Brassmasters **Scale Models**

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Detailing Kit for Bachmann Wainwright C 0-6-0 Locomotive and Tender

Instructions

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1 Introduction

1.1 The detailing kit was designed as part of the Brassmasters EasiChas frames for the Bachmann Wainwright C Class locomotive. The EasiChas concept, which was devised by John Brighton, is to allow easy conversion of ready to run locos to EM or P4 gauge, which results in a fully sprung locomotive and tender. Furthermore, the basic EasiChas conversion can be completed without the need to solder any of the main components together. It was realised that the detailing etch within these kits is just as suitable for those modellers wishing to enhance the model without converting to EM or P4.

1.2 There are a number of options in the detailing kit. These are, working from the front:

- replacement loco brake pull rods and linkage
- replacement sandboxes
- replacement tender brake gear
- tender vacuum tanks
- replacement tender guard irons

2 General Notes

2.1 Numbers shown in square brackets [ ] in the instructions refer to the etch (D for the Detail etch) and part numbers, e.g., [D2] is part 2 on the Detail etch. The part number appears on the separate etch diagrams. Certain parts, e.g. bolts, wire, springs, are not numbered.

2.2 Some of the parts are small and easily damaged, so do please take care. Parts should be removed from the sheets as and when needed by use of a small scalpel etc., and the tabs and etch cusp removed with a small fine-cut file.

2.3 All folds and bends are made with the half-etched line on the inside unless otherwise stated.

2.4 On some parts it is necessary to emboss rivet / bolt heads from the reverse sides by use of a punch.

2.5 A simple method of cutting tube is to place the piece of tube on a smooth wooden board, hold a Stanley knife with a new blade at right angles to the tube where the cut is to be and then, with gentle pressure on the knife, roll the tube backwards and forwards with the knife blade until the tube parts. All the tube in this kit has been cut this way.

3 Dismantling the locomotive and tender

3.1 Tools Required

- A selection of cross head and normal miniature screwdrivers
- Small pliers
- Small plastic bags and labels to identify parts & screws when dismantling
- Small files
- Soldering iron (for electrical connections)
- A steel rule
- Back to Back wheel gauge
- Plastic solvent, superglue and epoxy resin (24 hour & 5 minute)

3.2 First with pliers pull out the electrical plug under the tender and release the loco from the tender by minipulating the drawbar, plug and wires .

3.3 In all cases bag and label all small parts and source of screws **as soon as removed** (they are all different) - trust us on this one!

Locomotive

3.4 Unclip the brake pull rods from each brake block hanger so that the pull assembly hinges on the rear brake cylinder cross shaft. Carefully unclip this cross shaft by springing open the side frames with pliers. Unless you are very careful the end pips will break off. Place brake pull asembly aside for further use.

3.5 Unscrew the front and rear (below the cab floor hidden by wires) screws, pull the chassis vertically to remove the chassis from the body.

Tender

3.6 Unscrew the two front screws behind the drag beam.

3.7 Spring the tender side frames apart to release the brake pull rod assembly. Spring the tender side frames apart to release the wheels. Remove the rear tension lock coupling (put a screwdriver below it and twist) to reveal the screw holding the coupling pocket. Remove this and the guard irons.

3.8 Your loco and tender are now ready for conversion.

3.9 Wash your hands as you will have grease on them from stripping the chassis and the etches should be kept as clean as possible.

4 Locomotive components

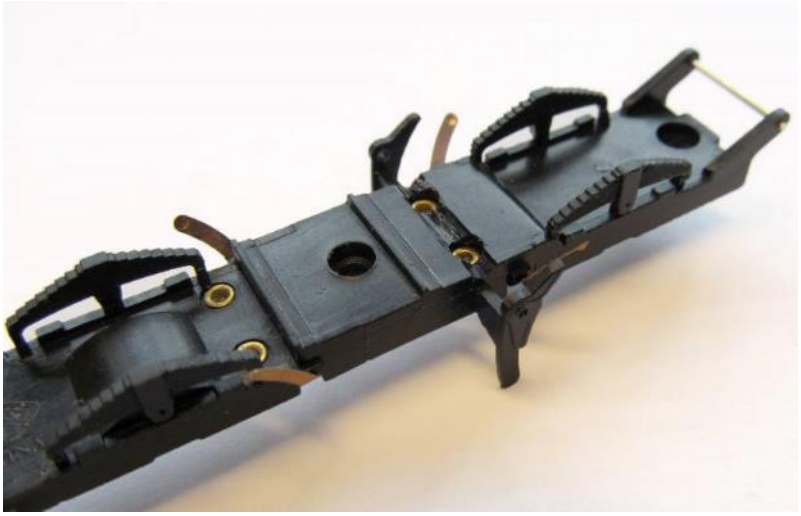
4.1 Locomotive brake gear

4.1.1 The plastic brake pull rods on the Bachmann model are not very accurate and look better if replaced.

4.1.2 Undo the screws that hold the keeper plate to the loco and remove it

4.1.3 Open up the holes in the brake hangers to be a push fit on 0.8 mm wire and the holes in the brake shaft bracket at the rear of the keeper plate to be a push fit for 0.6 mm wire.

4.1.4 Cut three pieces of 0.8 mm wire so that they fit between the brake hangers with a very short length protruding each side. Cut a piece of 0.6 mm wire to fit between the brake shaft brackets so it is flush with the outside.



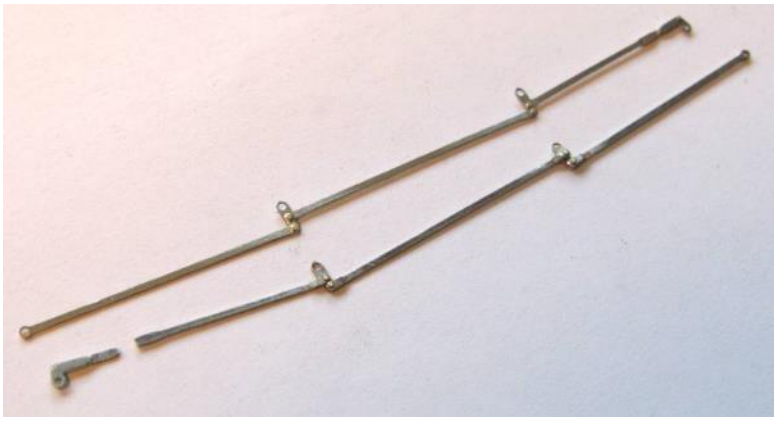
4.1.5 Carve away a groove across the bottom of the keeper plate in line with the holes in the rear brake hangers. Ensure a piece of 0.8 mm wire can slide between the two brake hangers. See photo.

4.1.6 Take the brake pull rods etch [D1], and cut off the lever and rear end where it is waisted, about 3.5mm from the end. Open up the holes at the front end and at the top of the centre and rear links to clear 0.8 mm wire. Open up the hole in the large boss on the brake shaft levers [D2] to clear 0.6 mm wire. The pull rods can be detailed if required.

4.1.7 For simple detail, solder short lengths of 0.5 mm wire into each of the 0.5 mm holes in the pull rods [D1] and trim back to represent the pins. See photo

4.1.8 For more detailed pull rods, identify the two overlays representing the boss on the leading pull rod [D3] and the forked ends of the pull rods [D4], then solder the boss [D3] to the back of the leading end of the pull rods and the forked ends [D4] to the face of the pull rods where the rods meet the compensation links, using short lengths of 0.5 mm wire to locate them. Remember that the pull rods are handed. See photo.

4.1.9 Solder the slack adjuster bodies [D5] to the brake shaft levers [D2], again using a short length of 0.5 mm wire to locate it. Remember that the brake shaft levers are handed. See photo.



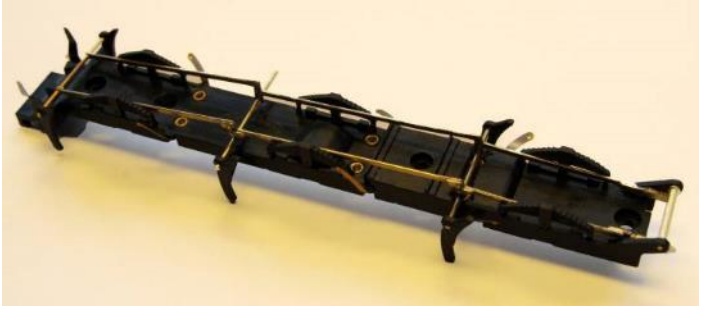
4.1.10 Pass a piece of 0.8 mm wire through the front brake hanger, through the front of the two pullrods and through the second brake hanger (making sure you have right sides out if you have fitted the etched detail).

4.1.11 Repeat for the rear brake hanger. It may be necessary to carve away a little more of the plastic keep plate to clear the pull rods.

4.1.12 Finally repeat for the centre brake hangers.

4.1.13 Mount the brake shaft levers [D2[on the 0.6 mm wire through the brake shaft brackets. Measure the distance between the two levers and cut a piece of 1.2 mm tube to this length.

4.1.14 Remount the brake shaft levers with the 1.2 mm tube between them, align the slack adjuster with the pull rods and solder or glue into position.



4.1.15 Refit the keeper plate to the loco chassis using the original screws.

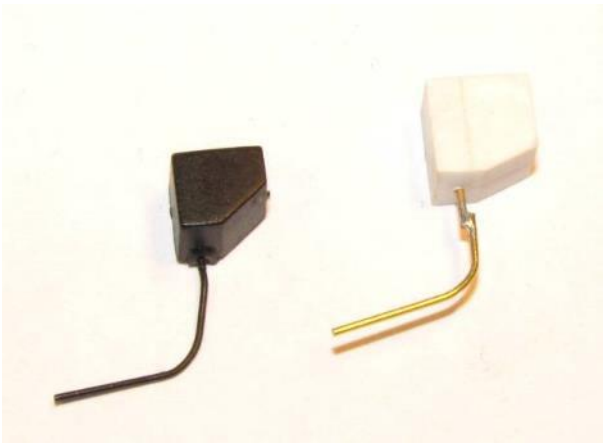
4.2 Sandboxes

Note: this paragraph is best completed **afte**r all other construction work is finished because the sandpipes interfere with the removal of the wheelsets.

4.2.1 The Bachmann sandboxes are not the correct shape. A pattern [D6] is provided to enable the builder to produce correctly shaped ones.

4.2.2 Three pieces of 2 mm x 4mm plastic strip 6.5 mm long should be glued together to form a block 6 mm x 4 mm x 6.25 mm high. Sand and file to ensure squareness. File the bottom of the block to the shape of the pattern. Note that the sandboxes were quite wide extending to the face of the wheels.

4.2.3 Drill a 0.4 mm hole through the centre of the lower face of the sandbox and fit 0.45mm wire to form the sand pipes. Shape to a 'J' configuration terminating just short of the centre wheels (all sandboxes operate on the centre driving wheel). Repeat for the other sandbox.



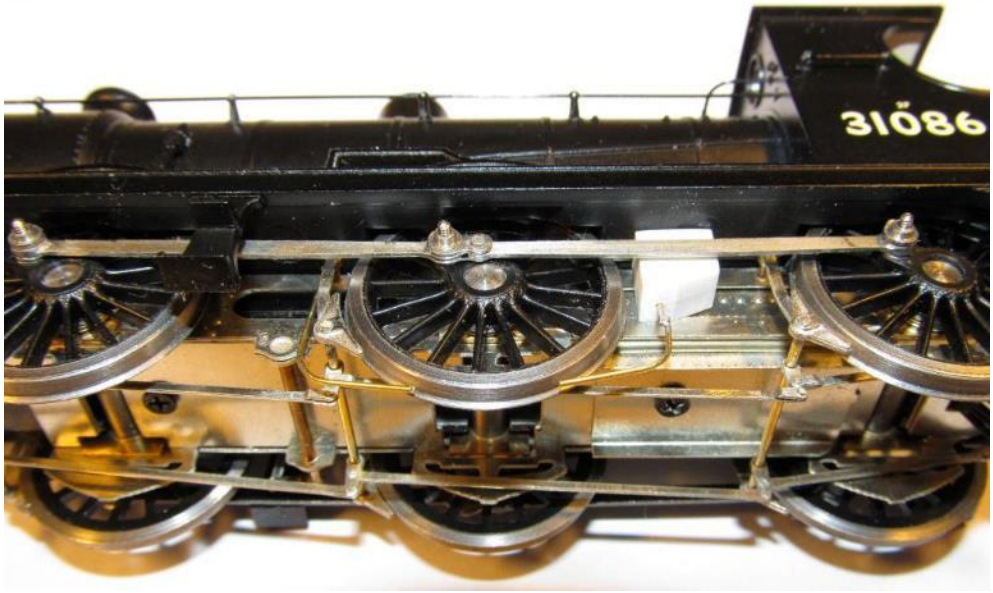
4.2.4 To represent the sandpipes from the leading sandboxes located on the footplate drill a 0.5 mm hole in each side of the Bachmann chassis block towards the top just in front of the middle brake hanger. Secure a piece of wire in the hole and bend it downwards so it comes down just to the front of the brake hanger. Again shape to a 'J'.

4.2.5 On the prototype there was a 'trap' just below the sandbox. This can be represented by a joint in the wire on the rear sandboxes – it couldn't be seen on the leading ones (see photos).

4.2.6 Attach the sandboxes to the chassis block using cyanoacrylate glue or epoxy resin. The front edge is 11.75 mm from the centre of the centre wheel.

4.2.7 The sandboxes fit tight up to the underside of the footplate.

See photo.



8 Additional tender components

8.1 Tank/brake frame

8.1.1 The dummy tank also supports the replacement brakes.

8.1.2 Fold up the sides of the brake frame [D7] to 90 degrees. With the tender wheels removed check in position.

8.1.2 The frame is held to the plastic tender by a self-tapping screw. Place the frame in the correct position in the body and mark where the central hole is. Remove the frame and drill a 1.5 mm hole in the body. Screw the self-tapping screw into this hole, and then remove.

8.2 Vacuum tanks

8.2.1 Fold up the vacuum tank support bracket [D8]

8.2.2 Cut two pieces of 4 mm tube 13 mm long

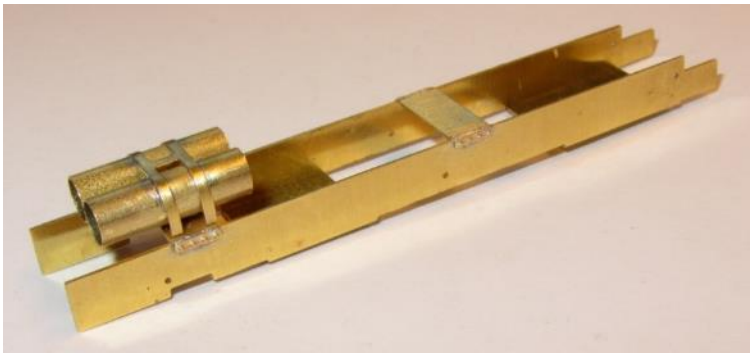
8.2.3 Solder the two pieces of tube to the support bracket [D8] so that they both overhang one end by 5 mm. See photo.

8.2.4 Bend up the retaining straps [D9], cut the legs to the correct length and solder in position. See photo.

8.2.5 Solder the support bracket into the cutouts in the frame between the leading and centre wheels with the 5 mm overhang towards the front of the tender.

8.2.6 Solder the rear cross member [D10] between the cutouts in the frame between the centre and trailing wheels.

8.2.7 Solder the nut plate [D11] over the outside of the cutouts with the nuts towards the top of the plate. See photo



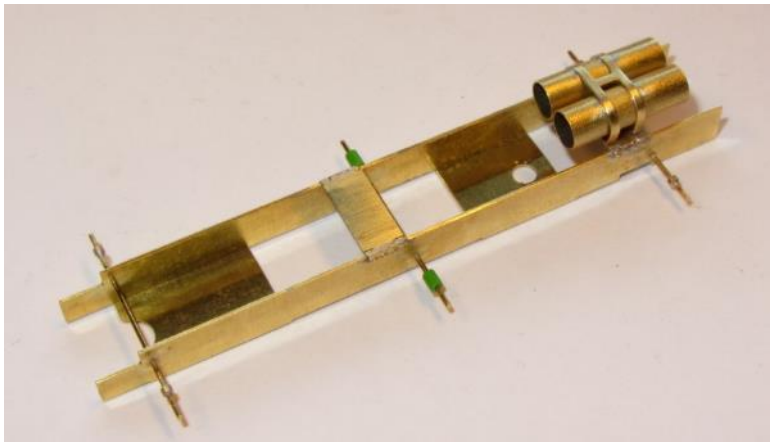
8.3 Replacement brake gear

8.3.1 The Bachmann tender brake gear is moulded in line with the frames and is probably the weakest visual area of the model. Cut the brake gear away and clean up the cuts especially the inside of the ‘D’ cut-outs.

8.3.2 Open out the holes in the pull rods [D12 & D13] to 0.5mm except for the one in the larger boss at the front end which should 0.6 mm.

8.3.3 Solder 0.5 mm support wires across the tank/brake frame so the ends are flush with the wheel faces.

8.3.4 Cut six short pieces (around 1.0 – 1.5 mm) of 1.0 mm brass tube. Slide one piece each side of the trailing support wire. An alternative is to use short pieces of insulation from small diameter electrical wire. (photo shows four brass and two insulation)

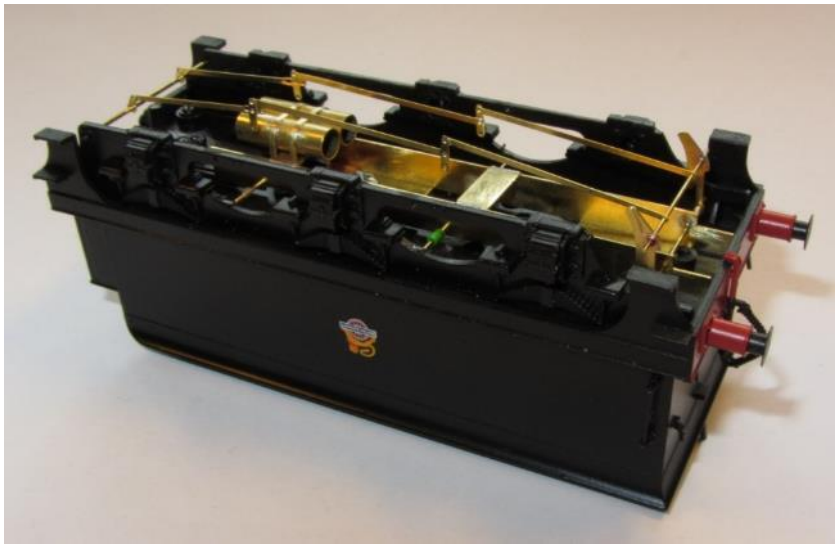


8.3.5 Place the trailing brake hanger/block [D14 & D15] on each side of the trailing cross wire and position them the correct distance in to suit the wheels you are using. Slide the tube up to the brake hanger/block. Remove the brake hangers and solder the tube to the wire or attach using cyanocrylate. Repeat for the centre and leading wheels.

8.3.6 Cut three pieces of 0.5 mm wire just under 24 mm long to fit between the Bachmann frames. Cut a piece of 0.6 mm wire by just under 27 mm long to go through the holes in the front of the Bachmann frames for the brake shaft.

8.3.7 This is best done without the wheels in place. With the tender upside down and the tank/brake frame screwed in place, position the two brake hangers [D14 & D15] on the trailing support wire. Slide a piece of 0.5 mm wire through the centre hole of one brake hanger, through the trailing hole of both the inner brake pull rods (making sure that they are the correct way up and you have the detailed sides in).

8.3.8 Slide the piece of 0.6 mm wire through the brake shaft hole in the Bachmann frame, through both brake pull rods and through the other brake shaft hole. Slide the pull rods until they are roughly where the back of the wheels would be and running parallel down the frames. See photo.



8.3.9 Holding one of the trailing brake hangers [D14 or D15] vertical, solder it to the 0.5 mm wire in the centre of the brake hanger (not the support cross wire). Repeat for the other side. Make sure that the there is an equal amount of wire on the outer ends of the brake blocks

8.3.10 Position the centre brake hangers [D16 & D17] on the support wire and slide the second piece of 0.5 mm wire through these and the top hole of the pull rods. Again, solder the hangers to the 0.5 mm cross wire only. Repeat for the front brake hangers [D18 & D19].

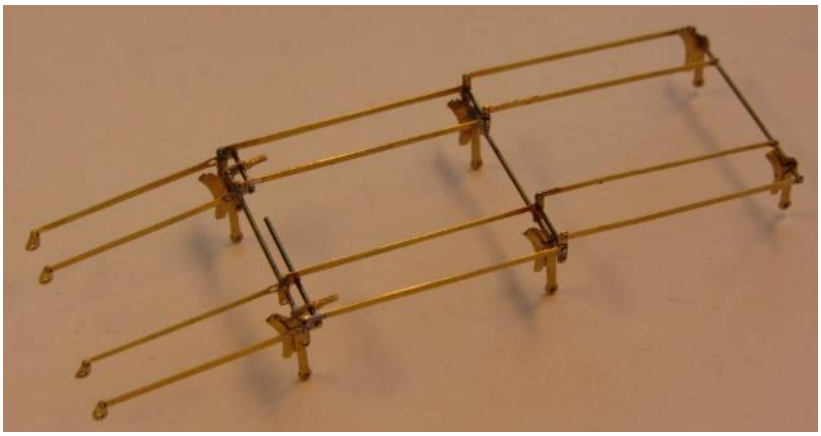
8.3.11 Refit the Bachmann wheels and check that the brake hangers are in the correct position across the face of the wheels. If not, adjust either the 0.5 mm cross shaft or the small piece of tube on the cross wire, or both.

8.3.12 Remove the frame and cut back the support wire to just outside of the brake hangers. The brake hangers should then just clip off the ends of the support wires

8.3.13 With the frame, wheels and brake gear refitted, position the inner pull rods so that they are clear of the backs of the wheels and solder to the cross wires.

8.3.14 Remove the brake gear, wheels and tank/brake frame and re-assemble the brake gear on the tank/brake frame. Solder the outer pull rods [D12 & D13] to the ends of the cross wires.

8.3.15 Cut eight pieces of 0.5mm wire that are long enough to reach between the inner and outer pull rods. Push the wire through the inner and outer pull rods and solder in the positions shown in the diagram

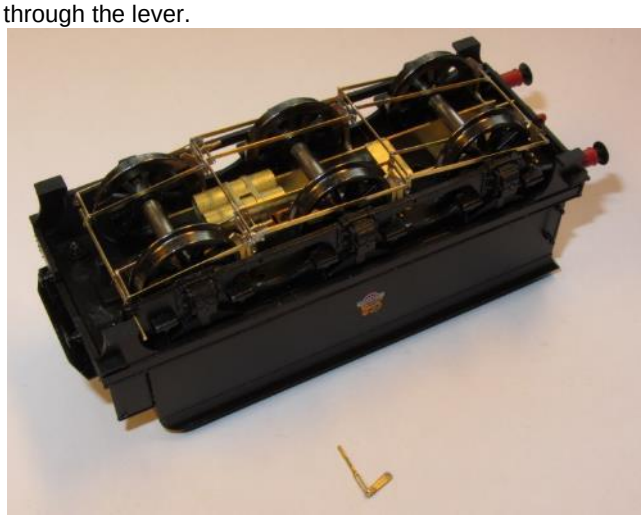


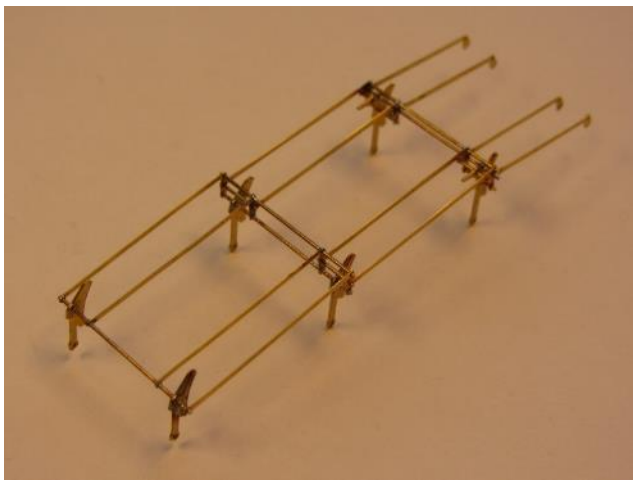
8.3.16 Cut two pieces of 0.5 mm wire just under 24 mm long to fit between the Bachmann frames and feed them through the bottom holes of the leading and centre pull rods to form the brake cross shafts and solder to the outer and inner pull rods.

8.3.17 Cut the original cross wire on the leading and centre brake hangers immediately behind the inner pull rods on both sides.

8.3.18 Solder the two halves of the handbrake lever [D20] together. Place the hand brake rod [D21] between the arms of the lever and locate in position with a stub of 0.5 mm wire. Adjust the angle between the two and solder in position See photo.

8.3.19 Glue the handbrake assembly to the inside of the frame so that the hand brake rod is in line with the hand brake column on the Bachmann body. Ensure that the 0.6 mm brake shaft wire can pass through the lever.





8.4 Replacement guard irons

8.4.1 Fold up the guard irons [D22] (see photo)

8.4.2 Remove the pips on the underframe that retained the original guard irons.

8.5 Re-assembly

8.5.1 Thread the wires from the loco through the tank/brake frame and insert the plug into the socket.

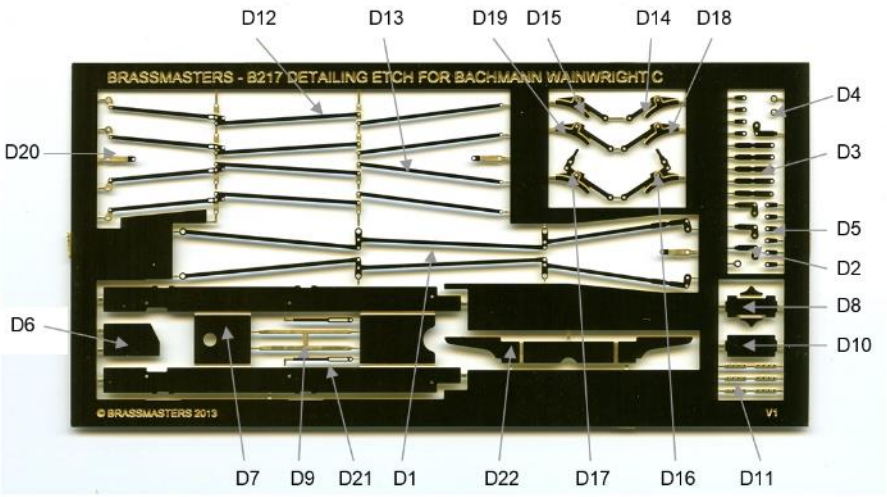
8.5.2 Position the guard irons on the underframe

8.5.3 Place the tank/brake frame in position over the guard irons and secure with the self-tapping screw.

8.5.4 Replace the original wheels

8.5.5 Clip the brake gear into position.

Detailing Etch



D1	loco brake pull rods (2)	D12	tender brake pull rods left hand (2)
D2	loco brake shaft lever (2)	D13	tender brake pull rods right hand (2)
D3	loco slack adjuster (2)	D14	trailing tender brake hanger/block left
D4	leading loco brake pull rod boss (2)	D15	trailing tender brake hanger/block right
D5	loco brake pull rod forked end (8)	D16	leading tender brake hanger/block left
D6	sandbox pattern	D17	leading tender brake hanger/block right
D7	brake frame (for 00)	D18	centre tender brake hanger/block left
D8	vacuum tank support bracket (00)	D19	centre tender brake hanger/block right
D9	vacuum tank straps	D20	handbrake lever (2)
D10	rear cross member (00)	D21	handbrake rod
D11	nut plates (4)	D22	guard irons 00

Other components

0.8 mm brass wire	4.0 mm brass tube
0.6 mm brass wire	1.2 mm brass tube
0.5 mm brass wire	1.0 mm brass tube
	self tapping screw

Diagram showing wire positions