

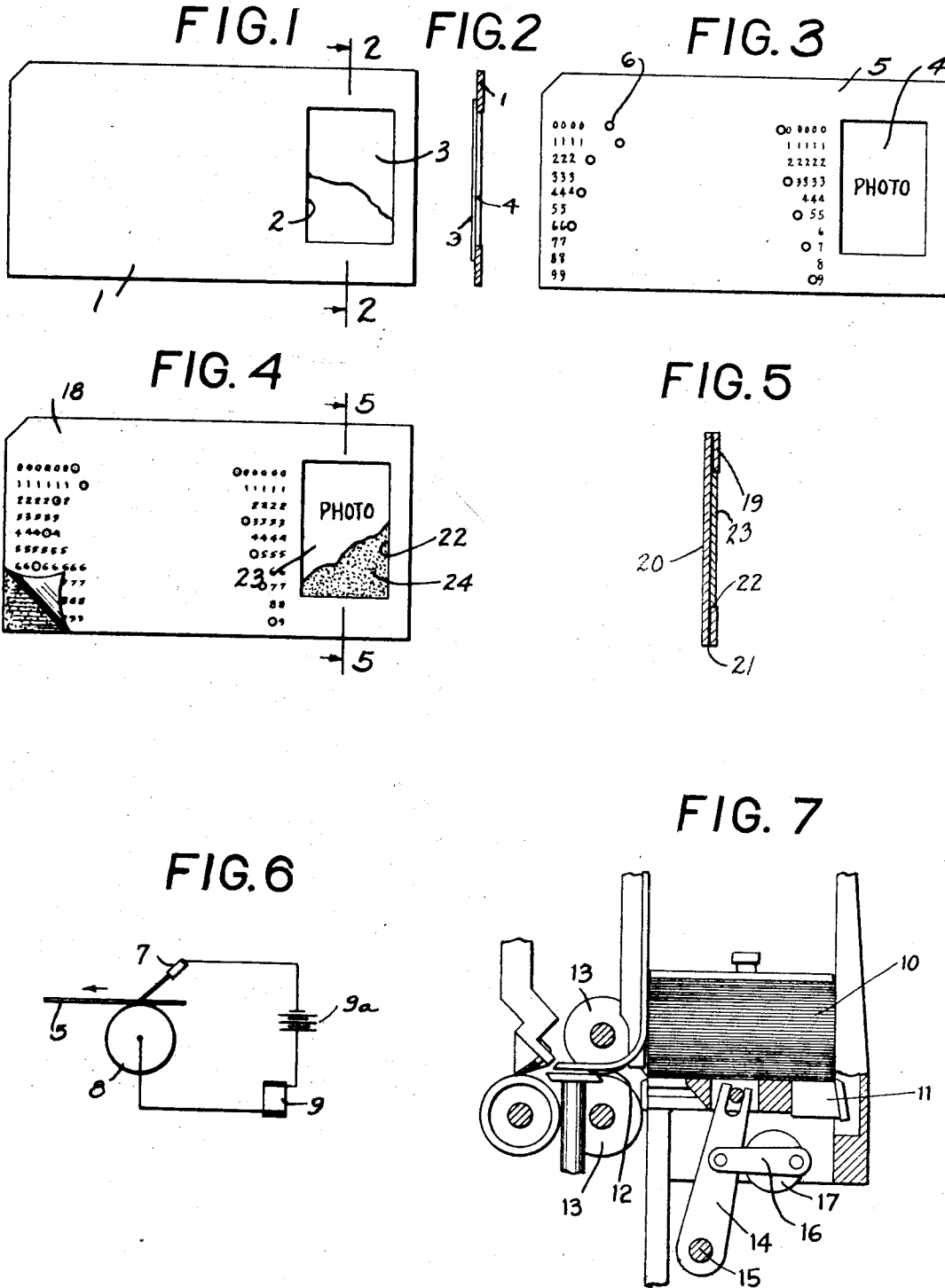
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STATISTICAL CARD

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STATISTICAL CARD

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1 Claim. (Cl. 283—1)

This invention relates to control cards for statistical machines and various types of calculating machines such as tabulating and record sorting machines. Records containing data in the form of perforations, or other representations, are run through the machines and the machines are caused to perform certain operations such as the sorting of the records, or the printing or accumulating of data contained on the records. The location of perforations arranged in columns or otherwise determines the value of the perforations and the machines are controlled in accordance with the location of the perforations.

It is an object of the present invention to provide, in addition to the data representations, pictorial representations on the control card, said representations bearing a definite relationship to each other. The users of tabulating machines have found that the photographic tabulating card has distinct advantages in certain types of applications. For example, this type of card possesses numerous advantages when used in conjunction with large personnel files. In this manner, it is possible to insert not only the data regarding the various personnel on the card, but the photographs of the personnel which in conjunction with the associated data presents all the details concerned thereabout. Another application of the photographic tabulating card is in crime prevention or detection bureaus, in which the control cards containing the photographs of the interested criminals may contain distinctive personal characteristics pertaining to the various individuals, such as number and nature of crime convictions, time and dates of arrests, modus operandi, age and dates of birth, personal characteristics, descriptive signalment, residential zone and operating zone, etc. The various advantages of control cards of this nature are obvious, without further description, when applied to such fields. Still another well known field is the Artists' Casting Bureau and may be applied similarly as just described.

However, in preparing photographic tabulating cards, certain restrictions as to the characteristics of the control cards must be remembered. Records for use in tabulating machines must be carefully prepared, not only that the perforations are accurately located, but also that the record cards must be of substantially uniform thickness as the feeding mechanism which comprises a card picker must pick one card at a time from the supply stack. Also, the card is fed through a throat or slot which is wider than the thickness of one card but narrower than the

thickness of two cards together, so that only one card at a time can be fed therethrough. For this reason, it is necessary to maintain the thickness of the cards within certain limits, otherwise the control cards would be caused to stick in the throat of the machine or become mutilated by either the throat or the feed picker.

To accomplish this, photographic tabulating or control cards may be produced by the following methods: (1) by providing an aperture in the card, which may be positioned as desired; however, it is preferred to insert the aperture which may be any shape desired, near one end of the control card. A thin sheet of tissue paper such as onion-skin paper may be used to cover the opening on the rear side of the card, to form a backing or support on which the photograph may be secured or pasted. The thickness of the photograph inserted in the opening provided must be substantially the same as the thickness of the card; (2) another type of photographic control card may be produced from a two-ply card. One method of making a two-ply card, the characteristics of which are acceptable for control purposes of statistical machines, is shown in United States Patent No. 2,041,880. One ply of the control card is then provided with a cutout portion. The laminated card thus has a recess at one end to receive a photograph, the thickness of which is substantially equal to the thickness of one ply thereof. The adhesive used to unite the two layers of paper in making the card forms a film within the recess in which the photograph is to be inserted. The adhesive may be a rubber cement, cellulose ester or some other form of solvent activating cement. It is, then, only necessary to moisten the recess with the proper solvent and apply the picture with sufficient pressure to cement it firmly to the card. In this manner, the card formed would be of uniform thickness even after the insertion of the photograph therein. However, both types of cards mentioned have operated the various tabulating machines satisfactorily.

Various other objects and advantages of the invention will be obvious from the following particular description of one form of mechanism embodying the invention or from an inspection of the accompanying drawing; and the invention also constitutes certain new and useful features of construction and combination of parts hereinafter set forth and claimed.

In the drawing:

Fig. 1 is a plan view of one type of photographic

tabulating card showing the aperture and backing thereof.

Fig. 2 is a cross sectional view along the lines 2—2 of Fig. 1.

Fig. 3 is a plane view of a complete photographic tabulating card prepared for use in a tabulating machine.

Fig. 4 is a plan view showing another type of photographic tabulating card.

Fig. 5 is a cross sectional view along the lines 5—5 of Fig. 4.

Fig. 6 illustrates a control card being sensed in a calculating machine.

Fig. 7 is a sectional view of a type of card feeding mechanism.

In Fig. 1, the control card 1 is shown to comprise a one ply card provided with a rectangular opening or aperture 2 extending through the card. A thin tissue sheet 3 such as onion skin paper or the like is used to cover the opening on the rear side of the card to provide a backing for the photograph to be inserted. A photograph adapted to fit into the aperture provided is generally indicated by the reference character 4 and is shown properly inserted and united to the backing sheet 3 by any suitable cement or paste.

Fig. 3 shows a complete card 5 with control representations such as perforations 6 located in the various columns at different index point positions to represent various data. These perforations serve to control the operation of the calculating or other machines.

A method commonly employed for sensing the perforations comprises running the cards between a row of electric brushes on one side and an electric contact plate or roller on the other. The brushes usually comprise strands of fine wire and a separate brush is associated with each column on the record card. Sensing takes place while the card is in motion. As the card passes under the brushes, wherever a perforation appears in one of the columns, the brush associated with that column will reach through the perforation and engage the contact roller on the other side, thus closing a control electric circuit through a magnet or relay to control the operation of the machine. The location of the perforation in the column represents the value of the entry and also determines the time in the card feeding cycle at which the circuit is closed, and the time at which the circuit is closed determines the control upon the machine. In other words, it determines the values or representations to be added in the accumulating devices or to be printed upon a report sheet.

Referring now to Fig. 6, it is seen as the control card 5 passes between the sensing brush 7 and contact roller 8, and when one of the perforations 6 passes between the brush and contact roller, a circuit will be closed through the source 9—a and operating magnet on relay 9. The energization of the said magnet will control the operation of the machine according to the location of the perforation, in a manner well known and as disclosed in U. S. Patent No. 1,976,617.

It was mentioned hereinbefore that the tolerances permitted for the thickness of a control card is quite limited due to the arrangement of the card feeding mechanism. Referring now to Fig. 7, one type of card feeding mechanism will be described briefly, reference numeral 10 designates a stack of perforated control cards 5 (Fig. 3) from which the cards are picked off one by one by the usual card picker 11 which feeds through the throat 12 to the transport rolls 13. The picker is moved or positioned to and fro in the usual way by means of a lever 14 pivoted upon shaft 15 and moved through connecting link 16 by a disk 17 which is operated by suitable means, such as a motor (not shown). The card picker 11 is designed to pick one card at a time from the supply stack, and the throat 12 is provided to be slightly wider than the thickness of one card, but narrower than the thickness of two cards together, and therefore it is readily understood why the thickness of the control cards must be maintained accurately within the allowed limits.

Referring now to Figs. 4 and 5, another type of photographic control card is shown to comprise a card 18 consisting of two thicknesses or layers of paper 19 and 20 rigidly united or pasted together by suitable adhesive 21. The front layer or ply of paper 19 is provided with a cutout section 22 corresponding to the design or shape of the photographic insert 23. The laminated card thus has a recess provided to receive a photograph substantially equal in thickness to the thickness of the front or top layer 19. Adhesive may be applied to the photographic insert 23 so as to be pasted to the rear ply 20, or the adhesive 21 used to combine the two layers of paper may form a film 24 within the recess 22 so that upon being moistened slightly with a suitable solvent, the photographic insert may be cemented firmly to the lower ply of the card. In this manner it is now understood how both the pictorial representations and related data or characteristic representations may be provided on a control card for control or statistical machines.

While there has been shown and described and pointed out the fundamental novel features of the invention as applied to a single modification, it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention. It is the intention therefore to be limited only as indicated by the scope of the following claim.

What is claimed is as follows:

A statistical card for use in controlling statistical and accounting machines of the type described comprising a laminated card consisting of a plurality of layers of paper adhesively united, an opening in one of said layers so as to expose the adhesive, and an insert adapted to be positioned in said opening and secured to another layer of said card by the exposed adhesive.

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