tin board is not very satisfactory as a means for ascertaining the amount of work ahead of each machine or class of machines by chronological periods. In general practice the operation orders are not transferred from the route file to the bulletin board until the materials are on hand; this is, I take it, one of the reasons why Mr. Hemmerly's scheme calls for the use of a separate board. Its greatest shortcoming is, however, so far as balance of work purposes are concerned—and this fault seems also to be inherent to a considerable degree in the development described by Mr. Hemmerly—that it does not show the amount of work represented by the manufacturing orders that have been issued but which are still in process of planning, nor the work represented by customers' orders received far in advance of shipping dates—for which manufacturing orders are not due to be issued for some time.

In a plant where there is comparatively little variety in the product, where it all, or each class, passes through the same processes, a more or less accurate approximation may be made immediately upon receipt of the customer's order and corrected, if necessary, after the work has passed the instruction card or rate setting operation in the Planning Department. On the other hand, in a plant doing a miscellaneous class of work, such as building special machinery, this cannot be done even approximately until after the planning has progressed far enough to indicate the character and amount of work involved in the operations on component parts and their assembling.

When the character of the product permits previous to planning, the determination of the number of units of work—in time or its equivalent—a simple and reasonably satisfactory plan is to have for each operation (or machine) involved, a sheet ruled in vertical columns representing time periods during which work should be finished. As soon as a manufacturing order is issued (or in some cases upon the receipt of a customer's order) the units of work for the various operations are entered under the appropriate columns on the sheets for the operations involved, and added to the previous balance. As work is completed, a corresponding entry and subtraction is made. This is approximately the scheme developed by Mr. Taylor and Mr. Barth as an integral part of the routing system. Mr. Barth will no doubt recall the difficulties he had in making me understand,—all this back in 1904 or 1905.

From the sheets I have mentioned, periodic reports may be drawn off for the manager and others concerned, and I believe that such a report should also include a statement of work actually in process in the plant as shown by the bulletin board.

The next question is, will the manager make use of these reports? He may, especially if the production clerk, production supervisor or superintendent of production, as you may prefer, is strong enough, rude enough, and persistent enough.

SANFORD E. THOMPSON[1]: I wish to call attention to the fact that this is one of the mechanisms which ties in with the administration—the so-called administration—problems that have been brought up today in giving information to the executives on questions of purchase and sales. No matter whether our factories are running full or running at a low ebb—but particularly when they are running full—the question of what goods can be sold, what goods can be best manufactured and manufactured in the immediate future, and the question as to what goods shall be ordered, what material shall be ordered for the manufacture of the articles which are most needed, are of the utmost importance to the executives.

These questions are partially answered by the mechanism of the balance of work described by Mr. Hemmerly.

JOHN W. CARTER[2]: This being the first meeting of the Taylor Society that I have attended, I was a little reluctant at first in permitting my name to be used as one to discuss anything that takes place in its meetings. I represent a firm, as you all know, who are pioneers in the administration of their affairs under the Taylor system, and who are at the present time carrying on their business under what I would consider the orthodox Taylor System. Nevertheless, we do not wish to live within the confines of our own four walls, but we want to know what the other man is doing.

There are some things, however, that I cannot dismiss from my mind in looking over this paper of Mr. Hemmerly's, and I shall confine my discussion to a very few questions.

In his paper he states that there is another bulletin board being used in connection with a regular Planning Department board which, to me, seems like a superabundance of mechanisms. What advantage is there in having a separate and additional bulletin board to control the balance of work when the unit and total times appearing on these tickets just mentioned are an exact duplicate of those appearing on the operation tickets such as are used on the bulletin board of the Tabor Company, which is the ordinary three-hook type?

Can we not arrive at the same machine and labor capacity by totalling the time units on the operation orders and use this as a basis for a daily and a weekly report?

I do, however, like the balance of tools and most heartily agree with Mr. Hemmerly. Very frequently a special tool is in demand by two or more operators at the same time, and this condition is not known to anyone but the tool room foreman; and quite often this fact is not discovered until it is too late to change the order of work on the Planning Department bulletin board without loss of time to both management and workman.

FRANK D. WHITE[1]: There are two questions which are not clear to me that I should like to inquire about. First: I understood the Sales Department was responsible for the promise on the orders to the customers. In other words, they were to be advised by the Planning Department, from the balance of work, as to the deliveries they could make to the customers. It seems to me that it is the function of the Planning Department to make these promises and submit them to the Sales Department. I am not averse to giving the Sales Department a copy of the balance of work and all the information which the Planning Department has showing what work the factory has scheduled and what it can produce, but it seems to me that if the Sales Department is allowed to promise the orders that it will be almost impossible for the Planning Department to make an order of work which they can hope to operate.

The other question on the balance of work is the four-week period. I wondered if it were the intention to submit the balance of work for four weeks only to the Administrative Department, or whether this was carried for the entire period for which the factory had work ahead. In our plant we have started to work up a balance of work, and in doing so we are using the chart as illustrated in Mr. Gantt's book entitled "Organizing for Work." This shows our actual production

[1]Consulting Engineer, The Thompson and Lichtner Co., Boston and New York.

[2]Tabor Manufacturing Co., Philadelphia.

[1]Eaton, Crane & Pike Co., Pittsfield, Mass.

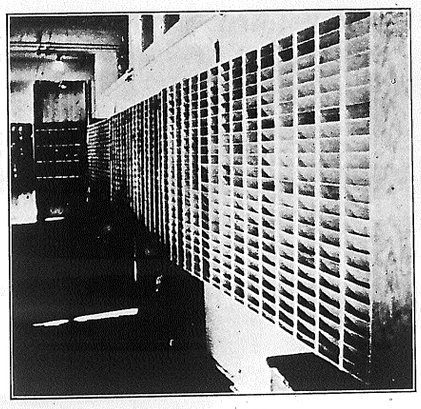

Fig. 1. Sorting Tray Mechanism.

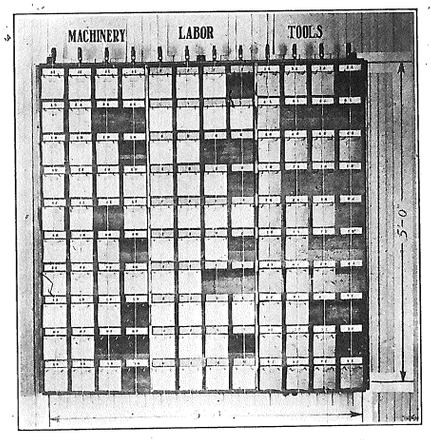

Fig. 3. Hook Type Planning Board.

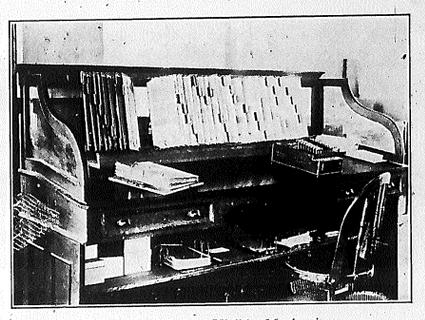

Fig. 2. Index Visible Mechanism.