

plished by employing a design which will be referred to later in this description as the "Unit Line Feature."

4. It affords *superior readability* of card records; and by this is not meant merely the greater legibility of printed over hand-written figures. By segregating the *balance* columns in a separate field from the posting or *transactions* columns, and by incorporating the "Unit Line Features," just referred to, the Ledger Card can be read understandingly and with ease by a person entirely unfamiliar with Balance of Stores records.

5. It *eliminates all proof or "pick-up"* columns. I am well aware that the pick-up column is the pet idol of the posting machine companies, and the one, apparently, that has them thoroughly scared, too, since none of them have dared to break away from it. We have proved it to be, however, like that famous one of Kipling's, nothing but a "bloomin' idol made o' mud." I am convinced that the pick-up column not only is unnecessary, but that it provokes the very mistakes that it was provided to trace. This is a point that will be explained more fully later in this description.

The foregoing brief summary of the special advantages we are deriving from our particular installation, logically brings us to a consideration of the *mechanical equipment* and the *card design* with which these results are obtained.

II. MECHANICAL EQUIPMENT AND CARD DESIGN

A. MECHANICAL EQUIPMENT

1. The machines employed by us for handling our Balance of Stores posting are the Burroughs Posting Machines, Style 676-C, costing approximately \$1000 each.

2. In addition to the regular posting machines we employ a hand-operated Burroughs Listing Machine, Style 314, costing \$275, to be used with each of the posting machines for the purpose of taking predetermined totals and cross footings.

Note: While the experiments which Elliott-Fisher machine people are conducting with our style of card are not yet complete, I may state from the latest information I now have as to their progress, that I believe their machine could be employed with our card with only a slight and unimportant alteration of the copy. Each machine has its advantage. The advantage of the Burroughs is that it is more nearly automatic, in that it *prints* the results of all calculations, while the Elliott-Fisher merely *indicates* such results on a dial or counter for the operator to copy as in typewriting. The advantage of the Elliott-Fisher is that it is capable of typewriting letters as well as figures, and where it is desirable

to incorporate the writing of words, sentences or mnemonic symbols in the posting, this advantage may be considered a very important one, as it would necessarily confine the choice of equipment to a machine of the typewriter variety, such as the Elliott-Fisher, or perhaps the Underwood or the Rem-Wahl. The capacity in this respect of the Burroughs model which is employed in our own installation, is the *printed month and day, four-code numbers, and the choice of any one of nine letters*. In the matter of proof methods, one machine is about as convenient as the other and, according to my present information, both are equally positive. The principal difference, which is one of form only, is in the old-and-new-balance proof. The Elliott-Fisher machine accumulates the footing of the new balance instead; the difference between this footing and a predetermined total of the old balance should equal the predetermined total of the posting media.

It should be mentioned here, however, that the references in this paper to posting the card, and adjusting and operating the machine, relate to the Burroughs installation.

B. CARD DESIGN

1. *The Base.* It is a well accepted principle of scientific management that the essential points of information concerning any item of stores which are required to give the complete status of the stores are as follows:

- Balance on Order.
- Balance on Hand.
- Balance Apportioned.
- Balance Available.

These particulars constitute what may be termed Base Requirements, and the card which we employ was designed on this base. The "complete lots" column often shown on standard Balance of Store sheets is merely a subdivision of the Balance on Hand, just as in our case the amount shown "In Storehouse" is a similar subdivision of the same balance. But these are merely variations of form; the base itself is not changed. For the sake of simplicity and clearness, this description will be confined, so far as possible, to the base card of four balance columns instead of to our own particular variation of five balance columns.

2. *Distinctive Features.* The particularly distinctive features of the card under discussion are:

- a. Separation of the *transactions or posting* field from the *balance* field;
- b. The *unit line* feature;
- c. The peculiar mechanical result obtained by the combination of these two features;
- d. The supplementary pencil columns.

These features will be described in detail in the order mentioned above.

a. Separation of the transactions or posting field from the balance field. Because of this feature all of the balances appear in a field by themselves and con-

EATON, CRANE AND PIKE CO. FLAT STOCK BALANCE OF STORES										
NAME COMMERCIAL BOND										STOCK No. 604
COUNT 18 COLOR WHITE SIZE 22x34										CU. No. 1
UNIT SHEETS					CONVERSION CONSTANT			SYMBOL		
TRANSACTIONS										
BALANCES										
ON ORDER										
ON HAND										
AVAILABLE										
Apportioned										
A normal posting equals, in column										
A posting in a Transactions column affects the Balance columns as indicated										

Figure 1

sequently the complete list of essential particulars regarding the status of any item, viz., the balance *on order, on hand, apportioned and available* are readily seen at a glance. No skipping from one section of a card to another to obtain these balances is required. This is particularly convenient when making up extensive reports from ledger cards. Comptometer operators or clerks entirely unfamiliar with ledger cards can take these cards and draw therefrom any designated particulars practically as readily as regular ledger

clerks. This makes it possible to split any given ledger up into as many sections as there are comptometer operators or other clerks available, and draw a complete ledger report in a surprisingly small amount of time. In our own experience we have on occasion drawn an inventory of an entire division of the ledger, consisting of around 600 cards, in approximately one hour by splitting the ledger into seven or eight sections.

b. The unit line feature. This feature provides that the complete status of stock on any given date