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AMERICAN RAILWAY SPEEDS.

The Engineer, of London, is greatly disturbed from time to time because American railroad men—managers, master mechanics and engineers—persist in crediting their own locomotives with feats of speed and hauling power which are entirely beyond the capabilities of any English locomotive.

When locomotive No. 564, of the Lake Shore and Michigan Southern Railroad, hauled a 150 ton train for 86 miles at the rate of 72.9 miles per hour, The Engineer proved to an absolute demonstration that such a thing could never have occurred.

After a brief period of well earned repose, our contemporary has again been disturbed by the performance of American locomotives, the immediate cause being a letter written to the Railroad Gazette by Mr. George S. Strong, in which he quotes certain runs made in 1887 by the Strong locomotive, runs which were certified by the proper officials and accepted as authentic by the engineering press throughout the country.

We are given to understand that, as on the occasion of the Lake Shore run above referred to, The Engineer is to be supplied with the certified statements of the officials of the roads on which the runs were made, on the receipt of which, no doubt, our contemporary will proceed to revise its already revised calculations.

In general it may be said that it is altogether absurd to make the data of English locomotive performance the basis of an argument as to the possible or impossible performance of an American locomotive, so radically different are the leading features of the two designs.

The American machine can haul the larger loads because it is specially designed to do so, and the same reason must be given for the relatively large horse power which it is able to indicate, and does indicate, on such runs as these in question.

Other things being equal, the locomotive that can pass the greatest weight of dry steam through its cylinders, in traversing a given distance on the rails, will exert the greatest power. English engineers, who are continually expressing their surprise at the enormous size of American locomotive boilers, should bear in mind that it is its large boiler capacity which primarily enables the American locomotive to haul heavy loads at speeds which are altogether beyond the power of the English machine.

The English locomotive is handicapped at the very start by its small boiler with only 1,000 to 1,200 square feet of heating surface, and the valve gear and piston speed are proportioned to match it, the ports being small and the piston speed slow.

The locomotive which made the runs that are now called in question represents an extreme application of the distinctive features of American design. The double furnace gives 60 square feet of grate area, as against 20 square feet in the English locomotive; the gridiron valves give 34 inches lead line or length of port on each valve, with an area of 25 1/2 square inches, as against 10 inches lead line or length of port on each valve with an area of 12 1/2 square inches on the average English locomotive; and with a 75 per cent cut-off this locomotive has given as high as 150 pounds mean pressure in the cylinders.

In conclusion it may be said that if the designers of English locomotives would cease to strive after an ideal economy in fuel, and devote their attention to the more serious problem of hauling heavy loads at high speed, they could solve the problem at once by adopting the practical and common sense methods of American builders; moreover, if The Engineer would spend as much time and energy in teaching its readers how and why the American locomotive does certain things as it now spends in trying to prove that it never has and never will do them, it would be more in line with modern developments and less open to the charge of persistent and unreasonable prejudice.

"DEFECTIVE PATENT LAWS."

The love of criticism is a quality inherent in human nature. Perfection is never attained by man, and his work is always open to unfavorable comment. This statement applies broadly to almost every case, and holds even when the critic has accurate knowledge of the subject he treats of.

Recently the patent law of the United States has been thus criticised by one of our Chicago contemporaries. Among its editorial articles appears one bearing the title "Defective Patent Laws," which criticises unfavorably what the writer of the article in question conceives the patent laws of this country to be, and undertakes in this vein of ignorance to compare them with those of foreign lands.

A mistaken apprehension as to the scope and function of a caveat marks the opening of the article. The writer states that a caveat is objectionable, as by the payment of ten dollars per annum it may be kept alive and practically extend the life of a patent for an inde-