"The old piece rates were . . . crude . . . The greatest defect . . . was the practice of rate cutting . . . Frequently when the employes . . . worked hard . . . and . . . increased their pay, the management cut the rate and reduced their future earnings to a 'fair day's pay.' . . . Moreover, if any employe . . . expended exceptional effort . . . he soon felt the crushing force of social disapprobation against his 'killing the rate.' . . . If weekly earnings under any piece rates were above the going wage in the community, the union had a hard task in bargaining for an increase or even retention of the rate. In all respects the piece rate had wasted its power through riotous cutting.

"With the coming of scientific management . . . conditions and methods were . . . standardized . . . to make them as stable as possible. The amount of output . . . was then determined . . . by time study. A rate thus scientifically determined was expected to stand the test of time. . . .

"Taylor devised a differential piece rate that aimed to discourage all but outstanding workers . . . He set a low rate of return per piece until a severe 'task' had been accomplished . . . and after that point not only increased the rate on subsequent units produced within the standard time, but applied the higher rate retroactively over all that had been produced. If the employe fell short of the allotted task by no matter how narrow a margin, no bonus was forthcoming . . . . . because of its harshness both upon the worker and management, it was hardly a lead that many would follow.

". . . straight piece rate which rewards production only favors mediocrity of quality.

"The most recent development of piece rates is the group rate. Its essential principle is the teaming of the employes engaged in making a common product into groups and the payment of each individual in the group in direct proportion to the group output. The group piece rate combines a social incentive with the direct financial incentive. Each employe works not for himself alone, but for his group as well. Upon him, if he lags, falls not only individual loss but social disapprobation.

"These roughly are the major types of financial incentives in use today. The number of possible —nay, almost of actual—minor variations are endless . . . . As far as I know, none is wholly satisfactory anywhere.

"When production records are kept . . . and the time wage is frankly determined on the basis of these records, it makes astonishingly little difference whether the worker is paid by the piece or by the hour. . .

"No step in the introduction of direct payment by results is more important than discovering as nearly as possible the ideal 'one-best-way' and then seeing that conditions are maintained at that standard.

"Perhaps the most serious evil of introducing piece payment before a sufficiently close approximation of the 'one-best-way' has been attained is the dilemma of having either to pay excessive rates or to cut rates. . . Even when great care is taken . . . improvements in method, material, equipment will occur . . . so gradually that it is . . . impossible . . . to say that a substantial change in method justifying a change in rate has been made. This problem of adjusting rates to gradual improvement of conditions is one of the most baffling problems of handling financial incentives. So far as I can discover, no satisfactory answer to it has been found. The problem is serious at best—if rates have been hastily installed without first standardizing conditions as far as possible, it is ruinous. . .

"Often conditions are such that the exact knowledge of daily output necessary for direct payment by results cannot be obtained without disproportionate expense. This has been most conspicuously true of the expense of inspecting after each operation . . . There are many places where the difficulty or the expense of standardization and of exact measurement of results are so great that time payments in one form or another are far better than any form of piece payment.

"In considering the effect of any financial incentive, its effect on the whole problem of production, not just upon output, must be considered. To an emabrrassing degree an incentive on one element of an employe's value tends to a slighting of all others. . .

"When all is said and done, much of the best value of an employe is too intangible for reward and, therefore, for stimulation by any form of financial incentives . . . their limitations must not be overlooked. Primary among these is the fact that they do not reach the invaluable voluntary co-operation and effort which each workman can, but cannot be forced to, give. . . .

"How the working out of the financial incentive affects these forces is always a pertinent question. . . .

"The more precise and direct the financial incentive employed, the more highly developed must the management be to cope with it. They make management more difficult."

Geoffrey C. Brown.[8] I wish, in the first place, to congratulate Mr. Smith on his interesting address. The subject of "Financial Incentives in Industry" is a timely one because it presents an aspect of scientific management which I am very sure has been dealt with, thus far, somewhat inadequately.

I believe with Mr. Wolf, that the popular conception of what constitutes an incentive or stimulus to human productivity has been limited and beclouded, hitherto, by the idea that it involves, more or less exclusively, an individual financial reward given for the attainment of a specified output standard. I share enthusiastically, moreover, in Mr. Wolf's conviction that the importance of the acquisitive instinct as an exclusive medium through which to stimulate workers' productivity, has been in the past, and still is being, enormously exaggerated.

The majority of men, I believe, are spurred to productive activity far more by the fact that they find work inherently *interesting* than by the prospect of a bonus to be reaped through its performance. An adequate wage return of course is indispensable. As society now functions the wage signifies the worker's subsistence. It should represent, therefore, as high a wage standard as the character of the work and efficient management will admit. But it should, I believe, be taken for granted. The incentive, if it is to have a sound basis, must be provided through a knowledge of what makes various kinds of work interesting to various kinds of men. Any incentive method that has a general foundation other than this one of inherent interest, I am very sure, is superficial and inadequate.

If men are incited to their best productivity by the fact that they find work interesting, it is of the utmost importance to know where lie the springs of interest. From the bewildering array of ingenious wage incentive scales that captivated the souls of our industrial engineers during the first two decades of the century, one would be led to believe that the most important stimulus was a bonus in the worker's pay envelope. I am convinced, however, that this is not the case. Work becomes interesting to the individual in proportion to the opportunity that it provides for the play of initiative and the attainment of self-expression in its performance. *If no such opportunity is afforded* the worker may be coerced into a semblance of interest through the prospect of an individual bonus, or through fear of dismissal or loss of wages; but the stimulus and the response are both artificial, the worker throughout is under a form of spiritual duress, and will not, I am sure, long maintain a high level either of productive attainment or personal satisfaction.

It has long been my conviction that proper incentive methods cannot be developed until society has evolved something more satisfactory than the somewhat opportunistic methods of vocational guidance that still prevail throughout industry. The *fitness* of the individual for the work is an overwhelming condition of his interest, and hence of his productivity. Mr. Smith has mentioned that the whole range of the worker's fundamental desires should be considered. First of all, then, adequate means should somehow be provided for guiding him toward the work for which he is most suited and feels a preference. This is something that continues largely outside any adequate range of control. The worker still drifts about taking what he can find, and under economic stress, frequently finds and spends the balance of his life at the wrong kind of work. One of the major problems of waste still confronting us is this vast futility of misdirected human effort, the problem, in brief, of the square peg in the round hole. I do not agree with a statement to the effect that men "are not square pegs or round pegs to be fitted into square holes or round holes as is frequently stated,"[9] which occurs in a widely recognized book on management. I believe, on the contrary, that men *are* pegs of greatly varying shape —square, round, pentagonal, hexagonal, etc.—and that they must fit into holes that have a sufficient degree of conformity. I am personally acquainted with a number of badly fitting pegs. I know that they are unhappy and I strongly suspect that they

[8] Consulting Engineer, East Orange, N. J.

[9] Richard Lansburgh, "Industrial Management," pg. 43.