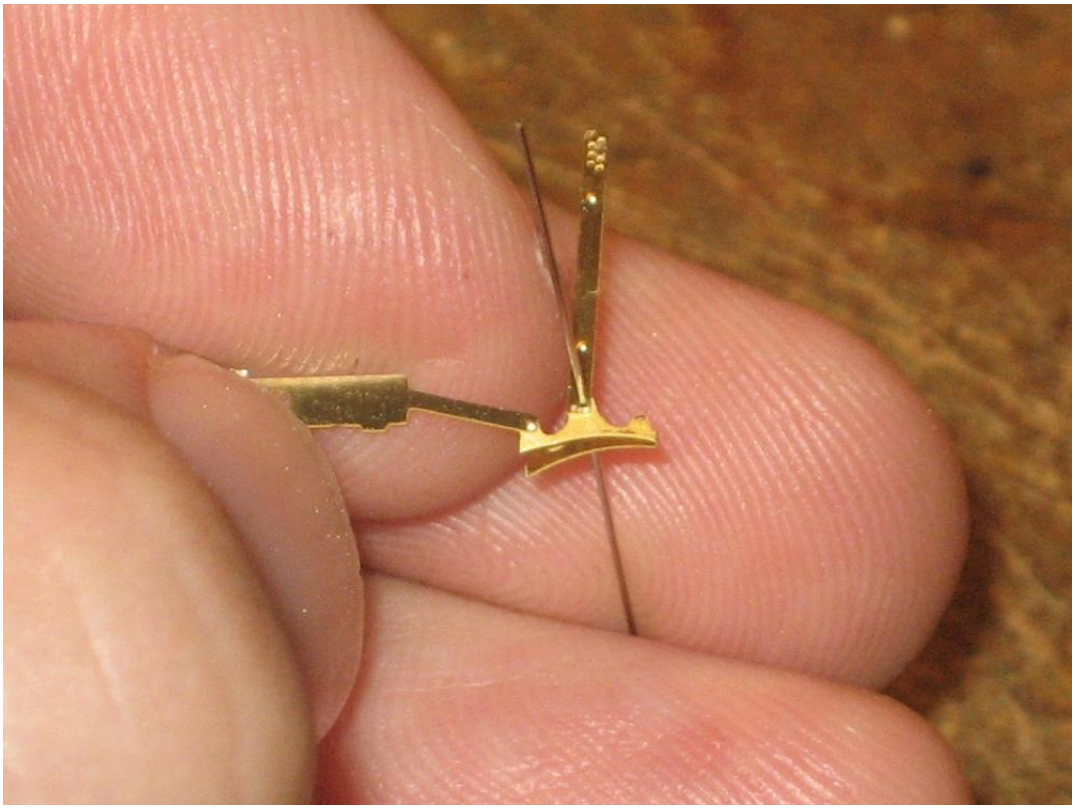
Fig. 3

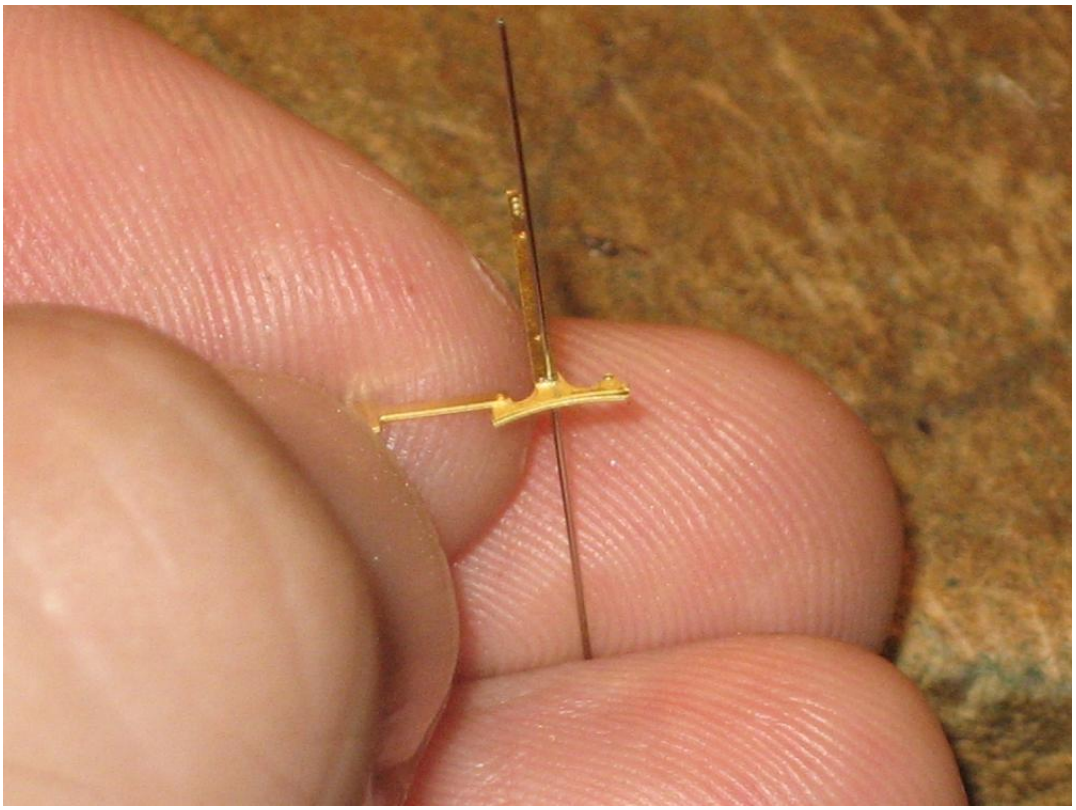
Morton clutch or
lifting link side

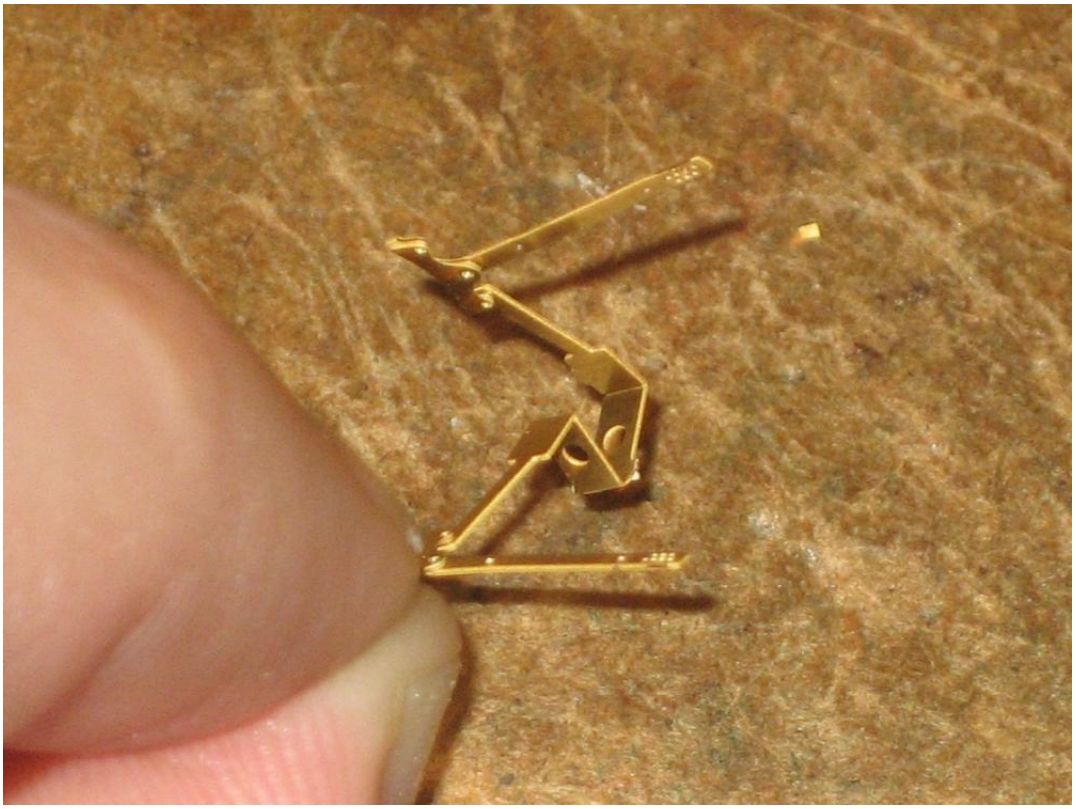
Remove from the fret and fold the brakes up. The following photographs will provide an illustrative guide. There are two parts to each side of the brake shoes, one half etched and one full thickness. The full thickness parts will go in the middle of the shoe and need to be folded so that it is on the back of the half etched part. In order to do this successfully you must hold the half etched part with a pair of pliers so that the pliers are hard up against the full thickness part or they will end up misaligned. Once the fold is nearly complete thread a length of 0.31mm wire through the holes in the brake shoes and use the pliers to clamp the two parts together. The wire will ensure the parts are properly aligned. All this is much easier than this makes it sound. Repeat for the other side.

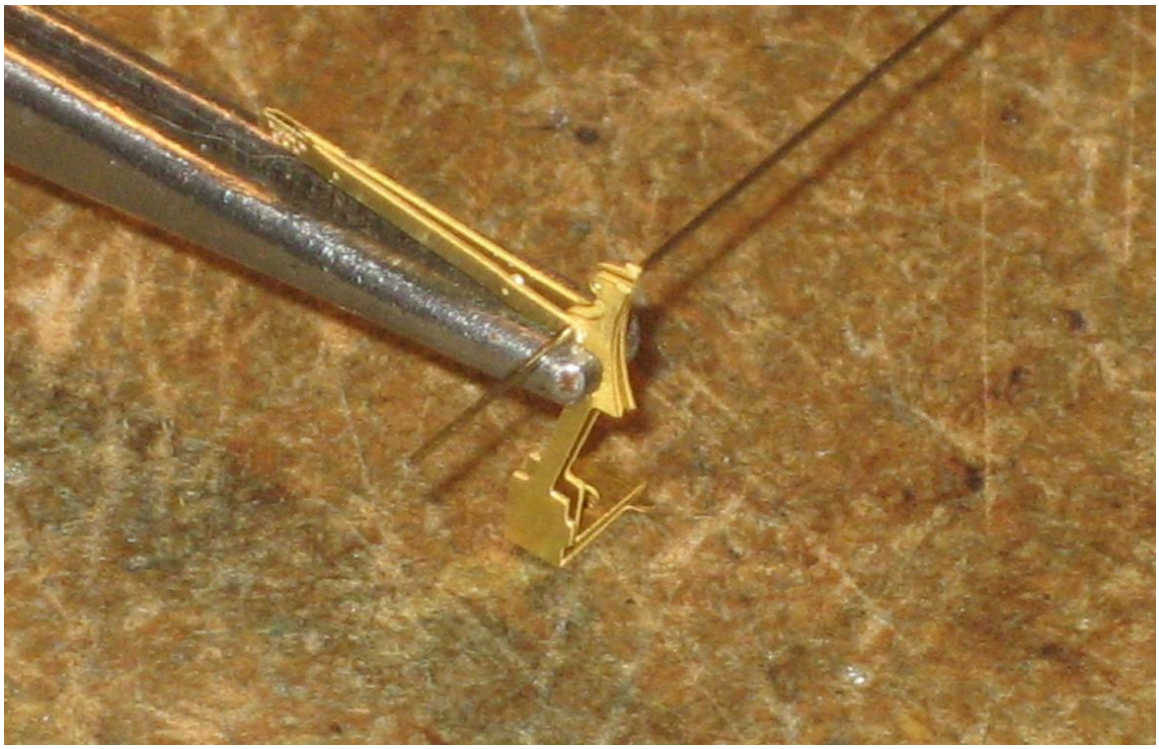
This brake shoe assembly then need to be folded up. There are three fold lines in the centre of the assembly. These need to be folded through 90° except for the centre one (the line between the holes) which needs to be folded through 180° with the fold line on the outside. A length of 0.31mm wire can be used to make sure the brake shoes are aligned and then the brake shoes clamped and solder together. The wire can be soldered in place at the same time and then trimmed to represent the bolt that is there on the prototype.









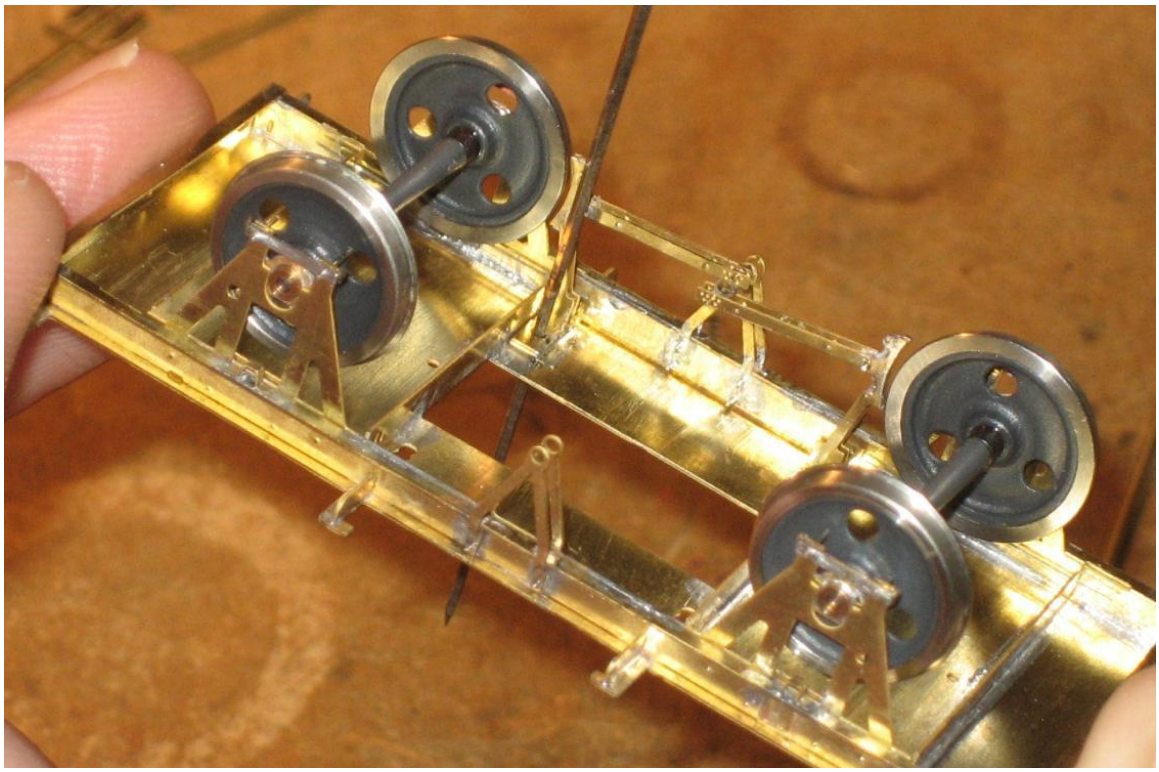


There are tabs on the brake shoes that locate into slots in the axleguard assembly (2). The outer ones are for EM/P4 and the inner ones for OO. Once located in place they can be soldered in. Make sure that the brakes are hard up against the axleguard assembly. The holes can also be used to help pin the brake shoes to the chassis top plate when soldering. Make sure that the brake shoes go in the correct place. Refer to prototype pictures or Fig1. Repeat the process for the other brake shoes.

The push rod cranks (9) need to be tackled next. There are two sorts of push rod cranks. One set have half etched areas to match the profile of the prototype and the other are solid. You will need two cranks for each set of brakegear.

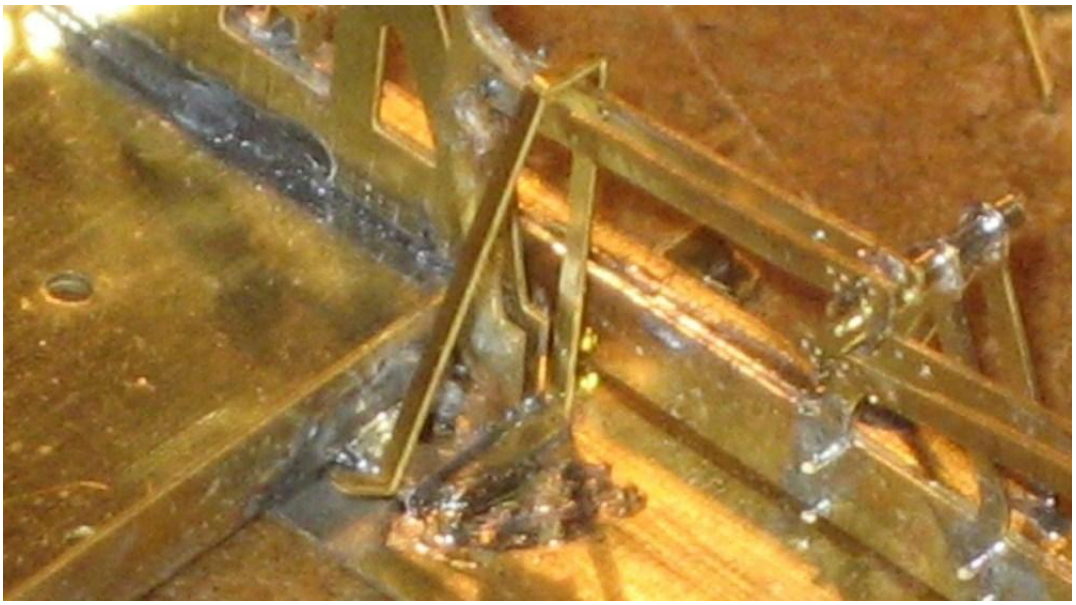
Make sure that the main hole in the push rid cranks can accept 0.8mm wire and the smaller holes 0.31m wire. Whilst still on the fret use one of the cranks to drill two 0.3mm holes into a piece of scrap wood. This jig will be used to solder the two parts of the crank together. Solder the wire in place at the same time. See photo below.

Once complete trim the wire so that it extends approximately 1mm either side of the crank. The crank can then be fitted to the push rods by gently prising the push rods apart and locating the wire into the holes. Generally the push rods end up tapering towards each other so I don't worry about soldering the crank to the push rods or indeed to the brake shaft.



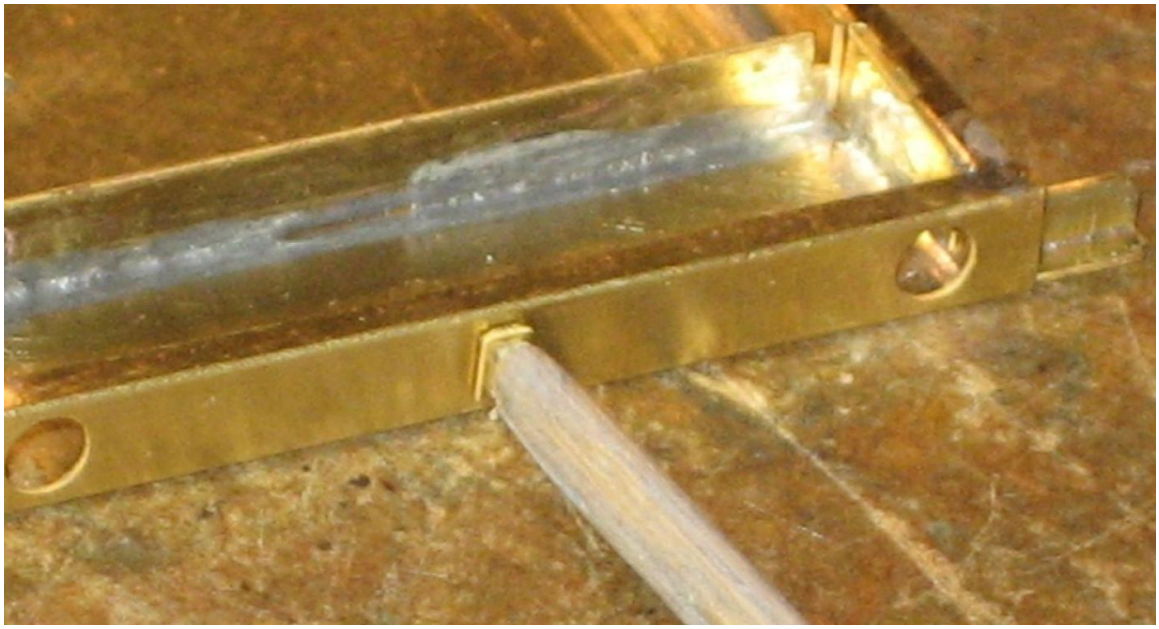
Safety Loops

The safety loops (10) can now be folded up and fixed in place. All the fold lines are through 90°. You will need to open one of the folds out slightly in order to get them around the push rods. They should go hard up against the brake shoes. Solder in place. Don't worry of they're a bit wonky most of those fitted to the real thing were!

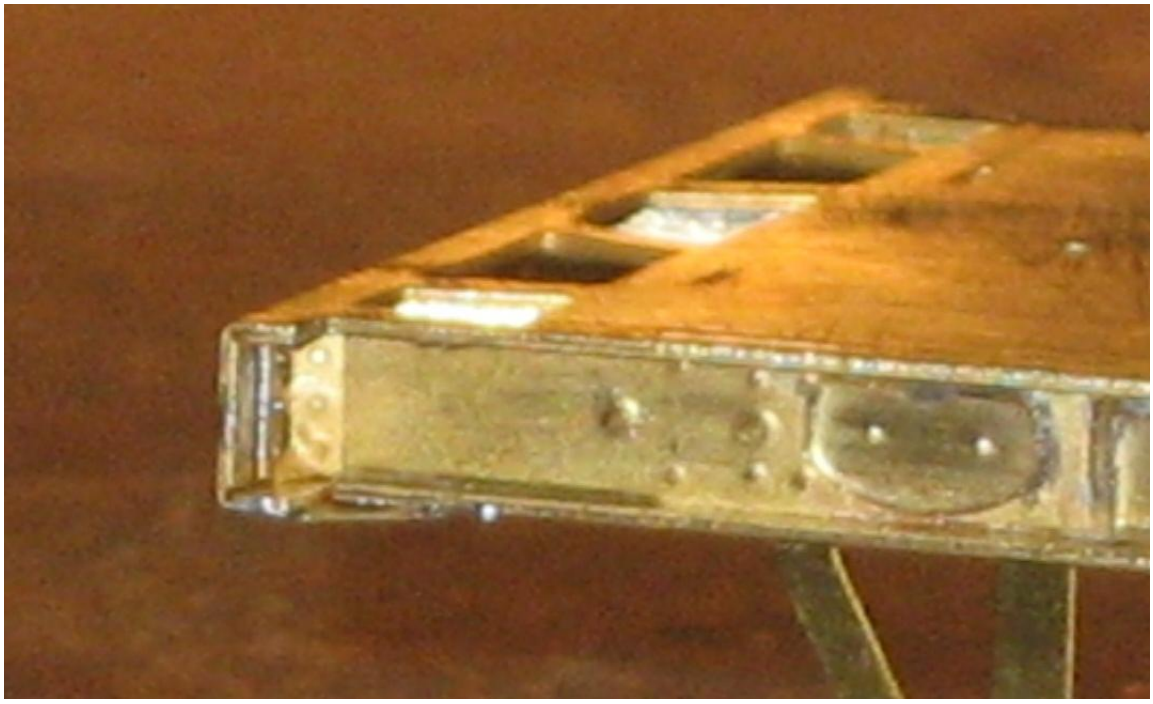


Headstock detailing

Now is a good time to fit the coupling pocket detail (17). There are up to two types depending on the chassis, riveted and welded. Check your prototype. Generally riveted chassis has riveted coupling pockets and welded chassis had welded coupling pocket but not always. Solder in place using the hole for the coupling as a guide. I find the easiest way of doing this is to shape the end of a cocktail stick to fit in the slot. This can be used to align the detail on the headstock and hold it in place while you solder them together



There are solebar/headstock rivet plates (19) for use with B.23. These need to be folded into an L using the slots as a guide for the fold. Solder in place in the corner between solebars and headstocks. Note that the side of the L with two sets of rivets goes against the solebar.



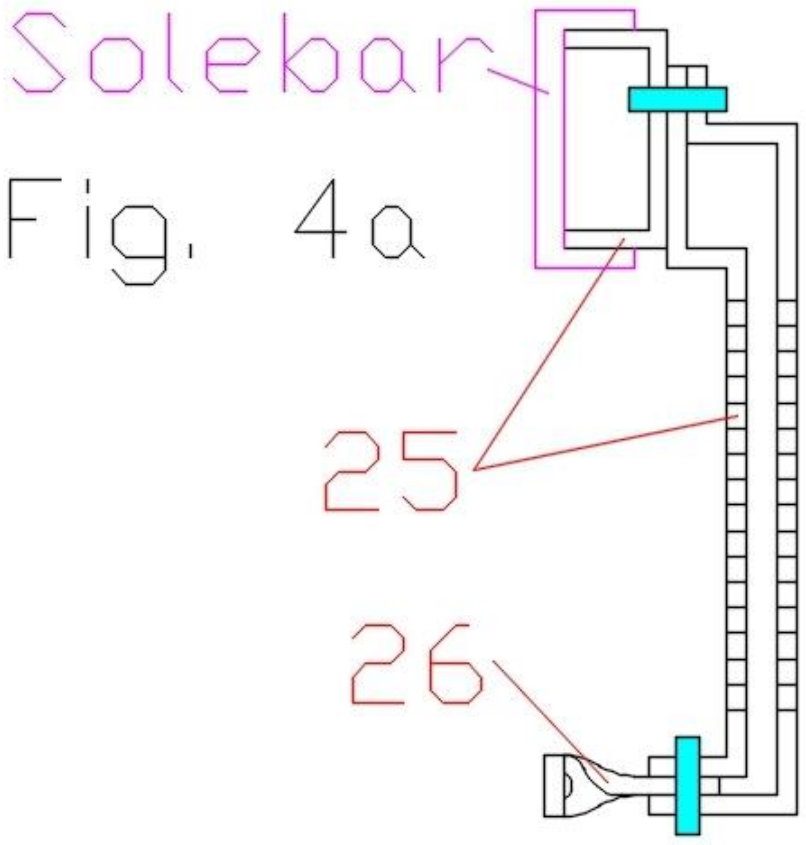
Brake Lever Guards

There are two types depending on the chassis. In both cases make sure that the holes in the brake lever guard/bracket (25) and the lever guard stays (26) or the GWR type on B.23 (30) can accept 0.31mm wire and remove from the fret. Note that on B.23 the stay is etched as part of the lever guard. I should have done them all like this in the first place!

Standard types

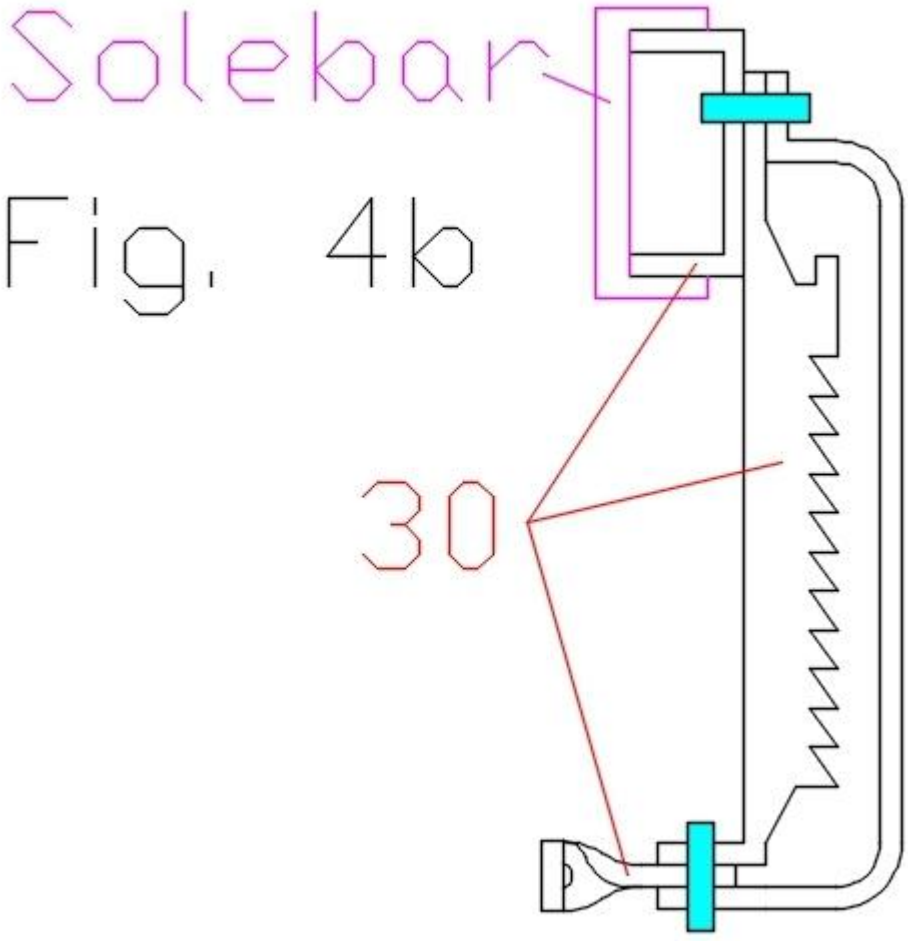
Separate the lever guard from the lever guard bracket. Fold the lever guard along with the lever guard bracket referring to Fig. 5a. If you are using the standard guard on B.23 then fold the stay through 180° with the fold line on the outside whilst you're going along (you will also need to push out the rivet and twist the end of the stay to fit against the axleguard. Solder a length of wire through the holes where the lever guard and stay meet to represent a bolt). Solder the lever guard and bracket together using 0.31mm wire to align them. Trim the wire on both the front and back to represent a bolt. The whole assembly can then be located in the solebar and soldered in place. There are slots in the solebar to receive the lever guard brackets.

For B.21 and B.22 press out the half etched rivet on the brake lever guard stays. The end with the push out rivet needs to be twisted and bent so that it sits flat against the axleguard. Note that this end is actually fixed to the riveted reinforcing strip for the axlebox guides on those types that had them. Test the stay against the model and adjust the fit if necessary. The stay can then be pinned to the bottom of the lever guard using 0.31mm wire noting that it goes between the two ends of the lever guard. It can then be soldered to the lever guard and fixed to the axleguard and any excess wire trimmed off.



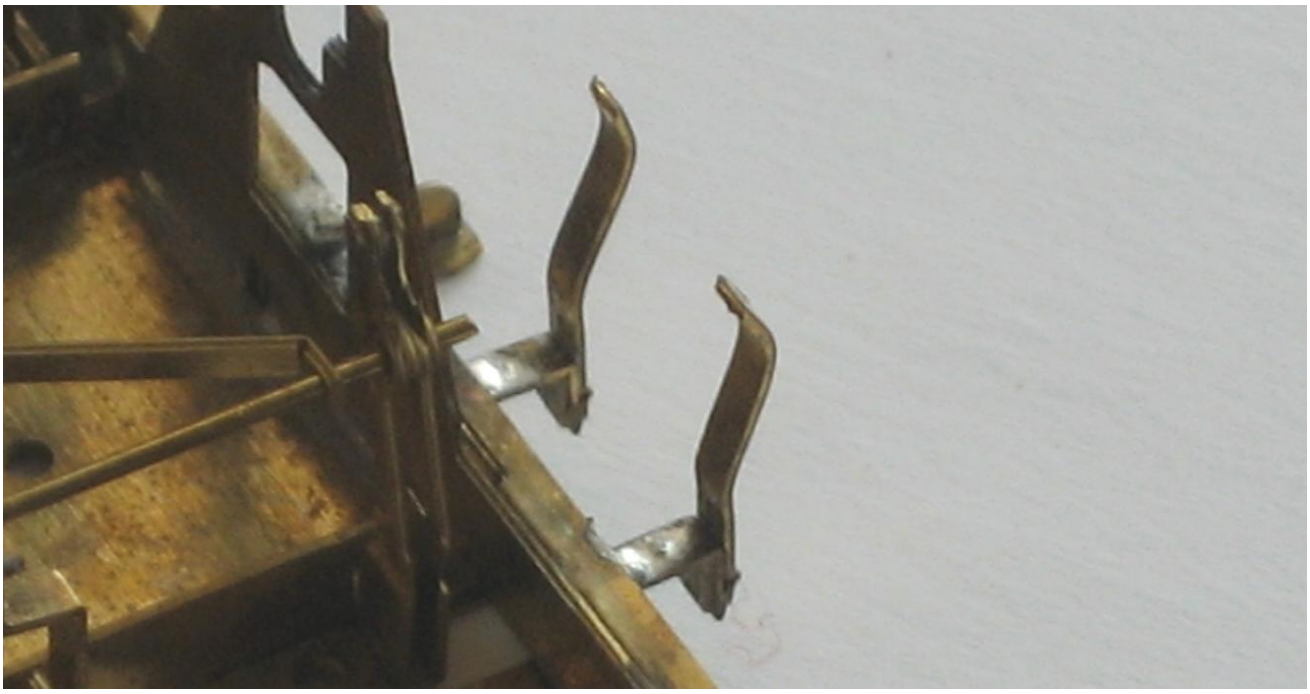
GWR type (B.23 only)

Separate the lever guard from the lever guard bracket. Fold the toothed part up and then the rest of the lever guard along with the lever guard and bracket referring to Fig. 5a. You should also fold the stay through 180° with the fold line on the outside whilst you're doing this. The front of the guard is curved at the top and the bottom. There are half etched markers to aid with the location of these bends. Push out the rivet and twist the end of the stay to fit against the axleguard. Solder a length of 0.31mm wire through the holes where the lever guard and stay meet to represent a bolt. Solder the lever guard and bracket together using 0.31mm wire to align them. Trim the wire on both the front and back to represent a bolt. The whole assembly can then be located in the solebar and soldered in place. There are slots in the solebar to receive the lever guard brackets.



Door Springs

Though it may seem jumping ahead a little now is the best time to fit the door springs (27) if required. You will need to bend the brake levers so they go behind the door springs and this is easier to do if they are in place. It's also safer to solder them in place before any whitemetal castings are added to the underside of the solebar. The door springs locate into slots in the solebar and solebar overlays. Push out the half etched rivets and remove from the fret. Fold up noting that the fold nearest the rivet detail should be made through 180° with the half etched line on the outside. Bend to shape and solder into position.



Axleboxes and springs

Now is a good time to fit the cast axle boxes and springs. It will make life easier when bending up the brake levers as they should be bent, like the prototype, to clear the axleboxes and springs. The back of the axleboxes will of course need slotting to allow the wheel bearings to move with the springs and drop out if making them removable. Some types come with the riveted reinforcing strips for the axlebox guides moulded on. These should be removed if you are using the etched riveted axlebox guide overlay (15).

Brake levers

Firstly make sure that the holes in the following items can accept the correct size of wire then remove from the fret.

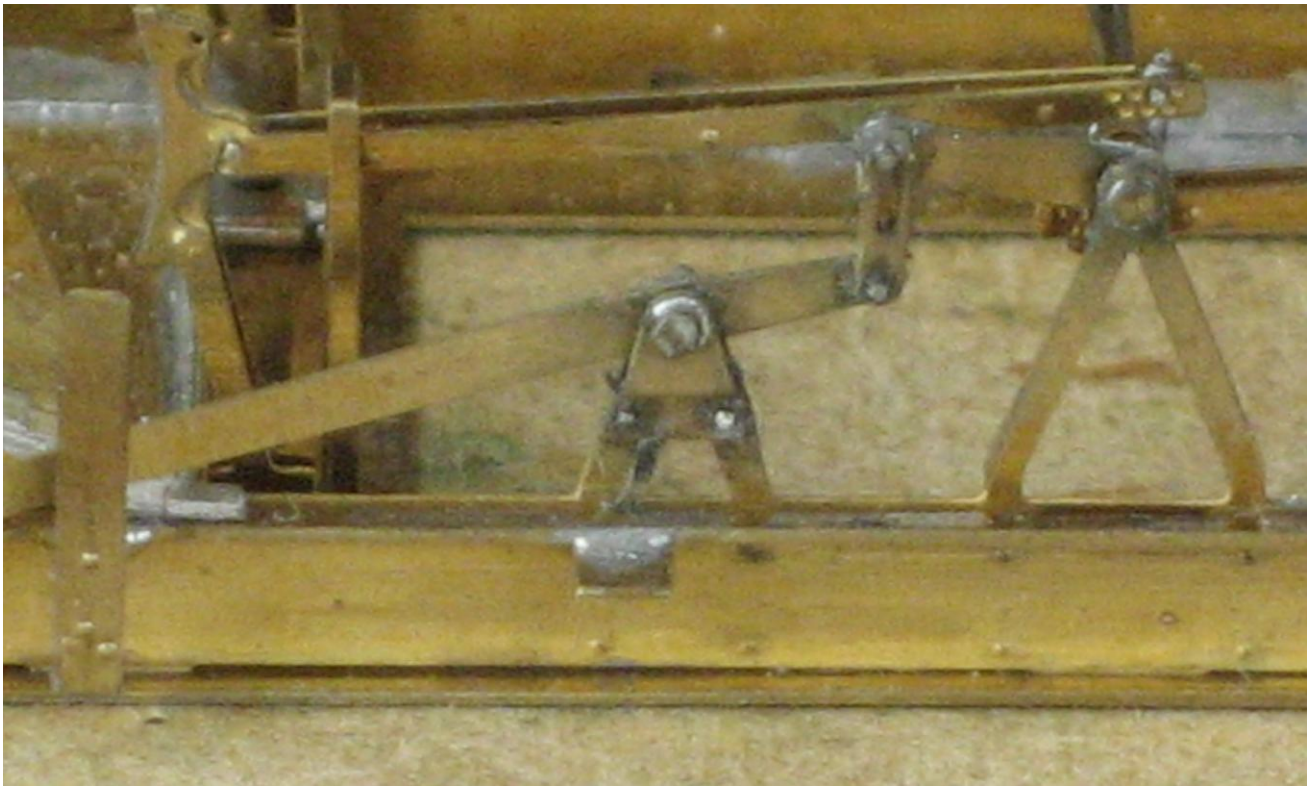
Secondary brake lever vee overlay (16) 0.31mm
Brake levers (20) 0.8mm and 0.31mm
Lifting links (21) 0.31mm
Lifting link cranks (22) 0.8mm and 0.31mm
Brake lever actuator (23) 0.8mm
Brake lever washer (24) 0.8mm

Note that there are two types of lifting link cranks (22). The crank goes behind the brake shaft vee and then is bent to align with the brake lever and lifting links. There is a solid crank to be bent up prototypically or one with half etched fold lines to make things easier if required.

Lifting link brake lever

A piece of 0.31mm wire needs to be soldered in place so that it projects at least 1mm on both sides at the end of the lifting link brake lever. If you are in any doubt this is the lever with two holes in. This will enable you to locate the lifting link in place. The same thing needs to be done with the lifting link crank (22) of your choice. A short length of 0.8mm wire needs to be soldered through the brake lever. The easiest way of doing these pins is to follow a similar method to the pins in the axle guards by drilling holes in a piece of scrap soft wood to accept the appropriate size of wire and then soldering in place.

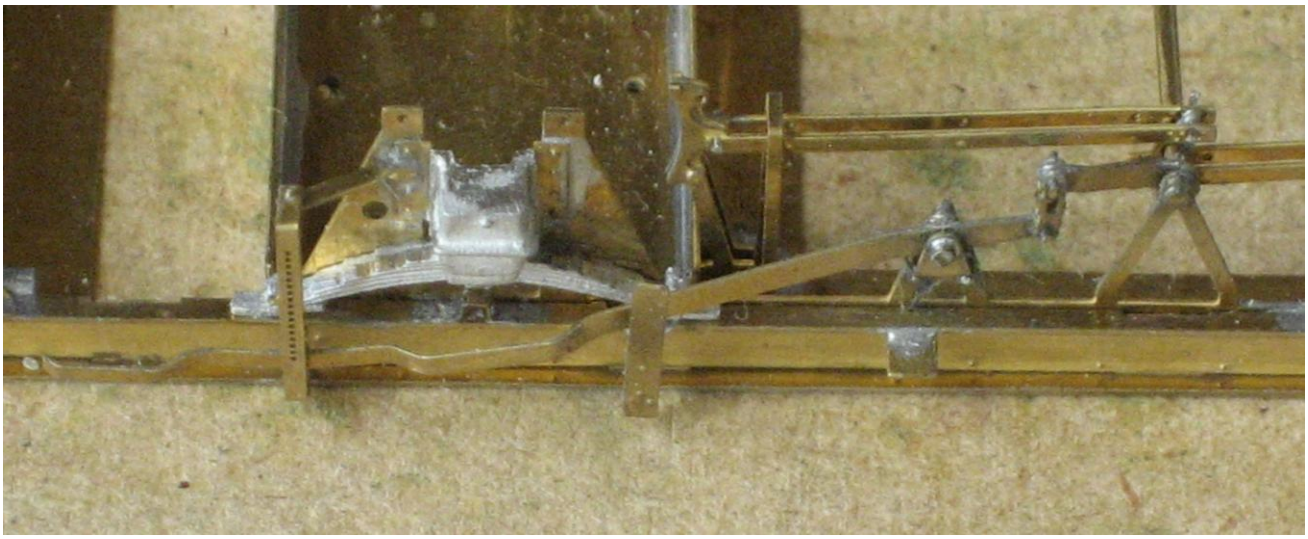
The brake lever needs to be bent up as per the prototype clearing the axleboxes and then cranked for the handle. Check on the model and adjust until you are happy with the shape. Once you are happy with the shape the brake lever can be soldered in place. You will need to fix the secondary brake lever vee overlay (16) in place at the same time. There are 0.31mm holes in it and the vee on the W-Iron assembly for short wire pins to aid this.



The lifting link crank can now be bent or folded to shape depending on type. Note that the crank goes behind the vee. Adjust if necessary so that it aligns with the brake lever when placed behind the main brake shaft vee. At this time remove the brake lever actuator from the fret and fold the small tab on it through 90°.

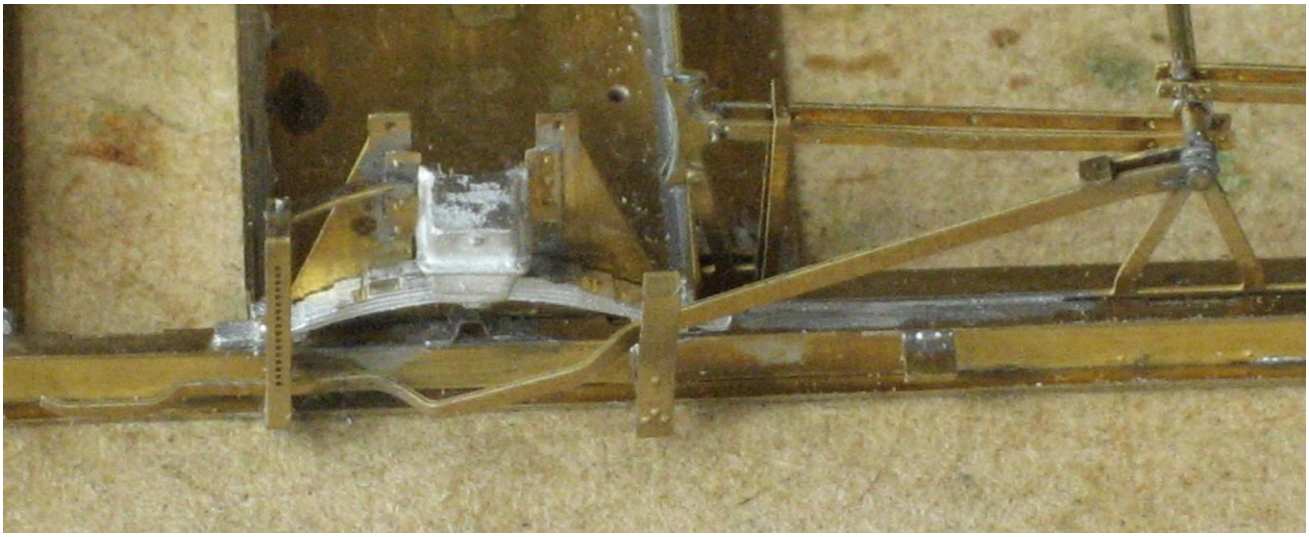
Cut a length of 0.8mm wire to form the brake shaft. This should extend approximately 0.5mm from each of the vees. Locate through the vees with the lifting link crank and brake lever actuator threaded on to it. Note that the brake lever actuator should be arranged so that the tab faces outwards from the chassis. It will go up against the bottom of the brake lever on that side. Tack solder the brake shaft in place making sure you leave the crank and actuator free.

Next fit the lifting links in place joining up the brake lever and the lifting link crank and solder in place. Note that there should be two lifting links, one on either side of the lever/crank. I find some aluminium soldering clips are handy when doing this as it's a bit of a fiddle. A washer can be added to the brake shaft on the outside of the vee and the lifting link crank soldered in place.



Non-lifting link brake levers

As with the lifting link brake lever this needs to be bent up as per the prototype clearing the axleboxes and then cranked for the handle. Check on the model and adjust until you are happy with the shape. Solder in place. You can then solder the brake lever actuator in place so that the tab is up against the bottom of the brake lever.



Wagon body top corner plates for riveted wagons

I have included riveted wagon body top corner plates (28) for use with riveted bodies if necessary. They fit in the top four corners of the body. Most welded body types had similar welded corner plates. I haven't done any of these as making them from 0.005" plastic sheet will produce a better stronger result. You can attach them to the finished body using superglue or epoxy resin.

A note on orientating wagon bodies

For the 20/21/24½T minerals there is a correct way around for the body. It should be arranged so that the door is to the left on the lifting link side. The exception to this was those wagons that were re-bodied in the 1970s where there was no discernable pattern so check your prototype.

Painting

One of the advantages of having the chassis as a complete unit with solebars and headstocks is that you can paint it separately from the body and then glue the two together afterwards. If using an airbrush or aerosol this means you can prime it and then paint it all black with no masking at all which makes life a little easier.

I now use Halfords grey primer in a tin through an airbrush with cellulose thinners to prime just about everything, including plastic bodies. The primer is synthetic and has no adverse effects on the types of plastics used on RTR railway models and kits. The cellulose thinners used evaporate so quickly that they don't have time to attack the plastic. You can then put your choice of paint over the top including cellulose. Don't use the red oxide in a tin on plastic though as it won't adhere and the paint will just come off.

Notes on wagon bodies and weighting

Some modifications may be necessary to the body to get it to fit the chassis. Principally this will revolve around removing the plastic headstocks from the ends of Parkside kits. In some cases this will present no problems as a lot of BR built stock had a clear distinction between underframe and body with no stanchions extending from the body onto the headstock. Where there were such items though a little work will be needed to remove the headstocks and then and thin down the backs of the stanchions to a near prototypical thickness. Careful use of a piercing saw and file will do the job.

The suspension on the underframe is designed to work optimally under a 50g load. I never find there is enough room for the amount of lead necessary to get up to this figure on the shorter wagon types. To overcome this problem I make a new floor and recess it from the bottom so that there is room for a piece of lead flashing to go between the new floor and the underframe. This does reduce the depth of the wagon but it isn't too noticeable on most types and saves trying to work around the brakegear. The longer 21/24½T types shouldn't present a problem as there is enough room.

Finally

Thanks must go to the staff of The Buckinghamshire Railway Centre at Quainton; The GWS at Didcot; Rocks by Rails at Cottesmore and The East Anglian Railway Museum at Wakes Colne for letting me measure up some of the wagons in their care which have greatly helped in the preparation of these kits.

Last but certainly not least if you haven't come across the wonderful resource for BR wagon photos that is Paul Bartlett's website then I would thoroughly recommend a visit to:
http://paulbartlett.zenfolio.com/

Justin Newitt 2015

Suppliers List

Eileen's Emporium (wire and sundries)
Unit 19.12 Highnam Business Centre
Newent Road
Gloucester
GL2 8DN
UK
www.eileensemporium.com

Lanarkshire Models and Supplies (buffers)
9 Nairn Avenue
Blantyre
G72 9NF
www.lanarkshiremodels.com

C&L Finescale (Exactoscale wheels, bearings and couplings)
Aran Lodge
Severn Road
Hallen
Bristol
BS10 7RZ
http://www.finescale.org.uk

Masokits (coupling hooks and screw couplings)
Michael Clark
c/o 27 Crotch Crescent
New Marston
Oxford
OX3 0JL
www.scalefour.org/masokits

MJT (axleboxes, spring castings and sprung buffer heads)
Dart Castings
17 Hurst Close
Staplehurst
Tonbridge
Kent
TN12 0BX
www.dartcastings.co.uk

Wizard Models (axleboxes, spring castings and buffer heads)
PO Box 70
Barton upon Humber
DN18 5XY
www.wizardmodels.co.uk