

THE FIRST RAILROAD IN AMERICA.

THE pressing need for additional and enlarged transportation facilities to meet the growing demand occasioned by the phenomenal growth of business in all of its departments and branches, presents itself as an issue and problem of far-reaching importance. Apart from this living issue, which is now in process of argument and investigation, it is interesting to review briefly the origin of railroads in America.

In this connection Mr. W. P. Maher, writing in "Railway and Locomotive Engineering," has presented a few statistics and data concerning the origin of railroads in the United States, as given below:

The first railroad constructed in the United States was the Quincy railroad (1826). It was three miles in length and was built to transport granite from the quarry at Quincy to the Neponset River, close to Boston harbor. This railroad was laid upon granite ties eight feet apart. The cars were drawn by horses and the usual load was ten tons. The schedule of this railroad was three miles an hour.

The Baltimore & Ohio Railroad is credited with being the first railroad constructed in the United States operated as "a steam railroad." This is erroneous. As a matter of fact the first railroad planned and constructed in the United States to have for its motive power steam engines was the Charleston & Hamburg Railroad, in the State of South Carolina, connecting the port of Charleston, S.C., with the town of Hamburg, S.C., located on the Savannah River, opposite Augusta, Ga., the distance between Charleston and Hamburg being 136 miles.

On December 6, 1827, the city council of Charleston called a public meeting of citizens. After varied discussion towards the means and ends of constructing a line of railway to run from Charleston to Hamburg, on December 19, the legislature passed an act, chartering the South Carolina Canal and Railroad Company. The directors realized the great importance of employing an engineer having special ability in construction work. They began to look around for a suitable person and engaged the services of Horatio Allen. He immediately proceeded to acquaint himself with the details of affairs as they existed and in two months he presented a report to the company embodying the cost of transportation by horse power and by locomotive power.

In March, 1830, E. L. Miller, a native of Charleston, who had been present at the opening of the Liverpool & Manchester Railroad and who had studied closely Stephenson's engine on that line, offered to construct a locomotive after his own plan. The offer was accepted and Mr. Miller proceeded to West Point, N.Y., and built the engine at the West Point foundry. The engine arrived at Charleston the latter part of October and was placed on the road November 2. It was named "The Best Friend." It made its trial trips December 14 and 15, 1830. In speed and power it exceeded the most sanguine expectations. It pulled six cars with 50 passengers at the rate of 20 miles per hour and with the empty cars it made from 30 to 35 miles an hour.

The engine was regularly used in carrying materials over the line, and also was used in between times to carry excursion parties. "The Best Friend" was the first American built locomotive and the road upon which it ran was the first American railroad to employ steam locomotive power. The engineer who had the honor to operate it was a native of Charleston named Nicholas W. Darrell. Through the carelessness, or perhaps due more to inex-

perience, the negro fireman gave the engine an overdose of steam and on June 17, 1831, "The Best Friend" exploded.

About this time the chief engineer, Allen, designed an eight-wheel locomotive which he had constructed at the West Point foundry. This locomotive was put on the line in January, 1832. It was named "South Carolina." It was a very powerful machine, and was the first eight-wheel locomotive in the world.

On November 7, 1832, the road was completed and opened for traffic between Charleston and Branchville, a distance of 61 miles. On November 2, 1833, the entire line from Charleston to Hamburg was finished and begun its operations of common carrier. It was the longest line of railroad in the world to be operated solely by steam locomotive power.

In summarizing some of the distinctive features of priority that the Charleston & Hamburg Railroad can claim over its competitors, it may be mentioned: It was the first railroad constructed in the United States, built and planned to be operated by steam locomotive power. Constructing and operating on its road the first American-built locomotive. Having for its first chief engineer the man who ran the first locomotive in America.

We learn that in February, 1835, the splendid locomotive "Edgefield" was making its regular schedule, pulling five passenger cars the distance of 136 miles in seven hours and 20 minutes; that the railroad owned 12 engines, 20 passenger cars and 135 freight cars, and that regular schedules were operated—both freight and passenger, and that depots had been built along the line about 10 to 15 miles apart.

This is, in brief, a historical summary of the first steam railroad built in the United States. This line is now a part of the Southern Railway system.

NOTABLE ITALIAN WATER SUPPLY.

With the completion of the Croce di Monaco tunnel through the Eastern Apennines, which was accomplished recently, the last engineering difficulty in the way of finishing the Pugliese aqueduct has been removed. This aqueduct, which was begun in October, 1899, and will, it is hoped, be completed this autumn, is said to be the greatest hydraulic work of its kind ever undertaken.

By diverting the River Sele, which at present flows into the Tyrrhenian Sea below the Gulf of Naples, its waters are carried through the main range of the Apennines to the Adriatic coast of Italy and delivered to the three arid provinces of Puglia. The aqueduct begins at Caposele, 1,358 feet above sea level, and the main waterway running to the eastern slope of the mountains at Venosa is 132½ miles long, of which 60 miles are cut through the rocky mountains.

At Venosa the supply is divided into three, one branch running to Foggia, another to Bari, and the third to Lecce, in the very heel of Italy. These three main conduits have a total length of 1,000 miles. The distribution among the principal towns and communes has necessitated the laying of 500 miles of piping. One hundred and fifty-two reservoirs, each containing 150,000 cubic metres of water, have been constructed at various points. Two and a-half million people will be benefited by the scheme, and 84,000 small land owners will obtain water for the irrigation of their holdings.

The total cost of the undertaking, which has employed 10,000 for 15 years, has exceeded £6,000,000.

Pine and fir piles that have been in service for 43 years in a railway trestle in Great Salt Lake have, upon inspection, been found perfectly sound, due to thorough impregnation with salt.

The Province of British Columbia has an area of 395,000 sq. mi. and a coast line of 7,000 mi. It has 15,000,000 acres of standing timber. There were 2,250 mi. of railway in operation last year, with 2,304 mi. under construction.