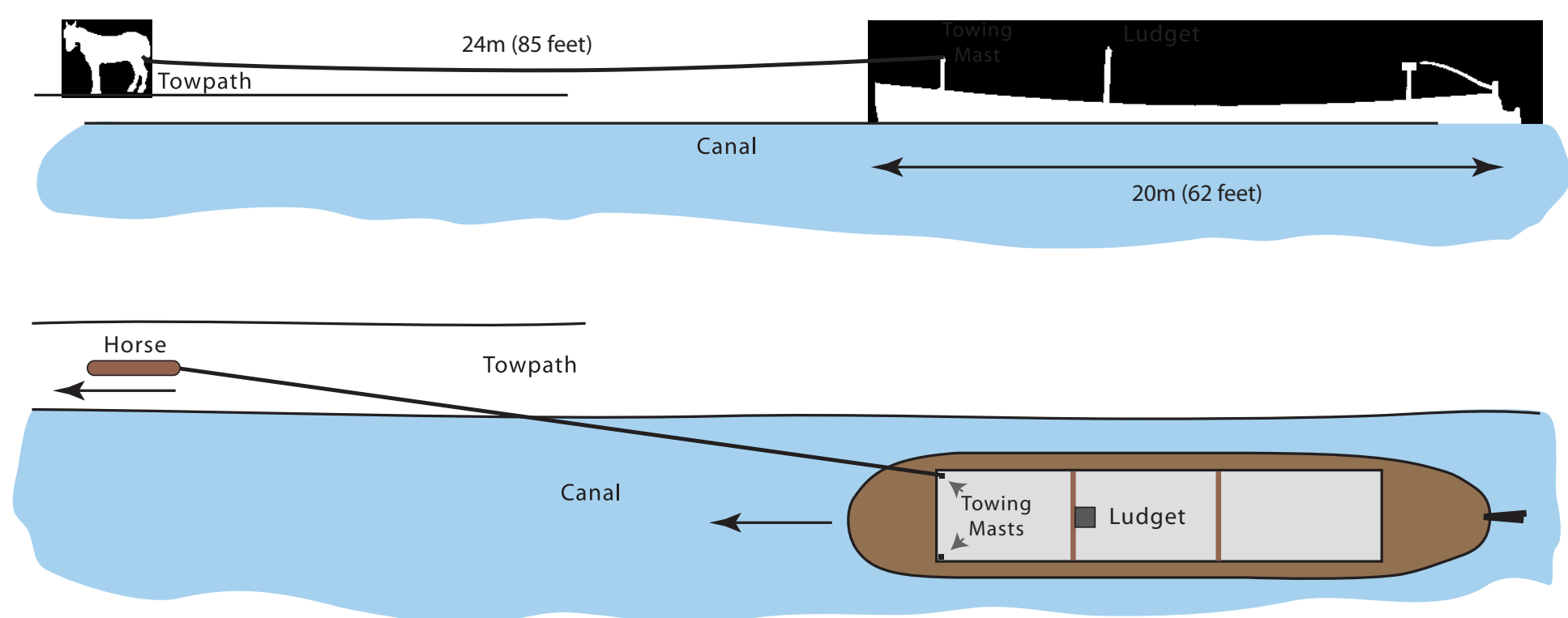


E W PAGET TOMLINSON AUG 1989

Although traditional 14 feet wide Leeds & Liverpool Canal boats weighed about 15 tons and carried up to 50 tons of cargo, they could be moved quite easily by one horse. The tow line, made from cotton rope 12 mm (½ inch) in diameter, was about 25 metres (80 feet) in length.

The tow line was fastened behind the horse onto the centre of a 'swingletree', a wooden bar about ⅔ metre (2 feet) wide, which was connected to the traces on either side of the horse. On the boat, the line could be attached to the 'ludget', or main towing mast, a square wooden mast fitted in the centre of the hold about ⅓ back from the bow. (Motor boats, like *Kennet*, also had a ludget, made from steel tube, as seen here)

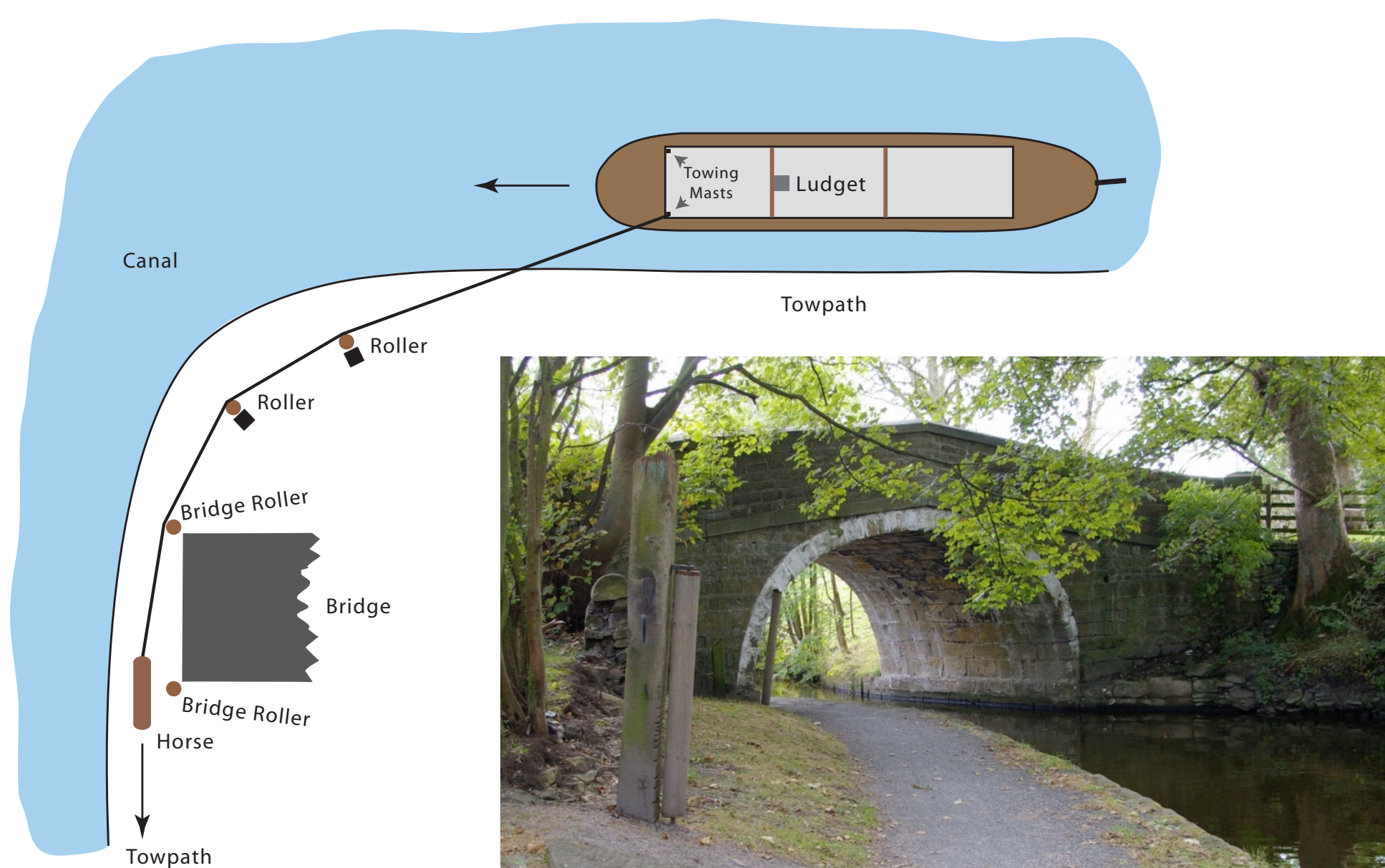
Because the horse was on the towpath and the boat in the canal, the tow line was at an angle to the direction of travel, pulling the boat towards the canal bank. It had to be steered away from the bank, and this tended to pull the horse towards the canal edge. If the boat hit something and stopped suddenly, there was a danger that the horse would be pulled into the canal. In some places, ramps in the edge of the towpath were provided, which allowed the horse to walk out of the canal if this happened.



Horse-drawn manure boats at Lydiate.

Underway, the towline was usually attached to one of two side masts, fitted at the front corners of the hold. Using the one nearest the towpath tended to push the boat out into the canal, making steering easier, and putting less sideways strain on the horse. In windy weather, the towline could be moved to any of the masts in order to get the best position to give the least sideways pull for the horse.

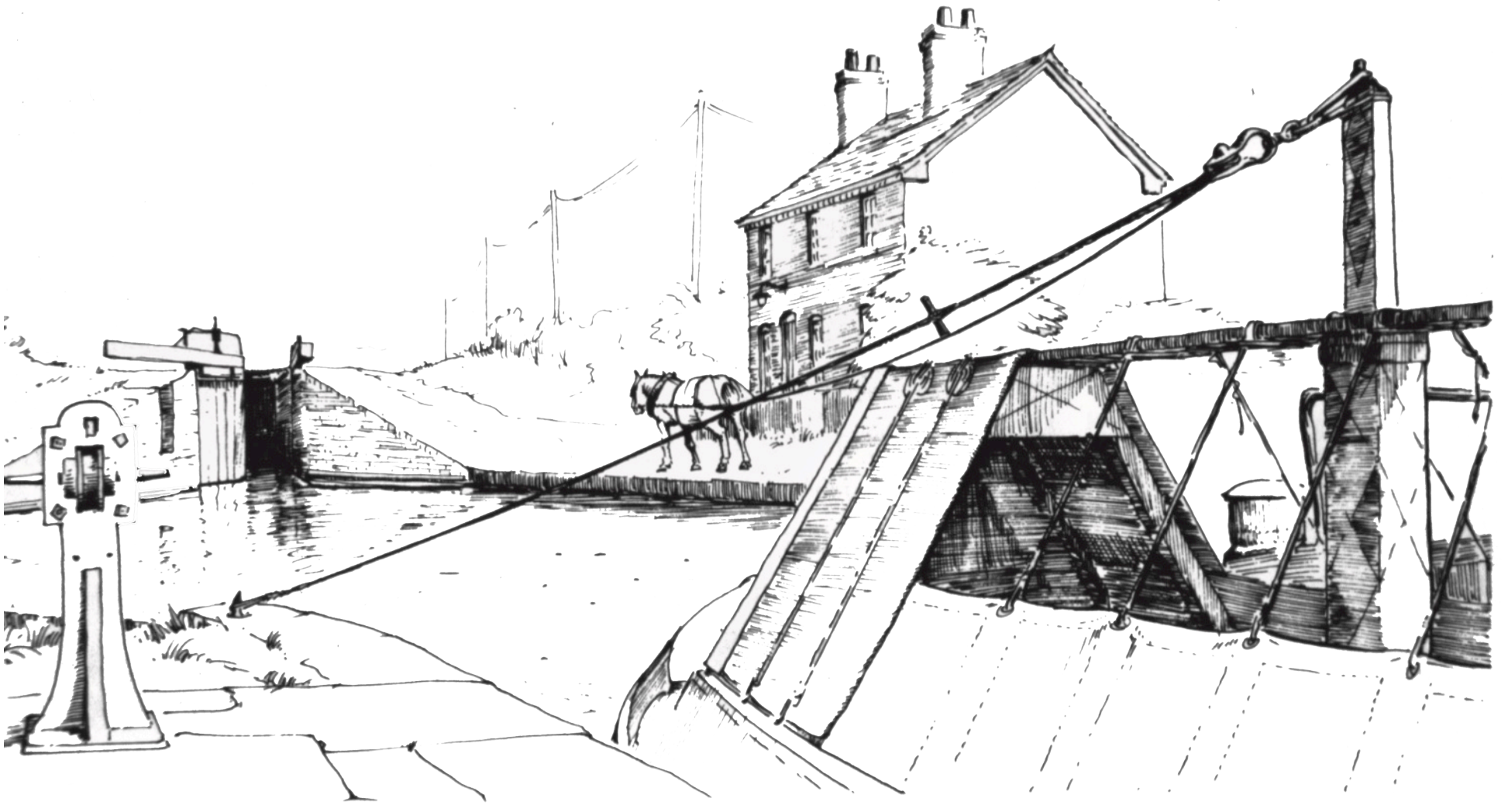
The ludget was provided on motor boats, where it was used for the rope which held the boat forward in locks, reducing the chance of the boat catching as it moved up or down in the lock.



When the canal turned a sharp bend, as at Salterforth, it was difficult to steer a horse-drawn boat. The tow rope would pull the boat towards the towpath instead of around the corner. To stop this from happening, vertical rollers were fitted to upright wooden posts, the tow rope then passing across the rollers. This made the pull on the boat towards the towpath such that it was not a problem for the boatman steering the boat.

Tow lines would rub against the bridge arch after the horse had passed underneath. This would cause grooves to be worn into the stonework. Vertical wooden rollers were fitted to most bridges to stop such wear. The iron bearings for the wooden rollers guard irons often survive, though most of the rollers have now disappeared.

# HORSE TOWAGE

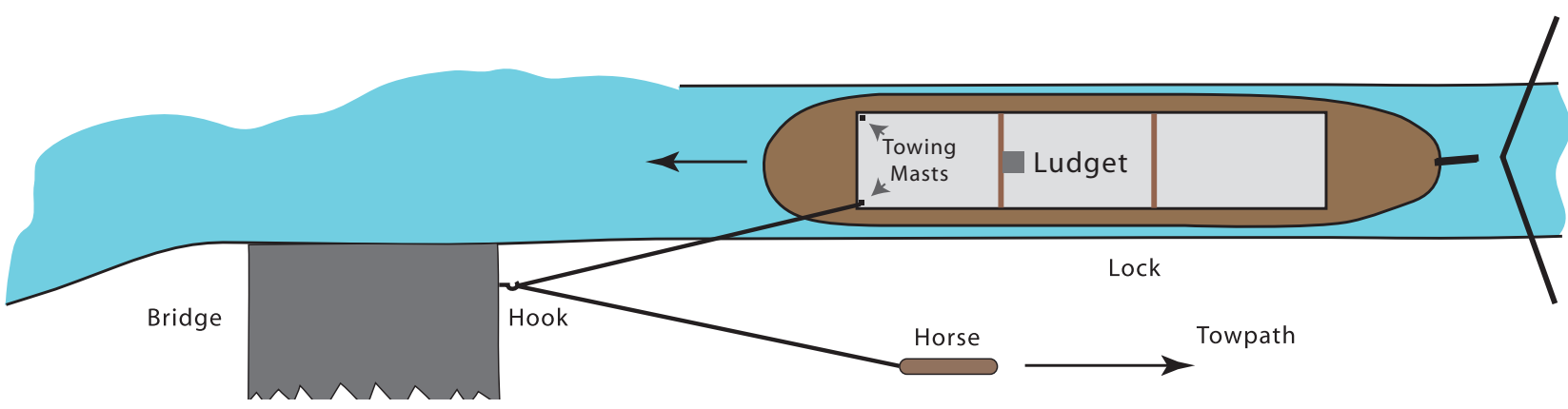
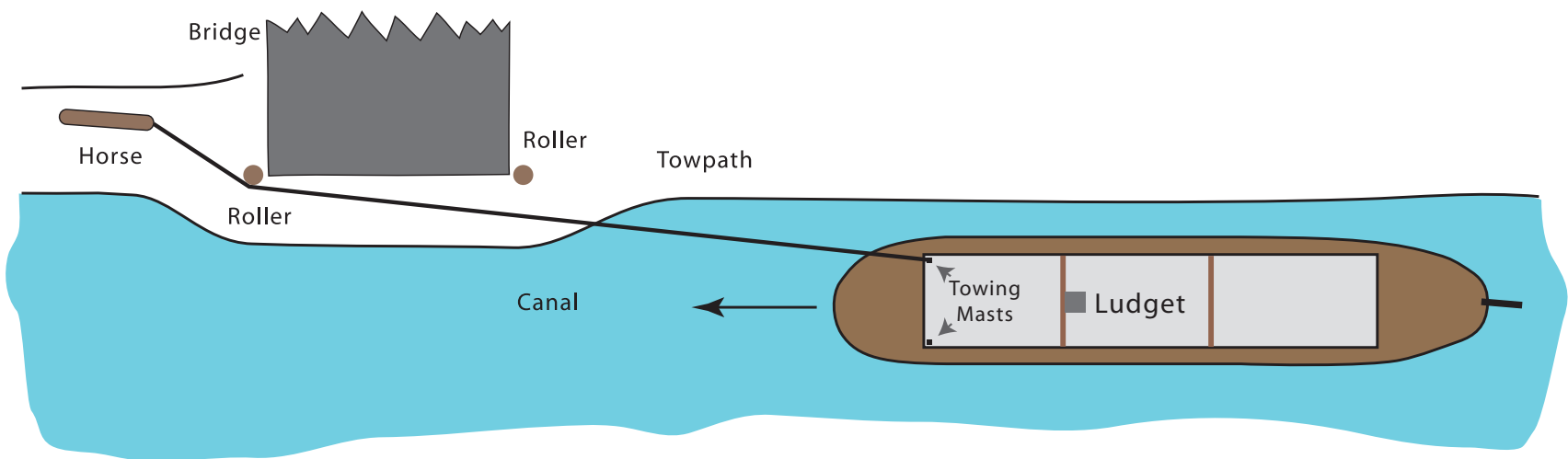


Starting a boat out of the confined space of a lock was hard work for the horse. To halve the effort, a pulley was fitted to the towing mast — see the drawing above — with the end of the towline hooked over a 'starting pin', seen in the photo below. The pulley formed a 'double purchase', halving the effort needed by the horse, but doubling the

distance it had to walk compared to that travelled by the boat. A peg in the line — as in the drawing — stopped the rope passing through the pulley, with horse then taking the full weight of the boat being towed. The end of the line would fall off the starting pin without help as the boat left the lock. The photo above shows a horse boat leaving the bottom lock at Barrowford, with the starting pin off the photo to the right



The tow line would rub against bridge arches and lock fittings, causing grooves to be worn into the stone and iron work. Vertical wooden rollers or iron guard irons were fitted to bridges and lock furniture to stop such wear. The guards often survive, as do the iron bearings for the wooden rollers, though most rollers have now disappeared. In the photo, the man closest to the arch of the bridge is standing next to the bridge roller. The boatman has stopped the horse for the photo to be taken, and the towing mast is hidden by his body.



The overbridge at Johnsons Hillock has no towpath, and this made towing boats out of the lock difficult. A hook was fixed on the side of the bridge — see left — around which the tow line was passed. The horse would then walk in the 'wrong' direction to pull the boat out of the lock and under the bridge. Once the boat was moving, the line was disconnected and passed under the bridge to be re-attached to the horse, which had been led back to the far side of the bridge and now towed the boat in the usual way. Note the wear on the hook from the many tow lines which have passed around it.

The photo on the right shows a Leeds & Liverpool Canal boat horse and harness. The side chains running from the hames to the swingle-tree are covered in leather to protect the horse's flanks from chaffing. Canal horses did not have to be large, as can be seen by comparing it to the height of the young boy.



# HORSE TOWAGE