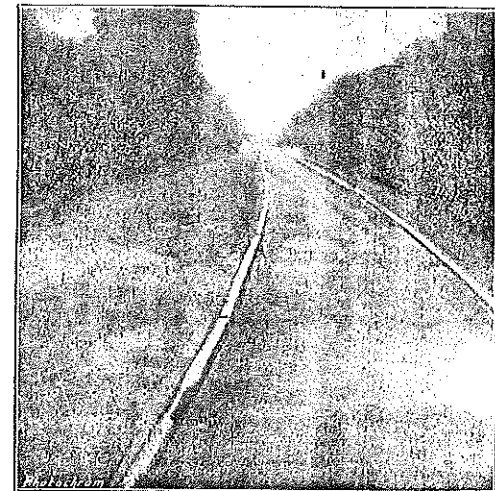


motives. The safety valves are mounted on a small dome over the fire-box, and the enormous box on the top



A LENGTH OF PERMANENT WAY, REDRUTH AND CHACEWATER RAILWAY.

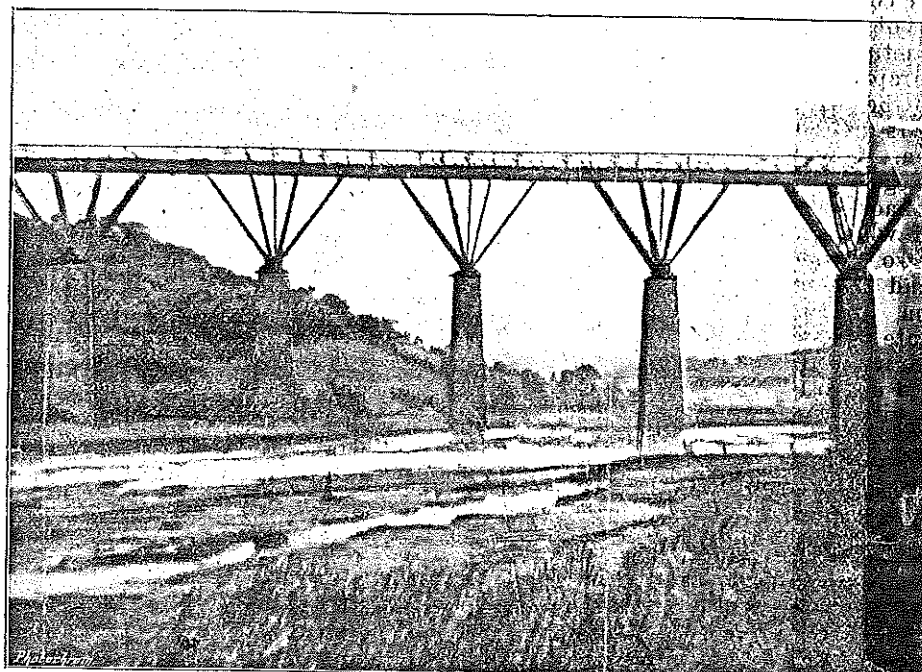
of the tank contains tools; this feature is common to the three locomotives. "Smelter" has cylinders 11 inches by 18 inches; driving wheels, 3 feet 6 inches; trailing wheels, 2 feet 6 inches; heating surface, 500 square feet; boiler pressure, 90 lbs. per square inch; so it is not exactly a "decapod," and is seldom used now, being kept in the Devoran shed as a spare engine. The "Miner," illustrated on pages 97 and 101, which was originally similar to "Smelter," is the most interesting locomotive of the three, as it boasts one feature which has all but disappeared from even the oldest locomotives, viz., a domed firebox of the haystack type; the steam is taken from the haystack. In view of recent developments, this old boiler, which was built in 1869, and was



[F. Moore.]

at 120 lbs. steam pressure, is interesting. The latest Great Western Railway locomotives take the steam direct from the highest point in the boiler above their big Belpaire fire-boxes. The principle of keeping a supply of steam at, and drawing it from, the hottest part of the boiler, is the same in both cases. This shape of boiler makes it difficult to stay the fire-box properly, and it would not be suitable for a high steam pressure. The "Miner" was in 1869 rebuilt and given

and below the sand handle the right of the regulator are the cocks, and to the left on a glass with blow-down cock; in left-hand side sheet are the pump and sand handles, also hand wheel for the brake; this a bevel wheel at the end of shaft (horizontal) which turns vertical shaft actuating the blocks. On the left side of the stack are two cocks; one the blower the other to let live steam into

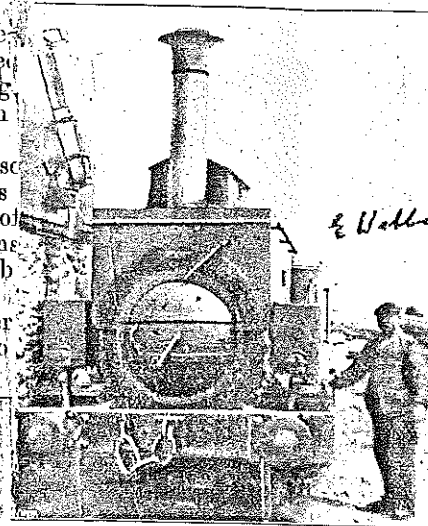


THE PERRANWELL VIADUCT.

Its present boiler, also being converted to a six-wheels-coupled engine; it was rebuilt again in 1902, and now has 3 feet 6 inch wheels; cylinders, 12 inches by 18 inches; boiler pressure, 120 lbs. per square inch; heating surface, 540 square feet. On the boiler front the regulator handle can be seen; above it the pressure gauge and safety valves, on the right the whistle, and below it the top of the reversing lever just protrudes; near the pump handles;

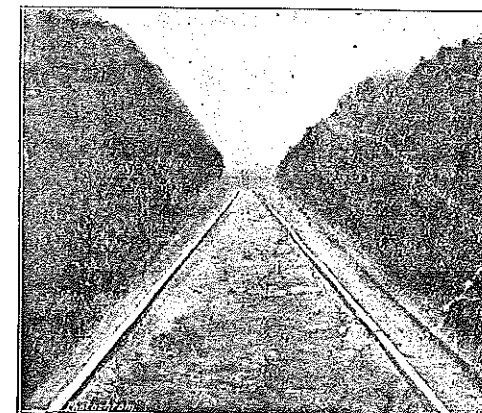
tank to warm feed water; the seen on right side of tank cylinder cocks. All the locomotives have hand brake only. The acquisition of the railway in the motive line is the "Spitfire," illustrated at the bottom of page 101, delivered in 1859 by Messrs. Neilson & Co. It is a six-wheels-coupled with 3 feet 6 inch driving cylinders, 12 inches by 18 inch heating surface, 540 square feet pressure, 100 lbs. per square inch.

the locomotives and wagons. The traffic of the line has now reduced itself to one up and one down train per day, so only one engine is kept in steam at a time, therefore, no signals are wanted, and, indeed, they do not exist. The line is single and has sidings at various points. The rails on the coal shoots are not strong enough to bear the weight of the engines, and this fact makes shunting rather awkward; for instance, at Redruth, in order to pull the wagons off the coal shoot, the engine has to get on a parallel track, a wire rope is then attached to



LOCOMOTIVE "MINER" TAKING WATER. A square wooden pipe is used.

In the case of "Smelter," the safety valves are mounted on a small dome over the firebox. The sand boxes, as in the other two engines, are outside, in front of the frame. The locomotives all have brass chimney tops and safety-valve covers. "Miner" and "Spitfire" are painted green, the other with brass bands to corners of stack. "Smelter" is painted very dark brown, lined out with dark red, and has brass driving-wheel splashers. The railway has small works at Redruth for repairing and re-building

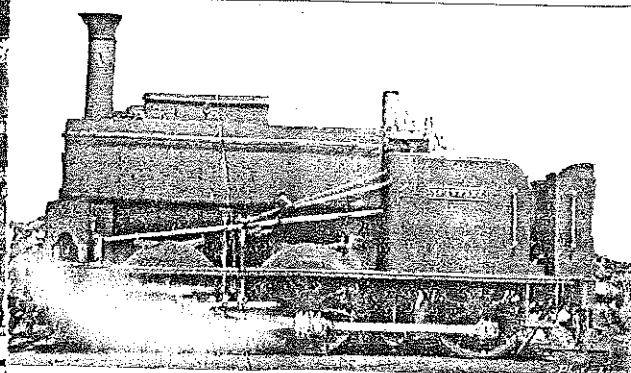


THE RAILWAY NEAR REDRUTH.

it and to the wagons, the engine pulls gently, and so brings the wagons off the shoots.

The remainder of the rolling-stock consists of about eighty four-wheeled wagons with dumb buffers, tare about 2 tons 6 cwt., load carried 4 to 5 tons. Besides these and the engines there is no other vehicle of any sort. The Board of Trade limits the speed of all trains to 8 miles per hour.

The writer thanks Mr. F. Tyacke, Locomotive Superintendent, for information placed at his disposal.



SIX-WHEEL COUPLED SADDLE-TANK ENGINE "SPITFIRE." [F. Moore.]