

Item from www.smj.me discussion forum (mildly abridged) Nov 20 – 21, 2010

Tony Marsh with question placed on the forum: On two of the railway wagon tracks that lead to the canal from mines rather than the SMJ line or the main line there was a brake drum contraption that controlled the rate of descent of a full wagon down to the canal. The full wagon's weight was utilised to bring up an empty wagon and halfway along the line, below the drum, there was a bifurcation in the railway track so that the two wagons could pass one another. I described some of this on the Blisworth site at http://www.blisworth.org.uk/images/Mining/Blisworth_mining.htm. Now, I wonder if the side-by-side tracks could have been equipped with automatic points so that a wagon, whichever one it is, will always "bear left" and so pass the other one without a man having to supervise the exchange. So, folks, do you know of such "automatic" points invented circa 1865, ie. early enough to be of use for this job? Tony Marsh

George Coles, SMJ Society Member and "Ferroequinologist" said: Tony, it depends on whether the rope was continuous or not. The more likely scenario is a discontinuous rope. In that case, to avoid tangling the rope at the passing loop, alternate wagons would use opposite sides of the loop. The point blades could either be loose (most likely) or held by an over-centre spring or an over-centre weighted lever. As an example, an upcoming wagon would meet the lower point set for the left hand road and the descending wagon would meet the upper point set for the right hand road (i.e. both would turn left with respect to their direction of travel.) As they left the loop, each would force the point through which it was passing to change to the opposite setting. As a result, the next pair of wagons would run through the right hand roads (in respect of their direction of travel) and as they exited the loop each would switch the points, so we end up where we started this example. Some long inclines were worked with continuous ropes (running round a pulley at the opposite end to the winding/braking drum.) Power winches usually drove these, and wagons were attached to the (often) moving rope with a length of chain hooked to the wagon and wrapped round the rope. In this case, the wagons always passed the same way through the passing loop, and the simplest way of achieving this would be to bias the point blades with a spring or a weighted lever thus allowing the points to be passed through from the 'wrong' road in the trailing direction. I'd be happy to demonstrate this, or draw a diagram :) Hope this helps. George Coles

Tony Marsh replied: No, no need for diagram, I follow your drift. I am going to try uploading a 1920s picture of the points area by the drum and show you the drum as well. The camera is pointing up the main incline, a full wagon waits to one side before being used to raise the empty wagon that is waiting 200 yards down the incline. Can you work out what is designed to happen? Every atom in the photo is now just dust and rust under tarmac and houses. Tony

George Coles replied: With reference to the picture (see next page), the shadows on the drum are confusing, but looking closely, the rope attached to the left half of the drum is deployed (to the empty wagon down the incline) and what appears to be another rope on the same side is the shadow of the actual rope. Confusingly, the shadow crosses the drum division close to where the almost fully wound rope on the right hand half of the drum leaves the drum. That rope is hooked up on the wall out of the way. The points nearest to us are set for the road to the right of us, and are conventional taper bladed points. The set between those points and the full wagon are typical quarry stub points. The route through stub points is normally changed by the application of a size 9 (boot) to the blades.

Sequence of events:

- 1) Kick stub points over to allow full wagon to approach incline.
- 2) Push wagon forward (toward the camera) until it is past the drum. It will now be on the right hand track. Apply brake (shove a stick under/through a wheel if no other means available.) It should be on the right track, as viewed from the camera, to correspond with using the right-hand section of the drum.
- 3) Attach the steel rope to far end, ie. the rear, of the full wagon.
- 4) Release brake on wagon.
- 5) Presumably signal that all is ready.
- 6) Push full wagon on to incline.
- 7) Release drum brake and control speed of descending/ascending wagons using drum brake. Note that ropes are wound round drum in same direction, (i.e. one comes off the top and one comes off the bottom) so left hand rope is wound in as the right hand one pays out.
- 8) If empties are to go in to left side of loop beyond the drum, kick stub points back to position shown on photo.
- 9) Stop drum and apply brake when wagons have arrived at ends of incline.
- 10) Apply brake of empty wagon (see above for options.)
- 11) Detach rope from empty wagon, and hook on to the nearby wall out of the way.
- 12) Release brake and push wagon in to left side of loop.
- 13) Repeat sequence (1) to (12) but send the next full wagon down the rail to the left of the picture, corresponding with the use of the left-hand section of the drum (which will be fully wound) . Note that, by design, the descent of each full wagon sets, in advance, the lower points of the bifurcation to pass the wagon on both its descent and its later ascent. This ensures that each wagon is returned to its starting point on the incline. A sequence of full wagons should descend on alternating sides of the bifurcation and use alternating sides of the drum. George

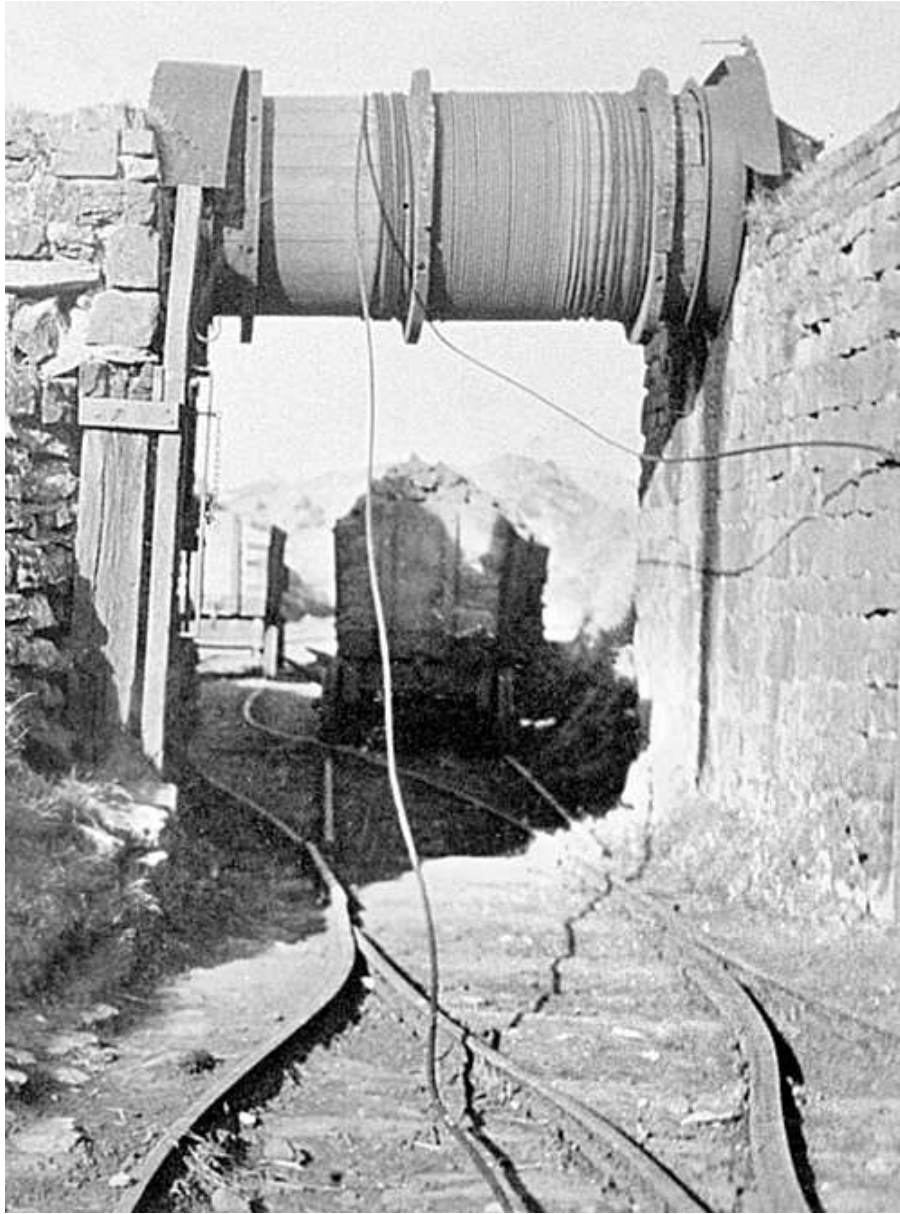


Photo. From one of Walter Alexander's dated circa 1920s.