

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) Publication number:

0 204 556 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication of patent specification: **18.09.91** (51) Int. Cl.⁵: **B41L 19/00**

(21) Application number: **86304257.8**

(22) Date of filing: **04.06.86**

(54) **Imprinter Apparatus.**

(30) Priority: **04.06.85 IE 1375/85**
28.02.86 US 834634

(43) Date of publication of application:
10.12.86 Bulletin 86/50

(45) Publication of the grant of the patent:
18.09.91 Bulletin 91/38

(84) Designated Contracting States:
AT BE CH DE FR GB IT LI LU NL SE

(56) References cited:
FR-A- 2 231 524

PATENT ABSTRACTS OF JAPAN, vol. 9, no.
103 (M-377)[1826], 8th May 1985; & JP-A-59
227 481 (RIBAA KOGYO K.K.) 20-12-1984

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EP 0 204 556 B1

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Description

The present invention relates to imprinter apparatus for imprinting characters from a character imprint source member such as a credit card onto an imprint recording document such as a docket, the apparatus comprising:

a housing having entrance and exit openings for introduction and discharge of a document, imprinting means in the housing, a carrier member movable within the housing, and

drive means to drive the carrier member to imprint characters from an imprint source member onto a document.

JP-A-59 227489 describes an imprinter apparatus of this general type. The apparatus is manually operated.

The present invention is characterised in that the housing has separate entrance and exit openings for introduction and discharge of a document onto which characters are to be imprinted, in that the drive means comprises a drive roller, and in that the apparatus includes document sensor means to sense the presence of a document on the carrier member and drive the drive member to pass the carrier member between the drive roller and the imprinting means, and to drive the carrier member along a feed path between a document receiving start position adjacent the entrance opening and a document discharge position adjacent to the exit opening to imprint characters from a source member onto a document.

In one embodiment of the invention the drive roller has a substantially cylindrical periphery interrupted by a flattened portion, the cylindrical portion of the drive roller engaging the carrier member to advance the carrier member between the start and discharge positions and the flattened portion allowing relative sliding movement of the carrier member for return the carrier member to the start position.

In another embodiment of the invention return means are provided for returning the carrier member to the start position. Preferably the return means comprises a tensator spring.

In another embodiment of the invention the drive roller is driven by an electric motor. Preferably the motor is coupled to the drive roller by a drive belt.

In a further embodiment of the invention document sensor means are provided to sense the presence of a document on the carrier member to drive the drive roller. Preferably the sensor means comprises a microswitch which is positioned to be activated by a document to energise the motor for driving the carrier member through an imprinting stroke.

In another embodiment of the invention means are provided for retaining the microswitch activated during an imprinting stroke. Preferably the means comprises a cam on the drive roller shaft, the cam profile being arranged so that when the carrier member completes an imprinting stroke the microswitch is deactivated.

In another embodiment of the invention, the carrier member comprises a platen having a substantially flat upwardly facing surface for receiving a character imprint source member and having means for receiving and positioning an imprint recording document. Preferably the means for receiving and positioning an imprint recording document comprises an abutment extending upwardly from a document supporting surface to be abutted by a leading edge of a document upon insertion through the entrance opening. Advantageously, the sensor means is positioned to be activated by portion of a document upon reaching the abutment surface.

In a further embodiment of the invention guide means are provided for guiding the carrier member along the feed path to pass the character source member and document between the drive roller and the imprint means.

Preferably the guide means comprises a guide slot engaged by an elongate protrusion extending from the carrier member. In a still further embodiment of the invention, means to deliver an imprinted docket from the apparatus through the exit opening is provided. Preferably the delivery means comprises a guide finger member extending into a groove in the carrier member when the carrier member approaches a discharge end position to move underneath the document and direct it through the exit opening.

In another embodiment of the invention, the imprint means is provided by an inked roller. Preferably the roller is mounted in a cassette which is releasably mounted in the housing.

In a particularly preferred embodiment of the invention there is provided document activated imprinter apparatus for imprinting characters from a credit card or the like forming a thin character bearing imprint member onto a document, comprising a housing having entrance and exit openings for introduction and discharge of a document onto which characters are to be imprinted, imprinting means in the housing including a printing station having an imprint roller and a drive roller between which the document and imprint member are to be advanced, a carrier member movable within the housing along a feed path between a document receiving start position and a document discharge end position for advancing a document fed onto the carrier member through said entrance opening between said rollers, means on said carrier member for receiving and positioning the imprint member

adjacent the document disposed on the carrier member to imprint characters on the document upon their passage between said rollers, means for guiding and reciprocating said carrier member and the document and imprint member thereon along said feed path, powered drive means including a document sensor to sense the presence of a document at a support position on the carrier member to drive said drive roller through a carrier member imprint stroke along said feed path, means for guiding the document through said exit opening upon the carrier member reaching said end position, and means for returning the carrier member to said start position.

The invention will be more clearly understood from the following description of an embodiment thereof, given by way of example only, with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of imprinter apparatus according to the invention;

Fig. 2 is a perspective view of the imprinter apparatus with the housing and carrier member shown in broken lines;

Fig. 3 is a side view of the apparatus of Fig. 1 in an initial or reset position;

Fig. 4 is a side view of the apparatus of Fig. 1 with the carrier member disposed along its path of travel in an imprinting cycle;

Fig. 5 is a side view of a detail of the apparatus of Fig. 1;

Fig. 6 is a perspective view of the carrier member of the apparatus of Fig. 1; and

Fig. 7 is an end view of the carrier member of Fig. 5 in the direction of the arrow A.

Referring to the drawings, there is illustrated imprinter apparatus according to the invention, indicated generally by the reference numeral 1 for imprinting characters from a character imprint source member such as a credit card 2 onto an imprint recording document such as a docket 3. The credit card 2 is illustrated in Figs. 3 and 4 in full lines and in broken lines in Fig. 6, while the docket 3 is illustrated in broken lines in Figs. 3 to 6.

The apparatus 1 comprises a housing 4 having an upper entrance opening 5 and an upper discharge opening 6 for introduction and discharge of the docket 3. The credit card 2 is mounted on a carrier member comprising a platen 8 portion 9 of which projects, in use, through an elongate slot 10 in a side wall 11 of the housing 4.

The carrier member 8 includes a credit card receiving sheet metal member 15 having a pair of side members 16 which are bent upwardly inwardly to engage the side edges of the credit card 2. Characters identifying details of the merchant using the apparatus are provided at 18 on the platen 8. A date roller 19 is also provided on the platen 8.

Means for receiving and positioning the docket 3 comprises an abutment 20 extending upwardly from a document supporting surface 21 to be abutted by a leading edge of the docket 3 upon insertion of the docket 3 through the entrance opening 5. The carrier member 8 runs in a guide comprising a substantially V-shaped slot 25 formed in a metal support 26. The slot 25 engages an elongate protusion 27 extending from one side 28 of the carrier member 4.

The carrier member 8 is driven beneath an imprint means which in this case is provided by an inked roller 30 for imprinting the characters onto the docket 3. The inked roller 30 is provided in a cassette 29 which, if desired may be disposable once the ink has been used up. Where the roller 30 or cassette 29 is disposable, it is envisaged that the cassette 29 may be attached to the apparatus by a suitable quick release mechanism. A drive means comprising a drive roller 31 drives the carrier member 8 beneath the inked roller 30. The drive roller 31 which is driven by an electric motor 45 through a belt drive 46 comprises a shaft 32 rotatable in a bearing (not shown) in the metal support 26 and in a bearing 33 mounted in a support bracket 34 which is secured to the support 26 by screws 35. A pair of disc members 37 fast on the shaft 32 bear on the carrier member 8 to drive it beneath the inked roller 30.

As will be apparent particularly from Figs. 3 and 4 each of the disc members 37 has a substantially cylindrical periphery 38 interrupted by a flattened portion 39, the cylindrical portion 38 engaging the carrier member 8 to advance the carrier member 8 between start and discharge positions and the flattened portion 39 allowing relative sliding movement of the carrier member 8 for return of the carrier member to the start position illustrated in Fig. 3. Return means for returning the carrier member 8 to the start position is in this case provided by a coiled tensator spring 40 mounted on a shaft 41 in a housing 43 and connected to the underside of the carrier member at 42. As the drive roller 31 rotates in the direction of the arrow B in Fig. 1 the cylindrical or rounded portion 38 of the periphery of the disc members 37 drives the carrier member beneath the inked roller 30 and the radius of the discs is such as to press the carrier member 8 against the inked roller 30 with sufficient force to cause imprinting of the characters from the credit card 2, merchants characters 18 and date roller characters 19 onto the docket 3. Further, the circumference of the rounded portion 38 of the disc members 37 is such that one revolution of the drive roller 31 completes one pass of the carrier member beneath the ink roller, thus on completion of a pass imprinting is complete, the docket 3 is discharged through the discharge opening 6 and the carrier

member 8 is returned to the start position ready to receive another docket.

Document sensor means to sense the presence of a docket 3 on the carrier member 8 the drive roller 31 in this case comprises a microswitch 50 which is positioned to be activated by portion of the docket 3 upon reaching the abutment 20 to energise the motor 45 for driving the carrier member 8 through an imprinting stroke.

Referring to Fig. 5, means for retaining the microswitch 50 activated during an imprinting stroke thereby maintaining drive on the drive roller 31 is provided by a cam 51 on the shaft 32 of the drive roller which operates a pivotal member 52 which bears on an arm 53 of the microswitch to retain the microswitch 50 activated. An adjusting screw 54 is provided on the pivotal member 52 to bear on the arm 53. When the drive roller 31 has completed one revolution, the profile of the cam 51 is such that the pivotal member 52 is released from the microswitch arm 53, thus deactivating the microswitch 50 and turning off the motor 45.

Referring particularly to Figs. 3 and 4 delivery means for delivering an imprinted docket 3 from the imprinter apparatus 1 through the exit opening 6 is in this case provided by a guide finger member 55 which extends into a groove 56 in the carrier member 8 when the carrier member approaches a discharge end position to move underneath the docket 3 and direct it through the exit opening 6.

In use, the credit card 2 is entered into side members 16 of the carrier member 8 through the slot 10 in the side wall 11 of the housing 4. The carrier member 8 will be in the position illustrated in Fig. 3. The docket 3 is then inserted through the entrance opening 5 in the housing 4 until it reaches the abutment 20 of the carrier member 8. Just as the docket 3 reaches the abutment 20 it triggers the microswitch arm 53, thereby activating the motor 45 and in turn the drive roller 31. As the drive roller 31 rotates, the rounded portion 38 of the circumference of the discs 37 drive the carrier member 8 between the drive roller 31 and the inked roller 30 in the direction of the arrow C of Fig. 4. The cam 51 and pivotal member 52 retains the microswitch 50 active, and in turn the motor 45. On completing a pass of the carrier member 8 between the inked roller 30 and the drive roller 31, the microswitch 50 is deactivated, and thus the motor 45. At this stage the flattened portion 38 of the discs 37 is adjacent the carrier member 8. The carrier member 8 is thus free to slide between the inked roller 30 and the driver roller 31, and the spring 40 thereby returns the carrier member 8 to its reset position illustrated in Fig. 3. While the carrier member 8 is being driven between the drive roller 31 and the inked roller 30, the characters on

the credit card 2, the merchant's identification characters 18 and date roller characters 19 are imprinted onto the docket 3. During this operation as the carrier member 8 moves in the direction of the arrow C of Fig. 4, the guide finger 55 directs the docket 3 into the exit opening 6 and the docket 3 is discharged through the opening 6. The credit card 2 is then removed, and the apparatus 1 is ready for the next operation.

It will be appreciated that while a particular drive means has been described for driving the carrier member between the print roller, any other suitable drive means could be used. For example, instead of having a pair of discs, an elongated roller could be used, and in this case it is envisaged that portion of the periphery of the roller would be flattened. Although needless to say, it will be appreciated that it is not necessary for the drive roller to be flattened. For example, in certain cases it is envisaged that a roller rotatable about an eccentric axis could be used. Also, it is envisaged that a roller of circular cross section rotating about a concentric rotational axis could be used if desired. In this case, however, it is envisaged that either a release means to release the pressure between the drive roller and the inked roller would be provided to allow for the return of the carrier member, or alternatively, the roller could be driven in reverse to return the carrier member.

Further, it will be appreciated that means other than a tensator spring could be used to return the carrier. It is envisaged that a coil spring may be used. It is envisaged that many other shapes and constructions of carrier member could be provided, as indeed could many other shapes and constructions of housing, as well as entrance and exit openings.

Furthermore, it will be appreciated that while the apparatus has been described for imprinting embossed information on a credit card onto a docket, the apparatus could be used for imprinting information from any suitable imprint source member onto any type of document.

It will be appreciated that the drive roller means may be provided with a friction gripping means for movement of the carrier member. For example, in the case of the disc members 37 described above an O-ring or the like may be fitted over the outer periphery and may be located in a groove or recess in the disc member.

It will further be appreciated that means may be provided for adjusting the pressure applied by the imprint roller. For example, the imprint roller may be eccentrically mounted to allow pressure adjustment.

In addition, it will be appreciated that alignment means may be provided for alignment of the drive roller means with respect to the imprint roller. For

example, the drive roller may be mounted in bearings, at least one of which is eccentric to allow adjustment of the drive roller.

Further, it will be appreciated that the imprinter apparatus according to the invention may be used in association with means for validating a credit card.

Claims

1. Imprinter apparatus (1) for imprinting characters from a character imprint source member such as a credit card (2) onto an imprint recording document such as a docket (3), the apparatus comprising

a housing (4) having entrance (5) and exit openings (6) for introduction and discharge of a document (3),

imprinting means (30) in the housing (4),

a carrier member (8) movable within the housing (4), and

drive means (31) to drive the carrier member (8) to imprint characters from an imprint source member (2) onto a document (3)

characterised in that the housing has separate entrance (5) and exit openings (6) for introduction and discharge of a document onto which characters are to be imprinted, in that the drive means comprises a drive roller (31), and in that the apparatus includes document sensor means (50) to sense the presence of a document (3) on the carrier member (8) and drive the drive roller (31) to pass the carrier member (8) between the drive roller (31) and the imprinting means, and to drive the carrier member (8) along a feed path between a document receiving start position adjacent the entrance opening (5) and a document discharge position adjacent to the exit opening (6) to imprint characters from a source member (2) onto a document (3).

2. Imprinter apparatus as claimed in claim 1 wherein the drive roller (31,37) has a substantially cylindrical periphery (38) interrupted by a flattened portion (39), the cylindrical portion (38) of the drive roller (31,37) engaging the carrier member (8) to advance the carrier member (8) between the start and discharge positions and the flattened portion (39) allowing relative sliding movement of the carrier member (8) for return of the carrier member (8) to the start position.

3. Imprinter apparatus as claimed in claim 2 wherein return means (40) are provided for returning the carrier member (8) to the start position.

4. Imprinter apparatus as claimed in claim 3 wherein the return means (40) comprises a tensator spring (40).

5. Imprinter apparatus as claimed in any of claims 1 to 4 wherein the drive roller (30) is driven by an electric motor (45).

6. Imprinter apparatus as claimed in claim 5 wherein the motor (45) is coupled to the drive roller (30) by a drive belt (46).

7. Imprinter apparatus as claimed in claim 4 or 5 wherein the sensor means (50) comprises a microswitch (50) which is positioned to be activated by a document (3) to energise the motor (45) for driving the carrier member (8) through an imprinting stroke.

8. Imprinter apparatus as claimed in claim 7 wherein means (51,52) are provided for retaining the microswitch (50) activated during an imprinting stroke.

9. Imprinter apparatus as claimed in claim 8 wherein the means comprises a cam (51) on the drive roller shaft (32), the cam profile being arranged so that when the carrier member (8) completes an imprinting stroke the microswitch (50) is deactivated.

10. Imprinter apparatus as claimed in any preceding claim wherein the carrier member (8) comprises a platen having a substantially flat upwardly facing surface (15) for receiving a character imprint source member (2) and having means (20) for receiving and positioning an imprint recording document (3).

11. Imprinter apparatus as claimed in claim 10 wherein the means (20) for receiving and positioning an imprint recording document comprises an abutment (20) extending upwardly from a document supporting surface (21) to be abutted by a leading edge of a document (3) upon insertion through entrance opening (5).

12. Imprinter apparatus as claimed in claim 11 wherein the sensor means (50) is positioned to be activated by portion of a document (3) upon reaching the abutment surface (20).

13. Imprinting apparatus as claimed in any of

claims 1 to 12 wherein guide means (25,27) are provided for guiding the carrier member (8) along the feed path to pass the character source member (2) and document (3) between the drive roller (31) and the imprint means (30).

14. Imprinter apparatus as claimed in claim 13 wherein the guide means comprises a guide slot (25) engaged by an elongate protrusion (27) extending from the carrier member (8).

15. Imprinter apparatus as claimed in any preceding claim wherein means (55,56) to deliver an imprinted document from the apparatus through the exit opening (6) is provided.

16. Imprinter apparatus as claimed in claim 15 wherein the delivery means (55,56) comprises a guide finger (55) member extending into a groove (56) in the carrier member (8) when the carrier member (8) approaches a discharge end position to move underneath the document (3) and direct it through the exit opening (6).

17. Imprinter apparatus as claimed in any preceding claim wherein the imprinting means (30) comprises an inked roller (30).

18. Imprinter apparatus as claimed in any preceding claim wherein the roller (30) is mounted in a cassette (29) which is releasable mounted in the housing (4).

19. Apparatus as claimed in claim 1 wherein the apparatus is document activated imprinter apparatus (1) for imprinting characters from a credit card (2) or the like forming a thin character bearing imprint member onto a document (3), the apparatus (1) comprising a housing (4) having entrance (5) and exit (6) openings for introduction and discharge of a document (3) onto which characters are to be imprinted, imprinting means (30) in the housing including a printing station having an imprinter roller (30) and a drive roller (31) between which the document (3) and imprint member (2) are to be advanced, a carrier member (8) movable within the housing (4) along a feed path between a document receiving start position and a document discharge end position for advancing a document (3) fed onto the carrier member (8) through said entrance opening (5) between said rollers (30,31), means (20) on said carrier member (8) for receiving and positioning the imprint member adjacent the document (3) disposed on the carrier member (8) to imprint characters on the document (3) upon their pas-

sage between said rollers (30,31), means for guiding and reciprocating said carrier member (8) and the document (3) and imprint member (2) thereon along said feed path, powered drive means (31) including a document sensor (50) to sense the presence of a document (3) at a support position on the carrier member (8) to drive said drive roller (31) through a carrier member imprint stroke along said feed path, means for guiding (55,56) the document through said exit opening (6) upon the carrier member (8) reaching said end position, and means for returning the carrier member (8) to said start position.

Revendications

1. Appareil d'impression (1) pour imprimer des caractères à partir d'un élément source d'impression de caractères, tel qu'une carte de crédit (2), sur un document enregistrant l'impression, tel qu'un reçu (3), l'appareil comprenant :

un boîtier (4) ayant des ouvertures d'entrée (5) et de sortie (6) pour l'introduction et la délivrance d'un document (3),

des moyens d'impression (30) dans le boîtier (4),

un organe de support (8) mobile dans le boîtier (4),

et des moyens d'entraînement (31) pour entraîner l'organe de support (8) pour imprimer les caractères à partir de l'élément source d'impression (2) sur un document (3)

caractérisé en ce que le boîtier comporte des ouvertures séparées d'entrée (5) et de sortie (6) pour l'introduction et la délivrance d'un document sur lequel les caractères doivent être imprimés, en ce que les moyens d'entraînement comprennent un rouleau d'entraînement (31), et en ce que l'appareil comprend des moyens (50) détecteurs de document pour détecter la présence d'un document (3) sur l'organe de support (8) et commander le rouleau d'entraînement (31) pour faire passer l'organe de support (8) entre le rouleau d'entraînement (31) et les moyens d'impression, et pour entraîner l'organe de support (8) le long d'un trajet d'alimentation entre une position de départ de réception de document adjacente à l'ouverture d'entrée (5) et une position de délivrance de document adjacente à l'ouverture de sortie (6) pour imprimer les caractères à partir d'un élément source (2) sur un document (3).

2. Appareil d'impression selon la revendication 1, dans lequel le rouleau d'entraînement (31, 37)

- présente une périphérie (38) sensiblement cylindrique interrompue par une partie aplatie (39), la partie cylindrique (38) du rouleau d'entraînement (31, 37) venant en contact de l'organe de support (8) pour faire avancer l'organe de support (8) entre les positions de départ et de délivrance, et la partie aplatie (39) permettant un mouvement de coulisement relatif de l'organe de support (8) pour le retour de l'organe de support (8) à sa position de départ.
3. Appareil d'impression selon la revendication 2, dans lequel des moyens de retour (40) sont prévus pour faire revenir l'organe de support (8) à sa position de départ.
 4. Appareil d'impression selon la revendication 3, dans lequel les moyens de retour (40) comprennent un ressort (40) de mise sous tension.
 5. Appareil d'impression selon l'une quelconque des revendications 1 à 4, dans lequel le rouleau d'entraînement (30) est actionné par un moteur électrique (45).
 6. Appareil d'impression selon la revendication 5, dans lequel le moteur (45) est couplé au rouleau d'entraînement (30) par une courroie d'entraînement (46).
 7. Appareil d'impression selon la revendication 4 ou 5 dans lequel les moyens détecteurs (50) comprennent un micro-interrupteur (50) qui est disposé de manière à être actionné par un document (3) pour mettre le moteur (45) sous tension afin d'entraîner l'organe de support (8) dans la course d'impression.
 8. Appareil d'impression selon la revendication 7 dans lequel des moyens (51, 52) sont prévus pour maintenir le micro-interrupteur (50) actionné pendant une course d'impression.
 9. Appareil d'impression selon la revendication 8 dans lequel les moyens comprennent une came (51) disposée sur l'arbre (32) du rouleau d'entraînement, le profil de came étant agencé de telle sorte que lorsque l'organe de support (8) termine une course d'impression, le micro-interrupteur (50) est désactivé.
 10. Appareil d'impression selon l'une quelconque des revendications précédentes dans lequel l'organe de support (8) comprend une platine ayant une surface (15) tournée vers le haut sensiblement plate pour recevoir un élément source d'impression de caractères (2) et comportant des moyens (20) pour recevoir et positionner un document (3) d'enregistrement d'impression.
 11. Appareil d'impression selon la revendication 10 dans lequel les moyens (20) pour recevoir et positionner un document d'enregistrement d'impression comprennent une butée (20) s'étendant vers le haut à partir d'une surface (21) supportant le document, butée contre laquelle est destiné à venir en appui un bord de tête d'un document (3) lors de son insertion à travers l'ouverture d'entrée (5).
 12. Appareil d'impression selon la revendication 11 dans lequel les moyens détecteurs (50) sont positionnés de manière à être actionnés par une partie d'un document (3) lorsque la surface de butée (20) est atteinte.
 13. Appareil d'impression selon l'une quelconque des revendications 1 à 12 dans lequel des moyens de guidage (25, 27) sont prévus pour guider l'organe de support (8) le long d'un trajet d'alimentation afin de faire passer l'élément source de caractères (2) et le document (3) entre le rouleau d'entraînement (31) et les moyens d'impression (30).
 14. Appareil d'impression selon la revendication 13 dans lequel les moyens de guidage comprennent une fente de guidage (25) dans laquelle vient s'engager une saillie allongée (27) s'étendant à partir de l'organe de support (8).
 15. Appareil d'impression selon l'une quelconque des revendications précédentes dans lequel des moyens (55, 56) sont prévus pour délivrer un document imprimé, depuis l'appareil, à travers l'ouverture de sortie (6).
 16. Appareil d'impression selon la revendication 15 dans lequel les moyens de délivrance (55, 56) comprennent un organe formant doigt de guidage (55) s'étendant dans une rainure (56) de l'organe de support (8), lorsque l'organe de support (8) s'approche d'une position d'extrémité de délivrance, pour déplacer d'en-dessous le document (3) et le diriger à travers l'ouverture de sortie (6).
 17. Appareil d'impression selon l'une quelconque des revendications précédentes dans lequel les moyens d'impression (30) comprennent un rouleau encre (30).
 18. Appareil d'impression selon l'une quelconque des revendications précédentes dans lequel le rouleau (30) est disposé dans une cassette

(29) qui est montée de manière détachable dans le boîtier (4).

19. Appareil selon la revendication 1, l'appareil étant un appareil (1) d'impression actionné par document pour imprimer des caractères, à partir d'une carte de crédit (2) ou analogue formant un mince organe d'impression portant des caractères, sur un document (3), l'appareil (1) comprenant un boîtier (4) ayant des ouvertures d'entrée (5) et de sortie (6) pour l'introduction et la délivrance d'un document (3) sur lequel les caractères ont été imprimés, des moyens d'impression (30) dans le boîtier comprenant un poste d'impression ayant un rouleau d'impression (30) et un rouleau d'entraînement (31) entre lesquels le document (3) et l'élément d'impression (2) doivent être avancés, un organe de support (8) mobile dans le boîtier (4) le long d'un trajet d'alimentation entre une position de départ recevant le document et une position d'extrémité de délivrance du document pour faire avancer un document (3), fourni à l'organe de support (8) à travers l'ouverture d'entrée (5), entre lesdits rouleaux (30, 31), des moyens (20) prévus sur ledit organe de support (8) pour recevoir et positionner l'élément d'impression adjacent au document (3) disposé sur l'organe de support (8) pour imprimer les caractères sur le document (3) à leur passage entre les rouleaux (30, 31), des moyens pour guider et déplacer suivant un mouvement de va et vient, l'organe de support (8) et le document (3) et l'élément d'impression (2), placés dessus, le long d'un trajet d'alimentation, des moyens d'entraînement (31) motorisés comprenant un détecteur de document (50) pour détecter la présence d'un document (3) en une position de support sur l'organe de support (8) pour actionner ledit rouleau d'entraînement (31) suivant une course d'impression de l'organe de support le long du trajet d'alimentation, des moyens (55, 56) pour guider le document à travers ladite ouverture de sortie (6) lorsque l'organe de support (8) atteint ladite position d'extrémité, et des moyens pour faire revenir l'organe de support (8) à ladite position de départ.

Patentansprüche

1. Präge- und Druckwerkzeug (1) zum Aufdrucken von Buchstaben von einem Druckbuchstabenstempel wie beispielsweise einer Kreditkarte (2) auf ein bedruckbares Dokument wie beispielsweise einen Kreditkartenzahlungsbeleg (3), wobei das Werkzeug besteht
- aus einem Gehäuse (4) mit einer Ein-

trittsöffnung (5) und einer Austrittsöffnung (6) zum Einführen und Entnehmen eines Kreditkartenzahlungsbelegs (3),

- einer Druckvorrichtung (30) im Gehäuse (4)
- einem im Gehäuse (4) verschiebbar angeordneten Tragelement (8) und
- einem Antriebselement (31) zum Antrieb des Tragelements (8) um die Buchstaben vom Druckbuchstabenstempel (2) auf das Dokument (3) übertragen zu können, dadurch gekennzeichnet,
- daß das Gehäuse (4) voneinander getrennt eine Eintrittsöffnung (5) und eine Austrittsöffnung (6) zum Einlegen und Entnehmen des mit den Buchstaben zu bedruckenden Dokuments (3) aufweist,
- daß das Antriebselement einen Antriebsroller (31) enthält und daß das Werkzeug (1) einen Dokumentensensor (50) aufweist,
- zum Ertasten eines auf das Tragelement (8) aufgelegten Dokuments und
- um die Antriebsrolle (31) anzutreiben, damit das Tragelement (8) zwischen der Antriebsrolle (31) und der Druckvorrichtung (30) hindurchbewegt wird und
- um das Tragelement (8) auf einer Bearbeitungsstrecke entlang zu fördern zwischen einer Startposition beim Einlegen des Dokuments (3) im Bereich der Eintrittsöffnung (5) und einer Dokumentauswurfposition im Bereich der Austrittsöffnung (6), wobei auf der Bearbeitungsstrecke Buchstaben vom Druckstempel (2) auf das Dokument (3) übertragen werden.

2. Druckwerkzeug nach Anspruch 1, dadurch gekennzeichnet, daß die Antriebsrolle (31,37) eine im wesentlichen zylindrische Mantelfläche (38) aufweist, welche von einem abgeflachten Bereich (39) unterbrochen ist, wobei der zylindrische Bereich (38) der Antriebsrolle (31,37) mit dem Tragelement (8) bewegungsmäßig verbunden ist zum Antrieb des Tragelements (8) zwischen der Start- und Auswurfposition und wobei der abgeflachte Bereich (39) eine Gleitbewegung des Tragelements (8) ermöglicht zum Zurückverfahren des Tragelements (8) in seine Startposition.

3. Druckwerkzeug nach Anspruch 2, gekennzeichnet durch eine Rückholvorrichtung (40) zum Zurückverfahren des Tragelements (8) in seine Startposition.

4. Druckwerkzeug nach Anspruch 3,
dadurch gekennzeichnet,
daß eine Spannfeder (40) die Rückholvorrichtung (40) bildet.
5. Druckwerkzeug nach einem der Ansprüche 1 bis 4,
gekennzeichnet durch
einen Elektromotor (45) zum Antrieb der Antriebsrolle (31).
6. Druckwerkzeug nach Anspruch 5,
dadurch gekennzeichnet,
daß ein Treibriemen (46) die Antriebsrolle (31) bewegungsmäßig an den Motor (45) koppelt.
7. Druckwerkzeug nach Anspruch 4 oder Anspruch 5,
dadurch gekennzeichnet,
daß der Sensor (50) einen Mikroschalter (50) umfaßt, welcher derart angeordnet ist, daß er durch ein Dokument (3) aktiviert den Motor (45) startet zum Antrieb des Tragelements (8) für die Dauer eines Druck-Arbeits-Zyklusses.
8. Druckwerkzeug nach Anspruch 7,
gekennzeichnet durch
Schaltelemente (51,52) zur Arretierung des Mikroschalters (50) in seiner Aktivstellung während eines gesamten Druck-Arbeits-Zyklusses.
9. Druckwerkzeug nach Anspruch 8,
gekennzeichnet durch,
eine von einer mit der Antriebsrolle (31) bewegungsmäßig verbundenen Antriebswelle (32) getragene Schaltnocke (51) deren Schaltnockenprofil so gestaltet ist, daß der Mikroschalter (50) deaktiviert ist, sobald das Tragelement (8) einen Druck-Arbeits-Zyklus durchlaufen hat.
10. Druckwerkzeug nach einem oder mehreren der vorhergehenden Ansprüche,
dadurch gekennzeichnet,
daß das Tragelement (8) eine nach oben gerichtete im wesentlichen flache Aufnahmeoberfläche (15) zur Aufnahme des Druckbuchstabenstempels (2) und Einrichtungen (20) zur Aufnahme und Positionierung des zu bedruckenden Dokuments (3) aufweist.
11. Druckwerkzeug nach Anspruch 10,
dadurch gekennzeichnet,
daß die Einrichtungen (20) zur Aufnahme und Positionierung des zu bedruckenden Dokuments (3) im wesentlichen aus einer Anlageleiste (20) bestehen, welche aus einer Auflagefläche (21) hinaussteht als Anschlag für die Vorderkante des Dokuments (3) nach dem Einle-
- gen des Dokuments (3) durch die Eintrittsöffnung (5).
12. Druckwerkzeug nach Anspruch 11,
gekennzeichnet durch
eine Anordnung des Sensorelements (50) derart, daß das Sensorelement (50) durch das Anschlagen des Dokuments (3) an der Anlagefläche der Anlagekante (20) aktivierbar ist.
13. Druckwerkzeug nach einem der Ansprüche 1 bis 12,
gekennzeichnet durch,
Führungselemente (25,27) zur Führung des Tragelements (8) entlang seiner Bearbeitungsstrecke zur Führung des Druckbuchstabenstempels (2) und das Druckelement (3) zwischen der Antriebsrolle (31) und der Druckeinrichtung (30) hindurch.
14. Druckwerkzeug nach Anspruch 13,
dadurch gekennzeichnet,
daß ein zu den Führungselementen gehörender Führungsschlitz (25) mit aus dem Tragelement (8) hinausstehenden Führungsvorsprüngen (27) bewegungsmäßig verbunden ist.
15. Druckwerkzeug nach einem oder mehreren der vorhergehenden Ansprüche,
gekennzeichnet durch
Manipulationshilfen (55,56) zum Transport eines bedruckten Dokuments (3) aus dem Druckwerkzeug heraus durch die Austrittsöffnung (6).
16. Druckwerkzeug nach Anspruch 15,
dadurch gekennzeichnet,
daß die Manipulationshilfen (55,56) einen in eine Nut (56) im Tragelement (8) hineinragenden Leitfinger (55) aufweisen, welcher sobald das Tragelement (8) sich seiner Entladeposition nähert unter das Dokument (3) greift und das Dokument (3) in die Austrittsöffnung (6) umleitet.
17. Druckwerkzeug nach einem oder mehreren der vorhergehenden Ansprüche,
dadurch gekennzeichnet,
daß die Druckvorrichtung (30) eine tintenge tränkte Druckwalze (30) aufweist
18. Druckwerkzeug nach einem oder mehreren der vorhergehenden Ansprüche,
dadurch gekennzeichnet,
daß die tintengetränkte Druckwalze (30) in einer aus dem Gehäuse (4) herausnehmbaren Kartusche (29) fixiert ist.

19. Präge- und Druckwerkzeug nach Anspruch 1, gekennzeichnet durch folgende Merkmale:

- a) Das Werkzeug ist eine durch ein Dokument (3) aktivierbare Druckmaschine (1) zum Abdrucken von Buchstaben von Kreditkarten (2) oder um auf diese Weise dünne Drucktypen von Druckbuchstabenstempeln auf ein Dokument (3) zu übertragen. 5
- b) Die Maschine (1) besteht aus
 - aa) einem Gehäuse (4) mit einer Eintrittsöffnung (5) und einer Austrittsöffnung (6) zur Einfuhr und Entnahme eines Dokuments (3), auf welches Buchstaben aufzudrucken sind, 10
 - bb) Druckelementen (30) im Gehäuse (4) einschließlich einer Druckstation mit einer tintengetränkten Druckwalze (30) und einer Antriebsrolle (31), zwischen welchen das Dokument (3) und der Druckstempel (2) hindurchführbar sind, 15 20
 - cc) einem Tragelement (8), welches innerhalb des Gehäuses (4) entlang einer Bearbeitungsstrecke zwischen einer Dokumenteinlege- und Startposition und einer Dokumententnahme- und Endposition längsverschieblich ist zum Verfahren des auf dem Tragelement (8) aufliegenden Dokuments (3) durch die genannte Eintrittsöffnung (5) zwischen den genannten Rollen (30,31) hindurch, 25 30
 - dd) Vorrichtungen (20) auf dem Tragelement (8) zum Anlegen und Positionieren des am Dokument (3) anliegenden Druckbuchstabenstempels (2) um Buchstaben auf das Dokument (3) zu drucken, während seiner Durchfahrt zwischen den genannten Rollenelementen (30,31) hindurch, 35
 - ee) Vorrichtungen zur Führung und Rückführung des Tragelements (8) und darauf des Dokuments (3) und des Druckstempels (2) entlang der Bearbeitungsstrecke, 40
 - ff) angetriebene Antriebselemente einschließlich eines Dokumentsensors (50) zur Ertastung des Vorhandenseins eines Dokuments (3) auf dem Tragelement (8) in einer Bereitschaftsstellung, um die Antriebsrolle (31) über die Dauer eines Druck-Arbeits-Zyklus des Tragelements (8) hinweg entlang der erwähnten Bearbeitungsstrecke anzutreiben, 45 50
 - gg) Manipulationseinrichtungen (55,56) um das Dokument (3) auf dem Tragelement (8) durch die genannte Austrittsöffnung (6) zu führen beim Erreichen der erwähnten Endposition und 55
 - hh) Vorrichtungen zur Rückführung des

Tragelements (8) in seine Startposition.







