

[72] Inventors **William T. Jones**
4341 S. Emerald Ave., Chicago, Ill. 60609;
Joseph P. Clancy, 1155 S. Elmwood Ave.,
Oak Park, Ill. 60304
 [21] Appl. No. **824,109**
 [22] Filed **May 13, 1969**
 [45] Patented **Oct. 12, 1971**

3,334,539 8/1967 Kleist et al. 355/40
 3,520,605 7/1970 Wharton 355/75

Primary Examiner—Samuel S. Matthews
Assistant Examiner—M. L. Gellner
Attorney—Greist, Lockwood, Greenawalt & Dewey

[54] **ADAPTER FOR A COPYING MACHINE**
9 Claims, 4 Drawing Figs.

[52] **U.S. Cl.**..... **355/40,**
355/75
 [51] **Int. Cl.**..... **G03b 27/62**
 [50] **Field of Search**..... **95/1.1;**
355/7, 40, 75, 76, 79

[56] **References Cited**
UNITED STATES PATENTS
 2,206,206 7/1940 Smith 355/40 X
 2,394,225 2/1946 Ashford..... 346/107
 2,975,282 3/1961 Schaffer 355/40 X
 3,042,919 7/1962 Simjian..... 95/1.1 X

ABSTRACT: An adapter for use with a copying machine of known type includes a multilayer plate receivable in a window in the machine. A lower face of the plate has first markings visible therefrom which are directed toward the copying mechanism in the machine. The plate has an opening therein for inserting into the adapter a card having second markings thereon identifying a particular subject. Preferably, the adapter includes a door for covering the opening and a counter which presents a number to the copying mechanism during operation of the machine. The counter is operatively associated with the machine in such a way that after one set of copies are made, the counter is advanced to present a succeeding number to the copying mechanism before the next set of copies are made. With this adapter, each copy of a predetermined number of copies made by the machine will have the first and second markings thereon and, if desired, a serial number presented by the counter.

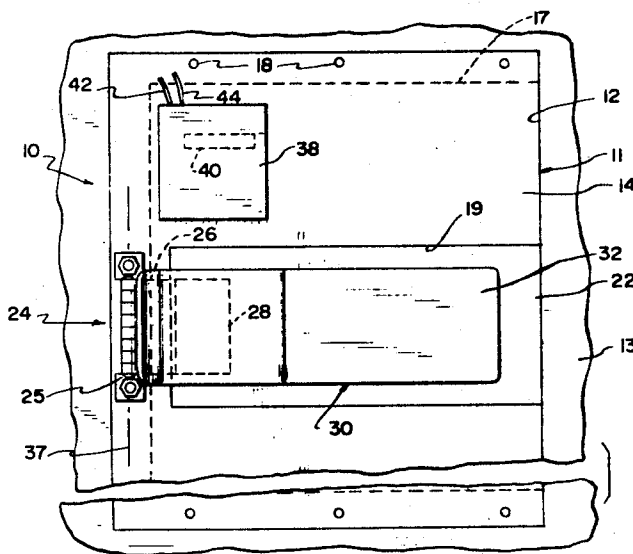


FIG. 1

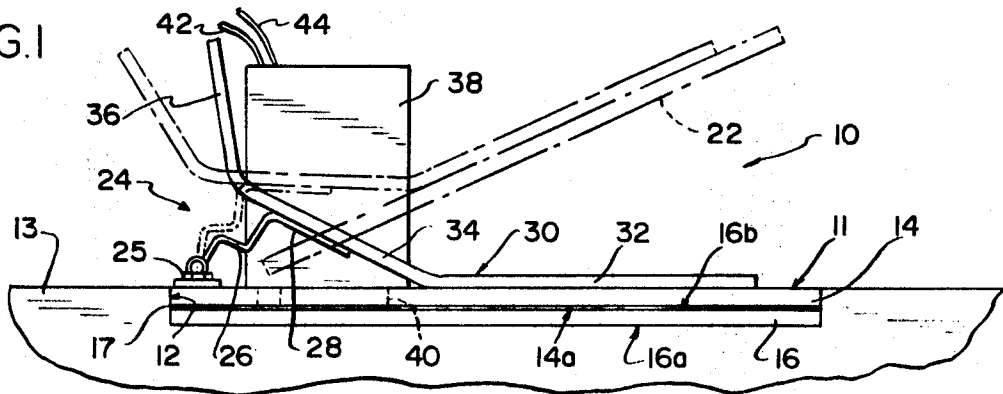


FIG. 2

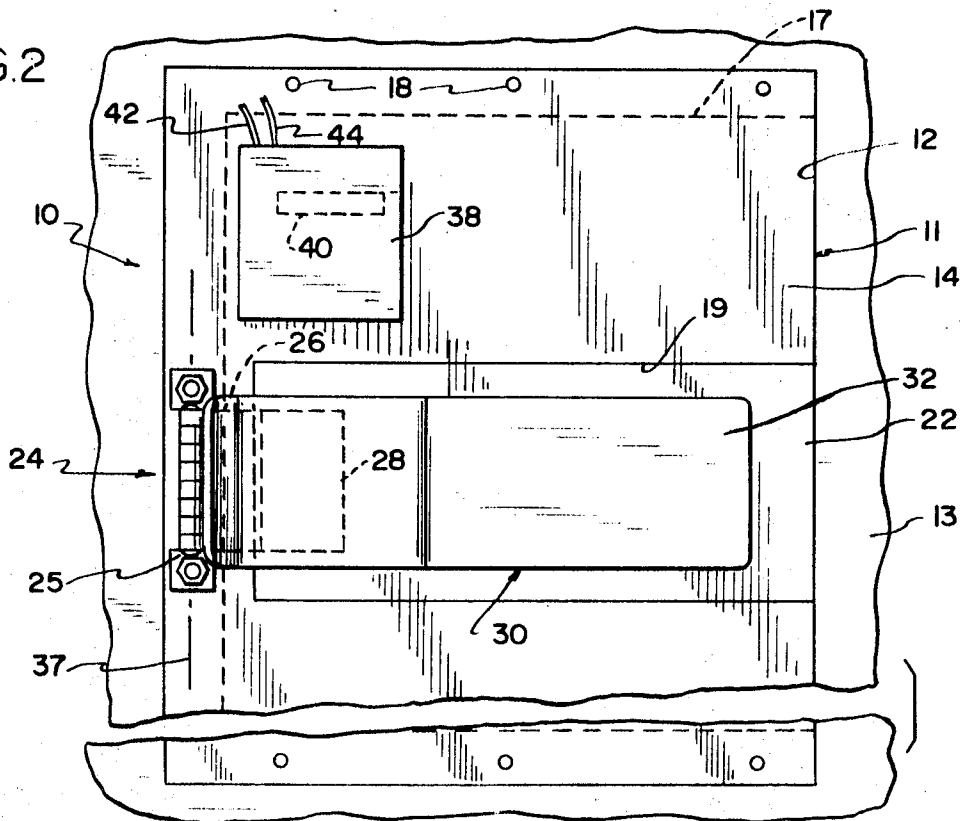
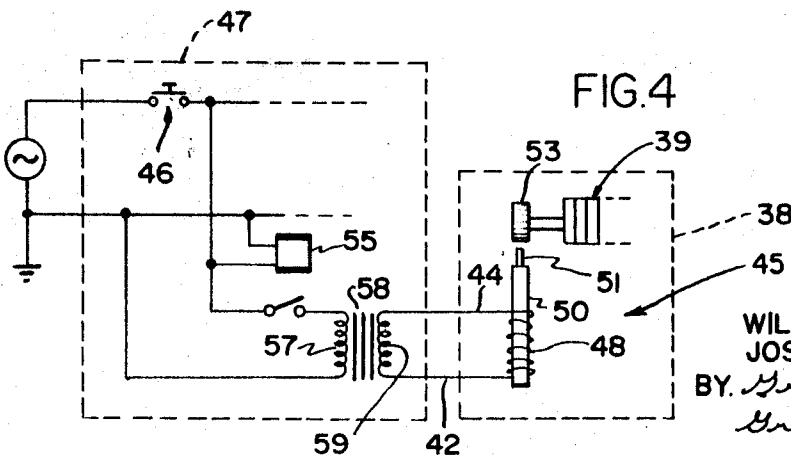


FIG.4



INVENTORS.
WILLIAM T. JONES
JOSEPH P. CLANCY
BY. *Grist, Lockwood,
Greenawald & Dewey.*
ATTORNEYS.

FIG. 3

CLINIC BILLING

COMMUNITY GENERAL HOSPITAL
25 TH. AVENUE AT 15TH. STREET

332061

THIS CARD
ISSUED TO
RECIPIENT
SIGN HERE

CASE IDENTIFICATION
DEC. 31, 1968 ADC 216

JONES, WILLIAM
2011 MAIN STREET

MEDICAL ASSISTANCE AGENCY

PATIENT NAME _____ DATE OF SERVICE 1 1 69

PROFESSIONAL SERVICE PER DIEM RATE _____

APPLIANCES DESCRIPTION _____ AMOUNT ---

TO: STATE OF _____ TO: COUNTY DEPARTMENT OF
DEPARTMENT OF PUBLIC AID PUBLIC AID

PATIENT AND INSURANCE CO.

PATIENT AMOUNT _____

MEDICARE NUMBER _____ AMOUNT ---

_____ AMOUNT ---

INSURANCE CO. NAME _____ AMOUNT ---

INVENTORS.

WILLIAM T. JONES
JOSEPH P. CLANCY

BY *Ernest, Lockwood, Greenwald & Dewey*

ATTORNEYS.

ADAPTER FOR A COPYING MACHINE

This invention relates to an adapter for use with a copying machine of the type where information to be copied is placed over a window in the machine. The invention also relates to a method for producing a predetermined number of copies of a form with each copy having information thereon identifying a particular subject to which the copies of the form will pertain.

Copying machines of the type where information (such as printed matter) is placed over a window in the machine and the machine is energized to produce a desired number of copies are well known in the prior art. Moreover, as improvements are made to these machines the cost per copy of the copies made is reduced. As a result, copying machines are becoming economically practical in more applications.

One such application is in the copying of billing forms on which information is inserted by one or more parties. In many instances, the subject of each form must be specifically defined on the form so that each copy of the form is correctly processed. For example, copies of an outpatient billing form having specific identifying information thereon are needed by a hospital business office. In this particular application, the hospital personnel need to record on a hospital billing form not only the name, address, etc., of the patient, but also his insurance coverage or the like. In other words, they need to know what insurance coverage the patient has and this coverage will be indicated (in code) on a card provided the patient by his insurance company. Many times, the patient will be a public aid recipient and will have a public aid card, instead of an insurance card, which has particular information thereon identifying the patient as a bona fide public aid recipient.

In the latter instance, it is necessary that the exact information on the public aid card be reported (or recorded) on the hospital billing form, since a copy of this form is forwarded to the state public aid department for payment of the medical services provided the patient. In situations where the exact information from the public aid card is not contained on the form, e.g., the hospital personnel record an abbreviated form of the patient's name, the state department of public aid will have difficulty in identifying the public aid recipient and payment to the hospital will be delayed.

Also, for hospital record keeping purposes, it is desirable that each copy of the form for one individual patient have a hospital identification number thereon.

In accordance with the present invention, an adapter for a copying machine has a hospital billing form or the like incorporated into the adapter and has an opening for inserting an identification card into the adapter whereby, when the copying machine is actuated to produce one or more copies of the form, each copy of the form produced by the machine will include information from the identification card identifying the particular subject to which the copies of the form will pertain.

In accordance with a feature of the present invention the adapter includes a counter which is connected to the adapter and operated by the means for energizing or deenergizing the copying machine in such a way that when the copying machine is energized to make one set of copies of the form the counter will present a particular identifying number or marking to the copying mechanism and, before the next set of copies are made, the counter is advanced to the next succeeding number or marking.

The invention is also concerned with a method for making a predetermined number of copies of a form for a particular subject, the method including the steps of: positioning in a window of a copying machine a form having a size which is less than the copying area of the window so that space is available in the copying area for other information; positioning an identification card having identifying information thereon in the available space in the copying area of the window and in a predetermined juxtaposed position relative to the form; and energizing the copying machine to produce a predetermined number of copies of a form with the identifying information from the identification card being at a predetermined position on each copy.

Preferably, the method also includes the step of presenting a serial number to the copying mechanism simultaneously with the presentation of the form and the identification card to the copying mechanism.

An object of the present invention is the provision of a novel adapter of the type described for a copying machine. Another object of the present invention is the provision of a novel adapter of the type described in which a form is presented to the copying mechanism in a copying machine and the adapter has means permitting insertion of an identification card into the adapter so that copies of the form produced by the machine will include information contained on the identification card as well as the information contained on the form.

Another object of the present invention is the provision of a novel adapter of the type described in which a counter presents an identifying marking or serial number to the copying mechanism of the copying machine simultaneously with the presentation of other information to the copying mechanism.

Another object of the present invention is the provision of a novel adapter of the type described in which a counter for presenting an identifying marking or number to the copying mechanism in a copying machine is connected with the operating switch for the copying machine in such a way that the counter will automatically advance to a succeeding identifying marking or number after a predetermined number of copies have been made by the copying machine. Preferably, the operating switch for the copying machine is preset for producing a predetermined number of copies and will automatically shut off the copying machine after the predetermined number of copies have been made. In one embodiment, the counter is advanced by the deenergization (turning off) of the machine. In another embodiment, the counter is advanced by the energization (turning on) of the copying machine.

Another object of the present invention is the provision of a novel adapter of the type described which includes means permitting insertion of an identification card or the like of various sizes into the adapter.

Another object of the present invention is the provision of a novel adapter of the type described which permits the copying machine to make a predetermined number of copies of a form for one individual or subject.

Still another object of the present invention is the provision of an adapter for a copying machine which facilitates the making of individualized forms for a patient treated by a hospital whereby each copy of the form produced by the copying machine has the exact identifying information contained on an identification card carried by the patient.

These and other objects and advantages of the present invention, including those inherent in the invention, will become apparent from the following description taken in conjunction with the accompanying drawings wherein:

FIG. 1 is a side elevational view of one preferred embodiment of the adapter of the present invention installed in a window of a copying machine;

FIG. 2 is a top plan view of the adapter shown in FIG. 1;

FIG. 3 is a fragmentary view of a copy made by a copying machine utilizing the adapter shown in FIGS. 1 and 2; and

FIG. 4 is a schematic diagram of an electrical circuit for operating the counter of the adapter shown in FIGS. 1 and 2.

One preferred embodiment of the adapter of the present invention is generally indicated at 10 in FIG. 1 and includes a multilayer plate 11 which is placed on (or in place of) a transparent plate (not shown) situated in a window 12 of a copying machine 13. The copying machine 13 can be of any known type and only so much of the machine 13 is shown in FIGS. 1 and 2 as is necessary to describe the present invention and its cooperation and use with the machine 13. In the illustrated embodiment, the plate 11 is inserted in place of the transparent plate of the copying machine 13.

As shown in FIG. 1, the layers of the plate 11 include an overlay or upper plate portion 14, a transparent or lower plate portion 16, and an intermediate sheet portion 17, commonly referred to as a mask which is disposed between the trans-

parent portion 16 and the overlay portion 14. The mask 17 is generally a sheet of paper or the like having a form thereon which includes printed matter and blank spaces for insertion of required information and which faces the transparent portion 16. The transparent portion 16 is made of a transparent glass or plastic material, whereby the printed matter and blank spaces are visible from the outer face or surface 16a of the transparent portion 16. The overlay portion 14 is made of, or covered with, a nontransparent material such as an opaque or translucent material. Preferably, the overlay portion 14 is made of a light colored or white material, e.g., a white plastic material, or the interface 14a is colored white, to provide a light colored or white background for the printed matter on the mask 17. Suitable fasteners, generally indicated at 18 in FIG. 2, are provided for securing the overlay portion 14 and the transparent portion 16 together, with the mask 17 fixed therebetween. Preferably, the fasteners 18 are of the type which can be easily and quickly unfastened for changing the mask 17. Also, it will be understood, that, in some embodiments, the mask 17 can be omitted and the form can be etched, carved, printed or otherwise formed on the outer face 16a or the interface 16b of the transparent portion 16 or on the interface 14a of the overlay portion 14. In the latter instance, the transparent portion 16 can be omitted and the adapter 10 can be placed directly on (and perhaps secured to) the transparent plate normally in the window 12 of the machine 13.

Preferably, the mask 17 has a size and shape which is less than the copying area of the window 12 so that a space is available for inserting other information into the adapter 10 in the available space remaining of the copying area in the window 13. In the illustrated embodiment, the mask 17 has a rectangular space, generally indicated at 19 in FIG. 2, which extends from the right side of the mask 17 viewing the same from the back side thereof as shown in FIG. 2. It will be understood, of course, that the printed matter on the mask 17 faces downwardly toward the copying mechanism (not shown) in the copying machine 13 such that the right-hand side of the mask 17 shown in FIG. 2 will appear at the left-hand side on the copies of a form produced by the machine 13, as shown by the copy 20 in FIG. 3. Thus, the rectangle 21 (FIG. 3) on the copy 20 corresponds to the rectangular space indicated at 19 in FIG. 2.

The overlay portion 14 is formed with an opening which is of the same size as the rectangular space 19 and which is located over the space 19. This opening in the overlay portion 14 is provided to allow for insertion of an identification card or the like in the space 19 in the adapter 10. Preferably, the space 19 and the opening in the overlay portion 14 are large enough to receive cards of varying size or a plurality of small cards (e.g., wallet-size cards).

Many times the identification card is creased or folded. Therefore, it is desirable to provide means in the opening for holding or pressing the card against the portion of the face 16b of the transparent portion 16 in the space 19 so that a suitable copy of the information on the card can be made by the copying machine 13. For this purpose, a door 22 is received in the opening and is connected by a hinge assembly, generally indicated at 24, to the overlay portion 14 whereby the door 22 can be raised to permit insertion of the identification card in the space beneath the door 22. In a preferred embodiment, the door 22 is made of the same material as the overlay portion 14 and has sufficient weight to flatten out, and then hold, a card against the portion of the face 16b of the transparent portion 16 in the space 19.

The hinge assembly 24 includes a first hinge bracket 25 secured to the overlay portion 14 adjacent the door 22 and a second hinge bracket 26 having a mounting plate 28 which is secured to an elongated strap 30. The elongated strap 30 is preferably made of a moldable plastic material and includes three planar portions 32, 34 and 36 which are offset from each other. The first planar portion 32 is secured to the door 22. The second or intermediate planar portion 34 extends from

the first portion 32 and is secured to the mounting plate 28 of the second hinge bracket 26. The third planar portion 36 extends upwardly at an angle from the intermediate planar portion 34 so as to provide an operating lever or handle for pivotally moving the door 22 about the axis 37 of the hinge assembly 24 and to a raised position away from the plate 11. The raised position of the door 22 is shown in phantom lines in FIG. 1.

Preferably, the handle 36 weighs much less than the door 22 and is inclined at an angle to the door 22 such that when the handle is moved to the left until it engages the top surface of the machine 13 adjacent the window 12 and then released, it will easily fall back into the opening in the overlay portion 14. Also, the hinge assembly 24 can be slightly damped to soften the impact of the door 22 against the portion of the face 16b of the transparent portion 16 in the space 19.

A counter or meter is generally indicated at 38 in FIGS. 1 and 2 and is preferably of the type which has a plurality of discs, indicated schematically at 39 in FIG. 4, mounted for rotation about a central axis. Each of the discs has a plurality of numbers or other markings printed on the outer periphery thereof. Typically, there are ten (10) numbers on each disc beginning with zero (0) and ending with nine (9). A slot 40 having a width equal to the height of the numbers on the discs is provided in the overlay portion 14 below the discs 39. The slot 40 is situated at a desired position in the overlay portion 14 relative to the printed matter and blank spaces on the mask 17 and extends parallel to the axis of the discs 39 whereby a line of numbers will face the copying mechanism in the copying machine 13 through the slot 40 and will appear on the copies of the form made by the machine 13 at a desired location on each copy as indicated at 41 in FIG. 3. A counter of this type is similar to an odometer used in a speedometer for indicating the miles traveled by an automobile and is particularly adapted for presenting serial numbers to the copying mechanism of the copying machine 13.

Preferably, the counter 38 is operated electrically and for this purpose two leads 42 and 44 (FIGS. 1, 2 and 4) are provided for connecting an electrical operating mechanism 45 (FIG. 4) of the counter 38 with a pushbutton operating switch 46 in a control box of the copying machine 13 generally indicated at 47. The operating switch 46 is connected to a control mechanism of known type (not shown) which can be set so that the machine 13 will make a predetermined number of copies of the form on the mask 17 when the pushbutton switch 46 is depressed. In the illustrated embodiment, and as best shown in FIG. 4, the operating mechanism 45 includes a solenoid 48 having a movable armature 50 therein. A pawl 51 is connected to the armature 50 at an outer end thereof. Upon energization of the solenoid 48, the pawl 51 will engage with ratchet teeth on a ratchet wheel 53 to move or advance the discs 39 to present a succeeding serial number at the slot 40.

In the illustrated embodiment, operation of the counter 38 will occur before the copying machine begins to make copies of the information presented to the copying mechanism through the transparent portion 16. In other words, when the pushbutton switch 46 is depressed, a relay 55 will be actuated to close a circuit to the primary winding 57 of a suitable step-down transformer 58 to develop a voltage across the secondary winding 59 of the transformer 58 which is connected by the leads 42 and 44 to the operating mechanism 45. The voltage developed will be sufficient to energize the operating mechanism 45 to advance the discs 39 to present a succeeding serial number at the slot 40. Of course, it will be understood that the operating mechanism 45 can be arranged so that the operating mechanism 45 is energized to move the discs 39 after the predetermined number of copies have been made. For example, the armature 50 can be arranged so that the pawl 51 is normally in engagement with the ratchet wheel 53. Then, when the solenoid 48 is energized, the pawl 51 is moved away from the ratchet wheel 53. Upon deenergization of the solenoid 48, the pawl 51 is moved back into engagement with the ratchet wheel 53 and, in so doing, will advance the discs 39 to the next succeeding serial number.

The adapter 10, illustrated in FIGS. 1 and 2 finds particular advantageous use in a copying machine 13 where the pushbutton switch 46 is located on the machine 13 above and to the left of the window 12 as shown in FIG. 1. When the adapter 10 is used on a machine 13 of this type, the handle 36 is conveniently located for being gripped by the operator's left hand and then moved to the left to raise the door 22 for inserting the card with the right hand. After the card is inserted the operator releases the handle 36 and moves his left hand forward (into the plane of FIG. 1) to depress the pushbutton switch shown schematically at 46 in FIG. 4. This sequence of operations is simple enough so that most hospital personnel can quickly learn to use the adapter 10 with a minimum of instruction.

As shown in FIG. 3, the reproduction or copy 20 of the form made by the copying machine 13 will contain the information on the mask 17, as indicated at 60 and 61, and also the information on the identification card inserted beneath the door 22, as indicated at 62. Moreover, each reproduction or copy 19 will have a particular identifying number or marking 41 which was presented to the copying mechanism by the meter 38.

The adapter 10 of the present invention is particularly useful in making copies of an outpatient billing form used in a hospital or clinic. In this application, the operator first obtains an identification card from the patient. Next, the card is inserted beneath the door 22 of the adapter 10. Then, the copying machine is energized to make a predetermined number of copies (e.g., two copies) of the outpatient billing form to be filled out by hospital personnel. The copies made will contain: (1) a hospital identification (control) number 41 which appeared at the slot 40 when the copies were made; (2) the identifying information 62 contained on the patient's identification card; and, (3) the printed matter 60 (information) and the blank spaces 61 on the mask 17. Copies of admitting forms made in this manner have the correct information required to obtain payment from the state public aid department for the medical services provided and minimize, if not altogether eliminate, human transcribing errors which previously occurred when information was transcribed manually from an identification card to an outpatient form or the like.

It will be understood, of course, that the adapter 10 of the present invention can be utilized in other applications besides a hospital or clinic. For example, the adapter of the present invention can be utilized in preparing statements of purchases for a particular customer of a department store. When used in this manner, additional spaces similar to the space 19 can be provided in the mask 17 together with corresponding openings in the overlay portion 14 to permit insertion of additional cards identifying items being purchased. Also, the adapter can be utilized in preparing form letters which are to be sent to different addresses where the names and addresses of the addressees are contained on cards. Moreover, the adapter 10 can be used with a wide variety of cards such as, for example, credit cards, drivers licenses, social security cards or the like.

I claim:

1. An adapter for use with a copying machine of the type wherein information to be copied is placed over a window portion in the machine, said adapter being associated with the window portion and including a plate having a transparent portion, an overlay portion and a mask situated between said transparent portion and said overlay portion and containing printed matter and blank spaces which are visible from a lower face of said plate through said transparent portion and which are directed through the window portion toward a copying mechanism within the machine, said plate being formed with a space therein for receiving a card having information thereon whereby the copies made by the copying machine will contain both said printed matter and blank spaces visible from said lower face and said information contained on said card.

2. An adapter for use with a copying machine of the type

wherein information to be copied is placed over a window portion in the machine, said adapter being associated with the window portion and including a plate having a transparent portion and an overlay portion and having first information visible from a lower face, which information is directed through the window portion toward a copying mechanism within the machine, said overlay portion having an opening for receiving a card having second information thereon which will be visible from said lower face of said plate through said transparent portion whereby the copies made by the copying machine will contain both said first information visible from said lower face and said second information contained on said card.

3. An adapter according to claim 7 in which said door has an elongated handle member which extends outwardly from said door and said handle member is connected by a hinge assembly to said upper plate portion.

4. An adapter according to claim 2 in which said plate has a slot therein at a predetermined juxtaposed position with respect to said first information, and a meter is mounted on said plate above said slot for presenting an identifying marking to the copying mechanism of the copying machine.

5. An adapter according to claim 4 in which said meter includes means for presenting serial numbers at said slot.

6. An adapter according to claim 5 in which the copying machine and said meter are operated electrically and said meter is connected to the copying machine in such a way that, after the machine produces said predetermined number of copies, said meter is advanced to the next succeeding serial number.

7. An adapter for use with a copying machine of the type wherein information to be copied is placed over a window portion in the machine, said adapter being associated with the window portion and including a plate having an upper plate portion and a lower plate portion and having first information visible from a lower face of said plate, which information is directed through the window portion toward a copying mechanism within the machine said upper plate portion having a space therein for receiving a card having second information thereon and including a door which is situated in said space and which can be raised to permit insertion of said card into said adapter, whereby the copies made by the copying machine will contain both said first information visible from said lower face and said second information contained on said card.

8. An adapter for use with a copying machine for producing a predetermined number of individualized copies of a form which contains printed matter, blank spaces for insertion of required information, and identifying information relating to a particular subject to which the form pertains, the copying machine being of a type which wherein information to be copied is placed over a window in the machine, said adapter comprising a plate which is positioned over the window and which has a form with printed matter and blank spaces for insertion of required information visible from the lower face of said plate, said form being of a size which is less than the copying area of the window so that space is available for positioning additional information in the copying area of the window, said plate having an opening therein which is in a predetermined juxtaposed position relative to said printed matter on said form and which is accessible from the backface of said plate for receiving an identification card having identifying information thereon, and said plate having a transparent portion extending across said opening adjacent said lower face of said plate.

9. An adapter according to claim 8 including a slot in said plate which is in a predetermined juxtaposed position relative to said printed matter on said form, and means mounted on said plate and visible through said slot from the lower face of said plate for presenting an individual marking to the copying mechanism of the copying machine each time one of said individualized copies is made.