

IN FAVOR OF METAL TIES.

The evidence laid before the recent railroad congress in Paris pointed clearly to the economy to be gained by the use of metal ties.

In Switzerland metal ties have been in service a sufficient length of time to give some reliable evidence of their value as compared with wood. They were there subjected to severe tests of climate, gradient and curves. The report of Mr. Mayer, the chief engineer of the Western railroad of Switzerland and the Simplon railroad, was that since 1883 metal ties had been used for a considerable portion of the renewals on all sections of the roads in his charge, the total length now in use being more than sixty-eight miles, representing 126,990 ties in track, and that all renewals are now made with them, in consequence of the satisfactory service they had given. Of the number laid down since 1883 only forty-three ties had been taken out for breakage or other causes. It is impossible yet to say what would be their duration, as the first laid down show no deterioration, but one of the same number of oak ties under similar conditions of time and traffic they already had had to replace between 20,000 and 25,000. It was found sufficient to space them three feet from center to center. The gradients are as high as 2.3 per cent, while the traffic amounts to thirty trains a day in each direction and the maximum speed forty miles an hour. The experience of the company is that there is a noticeable decrease of ordinary road maintenance cost after the second year with the metal tie. On this point another Swiss company stated that on a section of 12.9 miles laid with metal ties against the same length of section laid with new wooden ties, the cost of maintenance (not renewal) was for the third year \$869, against \$1563, or about 45 per cent. From all the Swiss railroads the verdict was in favor of metal ties. Her Brauns, at the recent meeting of German metallurgists at Dusseldorf, stated that on the Prussian railways alone 1,668,170 metal ties have been laid since 1886. This action has been taken after long continued tests. The Mexican railway company also after extended experience has adopted a steel tie as the standard, and at the end of June of this year has laid seventy-seven miles of road with them. The engineer of the road states that the track laid with them is exceptionally good, while it is maintained at much less cost than before.

Of course it is impossible to compare the cost of maintenance of track in one country with that in another, but to take the Pennsylvania railroad company, for example, we find an expenditure last year of \$6,119,590 for maintenance of way on 2369 miles of road operated, or nearly \$2900 a mile. A saving of 29 per cent of this would provide 2 per cent extra dividend on the Pennsylvania railroad company's share capital. Of course metal are more expensive than wooden ties, but air brakes air brakes are more expensive than the old hand brakes that are so rapidly disappearing. The wooden tie will certainly go also. It is satisfactory to note that at least three important railroad companies—the Pennsylvania, the New York Central and the Chicago and Western Indiana—are making serious tests of this improvement on the hitherto accepted type of permanent way, and that at a very early date we may expect one of the forms of metal tie now under experiment to be adopted as the standard for all renewals.—Engineering and Mining Journal.

The new locomotive works of the Pennsylvania railroad at Altoona are to have a capacity of building 500 engines a year, and are so constructed that their manufacture can be increased up to 1,500.

Children Cry for

A Sample of Western Driving.

Gen. Sheridan has often visited Omaha, and his face is familiar to many of our citizens, in whose hearts he holds a warm place. Of all his visits to Omaha none is more memorable than that in January, 1872, when he and his staff came here to meet the Grand Duke Alexis of Russia, and suite and to go with them on a grand hunt in the western part of the state, which was then thickly "populated" with buffaloes.

The buffalo hunt, which was conducted under the direction of Gen. Sheridan, was a very successful affair. The details were executed by Buffalo Bill, who was a great favorite with Sheridan. During the hunt a grand war dance was given by Spotted Tail and his Indians, 1,400 in all, who had been brought down from their agency by Buffalo Bill to entertain the visitors. On the return from the hunt the grand duke and Gen. Sheridan took seats in a double-seated open carriage drawn by four splendid cavalry horses, which were not much used to the harness. The driver was Bill Reed, an overland stage driver. On the way in the grand duke frequently expressed his admiration of the skillful manner in which Reed handled the reins. Sheridan informed him that Buffalo Bill had also been a stage driver in the Rocky mountains, and thereupon his highness expressed a desire to see him drive. Buffalo Bill was in advance, and Sheridan shouted out to him: "Cody, get in here and show the duke how you can drive. Mr. Reed will change places with you and ride your horse."

"All right, general," responded Cody, and in a few moments he had the reins and the horses were dancing over the prairie. When they were approaching Medicine creek, Sheridan said: "Shake 'em up a little, Bill, and give us some old-time stage driving." Bill gave the horses a crack or two of the whip and the struck an unusually rapid gait. They had a light load to pull and kept increasing their speed at every jump. Bill found it difficult to hold them. They fairly flew over the ground. At last they reached a steep hill or divide, which he drove down into the valley of the Medicine. There was no brake on the wagon, and the horses were not much on the back track. Bill saw that it would be impossible to stop them. All he could do was to keep them straight in the track and let them go it down the hill for three miles, which distance was made, it is claimed, in about six minutes. Every once in a while the wheels would strike a rut and take a bound, and not touch the ground again for fifteen or twenty feet. The duke and the general were kept busy in holding their positions on the seats, but when they saw that Bill was keeping the horses straight in the road they seemed to enjoy the dash. Bill was unable to stop the horses until they ran into the camp where they were to obtain a fresh relay. The grand duke said he didn't want any more of that kind of driving, as he preferred to go a little slower. Gen. Sheridan laughed and said: "That is nothing unusual in this western country. We do everything out here with a grand rush."—Omaha Herald.

Loads Carried by Voyageurs.

In 1844 I traveled by birch bark canoe something like a thousand miles, from Lapeoint over to the head waters of the Mississippi, and down the latter to Fort Snelling, at mouth of Minnesota river. We made several portages, the longest being nine miles. We had along two trunks, and provisions and bedding for four persons for one month. The load which our two voyageurs carried was certainly 150 to 200 pounds each. They made seven miles in one day, going over the ground five times—i. e., thirty-five miles. Three-fifths of the distance they were loaded, and two-fifths going back for another load. Their plan was to take the heaviest load first (about 200 pounds) and carry it about a mile or a mile and a half, put it down, go back for another load of 150 pounds, carry this a mile or a mile and a half beyond the first deposit, then come back, take up the first deposit, and carry it the same distance beyond, etc., until all was carried to the camp for the night; then, last of all, they went back seven miles to the last camp, took up the boat (which was the lightest load of all), and carried it to camp.

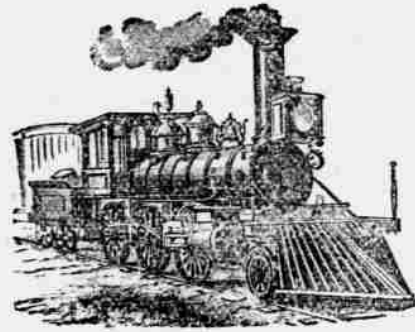
I will give an account of one load. They used a leather strap about two inches and a half wide in middle, and slender toward the end, and perhaps ten or twelve feet long. One fellow, a famous voyageur, would tie this about my trunk (about seventy-five pounds) in two places near each end, and throw it over the head, bringing the band across the forehead, the trunk resting on the back, then take a hundred pounds of flour and put on the trunk, and then twenty-five pounds of crackers on top of all, and walk off briskly, almost in a trot. The man was not a large or very muscular man, but rather lean and wiry.—Professor Joseph Le Conte in Science.

The Little Cash Registers.

Cash registers, so called, are by no means a new thing, but the latest style of register is a perfect marvel. It registers the amount of the purchase, indicates the amount to the clerk or cashier as well as to the customer; opens the drawer ready for making the change, rings a bell to give the alarm and adds the amount registered to the amount of all former registrations. All this is accomplished by a single depression of one key. This little machine is perfectly honest and makes no mistakes. It detects carelessness whether it is on the part of the employers or employees. When the day's work is done the machine has all the cash added up, so that it can be seen at a glance what amount of money should be found in the drawer. Or if at noon, or at any other time in the day, the proprietor wishes to find out how much business has been done, it is not a minute's work to find out with the machine, which is provided with a secret lock, to prevent the possibility of any one altering the figures or tampering with the mechanism.

The machine can be ready for a day's work and set for another day's work in less than two minutes. The clerk may lock his machine so that no person can tamper with it and so that the clerk himself cannot interfere with the registering mechanism. The proprietor, if he chooses, may, in a moment, set the mechanism so that no registration can be made without opening the draw each time.—New York Mail and Express.

Pitcher's Castoria.



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Le Portland	8:00 a. m.	Le Eugene	9:00 a. m.
Le Albany	12:40 p. m.	Le Albany	11:35 a. m.
Ar Eugene	2:40 p. m.	Ar Portland	3:45 p. m.

Lebanon Branch.

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Le Portland	5:20 p. m.	Le Albany	6:30 a. m.
Le Albany	9:05 p. m.	Le Albany	5:45 a. m.
Ar Portland	1:50 p. m.	Ar Albany	8:25 p. m.
Le Albany	2:35 p. m.	Le Albany	8:40 p. m.
Le Albany	7:30 a. m.	Le Albany	4:28 p. m.
Ar Portland	8:22 a. m.	Ar Albany	3:40 p. m.

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Arrive Yacouma 5:30 p. m. | Arrive Albany 11:10 a. m.

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