Rumney Models – Iron Ore Tippler Chassis Instructions
B.24 & B.25

Notes

These instructions cover the following chassis kits:

B.24 BR 10’ Iron ore tippler
B.25 BR 9’ Iron ore tippler

B.24 covers 10’ wheelbase iron ore tipplers built to diagram 1/164. These are intended for use with the Parkside iron ore tippler body which is the correct height for this diagram.

B.25 covers 9’ wheelbase vehicles built to diagrams 1/180, 1/181 and 1/183. The chassis on all three were the same. The Parkside body is suitable for the diagram 1/183 wagons. Diagrams 1/180 and 1/181 had bodies that were 4” higher but were otherwise identical. Hornby do a body but I’m not keen on it (I don’t like the arrangement of the stanchions on the ends and the top bracing looks too thick) and I have no idea if it would fit the stanchion spacing on my chassis which has been set for the Parkside kit. Given the simplicity of the design, and in wagon terms you aren’t going to get much simpler, it wouldn’t be too onerous a task to scratch build them from plastic sheet and strip. I have measured an example and will try and do some drawings for the bodies at some point.

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, axle guards
0.8mm - Main brake cross shaft and brake lever pivot shaft
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 vast majority of 9’ wheelbase wagons had 1’6” spindle buffers. Lanarkshire Model Supplies do various suitable 2 rib and 4 rib examples. The last lot of 9’ wheelbase wagons had 1’8½” Oleos from new. The 10’ wheelbase wagons had a mixture of types including 1’6” spindle, 1’8½” Oleos and1’6” heavy duty buffers. As always check your prototype. If making the 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. Roller bearings became common, particularly later in life.

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 - W-Iron assembly
3 - Solebars
4 - Solebar overlays

5 - Additional vees
6 - Side support brackets

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

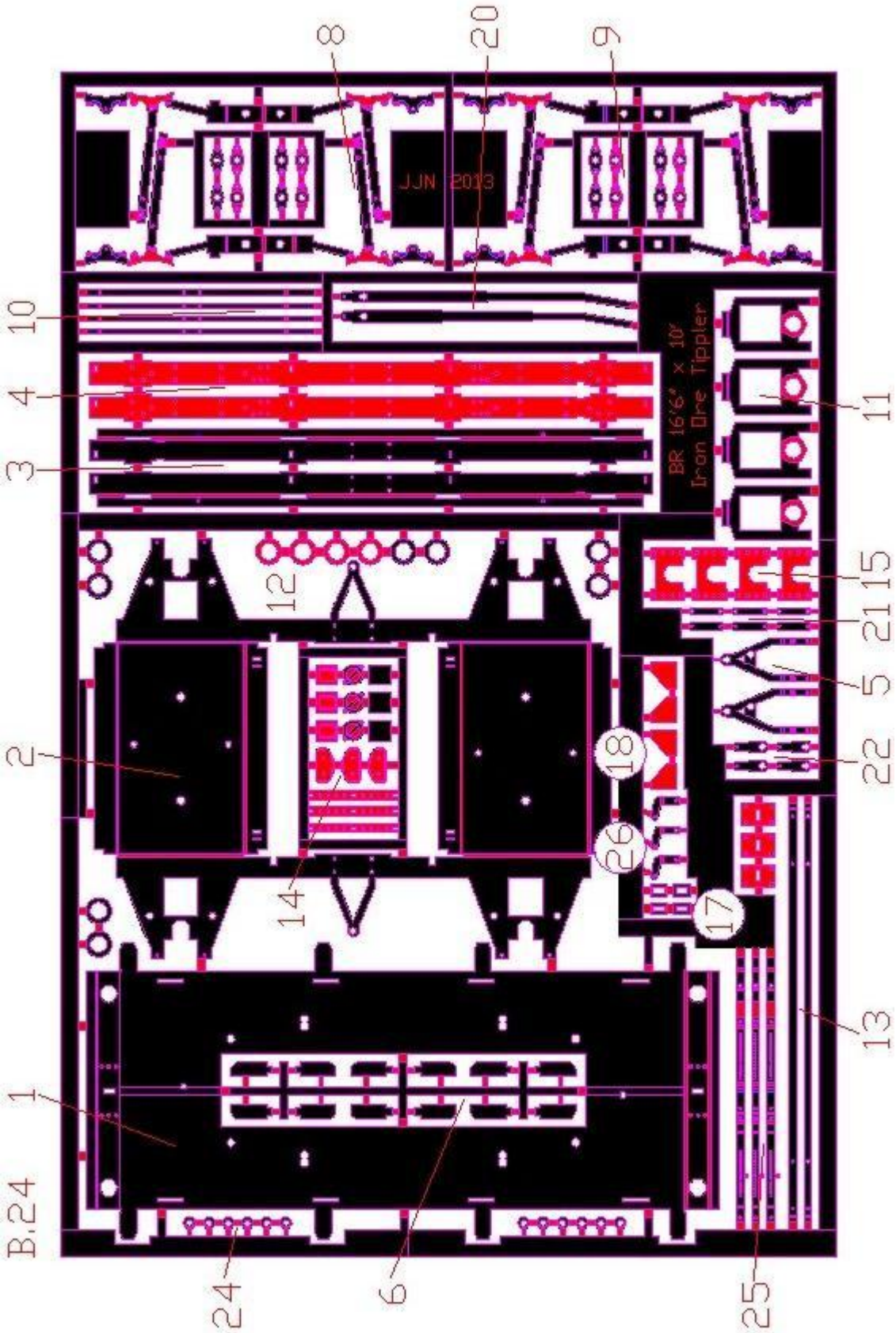
11 - Spring Carriers
12 - Bearing washers
13 - Axle guards/Tiebars

14 - Solebar detailing
15 - Riveted axlebox guide overlay for heavy duty types (B.24)
17 - Coupling pocket detail
18 - Solebar/Headstock corner plates

20 - Brake levers
21 - Lifting links
22 - Lifting link cranks

24 - Brake lever washers
25 - Brake lever guards/brackets
26 - Brake lever guard stays

27 - Door springs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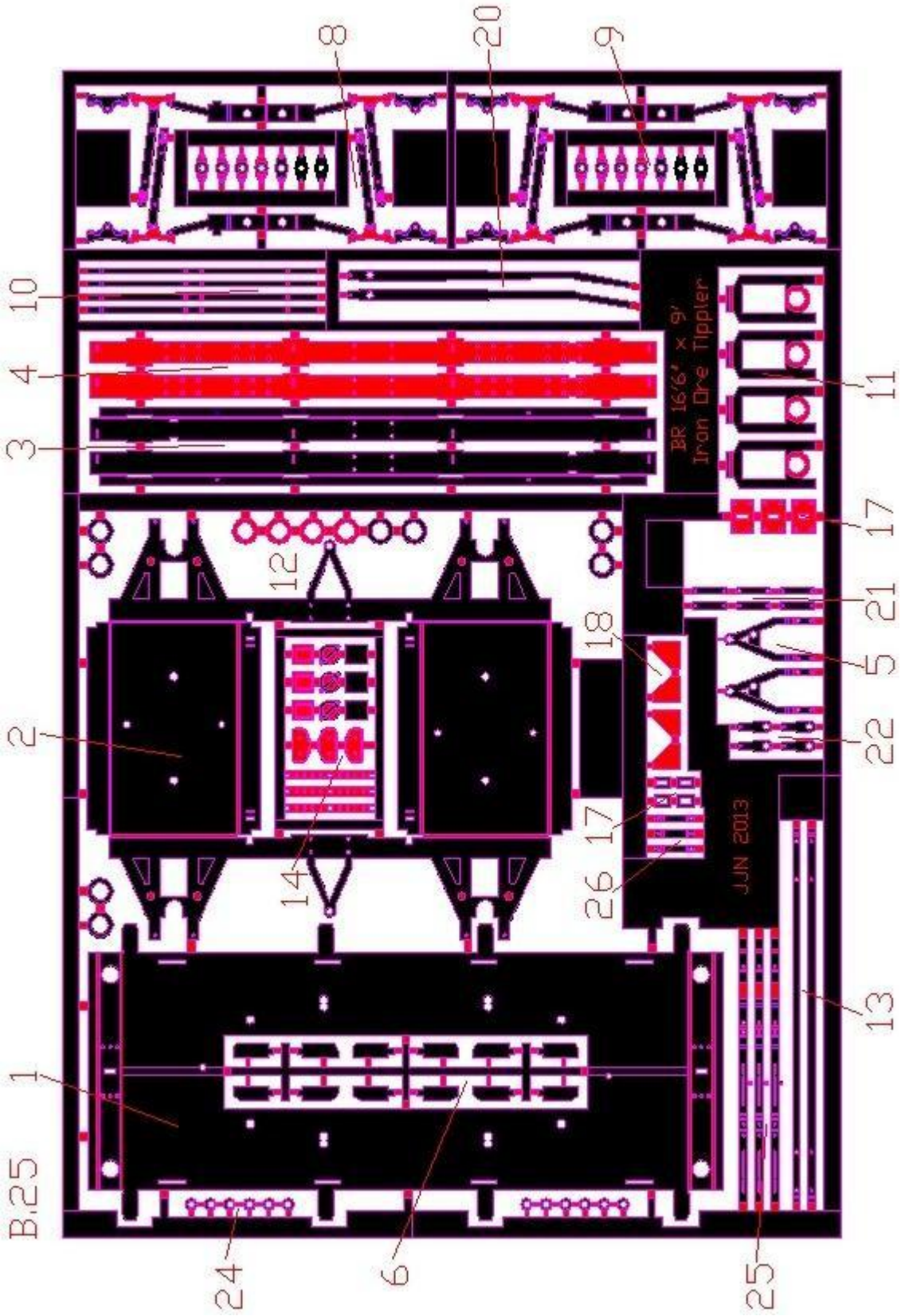
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Construction

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.

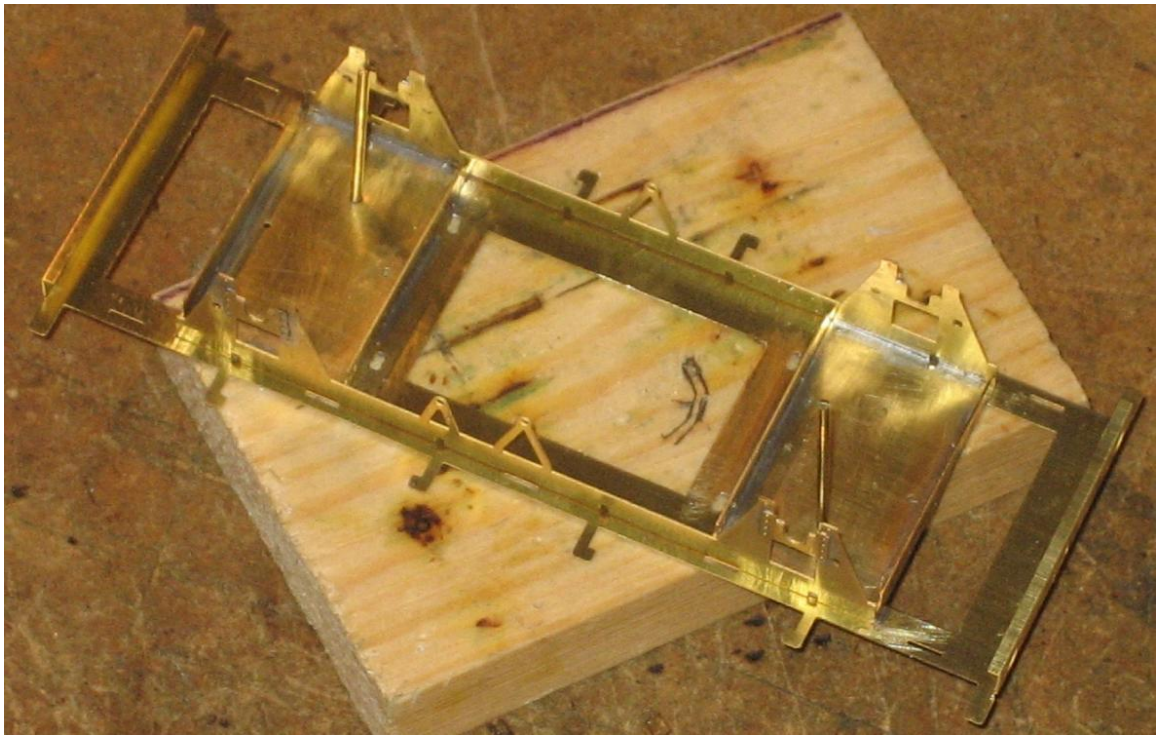
The headstocks need to be folded up. This is best done with the chassis top plate clamped to something or held in a vice to avoid distortion. There are two sets of fold lines as the headstocks need to be folded into a channel. Starting with the outermost parts of the chassis top plate fold through 90°. 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 W-Iron assembly (2) will accept 0.8mm wire. If necessary drill out the holes on the backs of the W-Irons 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.

If you are constructing a 10' iron ore tippler chassis (B.24) then there are etched riveted axlebox guide overlays (15) 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 W-Iron.

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 W-Iron assembly then need to be soldered together. There are 1mm diameter holes on both the top plate and W-Iron 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 W-Iron 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) from 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.

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).

Do one solebar at a time and lightly solder in place once happy with the fit.

Now is probably the best 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. 1 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 the rectangular block of wood was quite common. By far the most common type of number plates were the D type. 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.

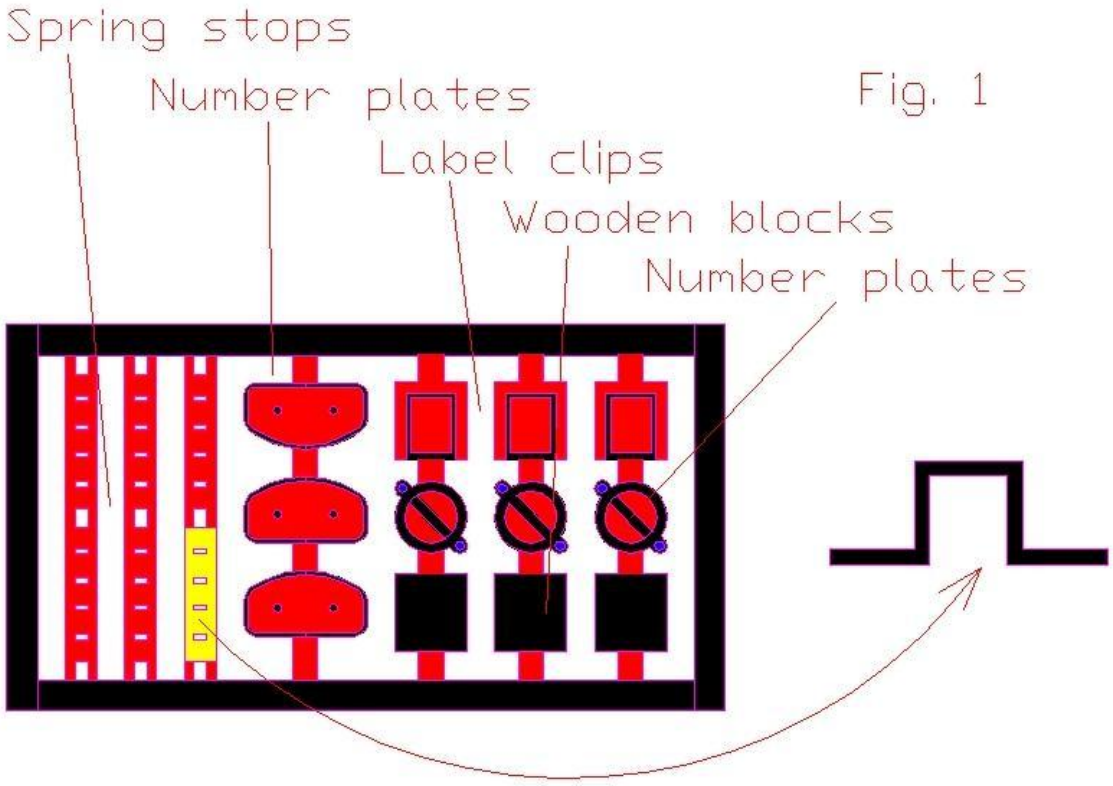
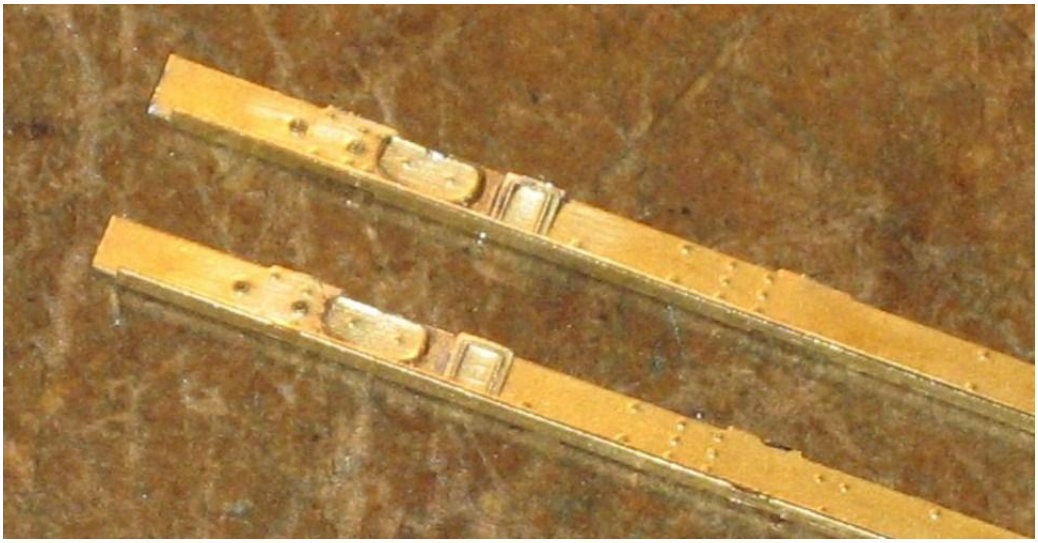
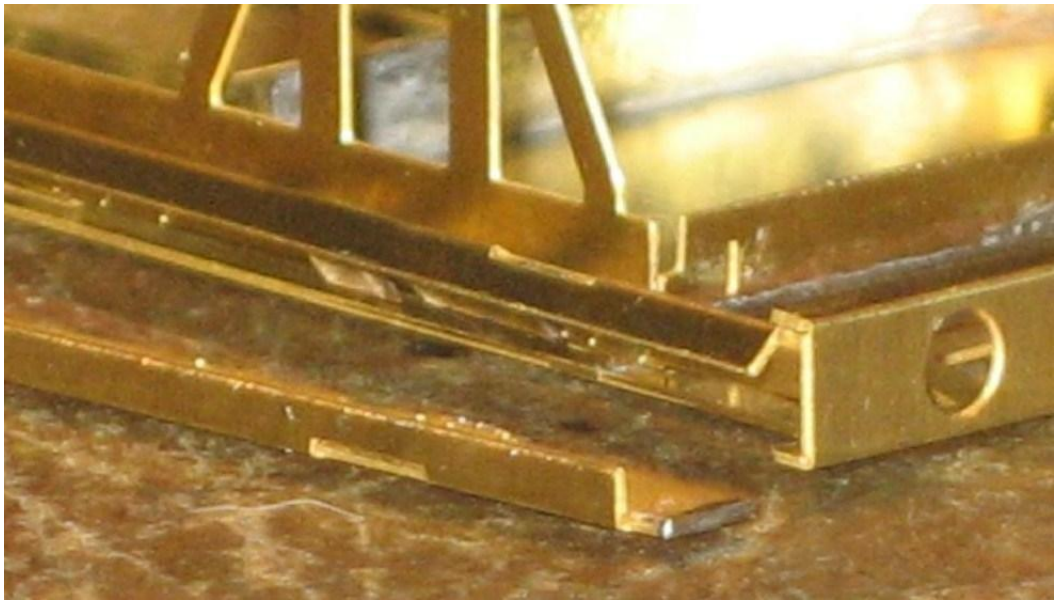


Fig. 1



Main Chassis Continued…

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, except for unfitted welded Morton and Independent chassis. Once in place then the solebar can be soldered in place. If you have problems locating the solebar in place then you can gently bend the headstock back to allow the solebar to slot in. It is difficult to get the headstocks at 90° though if you do this though and it shouldn't be necessary. The accessible fold line on the headstock can now be reinforced with solder.

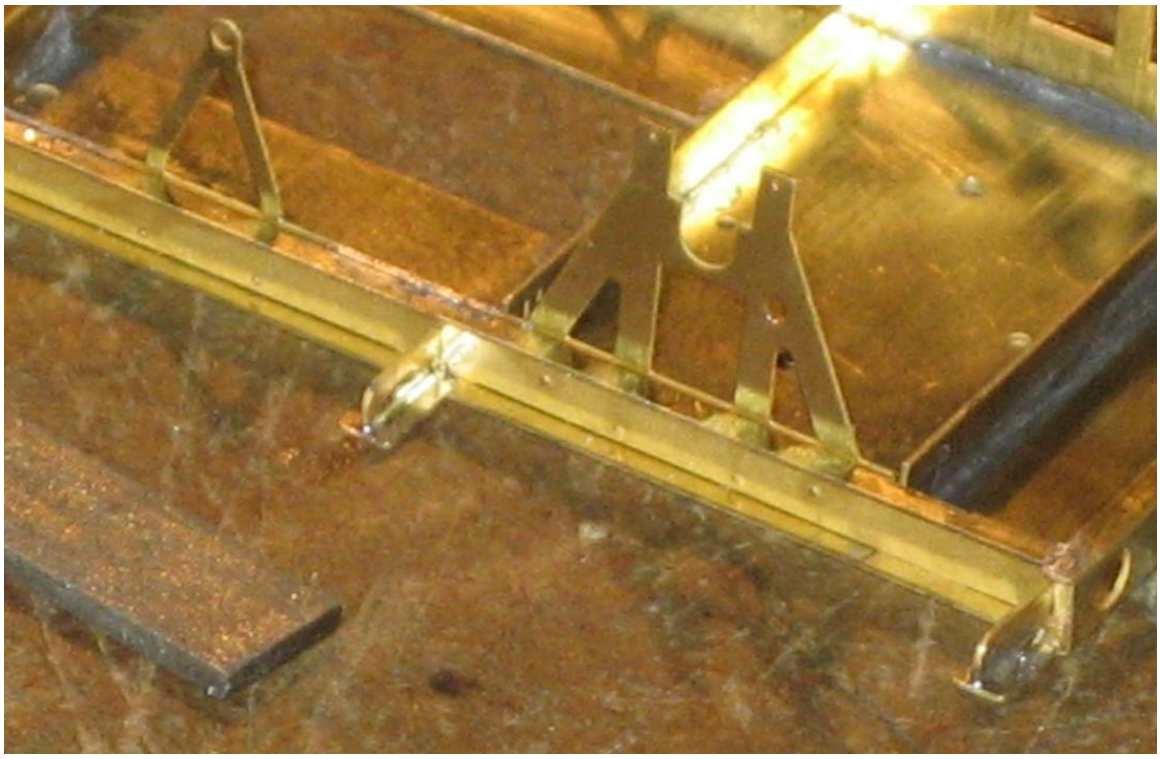


Additional vees

The iron ore tipplers had double vees on each side. There are additional vees (5) included on the appropriate chassis for this. Make sure that the holes in the additional vees and also the holes in the centre of the solebars will accept 0.31mm wire and holes for the brake shaft and brake lever pivot can accept 0.8mm wire. Fold the vees to fit into the solebar. Both fold lines are through 90°. Use 0.31mm wire to align the vees in place to the solebar. I used 4 pieces doing both vees at the same time. Solder in place and tidy up the wire to represent bolt heads on the solebar.

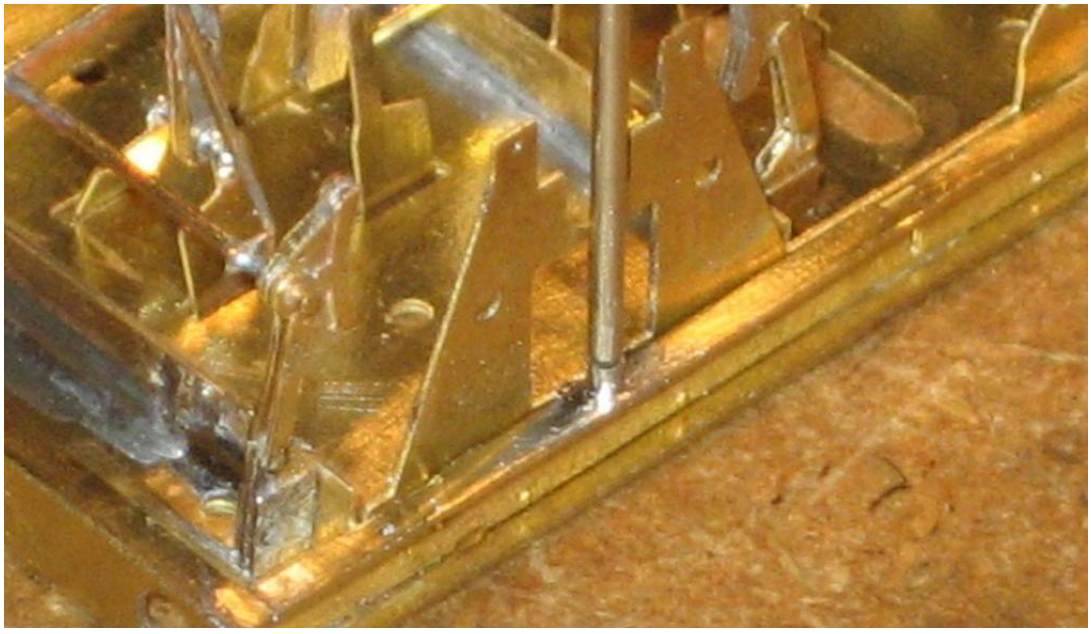
Wagon side support brackets

Remove the connecting tags from the side support brackets (6). The real things were formed of T section and this has been replicated by etching the top part of the T on the chassis top plate. The side support brackets 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.



Spring Stops

There are 6 fabricated spring stops on the solebar detailing fret (see Fig. 1) 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 have used 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.

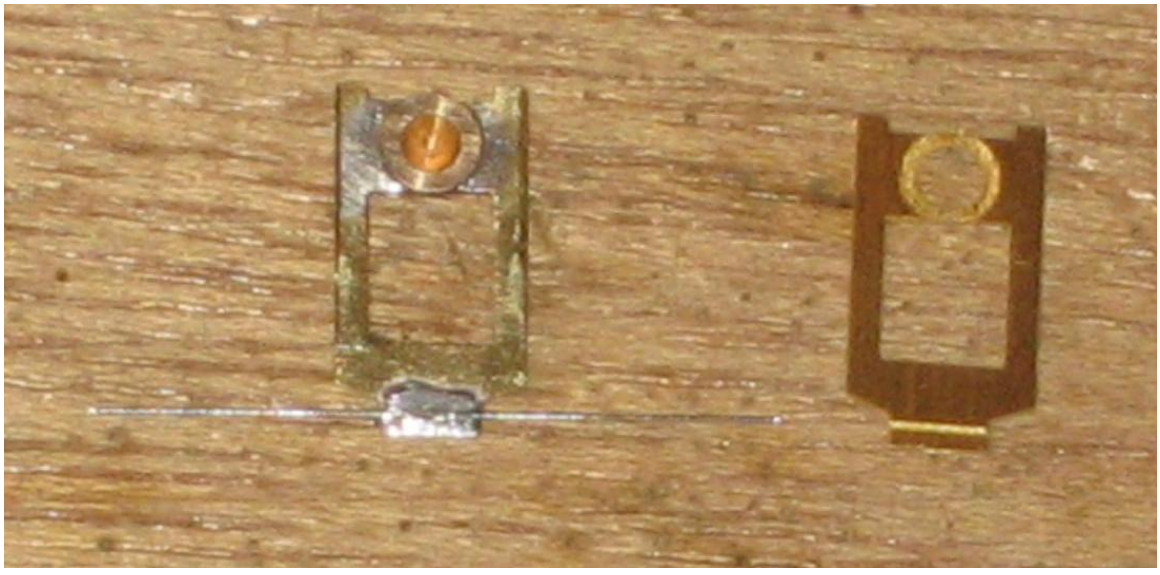


Spring Carriers

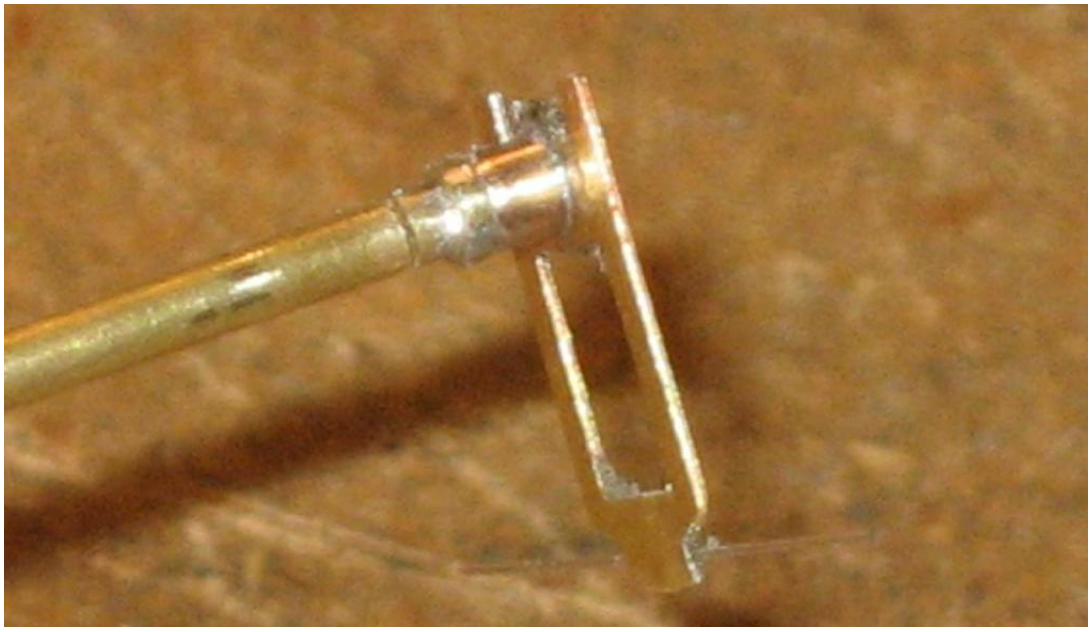
The spring carriers (11) can now be assembled. They are designed so that the springing wire is soldered to the carrier using the half etched slot as a guide. As mentioned in the preamble a suitable flux will be necessary. I use Carr's Black Label.

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 axle guards 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.



A note on roller bearings. Some had them from new and many others were retrofitted with roller bearings. One method of doing this is to extend a non-waisted pinpoint bearing using 1.5mm brass rod and a small sleeve of 2 x 1.5mm brass tube. If using parallel bearings you can make these extensions up from 1mm rod, 1.5x 1mm brass tube and 2x1.5mm brass tube. The actual bearing part of the axlebox casting is then removed with the functional bearing free to move up and down with the spring. Wizard Models make a suitable hooded type roller bearing axlebox casting (BRC023) as well as other non-hooded types.

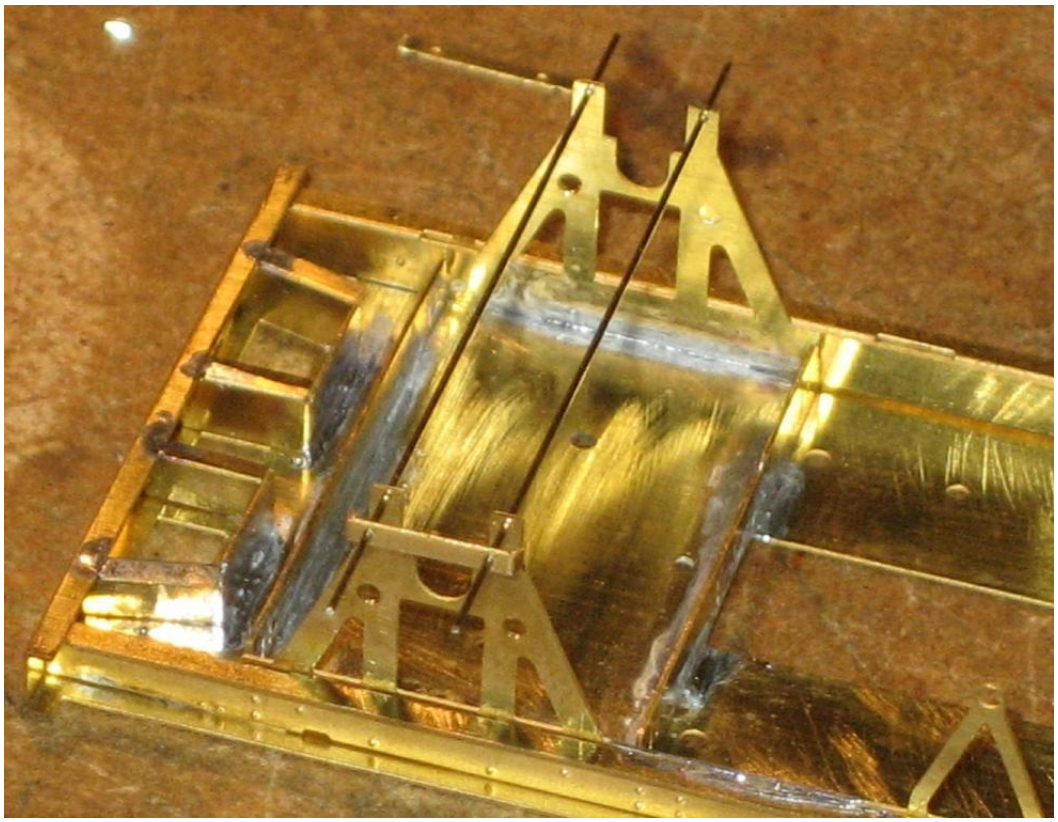


My preferred method now is to attach the roller bearing casting to the spring carrier. I do this by extending Exactoscale parallel bearings using 1.5mm x 1mm tube and then locate the roller bearing on to that. This would require some material removing from the top of the axlebox casting so that the cosmetic spring doesn't impede the movement of the axle.

Axle guards/Tiebars

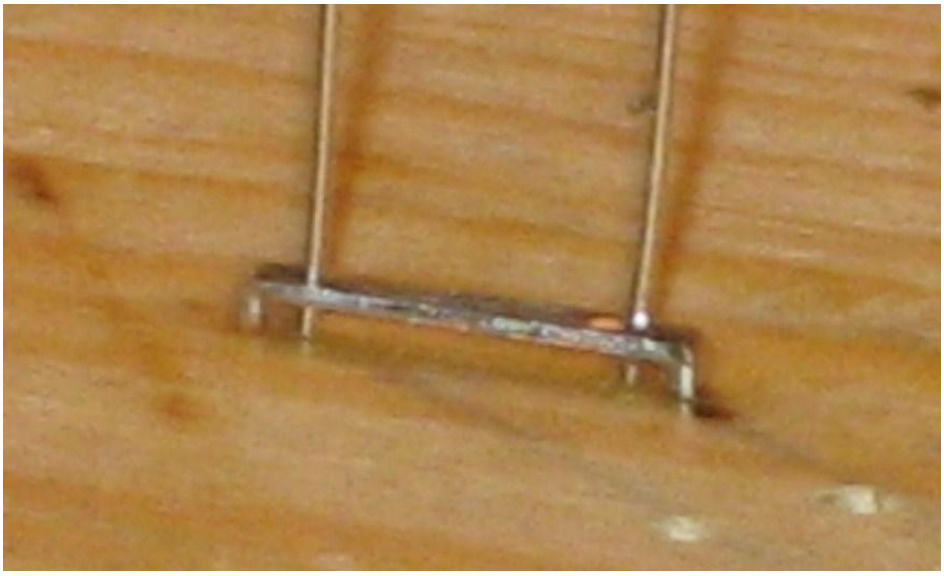
There are axle keeps or tiebars (13) included depending on the type of chassis. These are designed to be removable if you wish in order to allow the wheel sets to be easily dropped out. They can be soldered permanently in place but either way you will need to make sure the holes will accept 0.31mm wire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

If you are not planning on making them removable then they can be pinned and soldered to the W-Irons. Remove from the fret and fold the ends up. Thread lengths of 0.31mm wire through the axle guard and holes in the W-Iron and the corresponding holes on the opposite W-Iron. Solder in place. Fit the other axle guard and solder in place. Trim the wire so that it represents bolt heads on the tie bars but extends approximately 0.5mm from the back of the W-Iron. 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 tie axle guards. 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 axle guards 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 axle guards 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.



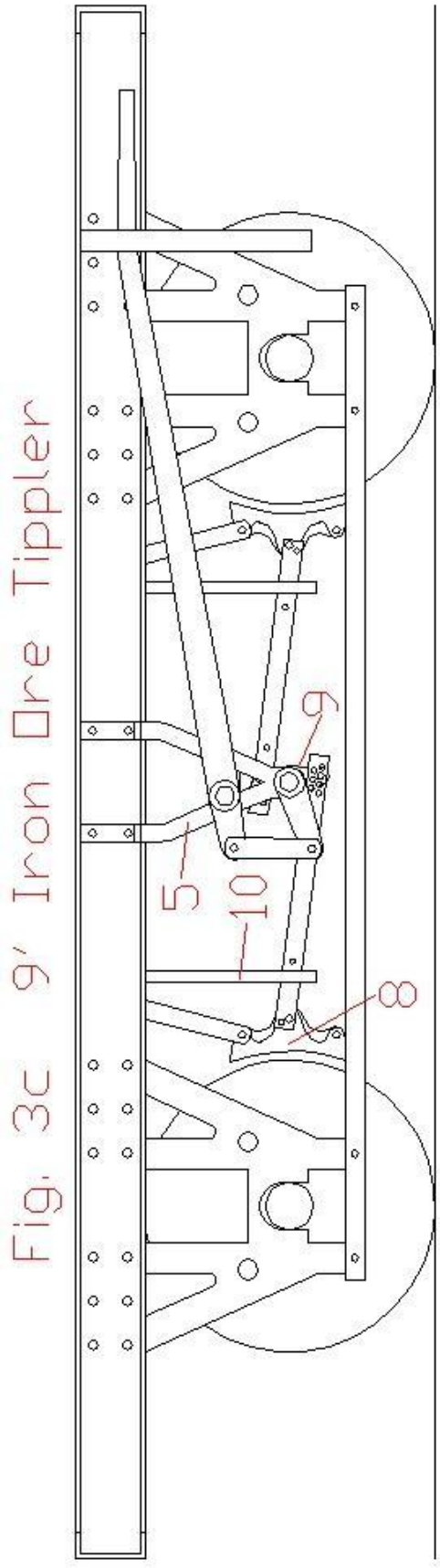
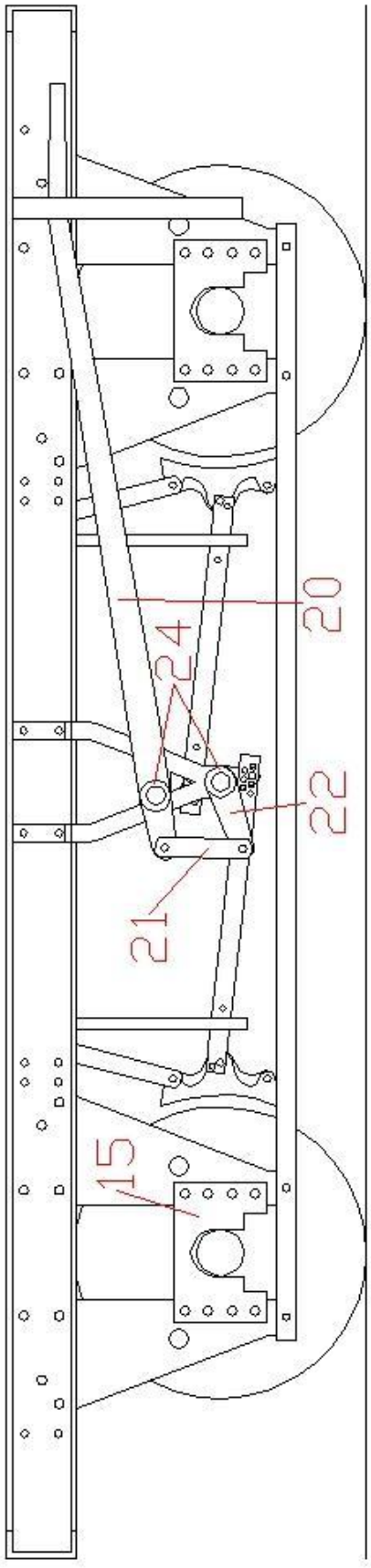
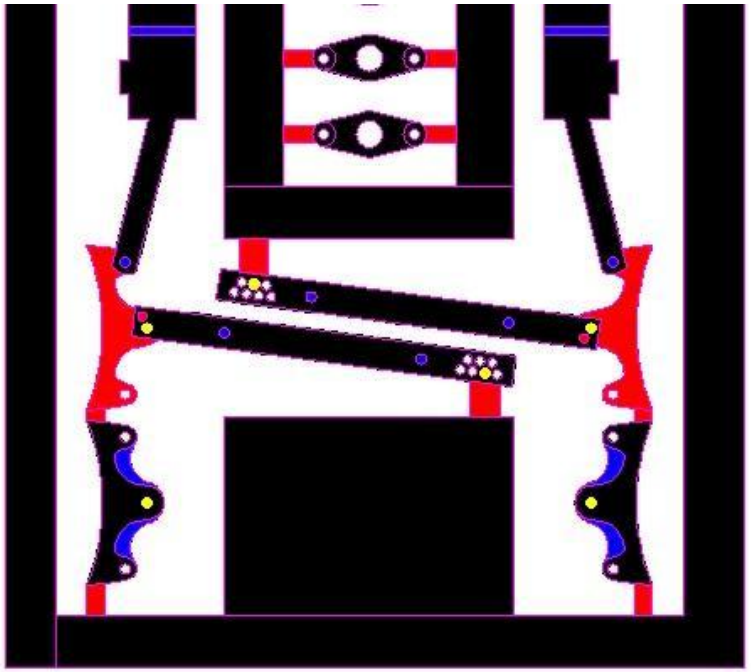


Fig. 3c 9' Iron Ore Tippler

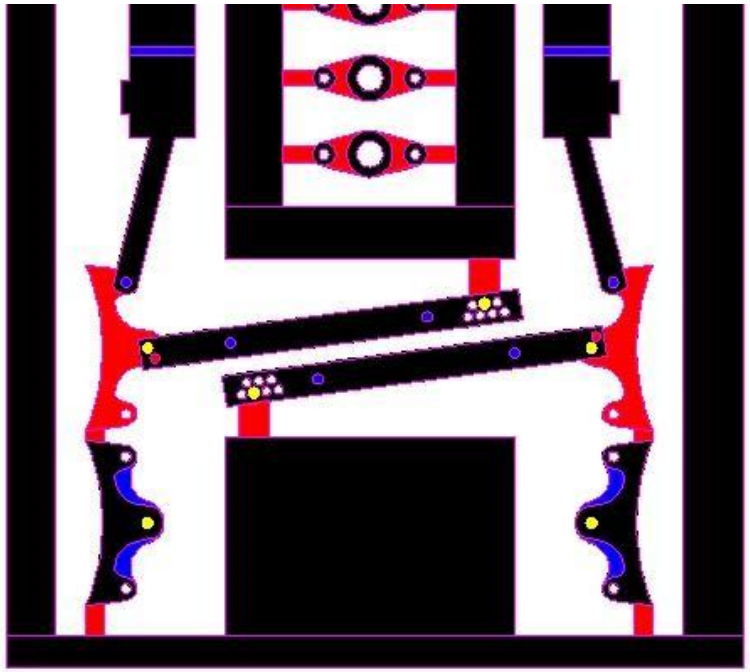


10' Iron Ore Tippler



Non-Morton clutch side
or independent brakes

Fig. 4



Morton clutch or
lifting link side

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.

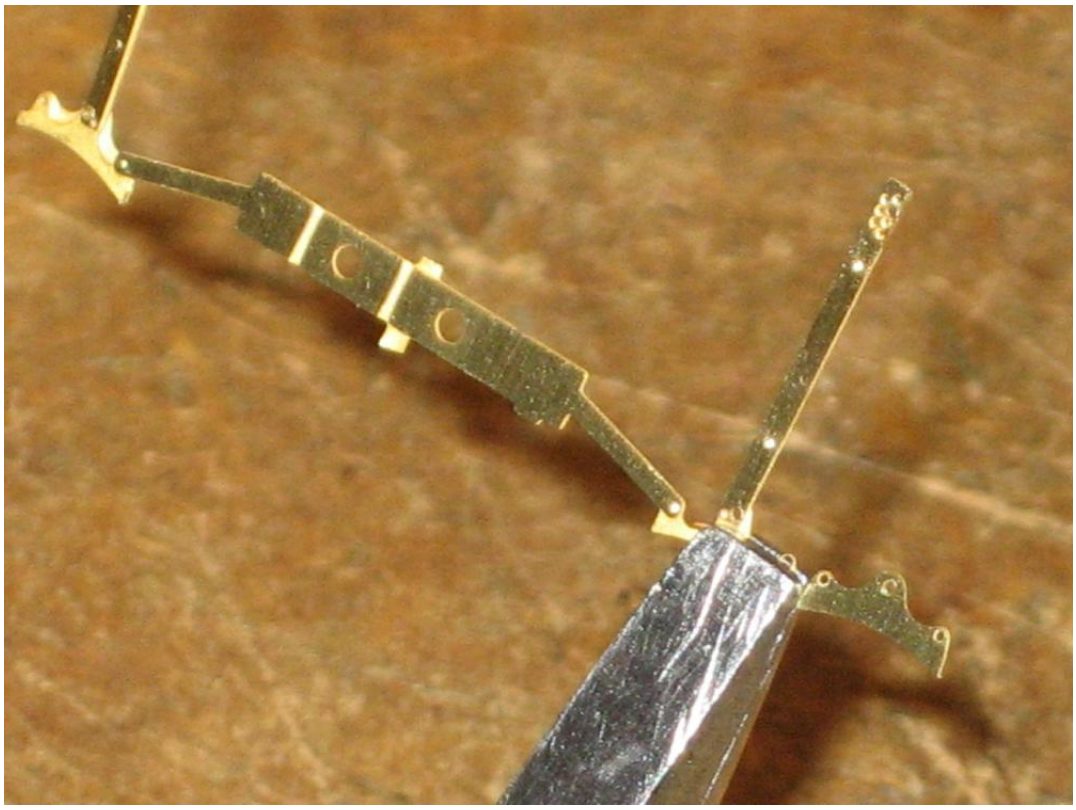
You need to make sure the appropriate holes in the brake shoes can accept 0.31mm wire as this will be used to align/pin everything. Refer to Fig. 4. The holes that need to be able to accept the wire are marked in yellow. I have shown one side of the Morton cam set and non- Morton cam or independent set.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

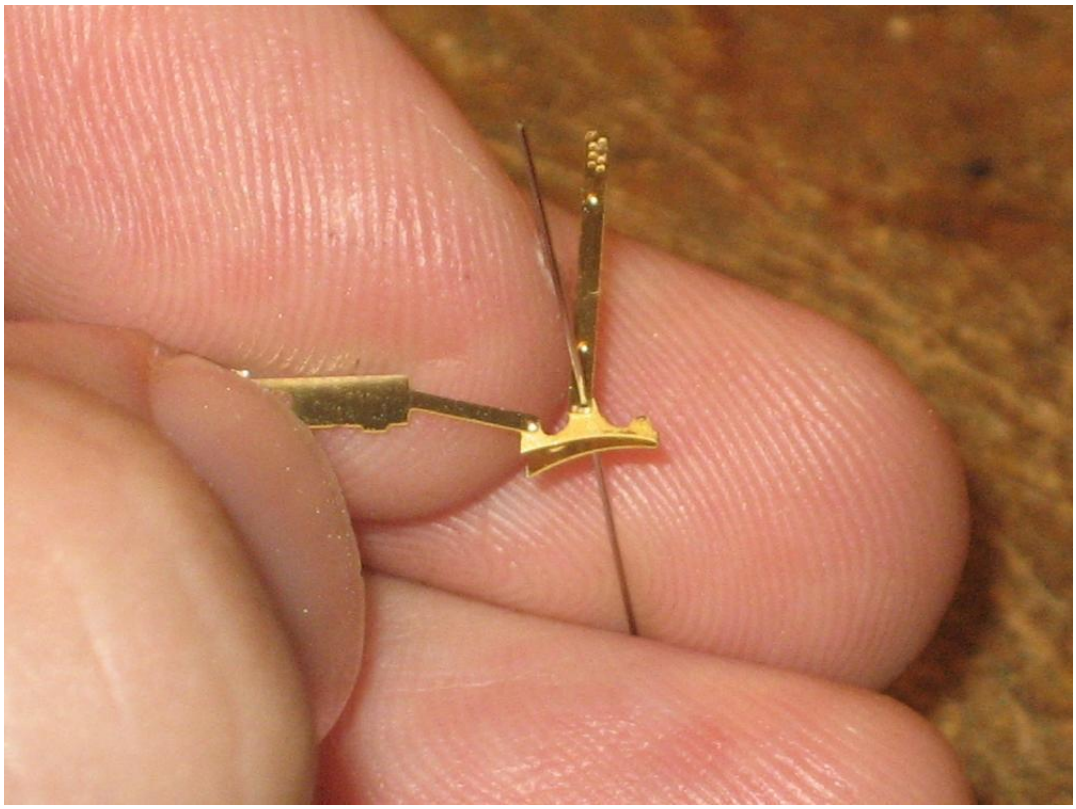
It is best to do one set at a time leaving the other set on the fret. This will avoid mixing parts up when dealing with brakes where the two sides are different. Those sets intended for the Morton cam side of wagons fitted with this type of brake gear or the RCH lifting link brakegear fitted to the heavier minerals are marked on the fret with a big M.

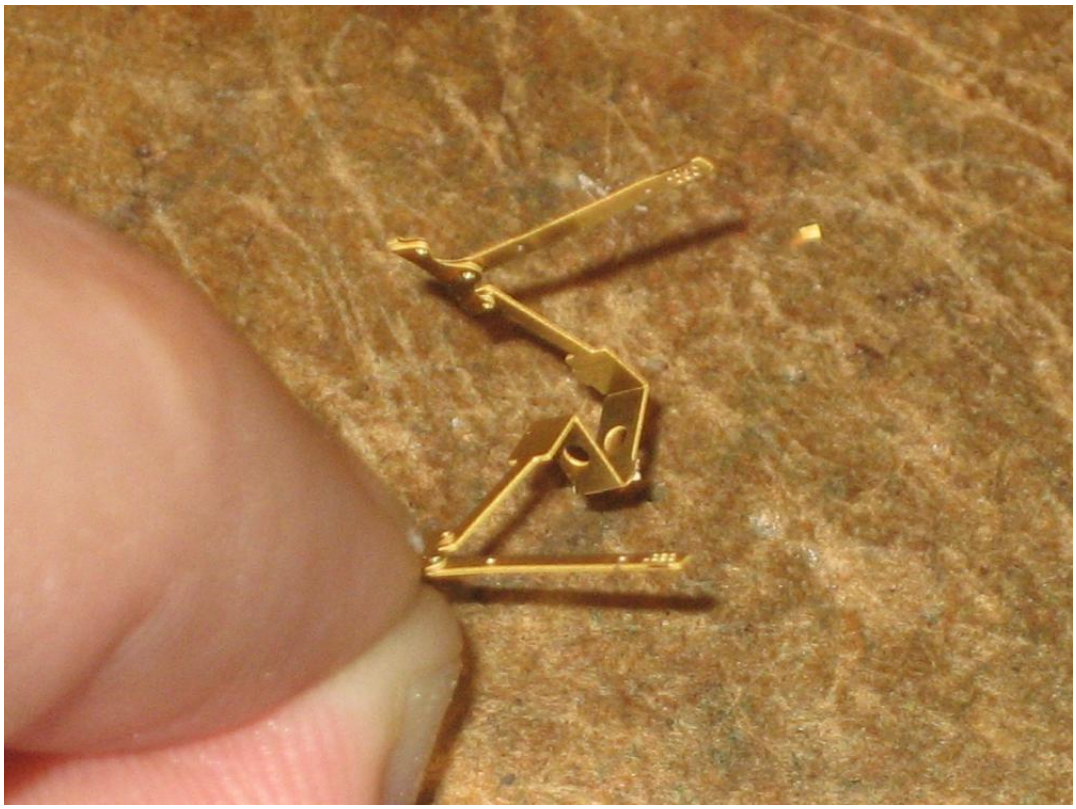
If you wish press out the half etched rivets at the top of the hanger bracket. I use a drop head rivet press for this with the parts held on one of those ubiquitous green cutting mats. Remove from the fret and fold the brakes up. This will distort the push rod so you will need to straighten it afterwards.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

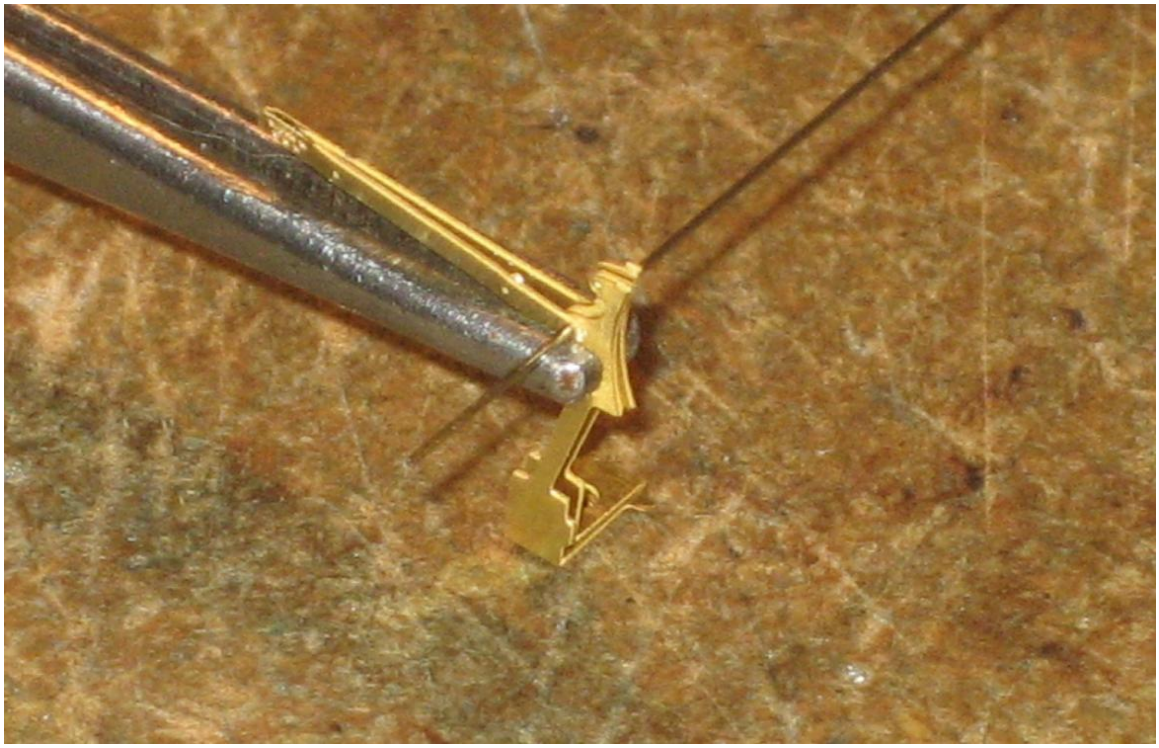
This brake shoe assembly then need to be folded up. There are three fold lines in the centre of the assembly. These need to be folded through 90° except for the centre one (the line between the holes) which needs to be folded through 180° with the fold line on the outside. A length of 0.31mm wire can 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.

Repeat for the other brake assemblies and tidy up any tags.







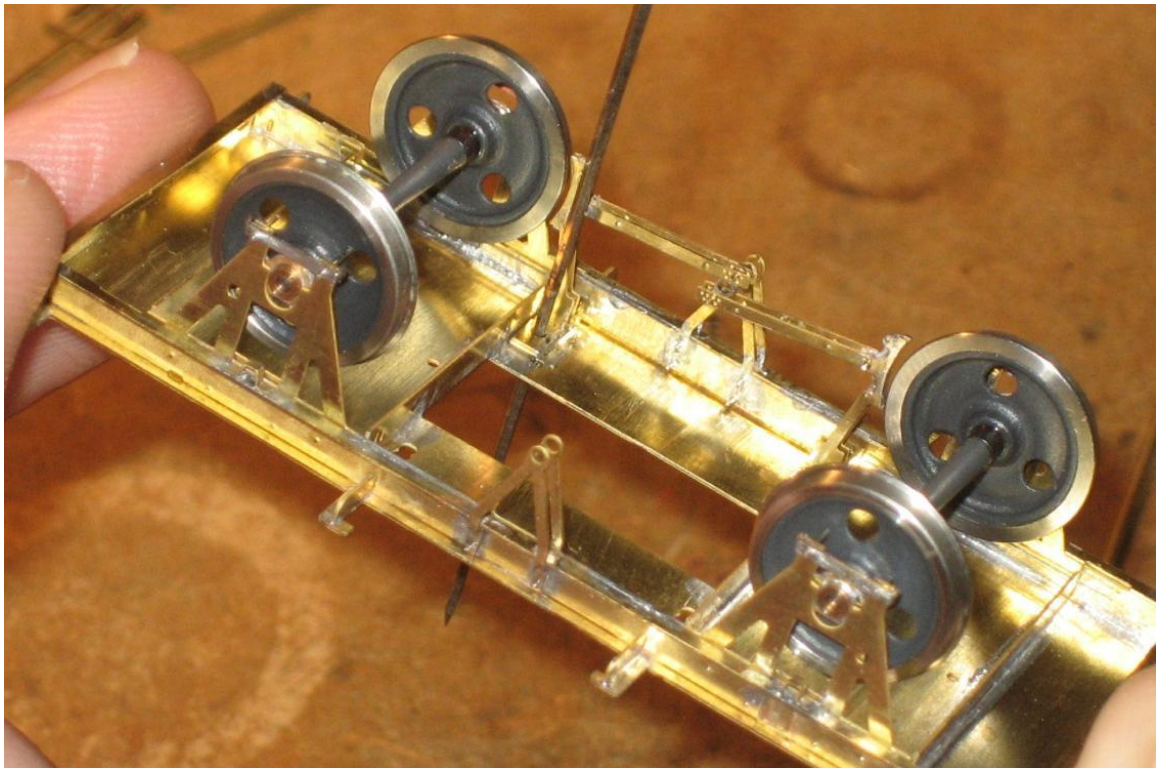


The push rod cranks (9) need to be tackled next. There are two sorts of push rod cranks. One set have half etched areas to match the profile of the prototype and the other are solid. You will need two cranks for each set of brakegear.

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.

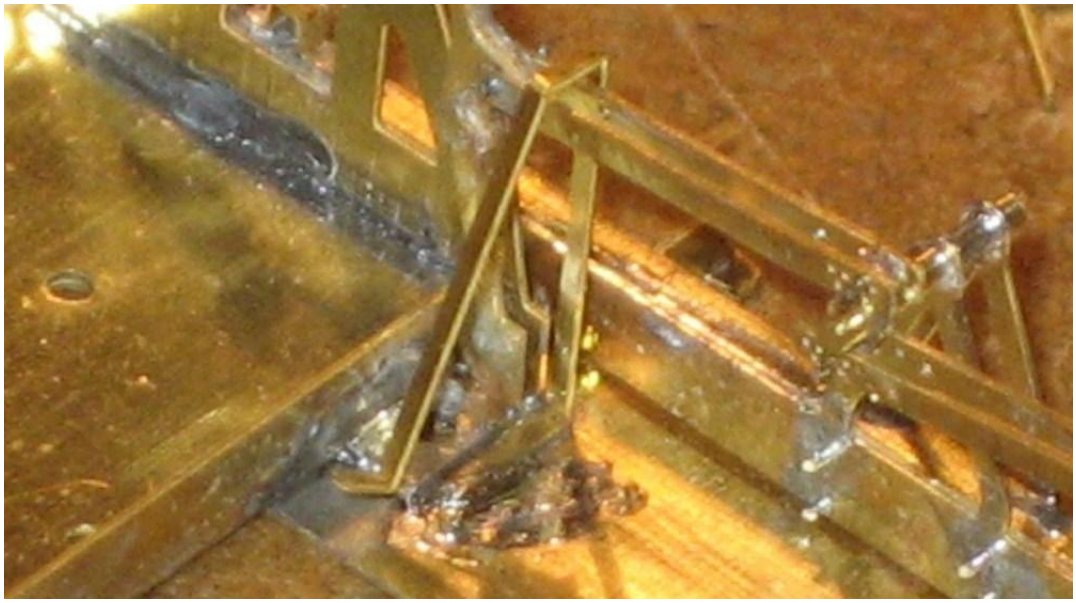
Once complete trim the wire so that it extends approximately 1mm either side of the crank. The crank can then be fitted to the push rods by gently prising the push rods apart and locating the wire into the holes. Once both sets of brake shoes have been added to the crank the wire pins can be trimmed back and then this whole assembly can be fitted to the wagon.

There are tabs on the brake shoes that locate into slots in the W-Iron 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 W-Iron assembly. The holes can also be used to help pin the brake shoes to the chassis top plate when soldering. I don’t worry about soldering the crank to the push rods or indeed to the brake shaft.



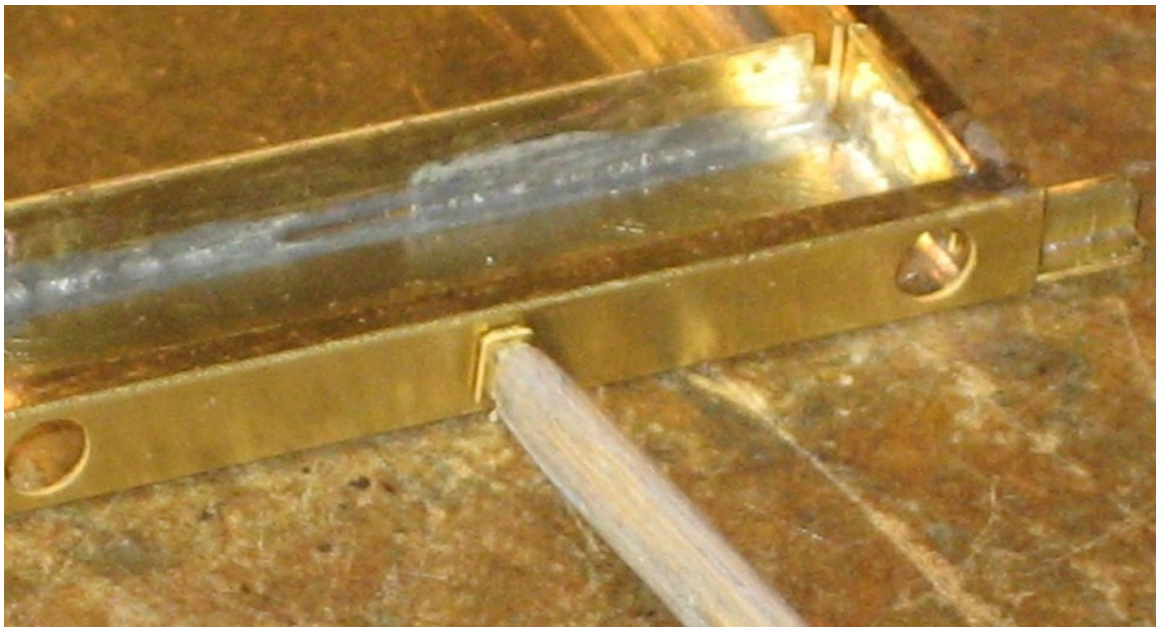
Safety Loops

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.



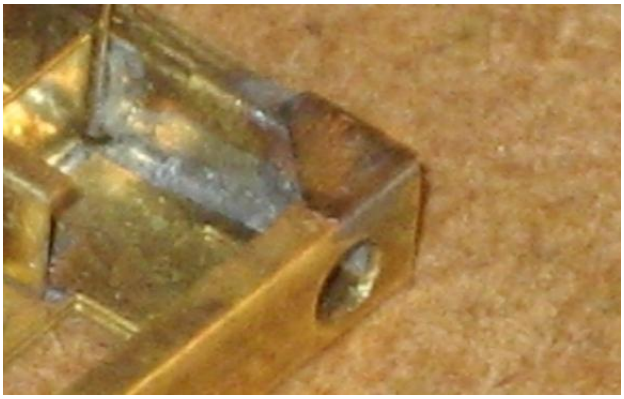
Headstock detailing

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



Corner plates

The corner plates (18) can also be added. These go on the bottom of the corners of the chassis.



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) can accept 0.31mm wire and remove from the fret.

9' iron ore types

Separate the lever guard from the lever guard bracket. Fold the lever guard along with the lever guard bracket referring to Fig. 5a. Solder the lever guard and bracket together using 0.31mm wire to help 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. Press out the half etched rivet on the brake lever guard stays and fold both ends through about 30°. The stay can then be pinned to the bottom of the lever guard using 0.31mm wire and then soldered to both the lever guard and the W-Iron and any excess wire trimmed off.

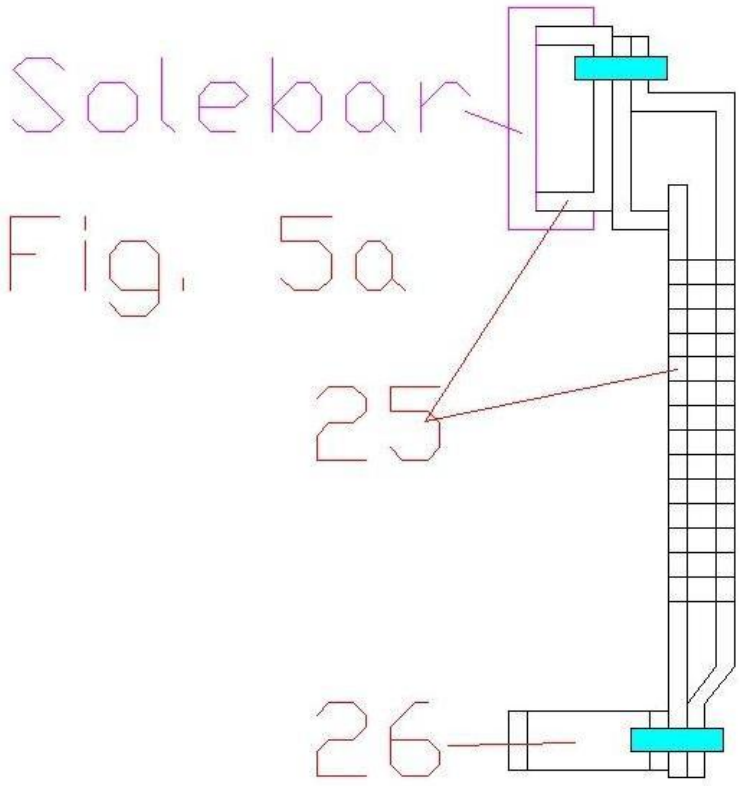
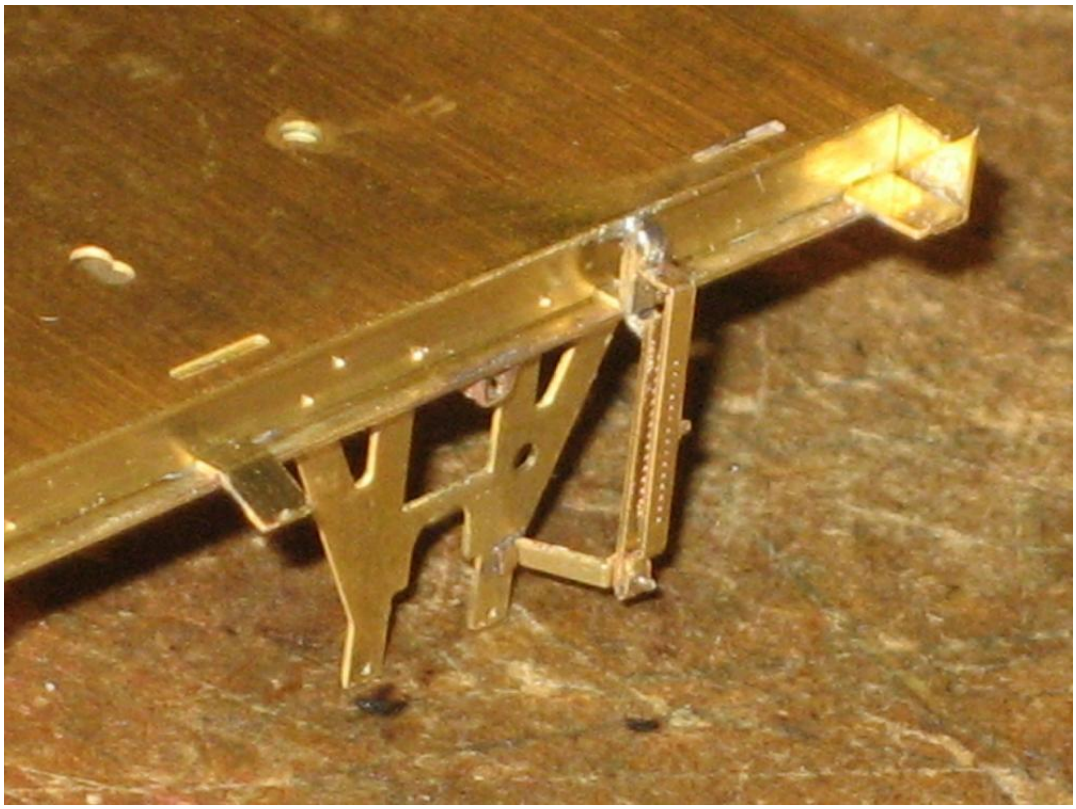


Fig. 5a



10’ iron ore tippler types

I have included riveted axlebox guide overlays (15) with 10’ iron ore chassis that you can use if you wish. Most suitable axlebox castings come with these heavy duty guides as part of the moulding so you don’t have to use them but if you do use the slot for the bearing in the w-iron to align them. The semicircle at the top of the slots should coincide.

Separate the lever guard from the lever guard bracket. Fold the lever guard along with the lever guard bracket referring to Fig. 5b. 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.

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 W-Iron. 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 W-Iron and any excess wire trimmed off.

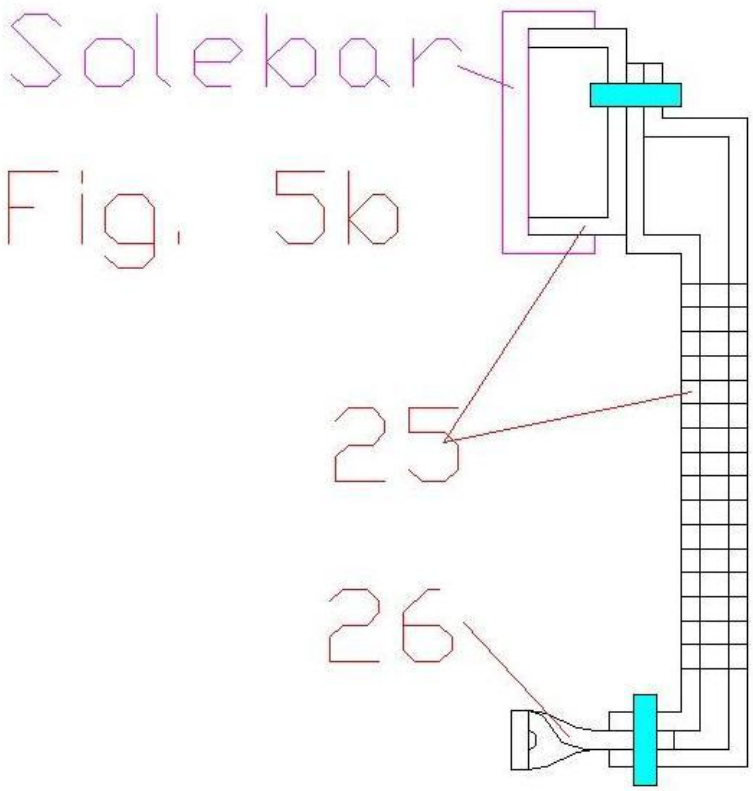
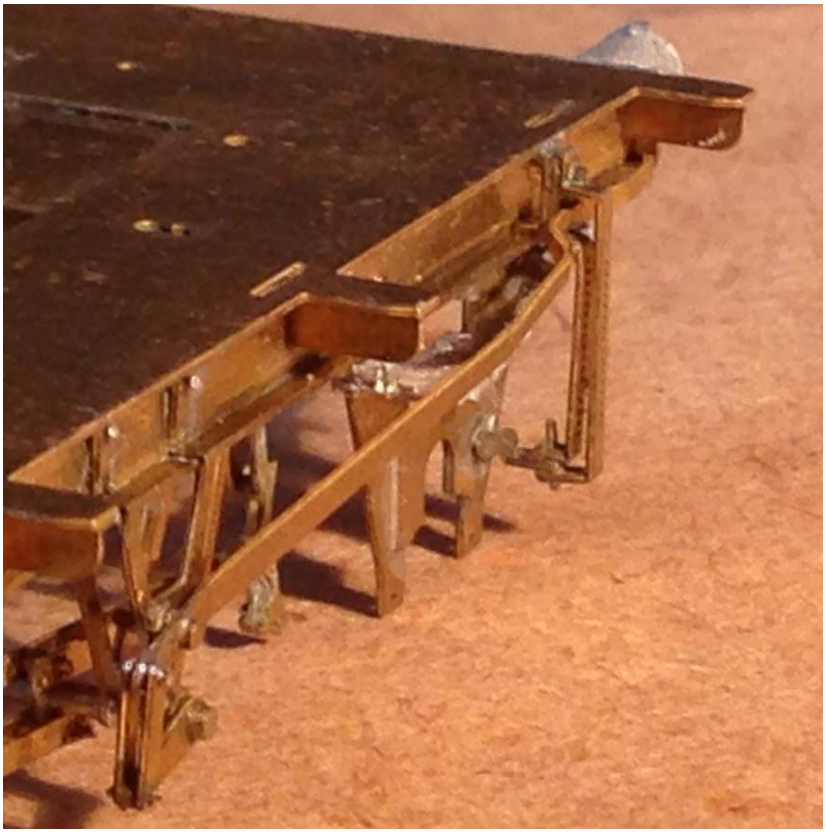


Fig. 5b



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 for the 9’ iron ore tipplers and also if you are using the etched riveted axlebox guide overlay (15) included on the 10’ iron ore chassis.

Brake Levers

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

Brake levers (20) 0.8mm and 0.31mm
Lifting links (21) 0.31mm
Lifting link cranks (22) 0.8mm and 0.31mm
Brake lever washers (24) 0.8mm

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 brake lever (20). This will enable you to locate the lifting link in place. The same thing needs to be done with the lifting link crank (22).Also a short length of 0.8mm wire needs to be soldered through the brake lever with a brake lever washer (24) on both sides. 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.

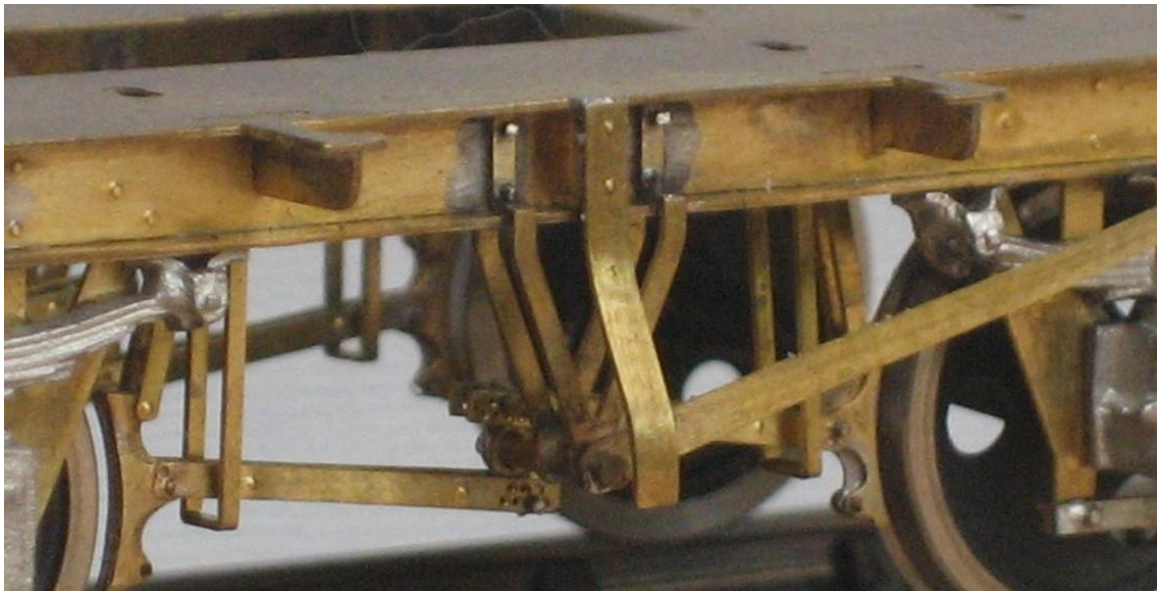
The brake levers need to be bent up as per the prototype clearing the axleboxes and then cranked for the handle. Check on the model and adjust until you are happy with the shape. Once you are happy with the shape the brake lever can be soldered in place.

Cut two short lengths of 0.8mm wire to act as the brake shafts. These should extend approximately 1mm from the front vee and then be long enough to pass through the crank in the brakegear. Solder in place to the vees. I haven't found it necessary to solder them to the cranks.

Fit the lifting link crank (22) on the brake shaft with a brake lever washer (24) between the crank and the vee. 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. Add a washer to the brake shaft and solder the lifting link crank in place. See fig 3c for more details.

Door Springs

Door springs (27) are designed to 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 at the top.



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.

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 2014

Suppliers List

Eileen's Emporium
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 and spring castings)
Dart Castings
17 Hurst Close
Staplehurst
Tonbridge
Kent
TN12 0BX
www.dartcastings.co.uk

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