



Fig. 8



Fig. 9

03948		DEC 22 PM 2 01	
Clock No. 7694	Name Mary Smith	Box No.	Finish
Order No. 14	Commodity	Box No.	Start
		DEC 22 AM 8 28	
No.	Order No.	Clock No.	Production
3000	Customer or Size	Production	Std. Time
Operation Kay Coors		Size of Sheet	Act. Time
Std. Time 5.42		Class & Rate	Del. Time
Delay Time 4.35		Earnings	Rate
Time Taken 1.002		1500 Dem	Rate
Pieces Work 1.208		500 46	Rate
Average		500 7P	Rate
Overtime		500 5E	Rate
Total		180	Rate
Material Location		51	Rate
		60	Rate
		51	Rate
		342	Rate
		2.19	Rate

Fig. 10

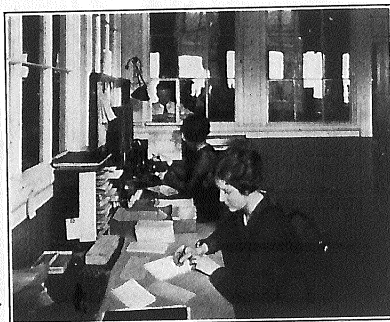


Fig. 11

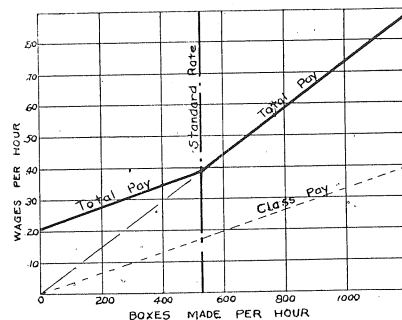


Fig. 12

mates the foreman figures the quantities of each kind and size of board which he expects to use and sends a list to the stores department. Here the estimates are compared with past withdrawals. The stores department modifies the estimates accordingly and sets its ordering points at three months' supply. When the stock on hand gets down to these quantities, the purchasing department orders more material, the quantity ordered depending upon market conditions. A store of raw material should be consequently always on hand.

At the beginning of each month the box-using departments send in their orders for the next month. The small orders may advantageously be cut in one batch and stored until needed. The large orders, however, would occupy too much floor space and would tie up too much capital if cut all at once. They should be cut in smaller batches of which the size depends on the quantity ordered. The cutting quantities for best economy are given in Table I.

CUTTING AND MAKING QUANTITIES FOR  
BOX MAKING DEPARTMENT

Monthly Requirements (complete boxes)	Cutting Quantity (days supply)	Making Quantity (days supply)	Ending Machine
1,000	30	12	single
5,000	30	7	single
10,000	16	6	double
50,000	8	6	double
100,000	7	continuous	double

Table I

From the economical cutting quantities and the quantities of blanks already in stock, the foreman makes up daily lists of work to be cut on the next day. He tells the scorers what jobs to work on next and orders the newsboard for the following jobs from the storeroom. The corner cutting, mitering, and bending machines are run in series with the scorers, the blanks moving from one machine to the next either on wheel tables or by hand. After being bent the blanks are stored in spaces set aside for their type of box.

Ends for the types of boxes most often called for are cut regardless of the number of boxes on order. These are kept in bins until required, the bins being replenished whenever the stock becomes low. The operator of the guillotine knife is responsible for keeping a supply of each size of end always on hand.

The blanks are now cut and stored waiting to be made into boxes.

Every day the departments wanting boxes send in

lists of the kinds and quantities which they will need on the second following day. In order to produce economically it may be advisable to make up the boxes in lots larger than those called for and hold them until needed again. The economical making quantities are also shown in Table I. From the lists of boxes needed and knowledge of economical making quantities the foreman makes up order-of-work lists, one for each ending machine, one for the battery of box-staying machines, and one for the battery of cover-staying machines. The ending-machine operators perform their work according to the order-of-work list, procuring the blanks from the locations in the stock bins. One move man holds the order-of-work list for the box stayers and another for the cover stayers. Each keeps his stayers always supplied with boxes or covers to work on and assigns the different jobs in the approximate order in which they appear on the lists. Variations may be made in order to distribute the hard and easy jobs equally among the workers. The strippers, doing their work in sequence with the stayers, require no extensive planning.

Boxes are thus produced by the direction of the foreman and are delivered to the ordering departments approximately when they are wanted.

#### Wage System

For payroll, cost and production records, Hollerith card job tickets (Figure 10) are used. Spaces are provided for employee's clock number, employee's name, order number, class or code number for operation, commodity or code number for style of box, box number (not used), starting time of job and finishing time of job. Further spaces are provided for number of boxes produced, customer's name or box size, depending on the kind of order, size of newsboard sheet and number of sheets required, operation, delay time and instruction card number. The columns headed std. time, class and rate, and earnings are used to figure the employee's wage, the method for which will be explained later on.

These cards are printed with a paper duplicate, the duplicate being used to procure the information from the workers and the original for the making up of records. When each worker is ready to start on a new job he turns in his old job ticket to the dispatch clerk and procures a new one inscribed with his name and clock number. The dispatch clerk stamps the time in the "Start" space on both original and duplicate tickets with an electric time stamp as shown in Figure 11. The original she places in the pocket for the worker on