Part Two

Making the components

These components were first introduced as the Facing Point Lock some years ago and the initial project was to re-introduce an improved Facing Point Lock so this section is defined by the chronology involved with the introduction of this range.

Facing Point Locks (item RFPL)

There are two sets of components each to make a bolt lock, a fourty foot long wheel flange detector and a selector for two signal wires. The wheel flange detector may be reduced in length. This design was considered as “standard” in the 1930’s (see figure 17 - in Part One)

The length of a detector would limit the rolling stock used on a section of railway. The longest part of any train without any wheels touching the rail would be between bogie vehicles - and therefore undetectable to the mechanism installed over a point switch - so as 6 wheel rolling stock was replaced with bogie designs the wheel detector would need to be extended. This change in rolling stock may also necessitate relocating a signal away from a point, so a train could be safety held at a signal without being detected by the mechanism. Alternatively the pointwork could be relocated.

Initial designs linked the operating rod close to the point and bolt lock and used a “T” shaped crank to apply movement in two directions. Later designs applied the movement to the furthest end of the detector bar which fed the movement to the bolt lock via an “I” shape crank as this was a better fail safe design. These changes would necessitate changes to the rodding runs.

If fitted, a signal selector box is linked to both switch blades and the bolt lock to prove all parts of the mechamism are correctly aligned to allow a signal to be pulled off. If not required at a facing point the selector could be used elsewhere such as selecting an appropriate ground signal depending on the lie of a point switch. The signal selector assumes that the signals are a semaphore design and operated by a wire run.

It is possible a selector could be used in conjunction with a single signal cabin lever and signal wire and use a pulley arrangment close to the selector - we have no evidence that was commonplace for running line signals bur reputedly was used by the GWR.

But it would be difficult to install a selector when the relevent signals were some distance from the pointwork e.g.at a complex junction. Alternatively some railway company practice may simply use signal cabin lever locking to perform the signal selection function. A pulley arrangement could be made using a 6 inch pulley wheel from etching RP3.

- See figure 19 for how the components are assembled.

We do not advise any modeller to try to make this component work and suggest the lock bar is located below the deepest wheel flange used on a model as we cannot confirm the weight on every wheelset used will depress the lock bar, it could just become a stock de-railing nusiance.

Bolt Locks (item RBL)

There are two sets of components to make a bolt lock and a selector for two signal wires.

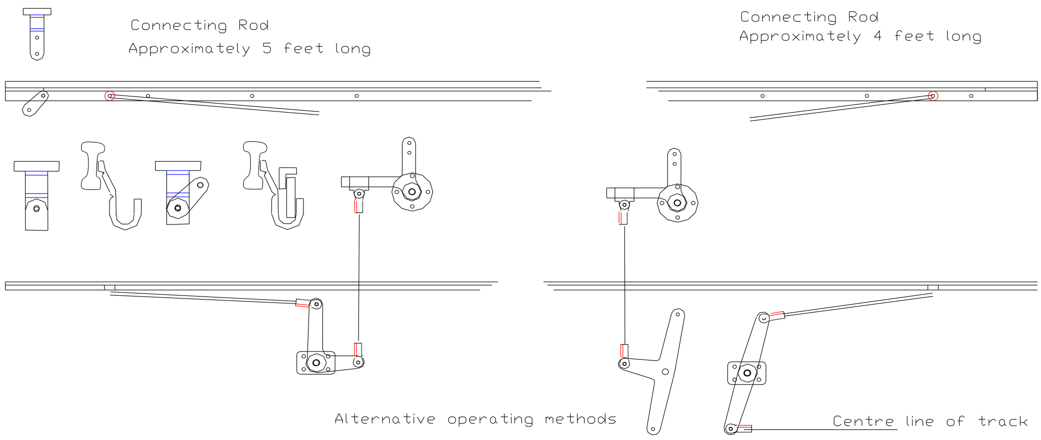
- See Facing Point locks above, except there is no wheel flange detector supplied.

Train on track - wheel flange detector or treadle

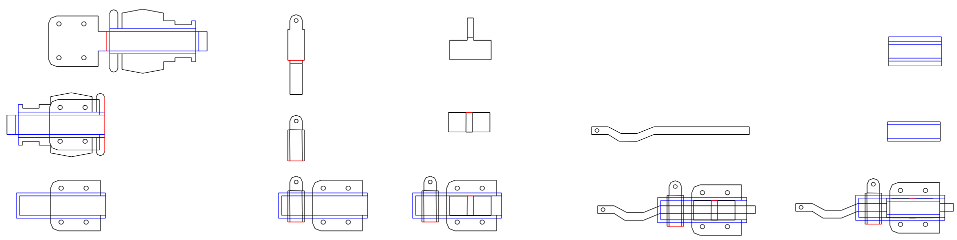
The difference between this wheel flange detector and the facing point lock bar is that it is balanced and simply moves under the pressure on any wheel. In most instances we have observed it links to a electrical switch - usually located outside the track gauge.

We do not advise any modeller to try to make this component work and suggest the bar is located below the deepest wheel flange used on a model as we cannot confirm the weight on every wheelset used will depress the bar it could just become a stock de-railing nusiance.

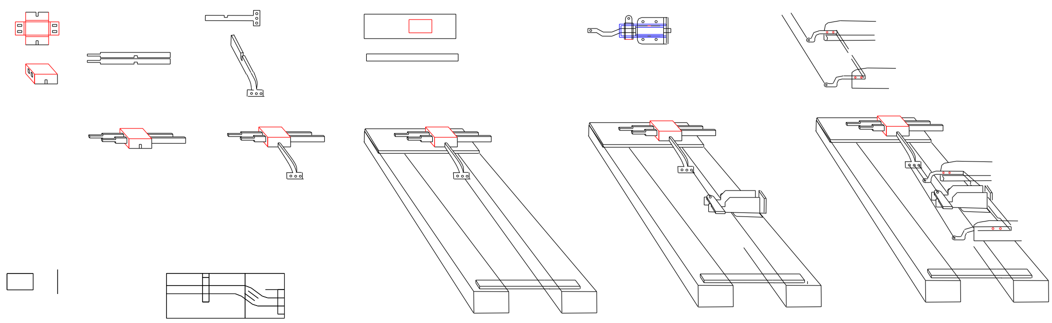
Details of Fouling bar
Showing alternative operating methods



Construction of Bolt lock
with signal selector attachment



Construction of Signal Selector,
showing bolt lock



Modern arrangement for operating
Facing Point Lock with wheel flange
operated fouling bar.

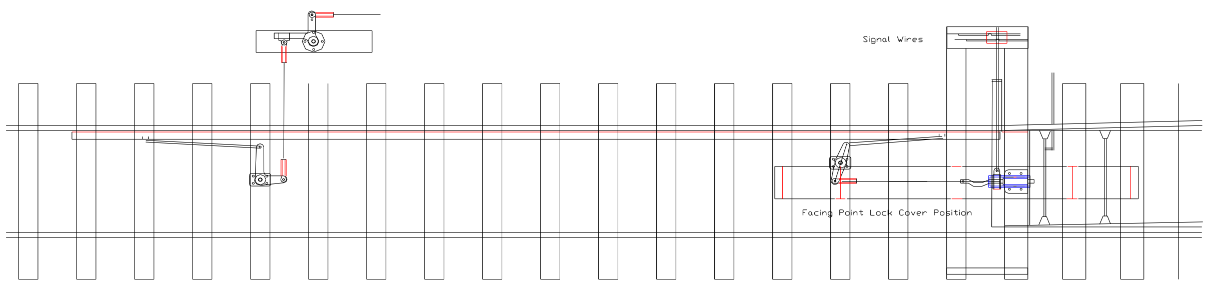


Figure 19. Facing Point locks

Figure 20. A mechanical detector or treadle.

This part has no cconstruction notes - yet.

Rodding Stools & Rodding

We can’t pretend this is a quick and easy item to make but it should be quicker than making up a rodding run from small individual parts. We believe that there were never more than 12 rods in one run (the will always be an exception...).

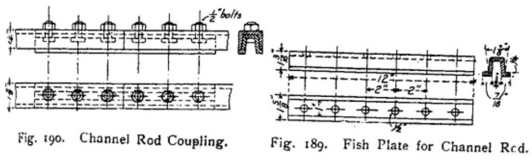


Figure 21. A channel rodding fishplate

Channel or “U” Rodding (item RMR)

The components will make up sections of up to 12 rods in 24cm or 9.5 inch long sections. These can be joined together as necessary using the 6 bolt joiners. You also need to add a 6 bolt joiner to every 15/16 feet of rod as this was the maximum length of rod manufactured. Enough rodding is supplied to make about a 5.5m long single rod.

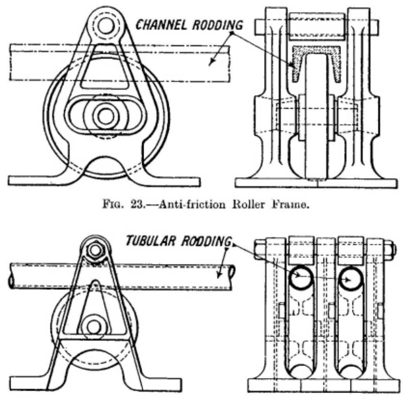


Figure 22. Examples of rodding stools

Rodding Stools (items RCS and RRS)

The stools are made for 12, 8, 4, 2 and 1 rod runs. If other numbers are required they will need to be made by cutting the stool up. In all cases it will be easier to remove one base and end from the other base, end and top section. The single rod stools have no support, the end simulated rollers perform this function.

The rodding stools are supplied in the following way

No of Rods through stool	12	8	4	2	1
Channel section	24	24	24	48	90
Round rodding	10	20	20	30	60

The round rodding stools are supplied in the follwowing combination and without rodding - use 0.4 or 0.5mm straight wire. The base part folds up to support the rods and the top section has teeth to simulate the individual stool and these should be pushed down between the rods - except for single rod supports.

The outermost pulley wheel (half) is simulated on the etching and this should be folded up and be behind the stool. The two stool parts should interlock before the rods are installed and then the top section being folded down over the rods.

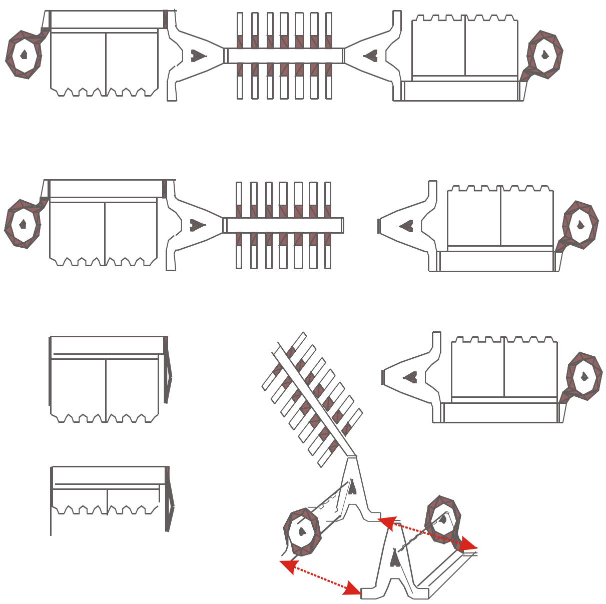
- Do not try feeding the rods through each rodding stool.

The fine half etched links across the channel rodding is designed to be hidden underneath the rodding stools. They can be removed if necessary and need to be cut if the rod run is to be reduced in width. There are a number of rodding stool etches supplied which will need to be reduced in width as required so a twelve wide etch can be reduced to for example 10, if required. When the rodding has been laid on the lower support fold down the top strip and fix it to the opposite end.

- See figure 23
- Note the rods have been produced handed for left and right runs (as joined) so the rod joints are staggered as they would be after leaving a signal cabin.

A number of connectors are supplied with each component and these will need a rod fixed into each and a wire/pin used to attach each to the crank.

Making up a rodding stool
1. Split the etching into two
2. Bend down the "fingers"
3. Fold over the base sections
4. Fold up the Simulated rod rollers
5. Raise the rod support
6. Interweave the two sections
6. Lay the rods in place
7. Fold down the top retaining bar and fix in place.



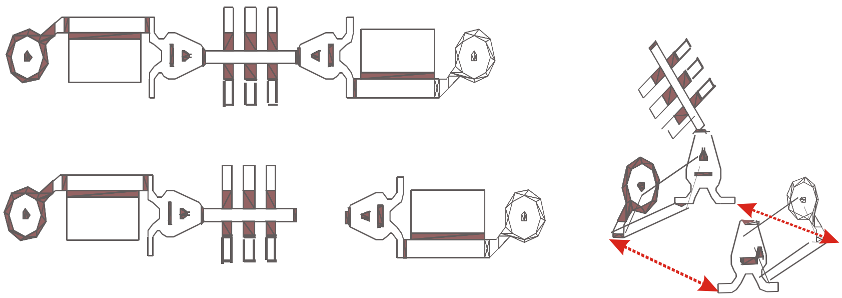


Figure 23 - Making up the rodding stools

Tube Rodding stools

The tube rodding stools are more closely spaced than the channel rodding 2.25in instead of 2.75ins. Rods/Tubes used could be between 1.25in and 1.5in diameter.

Cranks (items RC...)

These are designed to change the direction of movement by a right angle, but may be used for other angular movement. There are a number of special crank patterns, essentially there are four different purposes for a crank:-

1. To change the direction of travel of a rod on a horizontal plane
2. To compensate for temperature variations
3. To accommodate the exit of rodding, closely packed together, from a signal cabin
4. To change the direction of a rod movement in a vertical plane.

There are two main types of crank, those fabricated from wrought iron and those cast in a mould. The cast versions tend to have a retaining mounting and strengthening fillets.

The fabricated cranks need to be pinned to their base plate. In these cases the base plate is a simple etching and etched washers are provided to space the crank away from the base.

The cast cranks require the base plate to be folded up to provide a retaining arm into which the crank is fed and then held in place by a pin/wire.

A number of crank etches have been produced. In all cases the "fork" connector to the rod is also supplied.

- The folding process for a retained crank is shown in figure 25.

a. Vertical cranks - There are three types of cranks available.

Set one has six cranks with special mounts for special purposes.
Set two has eight cranks
Set three also has eight cranks and includes adjustment holes

- Set two and three ar more likely to be used for wire rodding runs.

The base for a vertical crank folds around the crank itself.

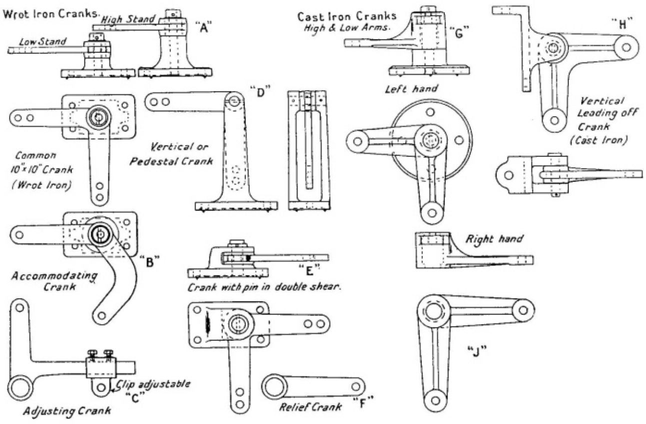


Figure 24. Some variety in crank designs

b. Adjustable cranks - the last crank in a rodding run. Two patterns - one of fabricated and the other cast cranks.

Adjustable cranks can also be found on the facing point lock and bolt lock and have been supplied with pointwork components. (item PCC)

- NOTE the sliding block is folded up in reverse to normal - away from the half etching. See figure 27

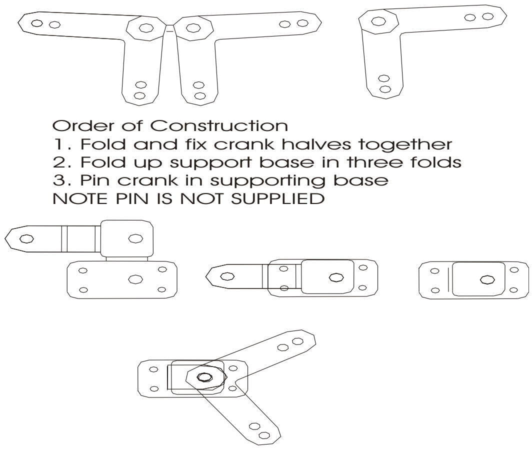


Figure 25. Folding up a retained crank

c. Accommodating cranks - one set of 20 cranks of five each of four patterns

The accommodating cranks were made to allow closely packed mounting and those with larger holes in the base plate need sections of 1/16th tube fixed into the base plate to be cut to provide vertical spacing of 6 or 9 inches.

- See figure 29 for a typical installation exiting from a signal box.

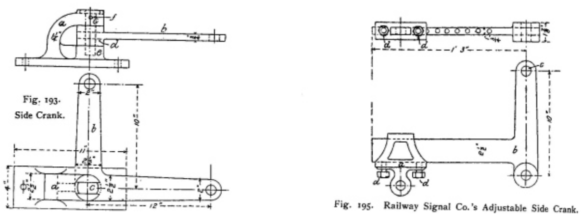


Figure 26. Alternative designs for cranks.

d. Compensating cranks - four types. These are to cope with temperature variations in rodding runs

1. The "standard" horizontal type - eight per etching,
2. Similar vertical type used by some companies e.g. LNWR
3. Another vertical design but inverted, used in a pit to avoid bending the rodding run.
4. A simpler bar type for mounting in a pit. A type known to be used by the GER.

A photograph of Ambergate (Midland Railway Album) also shows thesimple bar type in use by the Midland Railway.

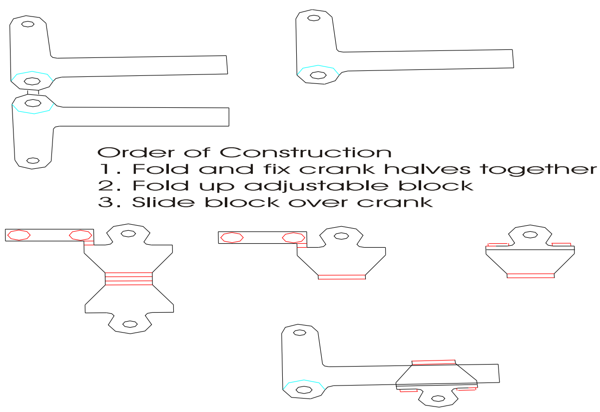


Figure 27. Making up adjustable cranks

In most instances it is necessary to fold over the crank etches aligning the holes and fix them together.

A number of connectors are supplied with each component and these will need a rod fixed into each and a wire/pin used to attach each to the crank.

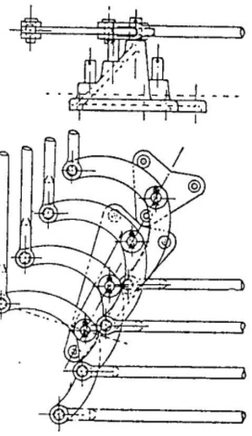


Figure 28. Accommodating cranks

Pins (item PINxx)

We have made available four types of pins - large and small, with and without heads to assist construction of rodding runs.

The pin where headed is fairly flat and should not require any/much chamfering to sit in a hole.

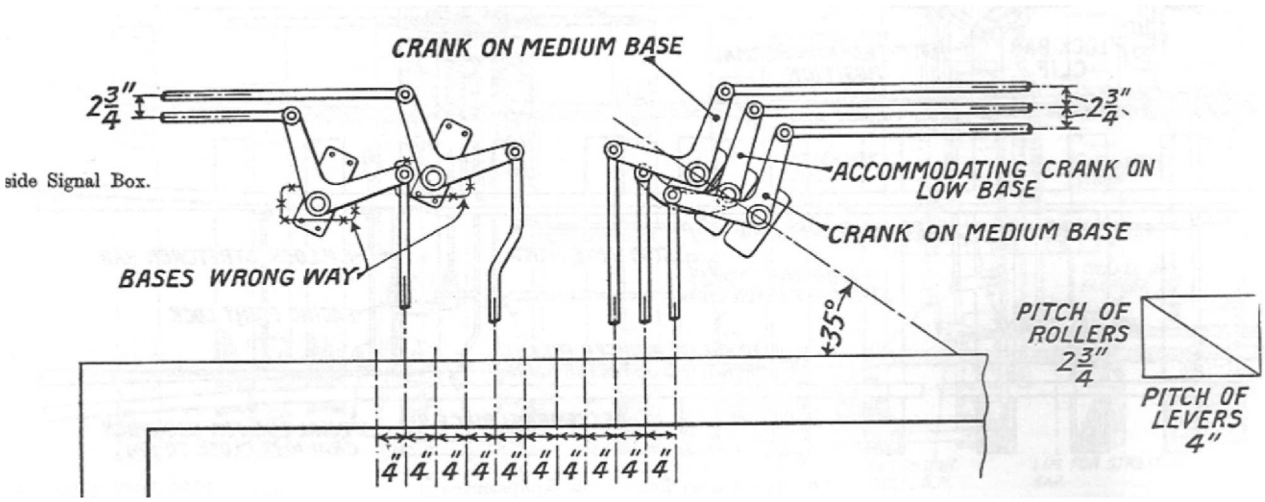


Figure 29. Cranks exiting a signal box

The sizes of the pin shanks are 0.56mm and 0.45mm for the headed pins and 0.56 and 0.38mm for the headless pins.

These may also be used for other purposes such as valve gear and screw couplings. (Item PIN...)

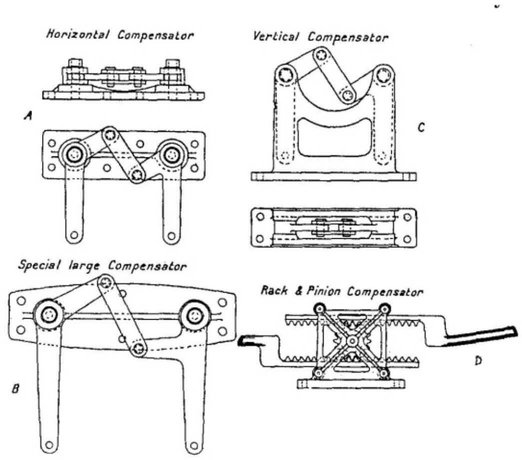


Figure 30. Compensting cranks - the "standard" design, top left, top right a vertical compensating crank, below rarer versions.

Facing Point Lock Covers (items RFPLC, REPLC, RPLP)

These are one piece fold up designs. The metal narrow cover pattern has a different fold up principle than the wood patterns. The metal cover has fold over edges and smaller "legs" the bending points of which are marked by "dots".

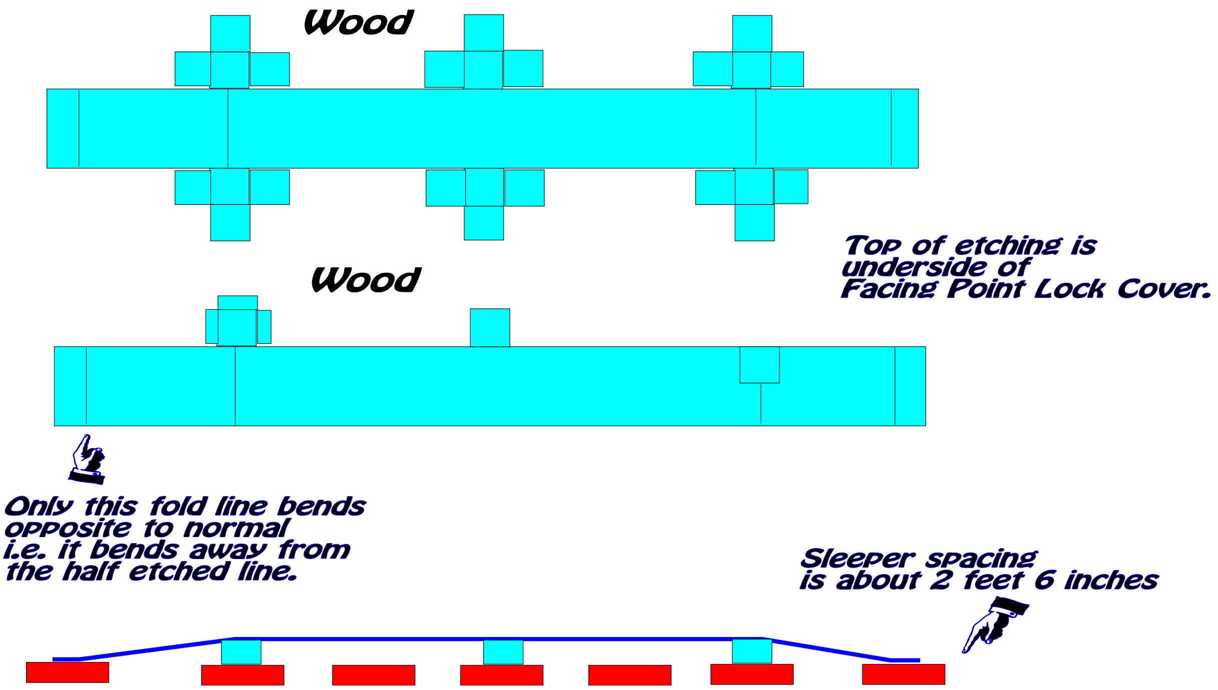


Figure 30. Wooden facing point lock covers

Wire Pulleys (items RP..)

These provide a change in direction for a wire run. It is necessary to align two layers of etching to make up one pulley with a central grove for the signal “wire”. It is usual to find a small chain to be used where pulleys are located. About 6 feet of chain would be required at each pulley - this should have about 60-80 links per inch - too fine to be manufactured as chain so an etching of a chain is supplied - but this will be very fragile and is not flexible.

There only advice we can provide for when the different size pulleys could be used is that the larger pulleys were used nearer the signal cabin. Pulleys can be found stacked one above the other and this option can be fashioned from the etchings - see figure 2.

A pulley allows a greater range of movement than a crank, so it would be unusual to find cranks used in wire runs except at the base of signal posts. Often these cranks had two holes used for adjusting the pull movement.

Within the signal cabin an arrangement of pulleys would multiply the lever movement so that taking into account stretching of the wire about 6 to 7" of pull would be provided at the signal.

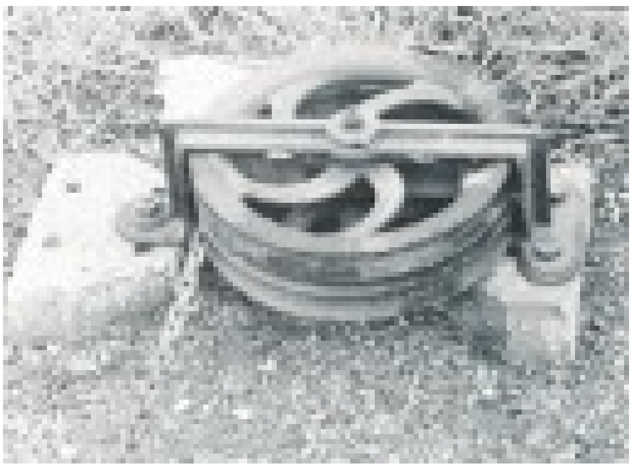


Figure 31. WIre pulley designs

Wire Mounting Posts (items RWP..)

These need to be folded up as in the figure 32. The unused pulleys can be removed from the etching. A strand of wire - fly fishing wire - should be fed through the pulleys, allowing it to sag, unless the signal is modelled “off” when it would be taunt.

Wire posts or stakes were generally wooden about 3-4 inches square, unless these were located in cramped positions such as along platform edges.

A metal version stake was also used made with a cruxiform section.

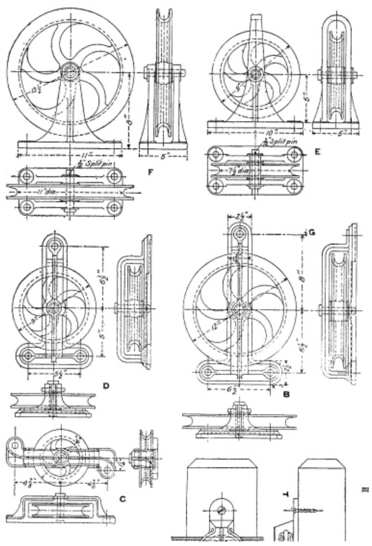


Figure 32. Wire Mounting Posts.
Production items, left up to 6 wires, right up to 12 wires per post.
These samples are clipped together, but should be glued/soldered as the posts are four layers thick.

Mechanical Detector

This is a delicate item and needs careful folding of the bars and the linking struts to make up the shape. One strut is extended to carry the arm that needs a piston into the transponder (not supplied). This tends to be a large bin like a vacuum cylinder. The only detectors we remember were generally covered in a thick grease layer at the ends of London terminii platforms, presumably because they were invisible to the signalmen who neede to know if the platform roads were entirely empty.

- End of Part Two