Oct. 10, 1961 J. F. HERBERT, JR. 3,003,415

IMPRINTER

Filed Nov. 3, 1959 4 Sheets-Sheet 1

FIG. 1.

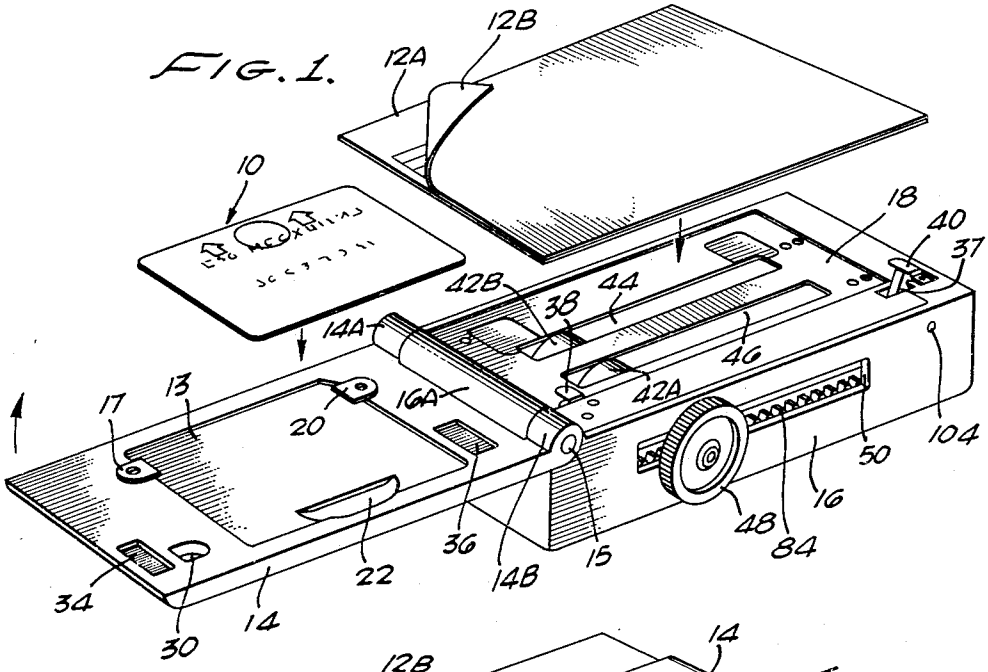


FIG. 2.

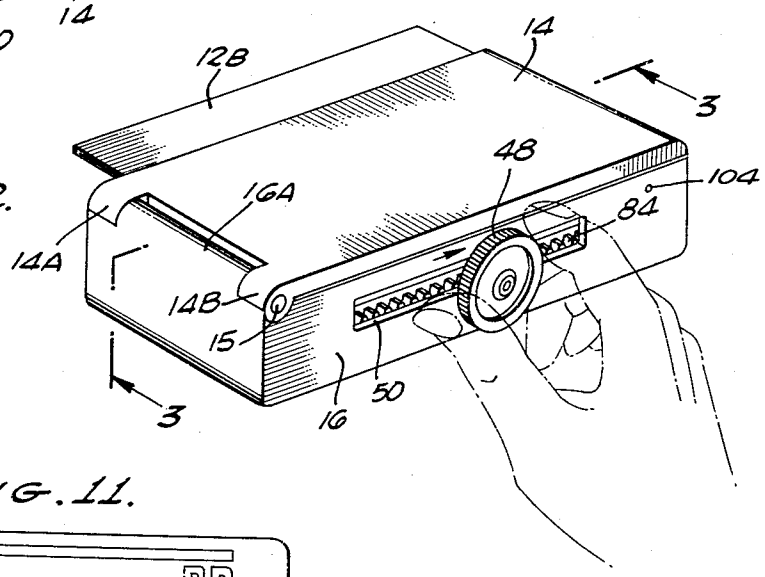
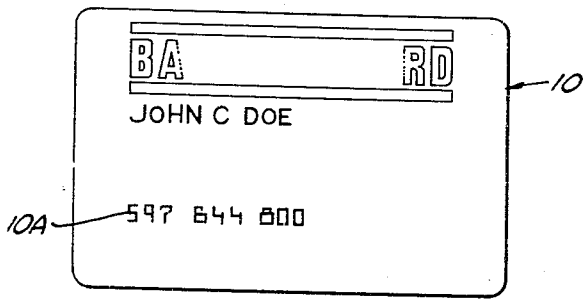


FIG. 11.



JOHN F. HERBERT, JR.,
INVENTOR.

BY Lyon & Lyon

ATTORNEYS

Oct. 10, 1961 J. F. HERBERT, JR 3,003,415

IMPRINTER

Filed Nov. 3, 1959 4 Sheets-Sheet 2

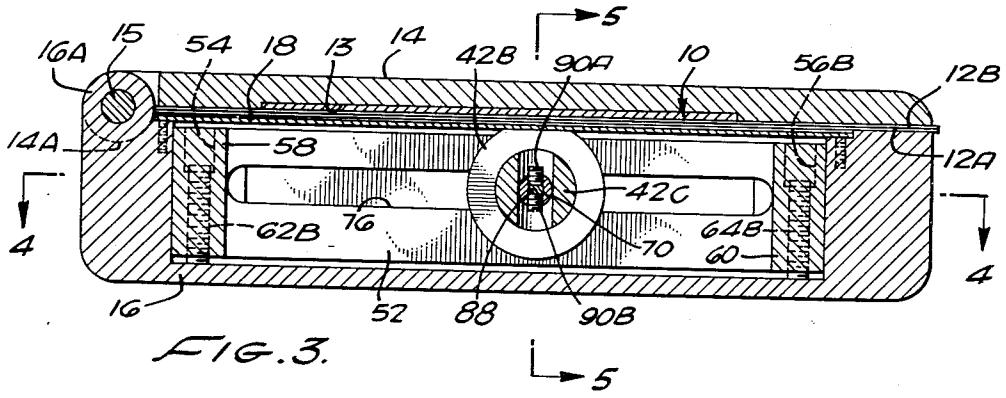


FIG. 3.

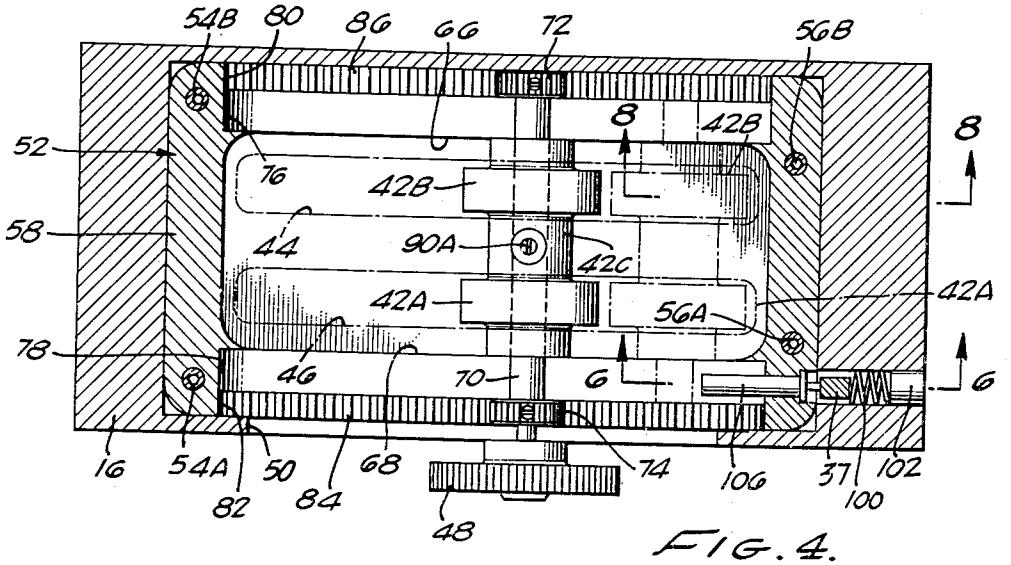


FIG. 4.

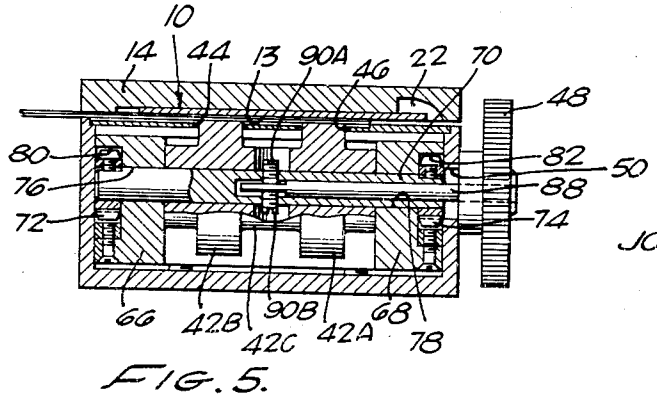


FIG. 5.

JOHN F. HERBERT, JR.,
INVENTOR.

BY Lyon & Lyon

ATTORNEYS

Oct. 10, 1961 J. F. HERBERT, JR 3,003,415

IMPRINTER

Filed Nov. 3, 1959 4 Sheets-Sheet 3

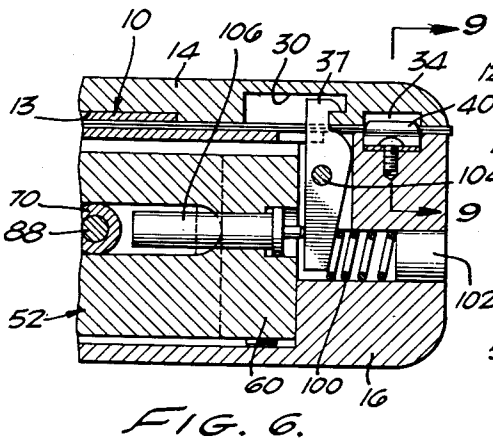


FIG. 6.

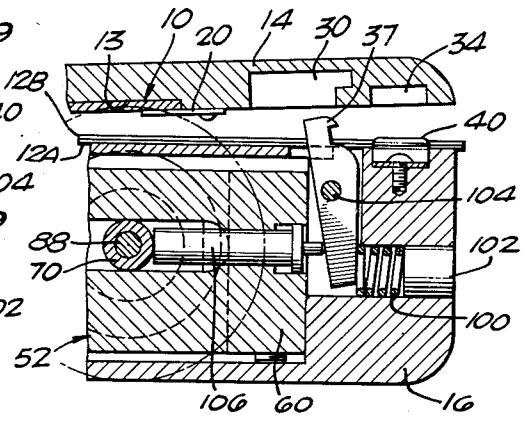


FIG. 7.

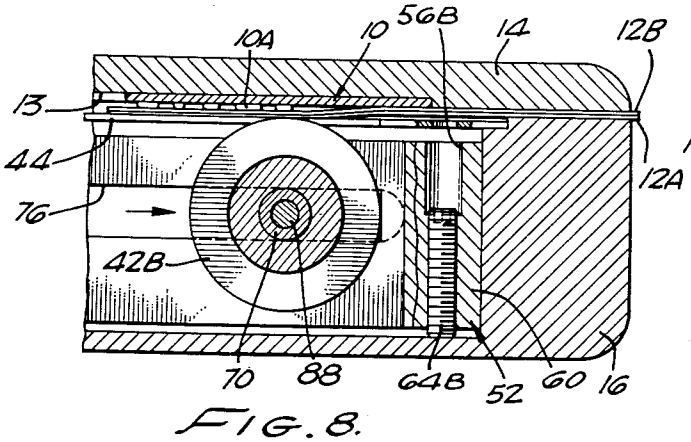


FIG. 8.

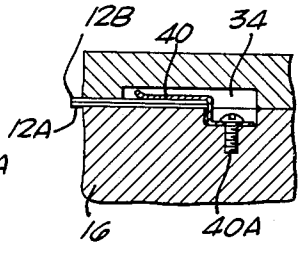


FIG. 9.

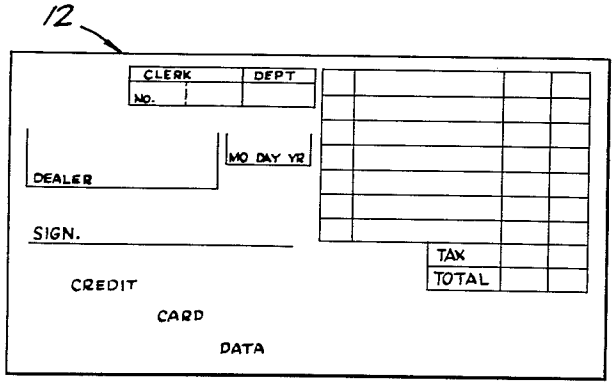


FIG. 10.

JOHN F. HERBERT, JR.,
INVENTOR.

BY Lyon & Lyon

ATTORNEYS

Oct. 10, 1961 J. F. HERBERT, JR 3,003,415

IMPRINTER

Filed Nov. 3, 1959 4 Sheets-Sheet 4

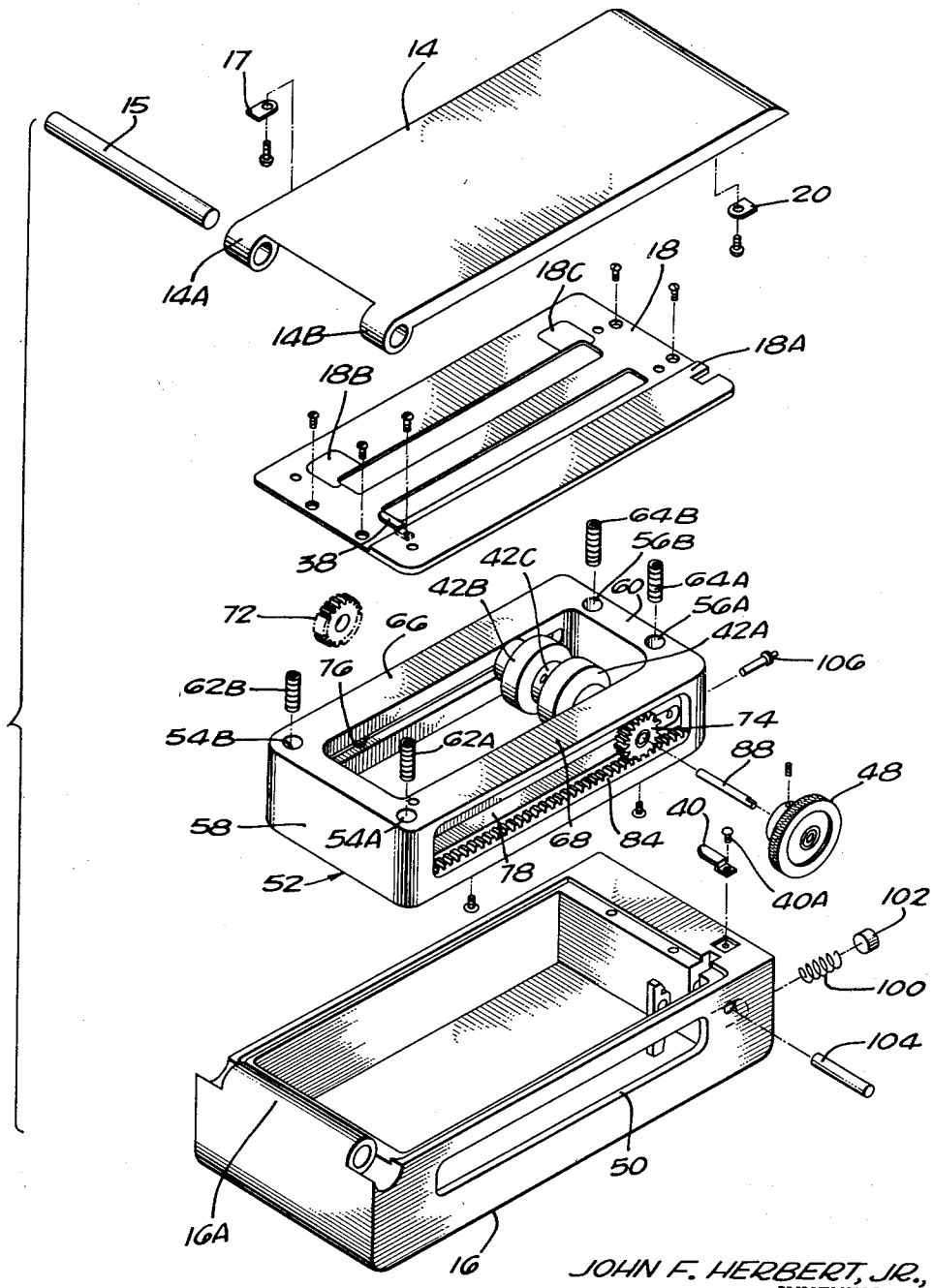


FIG. 12.

JOHN F. HERBERT, JR.,
INVENTOR.

BY Lyon & Lyon

ATTORNEYS

United States Patent Office 3,003,415
Patented Oct. 10, 1961

3,003,415

IMPRINTER

John F. Herbert, Jr., Santa Clara, Calif., assignor to Bank of America National Trust and Savings Association, San Francisco, Calif., a national banking association

Filed Nov. 3, 1959, Ser. No. 850,668
5 Claims. (Cl. 101—269)

This invention relates to an imprinter, and, more particularly, to improved apparatus for impringting on paper data in the form of raised lettering on a card.

The credit card has become a very widely used device. The card usually consists of plastic material, on which certain information has been printed, and, in addition, other information for identifying the user of the credit card is present in the form of raised lettering and numbers. The mechanics of the transfer of this identifying information to a document, whereby the credit-card user may be billed and the merchant who has sold him merchandise may be paid, is simple. An arrangement is provided for pressing the card against a sheet of transfer paper which is in contact with the document. The credit-card user is then asked to sign the document, signifying the authenticity thereof.

Although the actual mechanics of the transfer of the credit-card information to the document is simple, the mechanical arrangements for carrying out such imprinting do vary. In every instance, however, there is required a stable base position for the imprinter being employed, as a result of which these imprinters must remain at a fixed location. In stores or service stations where large areas are covered by the sales personnel, this requires either a large number of the imprinters to be placed about such areas or that the sales people do a great deal of walking to and from the locations at which the imprinters are positioned.

An object of this invention is to provide an imprinter which is portable.

Another problem which arises with imprinters is in getting the pressure, to obtain the best transfer between the credit card and the document through the transfer paper. Too great a pressure causes distortion of the information; too little pressure causes a poor transfer. This is important, in view of the fact that automatic character-sensing techniques are desired to be used for reading the documents. Unless a substantially perfect transfer occurs, automatic character-recognition techniques can provide faulty results. The adjustment of the pressure of the roller mechanism employed for applying such pressure heretofore has been complicated, difficult, and time consuming.

A further object of the present invention is to provide an imprinter, wherein the adjustment of roller pressures is performed very simply.

Another object of the present invention is the provision of a portable imprinter, wherein the alignment of a credit card and a document, to which information is to be transferred, is performed simply.

Yet another object of the present invention is a novel, useful, and inexpensive portable-imprinting apparatus.

These and other objects of the invention are achieved in an arrangement wherein an imprinter is in the form of a box, having a cover which is hingedly attached thereto for covering one side of the box. The cover has milled recesses for the insertion thereto of the credit card. When the cover is closed on the box, it positions the credit card on transfer paper which is on the document, to which information from the card is to be transferred. The document rests on a template which has suitable positioning and holding means for the document. The template has openings therein which are aligned with the portions of the card bearing raised lettering which is to be transferred to the document. Within the box there are supported rollers which extend through the openings in the template. Further, there are provided means for moving these rollers to rotate along the areas of the document to which transfer is desired, with sufficient pressure to effectuate such transfer. Means are provided in the form of an accessible screw adjustment for adjusting the pressure exerted by the rollers on the document and credit card. A releasable latch is provided which holds the cover, when closed, against the pressure of the rollers. When the rollers have been moved over the area of the document for effectuating the desired transfer, they effectively cause the latch to release the cover for removal of the credit card and the document on which the imprinting has been done.

The novel features that are considered characteristic of this invention are set forth with particularity in the appended claims. The invention itself, both as to its organization and method of operation, as well as additional objects and advantages thereof, will best be understood from the following description when read in connection with the accompanying drawings, in which:

FIGURE 1 is an isometric view, illustrating an embodiment of the invention open to receive a credit card and document upon which the credit-card information is to be transferred;

FIGURE 2 is an isometric view of an embodiment of the invention in its data-transfer operating position;

FIGURE 3 is a view in section along the lines 3—3 of FIGURE 2 and illustrates the roller pressure-adjusting means of the invention;

FIGURE 4 is a sectional view along the lines 4—4 of FIGURE 3, illustrating the rollers and how they serve to release the latch which is employed to hold the cover;

FIGURE 5 is a sectional view along the lines 5—5 of FIGURE 3, illustrating the drive shaft assembly;

FIGURE 6 is a partial section along the lines 6—6 of FIGURE 4, illustrating the latch assembly when holding the cover closed;

FIGURE 7 is a view such as FIGURE 6, which illustrates operation of the latch assembly for opening the cover;

FIGURE 8 is a partial section along the lines 8—8 of FIGURE 4, which illustrates the manner in which the roller exerts pressure for effectuating imprinting;

FIGURE 9 is a partial section along the lines 9—9 of FIGURE 6, illustrating the details of a clip for holding a document and transfer paper in position;

FIGURE 10 illustrates a typical document of the type on which credit-card data is to be imprinted;

FIGURE 11 illustrates a typical credit card suitable for use with the invention; and

FIGURE 12 is an isometric exploded view, illustrating the layout of the various parts of the embodiment of the invention.

In the description that follows, besides the figures of the drawings, to which specific reference is made, reference should also be made to FIGURE 12. FIGURE 12 is an exploded, isometric view of the invention and assists in understanding the relationship between all the parts.

Reference is now made to FIGURE 1 of the drawings, which is an isometric view of an embodiment of this invention. The imprinter is shown in an open position to receive a credit card 10 and a document 12A, to which the data on the credit card is to be transferred. The document has attached thereto a sheet of transfer paper 12B, to provide the ink for the transferred lettering. It will be noted that the embodiment of the invention essentially has a box-like shape with a cover 14 hinged to the box. The box actually comprises a base shell 16, within the upper side of which there is supported a template 18 upon which the document 12A and transfer paper 12B

are placed. A credit card **10** is placed in a suitable recess **13** which is milled in the cover. The credit card is held in place by a pair of clips **17, 20.** The card is brought up against an edge of the milled recess which is opposite the finger hole **22.** An opening **30** is milled in the cover to be engaged by a latch **37,** which is located in the shell, when the cover is closed. The remaining openings **34, 36,** which are milled in the cover, are provided to enable the proper closing of the cover, allowing for the presence of holding clips **38, 40,** which are respectively mounted on the template and on the shell, and which are used to hold the document **12A** and transfer paper **12B** in place.

Rollers **42A, 42B** extend through the slots **44, 46** in the template, whereby, when the cover **14** is closed, they can exert the required data-transferring pressure against the document and transfer paper. A knurled knob **48** may be turned, in order to rotate the rollers and roll them over the areas on the document over which the transfer is to take place.

FIGURE 2 shows the embodiment of the invention in its closed position during which the transfer of data from the credit card is made to occur by rotating the knurled knob **48.** Such rotation, as well as lateral motion, occurs from one end to the other of a slot **50,** which is in the wall of the shell, affording communication between the knurled knob **48** and the rollers **42A, 42B** from outside the shell. When the knob **48** has traveled from the hinged to the latched end of the shell, as shown in FIGURE 2, the latch **37** is released, whereby the cover **14** is released and partially opened, enabling the removal of the credit card and the document.

FIGURE 3 is a section along the lines **3—3** of FIGURE 2, showing the relative positions of the card, transfer paper, and document, as well as the rollers, when the cover **14** is closed. The card **10** is positioned adjacent to transfer paper **12B,** which in turn is held in contact with the paper **12A** upon which the credit-card data is to be transferred. It should be understood that more than one set of transfer papers and documents may be employed for the simultaneous transfer to all of the documents of the data on the credit card. Only one is being shown here by way of example, and not by way of limitation. The rollers **42A, 42B** extend through the slots in the template **18** in contact with the document **12A.** The cover **14** is attached to the shell **16** by means of a hinge pin **15.** Both the cover and shell have their respective ends formed into tubes (as may be seen in FIGURE 12), for the purpose of receiving the hinge pin **15.** The rollers are carried in a roller assembly frame **52,** which fits within the shell **16.** Tapped holes **54A, 54B, 56A, 56B** (see FIGURE 12) extend through the walls **58, 60** of the roller assembly shell. Screws **62A, 62B, 64A, 64B** (see FIGURE 12) are threaded into these holes and bear against the bottom of the shell. By turning the screws there is provided both a leveling arrangement, as well as a means whereby the pressure exerted by the rollers **42A, 42B** against the document **12** may be easily adjusted. Further, as may be seen in FIGURE 12, these screws are readily accessible through the template when the cover is opened for any required adjustment.

FIGURE 4 is a cross-sectional view in elevation along the lines **4—4** of FIGURE 3. FIGURE 5 is a view in section along the lines **5—5** of FIGURE 3. FIGURES 4 and 5 together show the arrangement employed in the embodiment of the invention for the purpose of mounting and supporting the rollers **42A, 42B,** as well as for securing the rolling motion required to effectuate the desired transfer of data. In addition, FIGURE 4 shows in dotted lines the position of the rollers at the end of an imprinting operation and just before releasing the latch. The two rollers **42A, 42B** are spaced apart on a hollow shaft **42C** a distance to enable them to extend through the apertures of the template. The roller shaft **42C** extends on either side of the rollers, until it is proximal to the opposite walls **66, 68** of the roller assembly frame.

An axle or subshaft **70** extends through the hollow shaft **42C** and supports the roller **42.** This shaft has attached thereto by means of set screws at each of its ends a pinion gear, respectively, **72, 74.** The shaft **70** has been made partially flat on each end to accommodate the set screws in the pinion gears **72** and **74.** The opposite walls **66, 68** of the roller assembly frame have aligned slots therein extending along their lengths. These slots effectively comprise a first opening **76, 78,** which is on the inside of the frame wall and which is just large enough to permit the axle **70** to be rolled therealong. The first openings open into second openings **80, 82,** which are wide enough to accommodate both the pinion gears **72, 74** as well as two rack gears **84, 86,** which are attached to the walls **66, 68** by means of screws. An arrangement for affording external rotation of the rollers is provided by means of an inner shaft **88,** on one end of which there is attached by means of a set screw the knurled knob **48.** The inner shaft **88** is attached to the axle **70** be means of two set screws **90A** and **90B,** leaving the roller shaft **42C** free to turn on the axle **70.**

For the purpose of achieving the imprinting operation, the knurled knob is first brought to the side of the imprinter to which the cover is attached. The card and document forms are then inserted and the cover is closed and latched. The knurled knob is then turned toward the latch side of the imprinter. When it reaches the latch side of the imprinter, it releases the latch **37.** The position of the roller assembly just before reaching the latch release is shown by the dashed-dotted lines in FIGURE 4.

FIGURES 6 and 7 shown in sectional views the appearance of the latch mechanism, respectively in the latched and released positions. FIGURES 6 and 7 are partial sectional views taken along the lines **6—6** of FIGURE 4. When the cover **14** is closed to engage the latch **37,** a hook end of the latch catches a suitably shaped projection, which is in the latch aperture **30** in the cover. The latch lever **37** is maintained in the engaging position by spring pressure provided by a helical spring **100,** which is inserted through a suitable aperture in the shell wall and held in position by a spring stopper **102** which is used to plug the aperture. The latch **37** is pivotally mounted on a pin **104** which is supported by the outer shell wall. A latch release pin **106** is moved by the shaft **70** in a direction to pivot the latch so that it will release the cover **14.** This position of the various elements of latch mechanism is shown in FIGURE 7.

FIGURE 8 is a sectional view along the lines **8—8** of FIGURE 4. This view is shown to illustrate how the roller **42** presses the document, including the transfer paper **12B** and the document **12A,** up against the raised lettering **10B** on the credit card **10.** The rollers are free to rotate on shaft **70;** however, they are rolled by reason of their contact with document **12A** while being laterally transported from the hinged end of the imprinter to the latch end. When this occurs, the latch is actuated to release the cover **14.**

FIGURE 9 is a detail in section and shows how the clip **40** is mounted in the shell wall. This clip assists in holding the transfer paper and the document **12B, 12A,** respectively, in position. The clip **40** is a spring clip and can be readily bent to release or admit the documents. Each clip is held in position by an associated screw **40A,** which is threaded into a suitably tapped hole in the shell wall.

FIGURE 10 is shown to illustrate a typical document **12,** to which the credit data is to be transferred. Illustrative information can consist of space for the name of the salesman, the dealer's name, the dealer's account number, provision for the amount of the sale, and provision for the signature of a customer. In the space where the words "Credit Card Data" appear, there is

imprinted the data which is transferred from the credit card.

A credit card is shown in FIGURE 11. It may consist of the name of the issuing organization, terms and conditions governing the use of the credit card, and pertinent information on the individual to whom the credit card is issued. In the space on the card which will lie opposite the apertures in the template **18** there is provided the raised lettering **10A** and **10B**, the name of the individual, and other pertinent information on the owner of the credit card, as well as his account number. A credit card usually is made of plastic material, whereby it is given a form of permanence and can withstand the roller pressure required for transferring data in the imprinter without the letters being flattened out.

FIGURE 12 is an exploded view of the embodiment of the invention from which the association of the various parts thereof may be seen. The cover **14** has hinge tubes **14A**, **14B** formed on one end. The shell **16** has a mating-hinge tube **16A** formed at one side thereof. The cover is attached to the shell by means of the pin **15**, which is passed through the hinge tubes **14A**, **16A**, **14B**. Spring clips **17**, **20** are attached to the cover by means of screws for the purpose of holding the credit card **10** in position thereon.

The template **18** has an aligning edge **18A** for the document formed therein by an increase in the thickness of the template at the desired location. A spring clip **38**, attached to the template, assists in holding the document in place. The spring clip **38** is fastened to the template by a screw. The template **18** has recesses **18B**, **18C** milled therein, to provide clearance for spring clips **17** and **20**. The template is fastened by screws onto the base shell **16**. Leveling and pressure-adjusting screws **62A**, **62B**, **64A**, **64B** are threaded into the respective apertures **54A**, **54B**, **56A**, **56B**, which extend through the opposite frame walls **58**, **60**. These screws are turned until they bear against the base of the shell **16** for the purpose of leveling and adjusting the pressure of the rollers. The template **18** has suitably located apertures to afford access to the screws **62A**, **62B**, **64A**, **64B** at all times.

The roller-assembly frame is fitted within the shell **16**. Thereafter, the subshaft **88** is inserted in the shaft **70**, and the knurled knob **48** is mounted on the subshaft **88**, whereby the rollers may be operated from outside the shell. The template **18** is then fastened onto the shell.

Also attached to the base shell **16** is a spring clip **40**, which assists in holding the document in position and the latch **37**, including the pin **104** on which the latch **37** is pivotally supported. A spring **100** and spring plug **102** bias the latch to hold the cover closed, until actuated to release the cover by the axle shaft **70**.

There has accordingly been shown and described herein a novel and useful apparatus for imprinting from a credit card the data which is in raised lettering thereon to one or more documents suitably arranged for receiving such imprinting. The structure is simple to operate. It is portable and may be hand-held while being operated, if desired. Furthermore, the procedures required for aligning the document and credit card, in order for the desired imprinting to take place, is extremely simple and substantially foolproof.

I claim:

1. Apparatus for imprinting on a sheet of paper the raised lettering on a card comprising a box; a cover for said box, hinge means for attaching said cover to said box at one edge thereof, means on said cover for releasably holding said card, means for releasably holding said sheet of paper at the side of said box upon which said cover will close, latch means for holding said cover closed with said card next to said paper, roller means, means for supporting said roller means in said box for rolling motion over the surface of said paper and pressing same against said card including a box-shaped roller-assembly frame having a top and bottom side joined by four walls, said top side being open and slots being formed in each of two opposite walls of said roller-assembly frame, said slots extending along the length of said opposite walls parallel to each other and to said top side, a rack gear in each of said slots, a shaft means on which said roller means are mounted, two pinion gears, and means for attaching said two pinion gears to said shaft means at a distance from one another for engaging said rack gears for moving said roller, means extending external to said box for moving said roller means, and means actuated by said roller means for releasing said latch means when said roller means has been rolled over the entire area of said paper which is to be imprinted.

2. Apparatus for imprinting on a sheet of paper the raised lettering on a card comprising a box-shaped shell having top and bottom sides joined by four walls, said top side being open, and a slot extending substantially along the length of one of said walls and being parallel to said top sides, a cover for said shell top side, hinge means for attaching said cover to said shell for closing on its top side, clip means attached to the side of said cover which closes on said shell for releasably holding said card, a template attached to and covering the top side of said shell, said template having slots therein at locations corresponding to those of the raised lettering on said card which it is desired to imprint, clip means attached to said template for releasably holding said sheet of paper in position to be imprinted by said card, latch means for holding said cover closed with said card next to said paper, roller means, means for supporting said roller means within said shell for rolling motion and pressure against said paper through the slots of said template, means for applying rolling motion to said roller means through the slot in the wall of said shell, and means for releasing said latch means when said roller means has been rolled over the area of said paper which is to be imprinted.

3. Apparatus for imprinting as recited in claim 2 wherein said means for supporting said roller means within said shell for rolling motion and pressure against said paper through the slots of said template comprises a box-shaped roller assembly frame having top and bottom sides joined by four walls, said roller assembly frame fitting within said shell, the top side of said roller assembly frame being open and a slot extending along each of the walls parallel with the wall in said shell which has a slot, said slots all being substantially aligned, a rack gear in each of the slots in the walls of said roller assembly frame, shaft means on which said roller means are mounted, two pinion gears, and means for attaching said two pinion gears to said shaft means spaced apart from one another for engaging said rack gears for rolling said rollers therealong, and means for adjusting the pressure of said roller means against said paper.

4. Apparatus for imprinting as recited in claim 3 wherein said means for adjusting the pressure of said roller means against said paper comprises a plurality of screws, and a plurality of tapped holes extending through the walls of said roller assembly frame from the top to bottom sides in which said screws are threaded to afford adjustment of the distance of said roller assembly frame from the bottom side of said shell.

5. Apparatus for imprinting on a sheet of paper the raised lettering on a card comprising a box-shaped shell having top and bottom sides joined by four walls, said top side being open, and a slot extending substantially along the length of one of said walls and being parallel to said top sides, a cover for said shell top side, hinge means for attaching said cover to said shell for closing on its top side, clip means attached to the side of said cover which closes on said shell for releasably holding said card, a template attached to and covering the top side of said shell, said template having slots therein at locations cor-

responding to those of the raised lettering on said card which it is desired to imprint, clip means attached to said template for releasably holding said sheet of paper in position to be imprinted by said card, latch means for holding said cover closed with said card next to said paper, roller means, means for supporting said roller means within said shell for rolling motion and pressure against said paper through the slots of said template, said last-named means including a roller assembly frame having walls parallel to the wall of said shell having a slot, slots in said roller assembly frame walls, all said slots being co-extensive and substantialy aligned with one another, shaft means on which said roller means are mounted, said shaft means extending into and being supported by said slots in said roller frame assembly, means attached to said shaft

means through said slot in said shell for applying a rolling motion thereto, means for adjusting the pressure of said roller means, and means for releasing said latch means when said roller means has been rolled over the area of said paper which is to be imprinted.

References Cited in the file of this patent

UNITED STATES PATENTS

677,910	Woodruff	July 9, 1901
700,119	Higgins	May 13, 1902
2,530,049	Ekblow	Nov. 14, 1950
2,598,161	Gruver	May 27, 1952
2,848,943	Simons	Aug. 26, 1958
2,900,899	Evans	Aug. 25, 1959