with no financial incentive, but the output measured in terms of pounds per man-hour increased from 113 in 1913 to 143 in 1920, 285 in 1922, and 378 in 1923.

I have been very much interested in the first joint efforts so far as I know in this country for the employers in an industry to accept unemployment as management's responsibility and to provide for it as a charge on industry. The Chicago Industrial Federation of Clothing Manufacturers and the local organization of the Amalgamated Clothing Workers of America have worked out a plan by which the workers are assessed 1½ per cent of their wages and the company contributes a like amount, so that during the dull seasons workers are guaranteed for four or five weeks, I think it is, 40 per cent of their wages. This is a much saner method, it seems to me, of attacking the problem of stabilizing employment than the English method of having it done through the government.

2. Adequate Wages

Taylor early enunciated the fact that low wages are not necessarily economical. In fact, he went so far as to say they are uneconomical. I think those of us who have been practitioners in that school hold that belief. It is the labor cost per unit that is important, not the wage.

Higher wages and higher earnings accompanied by low costs depend on stability of employment, freedom from labor turnover and precise control. Some illustrations of what is being done on those lines have already been given.

3. A Voice in Management

I have not yet found any employee who wants to sit on the board of directors, who feels that he can contribute to the general financial policy or the general sales policy. But workers everywhere have a lot of concern about that which immediately affects them.

The development of the works committee to capitalize in the manufacturing problems of the company the latent intelligence of the workers has been given new impetus. Works committees, like well organized employment and personnel departments, serve to form lines of communication: outlets for getting grievances out of the worker's system, and for expressing his aspirations.

Take again the labor unions. There is a growth unmistakably in the demand for collective bargaining. I am familiar with its development in the printing trades with the old strongly established conservative unions, for the most part under pretty intelligent and able leadership. I believe that in some way those who are compelled by necessity to deal with labor unions or who wish to, have got to find a better basis of working than they have had in order to insure against industrial disputes. It is quite possible to have strikeless eras, I believe. An understanding of the background of unionism, of the abuses and grievances upon which unions have thrived, of their underlying philosophy and traditions, is essential in dealing with them. In some unions in industries where the unions are strong and can curtail output and limit apprenticeship, it is a vital thing for the manufacturers to insure their future source of supply of labor, and the easiest way in such cases is by cooperation with the unions. On the other hand, in non-union plants, it seems to me it is essential to keep the organization free from grievances and from unrest, and to develop through shop committees and other methods responsible leadership, so that if those plants are taken over at any time by the unions you have a responsible body who have confidence in the concern and are not going to be stampeded by a Bolshevik agitator. That to my mind is the insurance that one should secure in operating a non-union plant.

4. The Right Kind of Foremen

When the history of the operations in France is written, a large part of the credit will go to the lieutenants and second lieutenants, the men who lived close to their men, who helped them in their troubles, who were there personally when they went over into "No Man's Land." And so to the foremen in industry. I think that industry by and large gives too little attention to the importance of the foreman. It is the foreman who represents the point of view and the personality of the company to the men, and there is nothing that is such a cause of grievance among employees as a foreman who is unfair, disagreeable, surly and ever fault-finding. Provision of proper foremanship is one of management's major tasks.

5. The Opportunity to Advance

It is pretty deadening for an ambitious, intelligent fellow, working away at one machine all the time, with a growing family, trying to pay for a house, wanting his children to go to high school and to

get into an industrial stratum better than his own, to feel that he is hemmed around and limited in his sphere. He cannot be a contented workman. You have got to have a contented workman. Workers must have the opportunity to rise by their own efforts, their own intelligence and industry. That opportunity can come only through a well functioning employment and personnel department and the spirit of the plant back of it to teach and develop all ambitious employees. Corporation schools, vocational training in the plants and all that sort of thing have been a reflection of this consciousness on the part of employers.

There is a chain of candy stores that use as their slogan, "Happiness in Every Box." I like to paraphrase that by saying, "Happiness in Every Shop." And that will mean happiness in the homes and in the community.

Revamping the physical and the human side of the cotton mills in the South is a fascinating story and a problem in itself. I have been interested in a couple of these mills for six or seven years. We have improved conditions a little relatively—in the long run not very much—but the friendliness that crops out as you walk through the mill and the village is very different from what it was on my first visit—when no one looked up, when it was not regarded as safe to be in the mill village after dark. A trip now to those mills is a veritable spiritual uplift.

B. Psychology and Industrial Relations

The subject of industrial relations must not be left without mention of a new measuring device which management is using—the psychological test. There are four essentials which an employer wishes to know about an applicant for work. *First*, his general intelligence and ability. Now it doesn't need to be high. It is a mistake to put into a blind alley job a person of intelligence beyond the need of that work. *Second*, his habits of industry: how hard does the man or girl like to work? The idea of everybody being ambitious is, beyond certain levels, an exploded theory. I have tried to advance men into positions of greater responsibility and have them come back to me and say: "We don't want the extra money and the extra responsibility. We are happy at doing this job at that wage level and we would rather do it because we are happier doing it and it is less wear and tear on us." *Third*, his interests, What does he like to do? What gives him the most pleasure in doing? *Fourth*, his personality. How does he get along with people? How does his executive capacity or his willingness to follow fit him for the job?

Not all of these qualities can be tested, but in my paper of ten years ago I raised the query if psychology applied in the selection of workers by the development of the Binet test or something of the kind might not help in reducing misfits of square pegs in round holes. Because of that query and the interest in it, I have been looking into what applied psychology has done. I was interested in following the work of Walter Dill Scott and the psychologists whom he brought together in determining the rating tests for the classification of the draft army. He frankly admitted to me that these tests were very hastily put together; they accomplished something but were just a beginning in showing the possibilities of tests.

The General Electric Company in West Lynn has been going somewhat extensively into tests for the selection of workers because they were faced with the necessity of reducing their labor costs. One of their operations involves the preparation of jewels for the parts of a meter. They purchase sapphires from the size of a peanut to the size of a walnut. They cannot use another stone which it is very hard to tell from a sapphire. The Company engaged, at a considerable expense, George Kountz of Tiffany's to come up and show them how they could differentiate this sapphire from white jade by optical methods, but they were not always sure of the optical refraction, because it changed with impurities. So they tried to train girls to do that work. Now they do all of that sorting by girls who take these little precious jewels and toss them up in their hands and feel the weight of them—the specific gravity is about 3.8 and 4.2 respectively—and drop the sapphires into one place and the white jade into another and they do it more accurately than could be done by the Kountz method of optical refraction. They have arranged the selection of these girls by tests designed to test their coordination between vision and tactile sense, and these tests are working out quite accurately.

The general manager said he had some startling examples of the value of these tests, and though startling examples are not significant, this example is very interesting. One of his foremen wanted a