

PLUG BOARD FOR GANG PUNCH

Computer Result Exit

These hubs connect directly to the digit relays in the printer. To punch positive numbers they can be plugged to the punch magnet hubs in any desired arrangement. Thus, it is possible to place the digits coming from the group 1 relays in any five of the eighty columns on the IBM card.

Minus Indication.

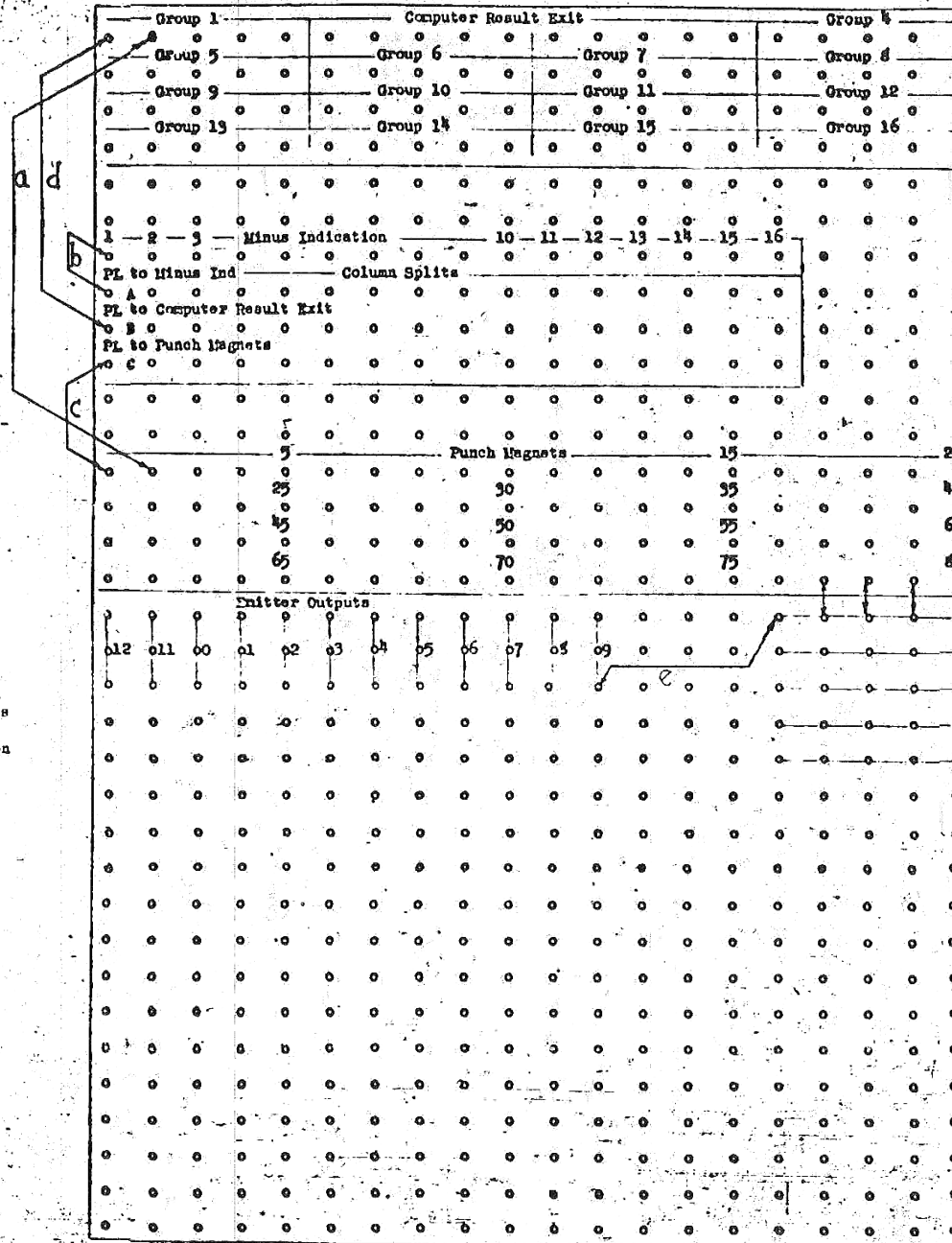
The sixteen hubs under minus indication go directly to the PM relays of the sixteen groups. The minus indication of any group could be punched in any of eighty columns on the card simply by connecting the corresponding minus indication hub with the particular column hub of the punch magnets.

Usually, however, the minus indication will appear above some digit of the number on the card. To place the minus indication (an 11 punch) above the first digit of the number the minus indication of the corresponding group is plugged to one of the terminals labeled "A" under column splits. The hubs "B" and "C" directly under the A-hub used are to be plugged, respectively, to the digit hub (Computer Results Exit) above which the minus punch is desired and to the corresponding hub of the punch magnets.

The column splits is simply a sixteen pole double throw relay switch. This switch is controlled by a cam in the IBM punch which causes the "A" hubs to be connected to the respective "B" hubs during the 11 position of the card and to the "C" hubs during the 0, ..., 9 position of the card.

Emitter Outputs

If one of these hubs is plugged to a punch magnet hub the corresponding number will be punched in that column of the card. The five rows of five common hubs to the right of the emitter outputs enable one to punch the same number in more than three columns. The connection labeled (e) on the diagram causes nines to be punched in the columns 77, ..., 80 on the card. Connections such as these cause the corresponding number to be punched in every card. This can be used to give identifying numbers to the cards or to punch dates on the cards. Alphabetic punching cannot be done on this machine.



Plugging Illustrations

- (a) This illustrates the type of plugging in columns where no minus indication is desired.
- (b, c, and d) When the 11 position of the card is under the punches there is a connection through leads (c) and (d) from the punch magnet hub to the minus indication. If the group 1 PM relays were activated a signal will arrive at this time causing the 11 to be punched in column 1 on the card. If the 11 punch indicating a negative number were desired in column 2 leads (a) and (c) must be interchanged at the punch magnet hubs and leads (a) and (d) interchanged at the computer exit hubs. Then the first column of the computer exit comes directly to the first column punch and the second column leads go through the minus indication hubs and the column split.
- (e) These connections will cause nines to be punched in the last four columns on the card.

MOORE SCHOOL OF ELECTRICAL ENGINEERING  
UNIVERSITY OF PENNSYLVANIA

IBM Gang Punch Plug Board

J. Cummings  
Rev. 4. 1945

12-7-45

PX-12-305