COALING WITH LOCOMOTIVE CRANES

In 1905 the Grand Rapids & Indiana Ry. started the use of locomotive cranes for handling fuel at some of its coaling stations. The experience since that time has been entirely satisfactory and such as to indicate this to be the most efficient system for stations handling from 300 to 400 tons a day.

A 600-ton pit is provided at these stations into which the coal from hopper cars is emptied. Other types of cars are emptied by the bucket direct. From either these cars or the storage pit, the fuel is transferred by the crane to either the tender or to a series of elevated 5-ton hoppers seen on the left in one of the illustrations. From these hoppers locomotives can be coaled at any time without delay or at times when the crane is engaged in handling cinders.

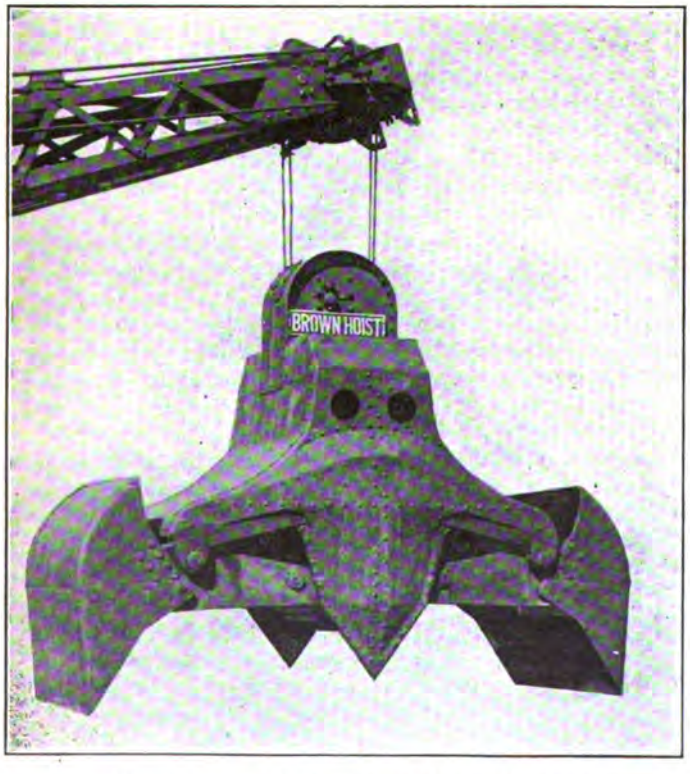
This arrangement eliminates many of the objections mentioned in the discussion of locomotive cranes for this service in the series of articles on Locomotive Terminals which appeared in the January, February and March issues of this journal. These briefly were: Use of cars for storage, damage to car equipment and delay to locomotives in taking coal. In this case, there is no damage possible to the hopper cars which of course form a large proportion of the supply, and no serious delay to any cars unless an unusual number of closed bottom cars arrive at one time.

Two men form the entire force at these stations, one is the crane operator and the other a helper whose duties consist largely of shoveling coal from ends and corners of cars, keeping the grounds clean, etc.

At one station a contract is made with the operator to handle all coal from cars or pit to locomotive tender for 3½ cents a ton. At the Grand Rapids station during the month of March, 1910, there were 6,506 tons of coal handled at an average cost, including repairs and supplies, of 4.8 cents per ton on the tender. The repairs and supplies amounted to but .8 cents per ton.

Brownhoist 10-ton cranes are used at these stations, being equipped with 54 cu. ft. two rope, grab buckets. These cranes are arranged for very high speed in operation and are especially suited for this work. They have 35 ft. booms and a radius of from 15 to 35 ft. One of the illustrations shows the bucket at close range. This type of bucket has been found to be particularly adapted for cleaning cars and can be hung either lengthwise or crosswise of the boom as desired by the operator.

LOCOMOTIVE CRANE FILLING ELEVATED COAL HOPPERS.



TYPE OF GRAB BUCKET USED ON LOCOMOTIVE CRANE.

HOT-WIRE SYSTEM FOR TUNGSTEN LAMPS

An ingenious scheme to overcome the brittleness of the tungsten lamp filament when not burning was devised by E. M. Fitz, Electrical Eng'r. of the Pennsylvania Lines West of Pittsburgh, in which he arranges to have a small current passing through the lamp when extinguished, which has been used by his road with great success. On cars using 63 volts (32 cells) the two end cells of the battery, giving 4 volts, are connected to the lamps when extinguished, which keeps the filaments at a faint dull red and makes them about as rugged as a carbon lamp. The lamps when lighted are connected to the remaining 30 cells, 60 volt lamps (instead of 63) being used. This scheme is known as the "Hot-Wire System," and is being patented. Recent figures show lamp lives of from 1,500 to 2,000 hours by this system.

In practice it is found that the two end cells of the battery are no more exhausted than are the remaining cells, as one would at first suppose. This might occur, however, if the burning hours were very short, the lamps being connected most of the time to the two end cells. On account of the lesser current taken from the end cells it is estimated that the lamps should burn an average of about three or four hours out of the 24 to have all the cells exhausted to the same extent.—*From "Train Lighting by Electricity" by Henry Schroeder—Proceedings of the Richmond Railroad Club.*

EFFICIENCY TESTS.—Over 300,000 efficiency tests were held last year by the Pennsylvania Railroad, resulting in the practically perfect record of all employees. The average number of tests each day was 820, and of the total for the year 99.75 per cent. were perfect. Many of the failures, however, were not such as could possibly cause an accident to the train.