

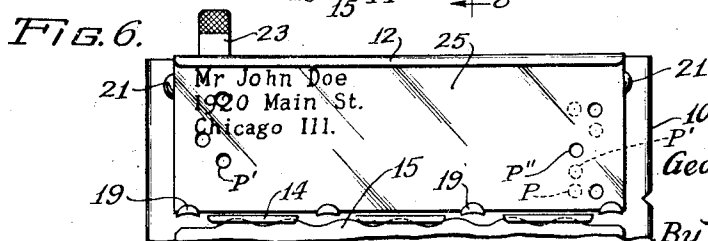
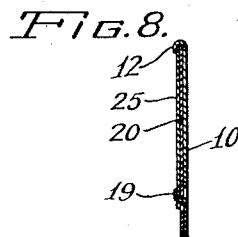
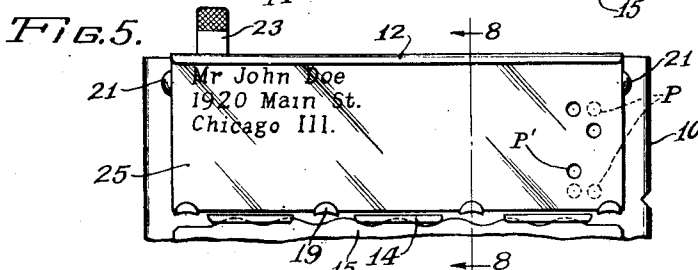
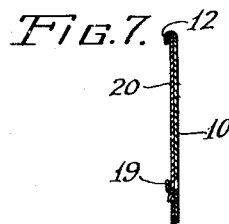
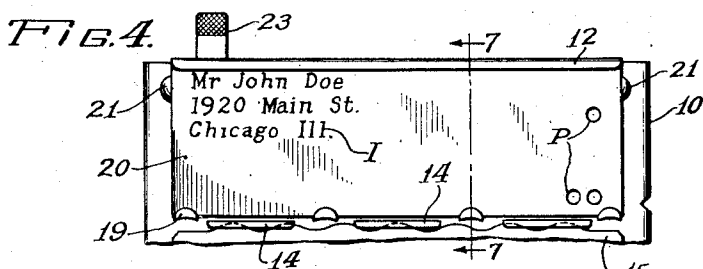
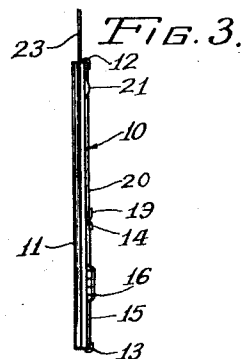
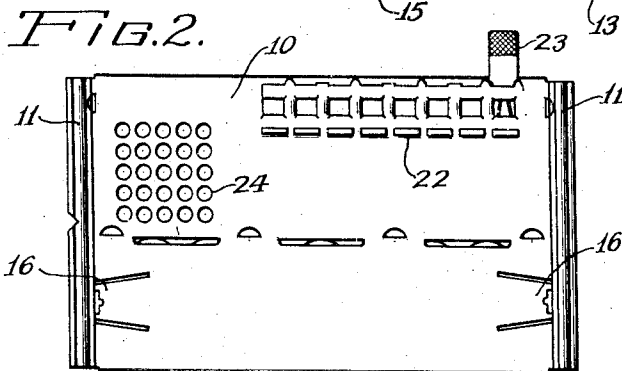
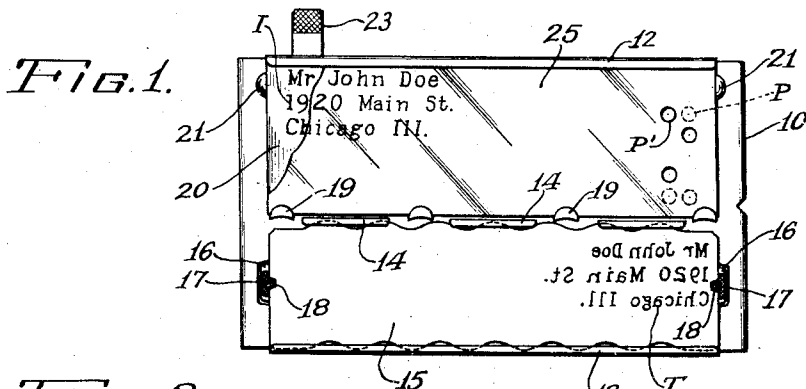
Nov. 21, 1944.

G. R. SULLIVAN

2,363,096

PRINTING DEVICE

Filed Aug. 16, 1941



Inventor:  
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## UNITED STATES PATENT OFFICE

2,363,096

## PRINTING DEVICE

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mington, Del., a corporation of Delaware

Application August 16, 1941, Serial No. 407,109

6 Claims. (Cl. 101—369)

This invention relates to printing and like devices of the kind filed in drawers, trays or the like when not in use and which are removed from such storage devices and introduced into the magazine of printing and like machines through which the devices are passed serially to have impressions or other operations made therefrom or under control thereof.

Printing devices of the aforesaid character often embody a carrier commonly known as a frame on which an embossable printing plate is removably retained and on which there is also included an index card bearing an impression from at least a part of type characters embossed on the plate. Printing devices of this character are disclosed, for example, in Gollwitzer Patent No. 2,920,865.

Printing devices of the aforesaid character are also made sometimes in the form of printing and control devices, an example of which is disclosed in Gollwitzer Patent No. 2,132,412. Such devices, in addition to including a frame, plate and index card of the aforesaid character, also have an area whereat perforations or other data representing means may be formed which are operative when devices of this character are passed through a machine to control certain operative functions in the machine as, for example, to control the operation of adding, multiplying, printing or like units in the machine under control of the perforation or other data representing means included on the printing and control devices, these devices being capable of so functioning as control devices, whether or not printing means is included thereon and whether or not impressions are made from the printing means.

Moreover, printing devices, within the purview of my invention, are also made in the form of a carrier including a stencil sheet in which type characters are formed and perforations are sometimes afforded in such a carrier for selection and like purposes and, in some instances, a portion of such a carrier, which is usually of cardboard, functions as an index card.

The index cards on printing and printing and control devices of the aforesaid character are usually prepared along with the preparation of the type characters, which is to say, once type characters have been embossed on a printing plate, for example, an impression is made therefrom either before or after the plate is secured on the frame, and such impression is made on the aforesaid card which is thereafter installed on the frame. Furthermore, in some instances en-

tries are made on index cards of the aforesaid character as by writing certain information thereon. When impressions are made on an index card from at least a part of the type characters provided on a carrier, this is usually done through the intermediary of an inked ribbon and the entries which are made on the card may be entered thereon either with pen or pencil. Furthermore, when the printing, printing and control devices or control devices, which are referred to hereinafter generically as printing devices, are stored in the drawers, trays or the like, reference is oftentimes made thereto for the purpose of ascertaining the data included on the printing devices, and particularly on the index cards thereof, which sometimes results in frequent handling of the printing devices.

Primarily because such handling of the printing devices may sometimes cause smudging of the data written or printed on the index cards in the course of handling thereof, as aforesaid, and since soiling of the cards may occur during passage of the printing devices through the machines in which they are utilized, it is advantageous to protect the cards so as to prevent smudging or other soiling thereof, and so to do is among the important objects of my invention.

Moreover, where printing devices include an area whereat perforations or other data representing means may be formed, sometimes a perforated area is provided in the frame and the perforations in such area are located at each of the positions whereat data representing perforations may be formed, and in such instances only selected of the perforations are rendered effective as data representing means by positioning a card thereover and in some instances a portion of the aforesaid index card is utilized for this purpose. In any event whether the perforations are formed in the frame as aforesaid or whether these perforations are formed through a card overlying the frame and the frame simultaneously, it is customary when it is desired to change the data representing means, as when there is a change in the data to be represented thereby, to remove one card from the frame and to substitute another therefor. In instances where perforations are formed in the index card, it has been necessary to print a new index card when a change was to be made from one data representation to another and this entailed extra handling and labor and was otherwise sometimes objectionable. Thus still another important object of the present invention is to enable data representing perforations afforded in an index or

like card to be altered without the necessity of removing the card from the frame and substituting another therefor.

A more specific object of the present invention is to dispose a transparent sheet over the card usually provided on printing devices of the aforesaid character, and an object ancillary to the foregoing is to retain such transparent sheet in position on the carrier or frame of the printing devices by the same means that are employed to retain the card in position on the frame.

Yet other objects of the invention are to retain a transparent sheet on a printing device in such a manner that data representing perforations may be formed in the transparent sheet, and an object ancillary to the foregoing is to removably retain the transparent sheet on the frame or carrier of the device and to so arrange the sheet and the carrier that in instances where perforations are formed in the sheet in one part thereof and it is desired to alter the perforations, the sheet may be removed from the carrier and reinstalled thereon to have an unperforated area disposed in position to have perforations formed therein, whereby the same sheet and card may be arranged to have a plurality of different data representing perforations formed therein without the necessity of substituting either a new card or sheet for those that have been previously used.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawing which, by way of illustration, shows a preferred embodiment and the principle thereof and what I now consider to be the best mode in which I have contemplated applying that principle. Other embodiments of the invention embodying the same or equivalent principle may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawing,

Fig. 1 is a front elevational view of a printing device embodying my invention in which a portion of the transparent sheet retained on the frame is broken away;

Fig. 2 is a rear elevation of the printing device shown in Fig. 1;

Fig. 3 is an end view looking in at the right hand end of Fig. 2 of the printing device shown therein;

Figs. 4, 5 and 6 are fragmentary front elevational views of different arrangements of the data representing field of the printing device shown in Fig. 1; and

Figs. 7 and 8 are sectional detail views taken substantially and respectively on the line 7-7 on Fig. 4 and the line 8-8 on Fig. 5.

The printing device shown in the accompanying drawing is a form of the printing and control device to which Gollwitzer Patent No. 2,132,412 pertains and is illustrative of a wide variety of printing devices in which my invention may be incorporated.

The printing device shown in the accompanying drawing embodies a frame 10 that is substantially rectangular in outline, the shorter edges of which are folded onto the back of the frame and upon themselves to afford spacing flanges 11 on the back of the frame inwardly of the shorter edges thereof. Retaining beads 12 and 13 are respectively formed along the longer edges of the frame by having portions of these longer

edges inwardly of the shorter edges of the frame folded over onto the face of the frame to have the free marginal portions thereof spaced from the face of the frame. Suitable retaining means

14 are struck up from the frame and in cooperation with the lower bead 13 serve to retain an embossable printing plate 15 on the face of the frame, the retaining devices 14 and the bead 13 preventing movement of the plate transversely on the face of the frame. Longitudinal movement of the plate on the frame is prevented by yieldable retaining devices 16 formed from the frame which have lugs 17 formed thereon that are engageable in notches 18 in the plate, this being in accordance with the arrangement disclosed in Gollwitzer Patent No. 2,030,865. It will be understood, however, that resort might be had to other suitable means for retaining a printing plate as 15 on the face of a frame as 10. Moreover, as disclosed in Duncan Patent No. 1,015,758, patented January 23, 1912, the type characters may be directly embossed on a member akin to the frame 10 within the purview of my invention or the type characters might be afforded in a stencil sheet included on the carrier.

Other retaining devices 19 are formed on the frame 10 to be disposed on the face thereof and these retaining devices, in cooperation with the upper bead 12, serve to retain an index card 20 against transverse movement on the face of the frame. Shoulders as 21 are struck up from the frame and are formed and disposed to prevent longitudinal movement of the index card 20 in the retaining devices 19 and bead 12, the index card 12 neatly fitting between abutment surfaces on the shoulders 21 and the bead 12 and the retaining devices 19 so as to be held against undesired movement on the face of the frame, this being particularly advantageous in an instance where, as in the present instance, aligned data representing perforations are to be formed in the card as 20 and the frame as 10.

Suitable retaining means as 22 are formed in the frame 10 near the upper edge thereof, and these retaining devices are adapted to secure index tabs as 23 against displacement from the frame 10, the retaining devices 22 being so located and the index tabs 23 being constituted and arranged that when a tab is secured in one of the retaining devices, a portion of the tab will extend beyond the upper end of the frame, the illustrated arrangement and one which is typical of an arrangement of this character being that which is disclosed in Gollwitzer Patent No. 2,049,436. It will be understood however that resort might be had to other means for retaining indexing means such as the tabs 23 on the frame as 10.

By referring to Fig. 2 it will be seen that the retaining devices 22 do not extend entirely across the frame 10, and in the frame 10 in the area thereof intermediate the inner end of the retaining devices as 22 and the adjacent end of the frame a plurality of perforations 24 are formed, these perforations 24 being located respectively at the positions whereat data representing perforations may be formed, this arrangement being of the kind disclosed in the aforesaid Gollwitzer Patent No. 2,132,412. It will be understood that it is not essential in all instances that perforations as 24 be afforded in a frame as 10 as there may be instances where it will be advantageous to form the perforations only at positions whereat data representing perforations are desired in the frame and, as will be understood, this could be done by a punching means of the character dis-

closed, for example, in the application of Gaspar P. Benes, Serial No. 348,621, filed July 31, 1940.

Ordinarily frames as 10 are made of metal and are considered to be a permanent element, and it is therefore advantageous to enable changes to be made in so far as data representing perforations formed therein are concerned. Thus, as explained in the aforesaid Gollwitzer Patent No. 2,132,412, data representing perforations are formed not only in the frame as 10 but also in a card as the index card 20 overlying the frame. Such a card which is usually made of heavy paper or light cardboard is therefore relatively inexpensive and may be readily changed whenever and as desired. In some instances, as disclosed in Gollwitzer Patent No. 2,132,412, the card in which such data representing perforations are formed may be separate and apart from the index card as 20, but in other instances such as the present, the retaining means on the frame are arranged to retain but a single card thereon which serves both as an index card and as a perforation receiving card.

In accordance with the usual custom, type characters as T are embossed on the printing plate as 15, or on a part like the frame 10 in accordance with Duncan Patent No. 1,015,758, to appear in relief on one face and in intaglio on the opposite face. It is the relief faces of such type characters that afford the printing surfaces and since impressions are usually made from such type characters by interposing an inked ribbon between the sheet to receive the impression and the type characters, the exposed face of the type characters appear in reverse order. Hence in order to facilitate ascertaining what may be printed from the type characters, it is customary to provide an impression as I on the index card as 20 from at least a part of the type characters and by referring to this impression ascertaining of what may be printed from the type characters is facilitated.

Moreover, there are instances where what may well be called entries are made on the index card, such entries customarily being entered on the card either in ink or pencil, this being a particularly common practice where data representing perforations are formed in the printing device in which instance the entries pertain to the data represented by the perforations. Thus, for example, where the perforations represent a numerical amount, sometimes the amount so represented by the perforations is written on the index card.

The impressions as I and entries which may be made on the card as aforesaid are, of course, subject to smudging in the handling of the printing devices, and furthermore the index cards may be soiled in the course of passage of printing devices through the machine in which they are utilized. Thus in order to prevent smudging or other soiling of the printing devices, I propose to utilize a sheet of transparent material as 25 which in the present instance is of an outline like that of the card as 20 and which is disposed over the exposed face of the card as 20 and which is retained on the frame 10 by the same means that retain the card 20 on the frame although, as will be appreciated, any suitable means could be utilized to retain the sheet on the carrier of the printing device.

While a transparent sheet as 25 may be made from a wide variety of materials, I have found that a sheet of the material commercially available and known as Cellophane is satisfactory as

well as one made from the material known as Celluloid. Of course, any of a wide variety of synthetic resinous materials may be employed for the purpose, but in this regard it is desirable, particularly where, as in the present instance, perforations are to be formed in the transparent sheet and where the sheet is to overlie already formed perforations, that the sheet be relatively tough so as to be effective to resist perforation thereof by the sensing means in the machines through which the devices are passed and which are adapted for cooperation with the data representing perforations afforded in the devices.

It will be recognized that a transparent sheet of the aforesaid character will effectively protect the index card against being soiled but at the same time by reason of the transparency thereof will enable reading of whatever data appears on the index card. Furthermore, by making the transparent sheets of different colors, the sheets may be used for the purpose of classifying the printing devices as, for example, a red transparent sheet might be used on those printing devices pertaining to females, while a green transparent sheet could be used on those printing devices pertaining to males, this of course merely being typical of numerous classifications of printing devices.

It will be understood that printing devices of the aforesaid character are put to a wide variety of uses as, for example, by being passed through a machine of the character disclosed in the application of Walter T. Gollwitzer, Serial No. 221,841, filed July 28, 1938, through which machine the printing devices are passed to have impressions made directly therefrom and to have other operations performed under control of perforations formed therein, this being utilized in the preparation of business instruments of which dividend checks of a corporation are illustrative.

In an instance where printing devices of the character to which this invention pertains are utilized for example in the preparation of the dividend checks of a corporation, the type characters as T embossed in a plate as 15 are such that the name and address of the payee of a particular check may be printed therefrom and in such instance data representing perforations are formed in the device to either represent the amount of money for which the check is to be payable as, for example, where the printing devices are to be passed through a machine of the character disclosed in Gollwitzer Patent No. 2,132,411. In other instances as where the printing devices are to be passed through a machine such as that disclosed in the above referred to application of Walter T. Gollwitzer, the perforations formed in the printing devices are representative of the number of shares of stock of the corporation owned by the payee identified by the type characters as T.

In either instance it will be recognized that whenever the holdings of the payee of the check change, as where some of the shares of stock owned by such payee are sold or where such payee buys additional shares of stock, it is necessary that the data representing perforations be altered. In such an instance however, there need not be any alteration of the embossed type characters as T. Thus where, as in the present instance, a card 20 is utilized on which an impression is made for the purposes and in the manner explained hereinabove from the type characters as T and perforations as P are formed in the card in alignment with previously formed or otherwise

afforded perforations as 24, it is disadvantageous to reprint the card as 20 each time there is an alteration of perforations as P in the card.

The printing device illustrated in the accompanying drawing is arranged to be perforated in accordance with the code described in Gollwitzer Patent No. 2,132,411 to afford numerical data representations. Thus referring to Fig. 4, perforations P are formed in the card 20 there illustrated to be representative of the numerical quantity 21. In accordance with one manner of use of my invention, perforations P as shown in Fig. 4 would be provided only in an index card as 20 and the impression I would be formed on the card prior to the time it was installed on the frame 10. Thereafter, as for example by utilizing the punching machine shown in the above referred to Benes application, Serial No. 348,621, the perforations P would be formed in the card 21.

If the printing device illustrated in Figs. 4, 5 and 6 is to be used in preparation of a dividend check, as explained hereinabove, and the payee whom the impression I identifies changes his holdings from twenty-one shares of stock, as represented by the perforations P shown in Fig. 4 to, let us say, thirty-eight shares of stock, it would normally be necessary to remove the card 20 from the frame 10 and to prepare a new card. However, in accordance with my invention in such an instance a transparent sheet 25 would be installed on the frame 10 over the index card 20 in the manner explained hereinabove. Such a transparent sheet 25 would of course cover the perforations P, Fig. 4, formed in the card 20. However, new perforations P' could be formed in the transparent sheet 25 and the underlying card 20 and also in the frame 10 if preformed perforations as 24 are not previously afforded. In the instance of the change from the representation of twenty-one to the representation of thirty-eight, each of the perforations P' is located in a position different from the locations of the perforations P. However, the perforations P are in effect cancelled by the unperforated areas of the transparent sheet 25 even though the previously formed perforations in the card 20 are visible therethrough.

Still further, if the payee purchases additional shares of stock, for example so as to change from thirty-eight to sixty-one shares, it is again necessary to change the location of the data representing perforations. In an instance where a transparent sheet as 25 is utilized, this may be effected by removing the sheet from the frame and turning it end for end. Thus referring to Figs. 5 and 6, it will be seen that the transparent sheet 25 has perforations P' formed therein and when arranged in the manner shown in Fig. 5 is perforated to represent the numerical amount of thirty-eight. However, when this sheet is removed from the frame and reversed and reinserted therein, the portion of the sheet 25 which did overlie the impression I in Fig. 5 is then disposed above the area whereat data representing perforations are to be formed and the perforations P' previously formed in the sheet overlie the area whereat the impression I is located. Thus as shown in Fig. 6, perforations P'' representative of the numerical quantity 61 may be formed in the sheet 25. In forming the perforations representative of the digit 1 in the numerical quantity 61, perforations are formed in the sheet 25, but in this instance it is not necessary to perforate the card 25 where, as in the present instance, it initially represented a quan-

tity as twenty-one, since perforations will already be in the card representative of the digit 1. However, the perforation P'' representative of the digit 6 will be formed at a position different from that in which any of the perforations P or P' have been located. Moreover, unperforated areas of the sheet 25 will cancel undesired perforations as the perforation P representative of the digit 2 in the numerical quantity twenty-one, as can be ascertained by reference to Fig. 6.

It will be seen from the foregoing that by the utilization of a transparent sheet as 25 in the manner hereinabove explained, a device which serves as a printing and control device, or merely as a control device, by having data representing perforations formed therein may be arranged to represent three different numerical amounts without requiring preparation of a new index card or the utilization of new transparent sheets. Moreover, by the use of new transparent sheets, it is possible to avoid preparing a new index card until there is a change in the type characters from which an impression is made on the index card. Furthermore, when a transparent sheet as 25 is disposed over the index card as 20, such transparent sheet protects the index card against soiling, mutilation and the like.

It is to be understood, however, that while I have illustrated and described a selected embodiment of my invention, this is capable of variation and modification and I therefore do not wish to be limited to the precise details set forth but desire to avail myself of such changes and alterations as fall within the purview of the following claims.

I claim:

1. In a device of the character described including a carrier embodying a portion in which perforations are formed, a card overlying said portion and bearing a legible impression, means for retaining said card in position over said portion against relative separating movement and against relative shifting movement parallel to said portion, whereby aligned perforations may be formed in the card and carrier to afford data representations, and a transparent sheet of greater area than said portion and effective to render aligned perforations in said card and carrier ineffective as data representations, said retaining means being operable to hold said sheet releasably in position over said card against relative separating movement and against relative shifting movement parallel to said portion, whereby aligned perforations may be formed in a portion of the sheet, card and carrier to afford data representations at least one of which differs from previously formed data representations, and said sheet being releasably held by said retaining means to enable the position of said sheet to be varied after perforation thereof as aforesaid whereby the previously formed perforations may be rendered ineffective and at least one other perforation may be formed in said sheet, card and carrier to afford at least one new data representation.

2. In a device of the character claimed in claim 1 wherein the transparent sheet is of a distinctive color selected from among a plurality of sheets of distinctive and different colors, each such color being representative of a different classification for the device whereby the inclusion of a sheet of a selected color on the device imparts a particular classification thereto.

3. In a device of the character described including a carrier embodying a perforation receiv-

ing portion in which perforations an impression-bearing card means overlying said portion to receive perforations which are aligned with perforations on the carrier to afford data representations, a transparent sheet, common means on said carrier for retaining said card means and sheet on said carrier with said sheet overlying the part of the card means that overlies said portion of the carrier perforations may be formed whereby said sheet may be effective to render aligned perforations in the card means and carrier ineffective as data representations, said retaining means being effective to hold said card and said sheet in face to face relation to each other with said card in face to face relation to said carrier, and said retaining means being effective to hold said card, said carrier and said sheet against relative shifting movement in planes parallel to the faces of said card to thereby retain the sheet in position over the card means whereby aligned perforations may be formed in the sheet, card means and carrier to afford data representations at least in part unlike the data representations afforded by aligned perforations in the card means and carrier alone, and said retaining means also being effective to enable the position of the sheet to be varied after perforation thereof as aforesaid whereby at least selected of the previously formed perforations may be rendered ineffective and at least one other perforation may be formed in said sheet, card means and carrier to afford at least one new data representation.

4. In a device of the character claimed in claim 3 wherein the transparent sheet retained in the common retaining means is of a distinctive color selected from among a plurality of sheets of distinctive and different colors, each such color being representative of a different classification for the device whereby the inclusion of a sheet of a selected color on the device imparts a particular classification thereto.

5. In a printing device including a carrier and having means thereon affording type characters, said carrier including an area in which perforations may be formed, card means having an impression from at least a part of said type characters and positioned over said area of said carrier whereby aligned perforations may be formed in the card means and carrier to afford data representations, a transparent sheet positioned over said card means and of greater area than said portion of said carrier and effective to render aligned perforations in said card means and carrier ineffective as data representations, and retaining means on said carrier releasably retaining said card and said sheet on said carrier to prevent movement of said card and said sheet with respect to each other and with respect to said carrier in directions parallel to said carrier or away from said carrier and retaining said sheet in face to face relation to said card means whereby aligned perforations may be formed in a portion of the sheet, card means and carrier to afford data representations and said retaining means being formed to enable the position of the sheet to be varied after perforation thereof as aforesaid whereby the previously formed perforation may be rendered ineffective and at least one other perforation may be formed in said sheet, card means and carrier to afford at least one data representation.

6. In a printing device as claimed in claim 5 wherein the transparent sheet is of a distinctive color selected from among a plurality of sheets of distinctive and different colors, each such color being representative of a different classification for the printing device whereby the inclusion of a sheet of one color on the device imparts a particular classification thereto.

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