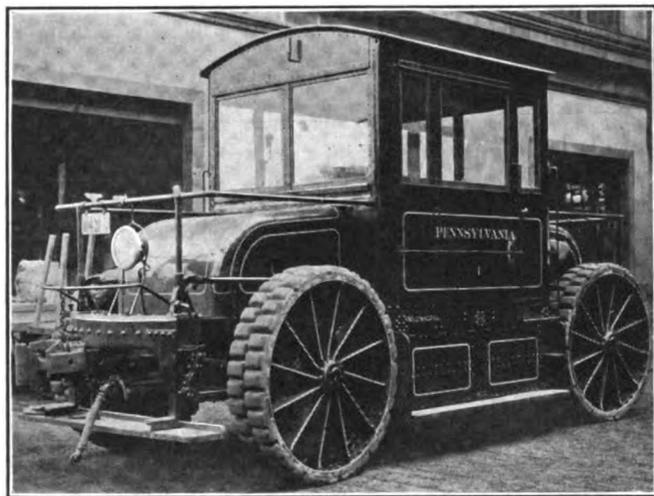


## ELECTRIC TRACTOR FOR SWITCHING SERVICE IN CITY STREETS

An extraordinarily powerful electric automobile has been placed in the service of the Pennsylvania Railroad at its Jersey City yards for moving freight cars through city streets. It is intended for use where steam locomotives are not available or desirable, and it is arranged to run on the



Storage Battery Tractor for City Switching Service

ground, the 7-ft. gage of its wheels easily spanning the standard track. The car can thus be maneuvered around an ordinary train, since its movement is not confined to the rails. The wheels are 5 ft. in diameter and they have rubber block tires. A normal drawbar pull of 8000 lb. is developed, which can be increased to a maximum of 21,500 lb. if required. Running light, the tractor maintains a speed of about 6 miles per hour.

Energy for the two 20-hp General Electric motors is supplied by eighty cells of Edison A-12-H storage battery, weighing 4350 lb. Herringbone gears connect the motors to the countershafts, a total reduction of 1 to 40 being obtained at the wheelshafts. The tractor utilizes all four wheels for driving, steering and braking. With this arrangement the car can be turned in a circle of 20-ft. radius. By means of duplicate equipment in the cab the tractor can also be operated in either direction from either position. Compressed air actuates the internal expanding brakes in the four wheels and an arrangement of interlocks prevents the controller being operated to turn on power while the brakes are set. Through standard hose connections compressed air is also supplied for braking the freight cars. In over-all length, including the M. C. B. couplers, the tractor measures 23 ft., the chassis being 19 ft. 6 in. long. The wheelbase is 12 ft. The over-all width of the machine is 8 ft. 4 in. and the height 11 ft. 3 in.

The tractor, which weighs 28,850 lb., was built in the Altoona (Pa.) shops of the Pennsylvania Railroad. While being tested at Altoona it successfully bucked a large steam locomotive which was attached to three freight cars and headed against the tractor with a wide-open throttle. The tractor was able to withstand the push from the steam machine and actually moved the cars and locomotive backward.

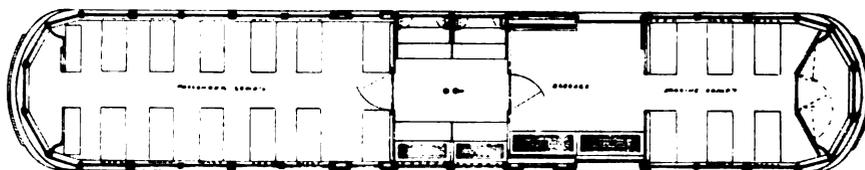
## NEW CENTER-ENTRANCE COMBINATION CARS

Two cars designed by W. A. Haller, of the Federal Light & Traction Company, have just been built by the Niles Car & Manufacturing Company for the South Fork-Portage Railway. This road is now under construction between South Fork and Portage by the Portage Construction Company, of which G. U. G. Holman is president. An extension of the line will be made as rapidly as possible so as to operate through cars crossing the mountain range between Johnstown and Altoona. Between South Fork and Johnstown the cars will run over the tracks of the Southern Cambria Railway Company.

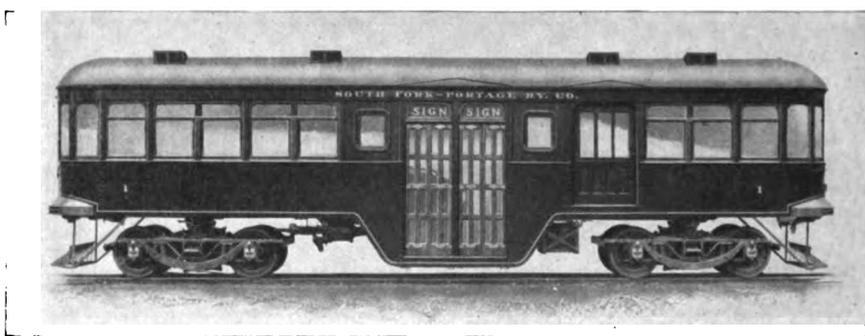
Owing to the almost continuous climb from both Johnstown and Altoona to the summit, it was considered necessary to have cars as light as possible yet with great seating capacity to accommodate the mining population in the small coal towns through which the road runs. In fact, for a considerable portion of the distance, these mining towns are at close intervals, and the traffic at present will be principally local. Larger cars of the same type are contemplated for through service when the road is extended. While the extreme length of the present car is only 45 ft. 7 in. and 44 ft. 7 in. over vestibules, the seating capacity is fifty-six persons. There is also a baggage compartment 8 ft. long which also can be occupied by passengers.

One of the novel features is the folding motorman's cab, which isolates the motorman at the front end and which, when at the rear end, swings transversely with the car and supports two folding seats, increasing the seating capacity by four persons. The left sides of the center vestibule and of the baggage room also are fitted with folding slat seats as it is intended to open only the right-hand side.

Each side of the center vestibule is fitted with four pairs of two-panel folding doors glazed with clear glass from top to bottom, so that the conductor can observe the pavement



South Fork-Portage Cars—Seating Arrangement



South Fork-Portage Cars—Exterior View

from his station. These doors are operated by handles from the conductor's station only. The step openings are covered by Edwards automatic steel trap doors.

The entire underframe, side frame and outside sheathing are of steel—the interior finish being of agasote and mahogany. Each car is equipped with four Westinghouse 1200-volt, 75-hp motors with HL double-end control and geared for a speed of 45 m.p.h.

On account of local clearances, the car is mounted with the bottoms of side sills 7 in. above the rails, the first step being 15 in. high. This may, however, be lowered to 11 in. if obstructions permit.