

sense on the part of railway men immense savings could be brought about without anyone concerned even thinking of scientific management.

So many statements have been made to the effect that Taylor's system of scientific management is a "sweat-shop system," garbled accounts of the system being given to prove the point, that I am led to make this statement. The making of scientific studies of operations as they are performed, and the devising of methods and means of performing these operations so that the workman may produce more in a given time with the same expenditure of physical and mental effort: that is scientific management. This means a cutting out of wasted time and often of wasted materials, and also in the majority of cases a larger wage for the workman.

When a foreman in a shop instructs a mechanic, from previous experience, how best to set up a certain piece of work on his machine, so that the mechanic goes about the task in a way that has been proven to be most efficient, instead of having to try a dozen methods before he finds the best one: that is an example of scientific management. This very thing done thoroughly and systematically is real scientific management, or efficient management if you like that word better.

HOW SAVINGS MAY BE EFFECTED.

But this is not a paper on scientific management, but on methods of cutting out leaks in railway work.

L. C. Fritch, chief engineer of the Chicago Great Western Railway, has said:

"There is opportunity for waste, and great waste, in the railway business, in almost all of its various departments, and in a greater or less degree on all roads. Much of this waste is unavoidable by virtue of the peculiar nature of the business. But, on the other hand, much of it is unnecessary waste, and a large part of the unnecessary waste is ruthless and inexcusable waste. 'Ruthless waste makes woeful want,' is as true when applied to the railway business as to our private affairs. No employee would tolerate in his own private affairs the extravagance and waste often witnessed and sometimes practiced in his own employment for the railway company.

"It lies within the power of every employee of a railway corporation to practice prudent economy, no matter what his position, or how humble his sphere may be. This may take the form of economy in time, in the use of material, in avoiding possible loss or damage to property and in countless other ways that come to the attention of almost every employee in his daily experience."

Following are actual instances, picked up here and there, which will give one an idea of how money may be saved; and