

original proposition: If the whole proposition of whether scientific management shall be used for good or shall be used for bad depends upon the single directing head of the establishment, there is not much likelihood, is there, of any penalty being attached to the exercise of that power for bad?

Mr. Taylor. I have never said that scientific management could be used for bad. It is possible to use the mechanism of scientific management, but not scientific management itself. It ceases to be scientific management the moment it is used for bad.

The Chairman. That might be true. But scientific management cannot be developed, as I understand it, unless you have the thing with the mechanism of it?

Mr. Taylor. Yes.

The Chairman. And according to your statement that the mechanism can be used for bad, and according to another statement that in scientific management there must be a directing intelligence and that the directing intelligence must not be interfered with by anyone. You may cooperate in accordance with the desires of that intelligence, but it must not be interfered with; otherwise it is not scientific management.

Now, under those circumstances, how is the workman going to be able to protect himself against the employer using that mechanism that has been established to oppress him for the gain of the employer?

Mr. Taylor. If a man in the management tries to use the mechanism of scientific management to oppress the workman or in any other way that it should not be used, the workman simply reverts to his old ways and goes right back and does what he did before under the old management, he soldiers, and cooperation at once ceases. This is a mutual affair and both sides must work together; then, and only then, do you have scientific management. The moment one side starts to jump the fence and bulldoze the other, or to do any acts which are outside of the principles of scientific management it ends. Without harmony you cannot have scientific management, and you go right back to the old fighting scheme, in which each side

is watching the other carefully and trying to get an advantage over the other.

We are, both sides, trying to get the largest possible amount of work out; there is no time for fights. Fights and quarrels are not characteristic of scientific management. The old type of management is full of demands on one hand and refusals on the other. The terms "demand and refuse" are never heard in scientific management. These are not words which one friend uses to another.

The Chairman. I think you stated the other day, Mr. Taylor, that up until last year you did not know of any strikes where scientific management had been introduced, during the time since it has been introduced.

Mr. Taylor. Yes, for 30 years.

The Chairman. Isn't it also true that peaceful relations almost invariably exist between master and slave, that no strikes occur?

Mr. Taylor. Well, if you call peaceful relations one fellow lashing the other with a whip, I do not call that peaceful relations. I call that very far from peaceful relations, the conditions that existed under slavery.

The Chairman. Did the master always lash with the whip?

Mr. Taylor. No, he did not.

The Chairman. Were there not some considered good masters, and some considered hard masters?

Mr. Taylor. There were. But, Mr. Chairman, I do not think you and I for one instant can disagree on the subject of slave institutions; there is no question about that whatever; there can be no two views between us as to slavery.

The Chairman. My only purpose in referring to it at this time was to demonstrate the idea I have always had, that the fact that no strikes have occurred does not prove anything as to the private relationship between employer and employee. I think you will admit, Mr. Taylor, will you not, that there are comparatively few strikes in India and China.

Mr. Taylor. Mr. Chairman, coming back to India, there was the terrible Sepoy mutiny which we always have in mind. We know that there exists even now the elements of dissension in India, and we know also there now exists an absolute state of revolution in China.

The Chairman. Is not that political revolution, rather than industrial rebellion?

Mr. Taylor. I admit I know very little about industrial conditions in India and China.

Mr. Tilson. In this country where a man is free and he has a perfect right to apply to public opinion in general (he thinks that is a proper sovereign court sometimes if he is not properly treated), would not you take it as evidence that his relations were rather friendly, where this free-sovereign man has been working for years and there has been no evidence of discontent?

Mr. Taylor. I should say that was evidence. I have heard it said, however, Mr. Tilson, that those men who are working under scientific management are weaklings; are men of little or no character, and yet our factories are more than holding their own with their competitors.

Mr. Tilson. That may be, but the kind of men that work in factories are not weaklings; the great mass of workmen in this country are not weaklings and not slaves, and are not enduring any oppression of an unendurable character, without making it known.

Mr. Taylor. No, sir. I know that we make errors and we make plenty of them on the management side, naturally, but the moment an error is made, a good big howl goes up from the workmen right off, and I can assure you that the complaint is not the kind made by weaklings or slaves.

Mr. Tilson. Because the workman knows what is right and knows how to get it.

Mr. Taylor. Certainly. In nine out of ten times, the trouble is on the management side, and I assure you that if we make a mistake it is promptly corrected by us, and if you like, I can bring you thousands of workmen right here to tell you that they do not have to go to anyone to have a mistake rectified beyond the man who has made the mistake. People do not become perfect under scientific management; they make mistakes; but when we do make them, the workmen tell us about them right off and we correct them, or the whole scheme would fall to smash.

The Chairman. Some time ago you gave as four fundamental principles of scientific management about the following definitions:

First. The gathering together of the tradi-

tional knowledge and recording, tabulating, and reducing this knowledge to laws.

Second. Scientific selection and then the development of the workmen.

Third. The bringing of the science and scientifically trained workmen together.

Fourth. The almost equal division of work of the establishment between the workmen and the management.

Now, under the third of those, the bringing of the science and the scientifically trained workman together, isn't it the purpose of scientific management that the workman must follow absolutely the directions that are given to him when this science and scientific workman are brought together—that he must follow the directions that are given to him as to how he shall perform the work?

Mr. Taylor. It is the rule under scientific management that the workman works in accordance with the laws that have been developed, and that they shall at least (when they get a new job, we will say, that they have not done before)—that they shall at least practice the method that has been set before them once before raising any objection or any kick about it. If after having tried the new method once any workman has a better suggestion to make, of any kind, sort or description, that suggestion is most welcome to the management. And it is through those suggestions from the workmen that nine-tenths of our progress is made. The following kinds of suggestions are received from workmen, after having faithfully tried the method outlined to them, they see something wrong about our method and suggest a new or a better way of doing the work, or suggest a more efficient series of movements or some better process than we have outlined. And in that way we get most of our knowledge and make our improvements in methods and implements.

The Chairman. If the workman has to obey instructions implicitly as to how the work should be done; would he not thereby simply become an automaton, and would not that ultimately reduce the skill and value of the skill of the workman?

Mr. Taylor. Mr. Chairman, I want to give an illustration in answer to that question, be-