

Report No. 38 on

Pulley blocks for use with small diameter wire rope in the extraction of thinnings

Report No. 29 covered the trials of a portable powered winch designed for the extraction of thinnings which are too heavy to be manhandled from inaccessible positions. These light winches are able to give pulls up to 1500 lbs. which is sufficient for most light logging if properly handled. For pulls of this order a very light rope can be employed. For instance a 5/16" diameter 6 x 19 flexible round strand wire rope in "Best Plough" has a breaking load of 3.4 Tons. This type of rope has given good service on these small winches and it has the advantages of:-

- (a) Low cost. Winching is a role in which early rope replacement is expected whatever the size of rope used
- (b) Low weight which greatly reduces the physical exertion of pulling out a winch rope. The actual weight is 18lbs per 100 ft.

The use of these small diameter logging ropes calls for the use of proportionately light ancillary equipment including pulley blocks for changing direction of the pull, "doubling up" to increase the pull etc.

The normal pulley block being intended mainly for occasional use is usually made with plain pulley bearings and clearances between the flanges of the pulley and the cheeks of the block are usually fairly generous. The result is that after a little wear a small rope can slip into the gap as seen at Photograph 1. When this happens the rope is severely damaged and during the trials with this light winching equipment more rope casualties have resulted from this cause than from any other.

Specially made pulley blocks would, of course, provide a cure but a simple modification can be applied to standard blocks as seen at Photograph 2. Here overlapping guards have been welded to the cheeks to guide a slack rope back onto the pulley.

This idea is not original but attention is drawn to the need for this feature on any pulley blocks being used with small diameter ropes.

The particular pulley blocks on which this modification was carried out were supplied by Charles Butterfield & Co., Sokraon Works, Stratford, London, E.15.

The prices were:-

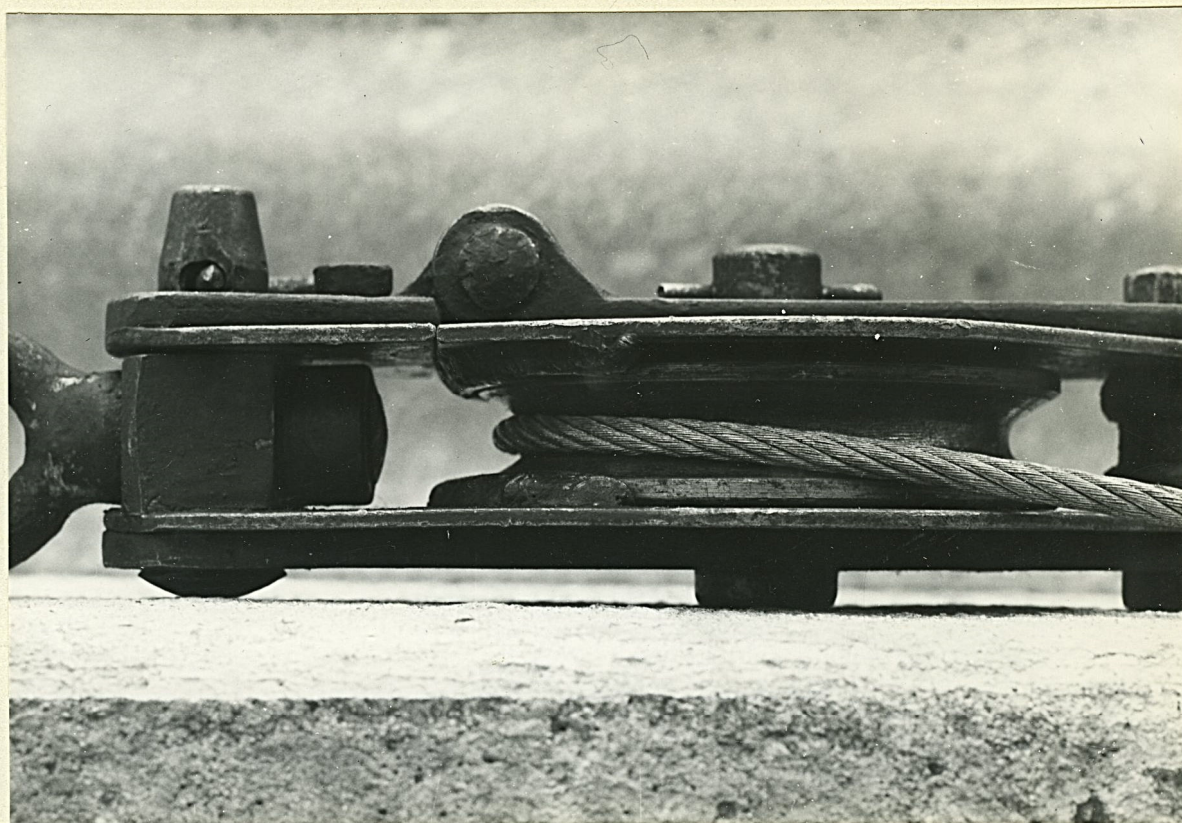
15 cwt. block - £4. 6. 3 each including modification

2 Tons block - £7.16. 7 " " "

These blocks were fitted with a diamond section hook to provide for attachment to any link of a chain sling.



1. Showing the rope trapped in the clearance between the pulley flange and the cheek.



2. Showing the guards welded on to the cheeks to guide the rope on to the centre of the pulley.