Oct. 4, 1949. E. E. LIBMAN 2,483,551

DATA TRANSFER MECHANISM FOR TABULATORS AND THE LIKE

Filed Sept. 20, 1947

Fig. 1

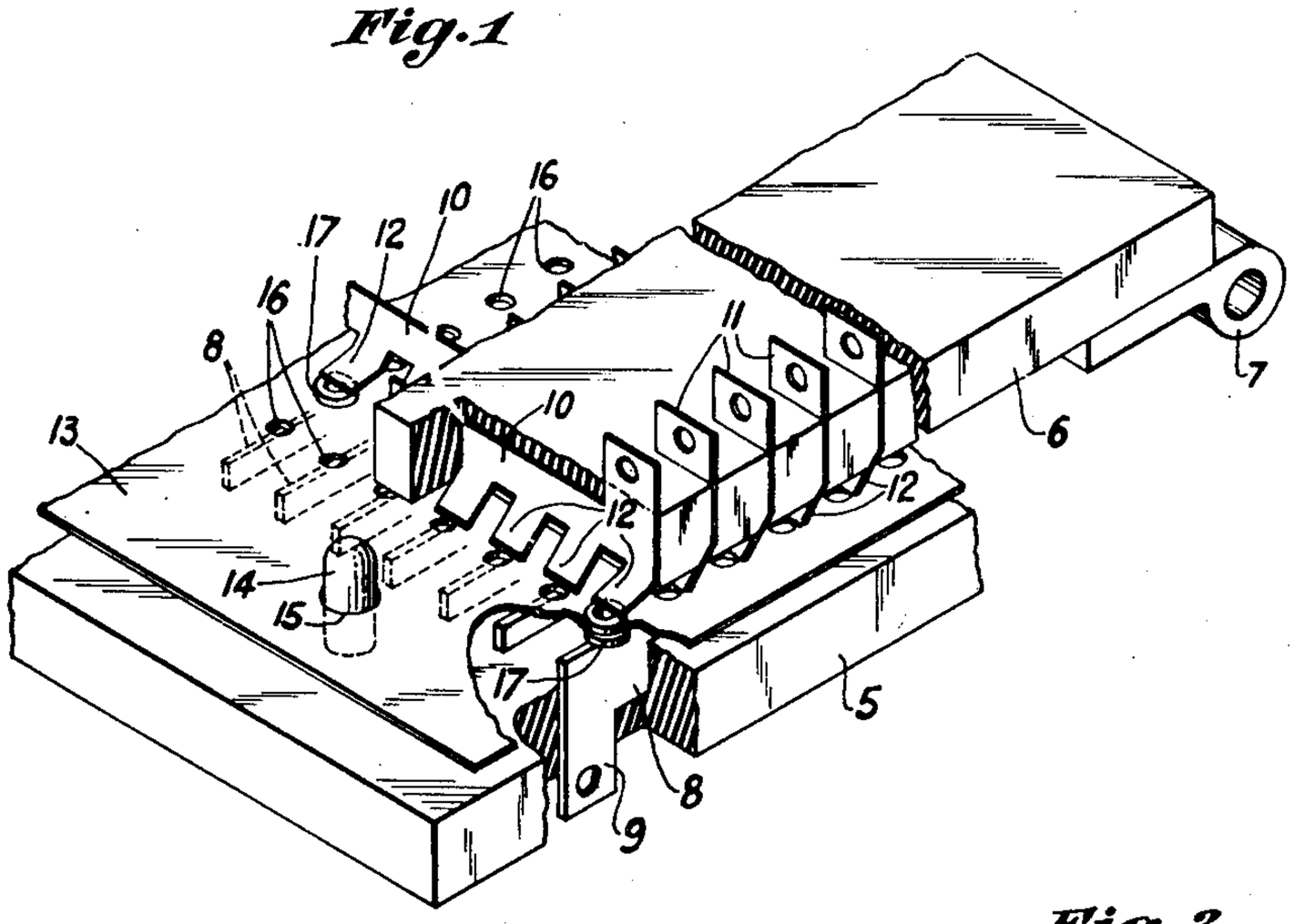
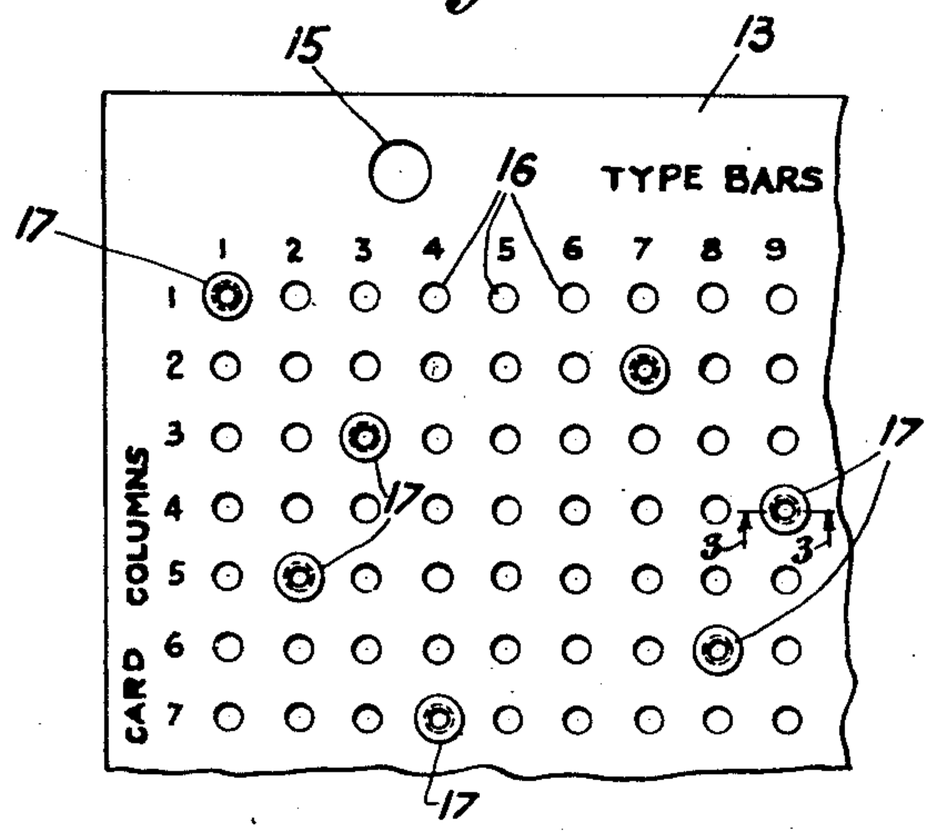


Fig. 3

Fig. 2



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DATA TRANSFER MECHANISM FOR TABULATORS AND THE LIKE

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Application September 20, 1947, Serial No. 775,353

1 Claim. (Cl. 173—328)

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This invention relates to improvements in statistical card machines and has particular reference to a data transferring mechanism for use in tabulators and similar equipment.

In the co-pending application of William Wockenfuss, Serial No. 749,386, filed May 20, 1947, the transmission of data from a card analyzer through a transfer unit and to the recording members of a tabulator is accomplished by electrical means under the control of a set-up device adapted for insertion into and removal from said transfer unit.

A feature of the present invention resides in the provision of an improved and simplified construction of transfer unit and set-up device employed in conjunction therewith, and adapted for use in a machine of the character shown in the above identified application.

Another feature of the invention is to provide an improved set-up device wherein electrical contact members are selectively located on an insulated member at points thereon which identify positions at which elements of a transfer unit are to be connected in order that data from an analyzed statistical card may be transmitted to recording members, such as type bars.

The inventive idea involved is capable of receiving a variety of expressions, one of which, for purposes of illustration is shown in the accompanying drawing, but it is to be expressly understood that said drawing is utilized merely to facilitate the description of the invention as a whole and not to define the limits thereof, reference being had to the appended claims for this purpose.

In the drawings:

Fig. 1 is a fragmentary perspective view, partly broken away and shown in section, of a combined transfer unit and set-up device, showing the same in operative position;

Fig. 2 is a fragmentary plan view of a set-up device constructed in accordance with the invention; and

Fig. 3 is a section on the line 3—3 of Fig. 2.

The transfer mechanism of the present invention may be substituted for the one illustrated in the aforementioned pending application to which reference is made for an understanding of the manner in which statistical cards are analyzed and the data therefrom transmitted electrically to control the type bars of a tabulating machine.

In the present disclosure, the transfer unit which is utilized to transmit data from the card analyzer to the type bars, comprises the superposed mount 5 and 6, both in the form of plates

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made of insulated material, with the upper mount 6 having a hinge connection 7 by means of which it may be swung to inoperative position out of proximity to the stationary lower mount 5 and then back into its operative position.

Supported in parallel and spaced relation in the mount 5 are a plurality of conducting bars 8 made of flat strips equal to the number of columns in a statistical card, with each bar being individual to one of said columns. Each bar is provided with a terminal 9 extending below said mount for connection to a conductor such as described in the aforesaid application, and the upper edge of each bar protrudes above the upper surface of said mount whereby electrical contact may be established with the bar.

Similarly, the upper mount 6 has supported therein a plurality of spaced conductor bars or strips 10 arranged parallel to each other but transversely with respect to the group of bars 8 so that the two groups of bars are disposed in crossed relation when the mounts are in their operative positions, as in Fig. 1. Each bar 10 is individual to one of the type bars of the tabulator and has a terminal 11 extending above the mount 6 for connection to a magnet shown in said application for controlling the type bar individual to said bar 10. The lower edge of each bar is serrated to form tines 12 for establishing electrical connections to the bars 8 through a set-up device 13 which is removably supported between the mounts 5 and 6 and held in fixed relation on the lower mount by two or more centering pins, one of which is indicated at 14 as projecting from the latter mount and through an opening 15 in said device, thereby to prevent lateral shifting of the latter in the plane thereof when in its operative position.

As illustrated, the device 13 is in the form of a card or plate of insulated material and is provided with a plurality of openings 16 arranged in columns equal to the number of type bars in the tabulator and each individual to one of them, and said openings also form horizontal rows equal to the number of columns in a statistical card, with each row being individual to a column. These openings thus identify positions at which electrical contact may be established between predetermined crossed conducting bars 8 and 10 in order that data sensed at any punched index point in a column of a statistical card may be electrically transmitted to control any one of the type bars of the machine and, when the device 13 is in its operative position, each of said openings will

be located at the point of intersection of the planes of two of said bars 8 and 10.

When it has been determined which of the type bars is to be controlled by index points in the various card columns in order to secure a desired type of statistical report, the device 13 is completed by mounting, in each of the selected openings 16 thereof at the points of intersection between the bars 8 and 10 to be energized, an electrical contact member 17 in the form of an eyelet which is fixedly secured in the opening by crimping the same, as shown in Fig. 3. Thus completed, the device is inserted between the mounts 5 and 6 after swinging the latter about its pivot 7 and then restoring it to the operative position in which the members 17 will rest upon the edges of the selected bars 8 and be engaged by adjacent tines 12 so that electrical connections will be established between the desired bars 8 and 10 to control the required type bars when the bars 8 engaged by said members 17 are energized by the sensing of punched holes in a statistical card.

From the foregoing, it will be apparent that for each type of statistical report desired, one of the set-up devices 13 is prepared and that the change-over from one type of report to another is effected by the simple procedure of removing one device from its position between the mounts 5 and 6 and inserting a new device.

What is claimed is:

A transfer unit for use in a statistical card machine, comprising opposed insulated mounts, a group of electrical transmission bars partially embedded in one of said mounts with edges thereof protruding therefrom, a second group of transmission bars embedded in the other mount and arranged in crossed relation to those of the first named group to define points of intersection between planes of bars of said groups, and the protruding edges of the bars of the second named group being serrated to form spaced tines, a set-up device interposed between said groups of bars, and electrical contact members positioned selectively on said device and resting upon the protruding edges of the bars of said first named group for electrical contact therewith and engaged by the tines formed on said edges of the bars of the second named group.

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