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**UTILITY
PATENT APPLICATION
TRANSMITTAL**

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	2005-0303.02
First Inventor	David G. King
Title	Heater Chips With A Reduced Number of Bondpads
Express Mail Label No.	ED962465635US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ **Fee Transmittal Form** (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☐ **Applicant claims small entity status.**
See 37 CFR 1.27.
3. ☒ **Specification** [Total Pages 13]
Both the claims and abstract must start on a new page
(For information on the preferred arrangement, see MPEP 608.01(a))
4. ☒ **Drawing(s)** (35 U.S.C. 113) [Total Sheets 3]
5. **Oath or Declaration** [Total Sheets 2]
 - a. ☒ Newly executed (original or copy)
 - b. ☐ A copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
 - i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s)
name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or
Computer Program (Appendix)
☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
(if applicable, items a. - c. are required)
 - a. Computer Readable Form (CRF)
 - i. ☐ Computer Readable Form (CRF)
 - ii. ☐ Transfer Request (37 CFR 1.821(e))
 - b. Specification Sequence Listing on:
 - i. ☐ CD-ROM or CD-R (2 copies); or
 - ii. ☐ Paper
 - c. ☐ Statements verifying identity of above copies

ADDRESS TO: Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450**ACCOMPANYING APPLICATION PARTS**

9. ☒ **Assignment Papers** (cover sheet & document(s))
Name of Assignee Lexmark International, Inc.
10. ☐ **37 CFR 3.73(b) Statement** ☐ **Power of Attorney**
(when there is an assignee)
11. ☐ **English Translation Document** (if applicable)
12. ☒ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
☐ Copies of foreign patent documents,
publications, & other information
13. ☐ **Preliminary Amendment**
14. ☒ **Return Receipt Postcard** (MPEP 503)
(Should be specifically itemized)
15. ☐ **Certified Copy of Priority Document(s)**
(if foreign priority is claimed)
16. ☐ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i).
Applicant must attach form PTO/SB/35 or equivalent.
17. ☐ Other: _____

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____

Prior application information: Examiner _____ Art Unit: _____

19. CORRESPONDENCE ADDRESS☒ The address associated with Customer Number: 21972 OR ☐ Correspondence address below

Name			
Address			
City	State	Zip Code	
Country	Telephone	Email Address	

Signature	<u>Scott N. Barker</u>	Date	<u>9/29/05</u>
Name (Print/Type)	Scott N. Barker	Registration No. (Attorney/Agent)	<u>42,292</u>

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).**FEE TRANSMITTAL**
For FY 2005☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$) 1,040.00**Complete if Known**

Application Number	
Filing Date	
First Named Inventor	David G. King
Examiner Name	
Art Unit	
Attorney Docket No.	2005-0303.02

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____☒ Deposit Account Deposit Account Number: 12-1213 Deposit Account Name: Lexmark International, Inc.

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	1,000.00
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES**Fee Description**

Each claim over 20 (including Reissues)

Small Entity Fee (\$)

Fee (\$)

Each independent claim over 3 (including Reissues)

Fee (\$)

Multiple dependent claims

Fee (\$)

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
20 - 20 or HP = 0	x		0.00

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)
3 - 3 or HP = 0	x		0.00

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
16 - 100 = -84	/ 50 =	(round up to a whole number) x	250.00	0.00

4. OTHER FEE(S)

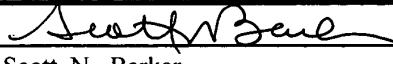
Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Recordation Fee

Fees Paid (\$)

40.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent)	42,292	Telephone	859-232-3668
Name (Print/Type)	Scott N. Barker	Date	9/29/05		

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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HEATER CHIPS WITH A REDUCED NUMBER OF BONDPADS

FIELD OF THE INVENTION

[0001] The present invention relates generally to heater chips in printheads, and more particularly, in one embodiment, heater chips having a reduced number of bondpads.

BACKGROUND OF THE INVENTION

[0002] A printhead is the device in printers, copiers, and multi-function products which sprays droplets of ink onto a sheet of paper. A number of printers, copiers, and multi-function products utilize heater chips in their printheads for discharging ink drops from one or more ink vias. Inkjet heater chips typically contain one or more ink vias as well as arrays of heaters located next to an ink via. The heaters provide thermal energy that causes the discharge of a droplet of ink. Chip bondpads are used to power the heaters by providing electric current to the heaters. Each chip bondpad usually has a corresponding tab circuit connection, tab trace, and electrical connection to the printing device.

[0003] The minimum number of bondpads required to power the heater arrays is determined by the amount of current required to fire the number of heaters simultaneously to achieve the desired performance in discharging ink droplets. Typically, in inkjet heater chips with one ink via, heater chip bondpads supply power only to heaters located on the same side of the ink via as the chip bondpads. Similarly, in inkjet heater chips containing multiple ink vias, a given bondpad supplies power to heaters on one side of the ink via or the other, but not both. Bondpads consume chip area. The on-chip routing of heater power from the bondpad to the heater arrays is also a contributing factor to overall chip size. The higher number of chip bondpads and power routes also increase the cost of the heater chip. Therefore, what is needed is a way to minimize the number of chip bondpads necessary to power the heater arrays on the chip.

BRIEF SUMMARY OF THE INVENTION

AO 1378955.1

[0004] According to an embodiment of the invention, there is disclosed a heater chip for use in a printing device. The heater chip includes an ink via. A first heater array is adjacent at least a portion of one side of the ink via, and a second heater array is adjacent at least a portion of another side of the ink via. The heater chip also includes a bondpad, where the bondpad supplies power to at least a portion of the first heater array and to at least a portion of the second heater array.

[0005] According to one aspect of the invention, the heater chip may also include a second bondpad that supplies power to another portion of the first heater array and to a another portion of the second heater array. According to another aspect of the invention, the bondpad may supply power to the first heater array and the second heater array portions by power traces physically separated proximal to the bondpad. Additionally, each of the first and second heater arrays may include at least 320 heaters. According to yet another aspect of the invention, the bondpad supplies power to the first heater array and the second heater array by at least one power trace. Additionally, the first heater array and the second heater array may include a plurality of thin film resistors. Further, the heater chip may include a second ink via, and a third heater array associated with the second ink via, where the bondpad also supplies power to the third heater array.

[0006] According to another embodiment of the invention, there is disclosed a heater chip for use in a printing device. The chip includes an ink via, a first heater array and a second heater array adjacent at least a portion of the ink via, where the ink via is positioned between the first heater array and the second heater array, and a bondpad having at least two traces stemming from the bondpad. At least one of the traces is operatively connected to the first heater array and at least another one of the traces is operatively connected to the second heater array.

[0007] According to one aspect of the invention, the first and second heater arrays include a plurality of thin film resistors. The plurality of thin film resistors may be formed, at least in part, from a material selected from the group of materials consisting of platinum, gold, silver, copper, or aluminum, tantalum, titanium tungsten,

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silicon-nitrogen, silicon carbide, or diamond-like carbon coating. According to another aspect of the invention, each of the first and second heater arrays may contain at least 320 heaters. According to yet another aspect of the invention, the bondpad and the at least two traces are capable of supplying eight simultaneous fires per heater array. Additionally, the first and second heater arrays may each comprise a top portion and a bottom portion, and the bondpad may be operatively connected to the top portion of the first heater array and the top portion of the second heater array.

[0008] According to yet another aspect of the invention, the heater chip may include a second bondpad operatively connected to the bottom portion of the first heater array and the bottom portion of the second heater array. The heater chip may also include another ink via disposed between a third heater array and a fourth heater array, and a second bondpad coupled to a trace that is operatively connected to the third heater array and to a trace that is operatively connected to the fourth heater array. The traces coupled to the second bondpad can be physically separated proximal to the second bondpad.

[0009] According to yet another embodiment of the invention, there is disclosed a heater chip. The heater chip includes at least eight heater arrays, where the at least eight heater arrays include four heater array pairs, and where the arrays in each of the heater array pairs are disposed substantially adjacent opposing sides of at least a portion of an ink via. The heater chip also includes a plurality of bondpads operatively connected to the at least eight heater arrays, where at least one of the plurality of bondpads is operatively connected to both heater arrays within one of the heater array pairs.

[0010] According to one aspect of the invention, each of the at least eight heater arrays include a plurality of thin film resistors. According to another aspect of the invention, each of the at least eight heater arrays include at least 320 heaters. According to yet another aspect of the invention, each of the at least eight heater arrays comprises a top portion and a bottom portion, and some of the plurality of bondpads are operatively connected to the top portion of one of the at least eight heater arrays and the top portion

of another one of the at least eight heater arrays. Additionally, some of the plurality of bondpads may be operatively connected to the bottom portion of one of the at least eight heater arrays and to the bottom portion of another one of the at least eight heater arrays.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S)

[0011] Having thus described the invention in general terms, reference will now be made to the accompanying drawings, which are not necessarily drawn to scale, and wherein:

FIG. 1 is a block diagram of the configuration of heater arrays and routing of the connections to bondpads on a heater chip with only one ink via as it exists in the prior art.

FIG. 2 is a block diagram of the configuration of heater arrays and routing of the connections to bondpads on heater chips with multiple ink vias as they exist in the prior art.

FIG. 3 shows a block diagram of the configuration of heater arrays and routing of the connections to bondpads on a heater chip with multiple ink vias in accordance with an illustrative embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0012] The present invention will now be described more fully hereinafter with reference to the accompanying figures, in which like numerals indicate like elements throughout the several drawings. Some, but not all embodiments of the invention are described. Indeed, these inventions may be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will satisfy applicable legal requirements.

[0013] An exemplary embodiment of the present invention is directed to a heater chip that includes heater power trace routes from a single bondpad to at least two different heater arrays located on both sides of an ink via. Specifically, the embodiment described herein minimizes the number of bondpads necessary to be fabricated on a

heater chip and saves a significant amount of heater chip space particularly in heater chips requiring a very high number of heater elements, such as two thousand or more.

[0014] FIG. 1 is an illustration of the configuration of heater arrays and routing of the connections to bondpads on a heater chip with only one ink via as it exists in the prior art. As illustrated in FIG. 1, four chip bondpads **102** are used to supply power to the heater arrays **106**. Each bondpad **102** requires a tab circuit connection, a tab trace (also referred to as a power trace or interconnection) **104**, and a connection to the printer head carrier. Power traces **104** and bondpads **102** are made of conductive material for the transfer of electric current to the heater arrays **106**. Electrical current is supplied to the bondpad **102** from its external electrical connection to the printhead. The current is transferred to the heater array **106** through the power trace **104**. The heater array **106** is an array of heaters which are heated as a result of being powered by the current received from the bondpad **102**. In an exemplary embodiment of the invention, each of these heater arrays **106** may include a plurality of individual heaters fabricated as resistors in the heater chips.

[0015] For example, these resistors may be thin-film resistors in accordance with an exemplary embodiment of the invention. These thin-film resistors (or “heater stacks”) may be formed of one or more materials, including platinum (Pt), gold (Au), silver (Ag), copper (Cu), aluminum (Al), tantalum (Ta), titanium tungsten (TiW), silicon-nitrogen (SiN), silicon carbide (SiC), diamond-like carbon (DLC) coating, etc. Other metals, alloys, or materials appreciable by one of ordinary skill in the art may also be used. The heaters may also be formed of other technologies besides thin-film resistors as known to those of ordinary skill in the art.

[0016] The heaters may also be referred to as thermal actuators. Further, the heater array **106** may be referred to as an actuator array. When the heaters in the heater arrays **106** are activated by the current provided from the bondpad **102**, the heaters provide thermal energy to a nozzle chamber that contains the heaters. The nozzle chamber is in fluid communication with the ink via **108**. Once the nozzle chamber is heated by the heaters, the ink via **108** discharges or “fires” a droplet of ink. Notably, in

the prior art configuration of FIG. 1, each bondpad **102** sends current through its respective power trace **104** only to the heater array **106** that is on the same side of the ink via **108** as the bondpad **102** itself.

[0017] Similarly, prior art heater chips that contain multiple vias on the same chip, as shown in FIG. 2, also configure heater chip bondpads to supply power only to heater arrays located on the same side of the ink via as the chip bondpads. FIG. 2 shows a traditional heater chip that includes three ink vias—a cyan ink via **202**, a magenta ink via **204**, and a yellow ink via **206**. As they exist in the prior art, the CMY (Cyan, Magenta, Yellow) color heater chip's bondpads supply power only to the heater array that is on the same side of the ink via as the bondpad itself. These conventional designs shown in FIGS. 1 and 2 are undesirable because chip bondpads consume chip area, as do the on-chip routing of power from the bondpads to the heater arrays.

[0018] In contrast, FIG. 3 shows a block diagram of the configuration of heater arrays and routing of the connections to bondpads on a heater chip with multiple ink vias in accordance with an illustrative embodiment of the present invention. As illustrated in FIG. 3, a CMYK (cyan-magenta-yellow-monochrome) heater chip includes four ink vias each disposed between two heater arrays. In particular, a cyan ink via **302** is positioned between a first heater array **304** and a second heater array **306**; a magenta ink via **308** is positioned between a first heater array **310** and a second heater array **312**; a yellow ink via **314** is positioned between a first heater array **316** and a second heater array **318**; and a monochrome (K) ink via **320** is positioned between a first heater array **322** and a second heater array **324**. In an alternative embodiment of the present invention, different ink colors may be associated with one or more of the ink vias. Such ink colors may include red, green, photo CMY, or other ink colors appreciable by one of ordinary skill in the art.

[0019] One of ordinary skill in the art will also recognize that fewer or more ink vias and corresponding heater arrays may be utilized as necessary. As an example, an additional monochrome (K) ink via may be disposed between two additional heater arrays to form a CMYKK heater chip. In addition, in other embodiments of the invention, perhaps only a portion of the ink vias may be disposed between two heater

arrays. For example, the monochrome ink via 320 may alternatively include only one monochrome heater array along a single side of the monochrome ink via 320. With the heater arrays positioned on both sides of at least a portion of the ink vias, the ink vias may provide smaller ink drops in order to achieve higher printing resolutions.

[0020] The heater arrays 304, 306, 310, 312, 316, 318, 322, and 324 illustrated in FIG. 3 may each contain a plurality of heaters. In an exemplary embodiment of the invention, at least a portion of the plurality of heaters within each heater array may be serially connected. One of ordinary skill in the art will also recognize that parallel connections may also be made with the heaters, depending on the desired routing characteristics of the heater arrays. In certain illustrative embodiments of the present invention, each of the heater arrays 304, 306, 310, 312, 316, 318, 322, and 324 may include an array of 320 heaters (for a total of 2560 heaters), although more or less heaters may be utilized in the heater arrays as necessary according to alternative embodiments of the present invention. In exemplary embodiments of the present invention, these 320 heaters may be grouped and/or addressed in blocks of 20 or 40 heaters each, although alternative groupings with varying numbers of heaters may also be utilized. In other embodiments, each of the heater arrays 304, 306, 310, 312, 316, 318, 322, and 324 may have varying numbers of heaters grouped in varying blocks. Many other variations to the heater arrays are readily apparent to one of ordinary skill in the art.

[0021] With the configuration of the heater arrays on each side of their corresponding ink via, as shown in the illustrative embodiment of FIG. 3, the amount of heaters needed to be fired simultaneously in each array has been reduced. Thus the amount of current needed to be supplied from the bondpads 328 to each heater array has been reduced to power the heater elements has also been reduced. Usually, bondpads are current limited to providing no more than approximately 1 Amp of current.

[0022] The minimum number of bondpads 328 required to power the heater arrays in the configuration of FIG. 3 is determined by the amount of current required to fire the maximum number of heaters simultaneously. In an exemplary embodiment of

the present invention, the bondpads 328 are limited to supplying eight simultaneous fires given commonly used heater resistances. For example, the configuration of FIG. 3 requires only 8 simultaneous fires per 320 heaters, rather than 16 simultaneous fires per 320 heaters (required in several prior art configurations). Thus, the number of bondpads 328 required to fire the required number of heaters simultaneously has been reduced to the point that one bondpad 328 can supply the power needs of an entire array of heaters, or alternatively, to a portion of one heater array and a portion of a second heater array.

[0023] Using one bondpad 328 to power an entire heater array would require the use of greater chip area to ensure adequate power balance across the array. To save space on the heater chip, a bondpad 328 may be configured to supply power to the portions of two or more different arrays of heaters. For example, a bondpad may be configured to supply current to the top or bottom halves of two different heater arrays through the use of multiple power traces stemming from that bondpad. This configuration maintains the maximum current allowable for each bondpad, while minimizing the chip area needed for power balancing. By employing such a configuration, a single bondpad 328 supplies power not only to heaters in multiple heater arrays, but also to heaters on both sides of an ink via. For example, as shown in FIG. 3, employing this configuration with two power traces 326 stemming from a single bondpad 328 reduces the number of bondpads needed to power all the arrays from 16 to 10.

[0024] In an alternative embodiment of the present invention the number of bondpads may be reduced even further. For example, each bondpad 328 may have two power traces stemming from it, which would reduce the number of bondpads 328 in FIG. 3 from 10 to eight. In alternative embodiments, the bondpads may have more than two traces stemming from each of them supplying power to two or more heater arrays. This would drop the number of bondpads required even further, though such embodiments may have a direct impact on the efficiency and effectiveness of the ink via operation.

[0025] Further, as shown in the exemplary embodiment of FIG. 3, the power traces 326 are physically separated as they meet the bondpad 328. As is shown, it may be advantageous to utilize two separate power traces 326 from a single bondpad 328 to efficiently balance the series resistance of the power traces 326. This ensures adequate power balancing to the heater arrays. Additionally, the on-chip routing of power traces 326 from a single bondpad 328 may also be positioned close together, and more closely than conventional power traces stemming from different bondpads. Although not illustrated, it should also be appreciated that a single power trace may extend from the bondpad 328, and then branch into two or more traces that extend to respective heater arrays. The on-chip routing shown and described with reference to FIG. 3 may be implemented in many other heater chip configurations containing any number of ink vias. Further, it is appreciated that in alternative embodiments a bondpad may have multiple (more than two) power traces stemming from its tab circuit connection which provide current to several heater arrays located on the heater chip.

[0026] Many modifications and other embodiments of the inventions set forth herein will come to mind to one skilled in the art to which these inventions pertain having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is to be understood that the inventions are not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation.

THAT WHICH IS CLAIMED:

1. A heater chip for use in a printing device, comprising:
 - an ink via;
 - a first heater array adjacent at least a portion of one side of the ink via;
 - a second heater array adjacent at least a portion of another side of the ink via; and
 - a bondpad, wherein the bondpad supplies power to at least a portion of the first heater array and to at least a portion of the second heater array.
2. The heater chip of claim 1, further comprising a second bondpad, wherein the second bondpad supplies power to another portion of the first heater array and to another portion of the second heater array.
3. The heater chip of claim 1, wherein the bondpad supplies power to the first heater array and the second heater array portions by power traces physically separated proximal to the bondpad.
4. The heater chip of claim 1, wherein each of the first and second heater arrays comprise at least 320 heaters.
5. The heater chip of claim 1, wherein the bondpad supplies power to the first heater array and the second heater array by at least one power trace.
6. The heater chip of claim 1, wherein the first heater array and the second heater array each include a plurality of thin film resistors.
7. The heater chip of claim 1, further comprising a second ink via, and a third heater array associated with the second ink via, and wherein the bondpad supplies power to the third heater array.
8. A heater chip for use in a printing device, comprising

an ink via;
a first heater array and a second heater array adjacent at least a portion of the ink via, wherein the ink via is positioned between the first heater array and the second heater array; and
a bondpad having at least two traces stemming from the bondpad, wherein at least one of the traces is operatively connected to the first heater array and at least another one of the traces is operatively connected to the second heater array.

9. The heater chip of claim 8, wherein the at least two traces are physically separated proximal to the bondpad.

10. The heater chip of claim 8, wherein the first and second heater arrays include a plurality of thin film resistors formed, at least in part, from a material selected from the group of materials consisting of platinum, gold, silver, copper, aluminum, tantalum, titanium tungsten, silicon-nitrogen, silicon carbide, and diamond-like carbon.

11. The heater chip of claim 8, wherein each of the first and second heater arrays contain at least 320 heaters.

12. The heater chip of claim 11, wherein the bondpad and the at least two traces are capable of supplying eight simultaneous fires per heater array.

13. The heater chip of claim 8, wherein the first and second heater arrays each comprise a top portion and a bottom portion, and wherein the bondpad is operatively connected to the top portion of the first heater array and the top portion of the second heater array.

14. The heater chip of claim 13, further comprising a second bondpad operatively connected to the bottom portion of the first heater array and the bottom portion of the second heater array.

15. The heater chip of claim 8, further comprising:

another ink via disposed between a third heater array and a fourth heater array; and

a second bondpad coupled to a trace that is operatively connected to the third heater array and to a trace that is operatively connected to the fourth heater array,

wherein the traces coupled to the second bondpad are physically separated proximal to the second bondpad.

16. A heater chip comprising:

at least eight heater arrays, wherein the at least eight heater arrays comprise four heater array pairs, and wherein the arrays in each of the heater array pairs are disposed substantially adjacent opposing sides of at least a portion of an ink via; and

a plurality of bondpads operatively connected to the at least eight heater arrays, wherein at least one of the plurality of bondpads is operatively connected to both heater arrays within one of the heater array pairs.

17. The chip of claim 16, wherein each of the at least eight heater arrays comprises a plurality of thin film resistors.

18. The chip of claim 16, wherein each of the at least eight heater arrays comprises at least 320 heaters.

19. The chip of claim 16, wherein each of the at least eight heater arrays comprises a top portion and a bottom portion, and wherein some of the plurality of bondpads are operatively connected to the top portion of one of the at least eight heater arrays and the top portion of another one of the at least eight heater arrays.

20. The chip claim 19, wherein some of the plurality of bondpads are operatively connected to the bottom portion of one of the at least eight heater arrays and to the bottom portion of another one of the at least eight heater arrays.

HEATER CHIPS WITH A REDUCED NUMBER OF BONDPADS

ABSTRACT OF THE DISCLOSURE

Heater chips for use in printing devices, such as those including one or more ink vias and one or more heater arrays, where at least a portion of at least one the ink vias is associated with at least portions of at least two heater arrays. The first heater array can be adjacent to one side of at least a portion of the ink via and a second heater array can be adjacent to another side of at least a portion of the ink via. The heater chip can also include a bondpad supplying power to at least a portion of the first heater array and to at least a portion of the second heater array.

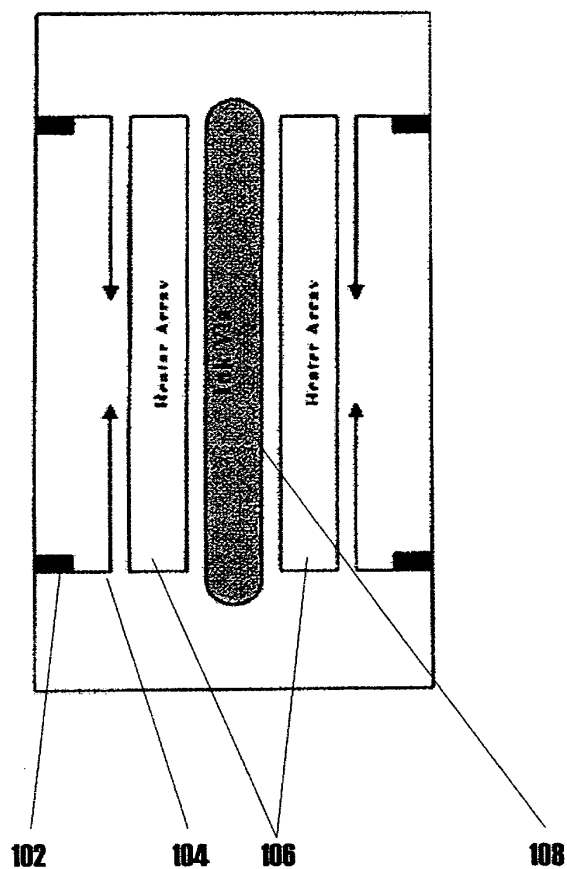


FIG. 1 (Prior Art)

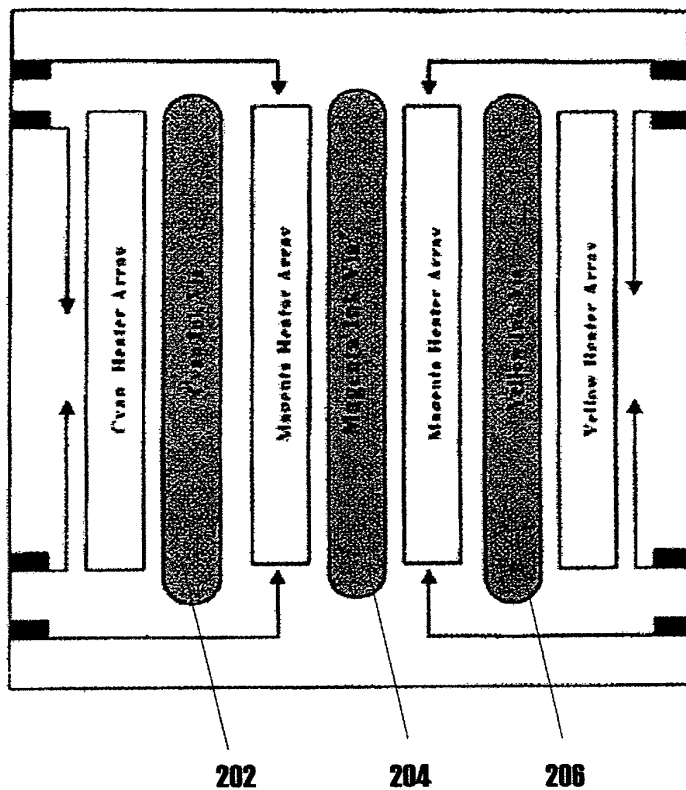


FIG. 2 (Prior Art)

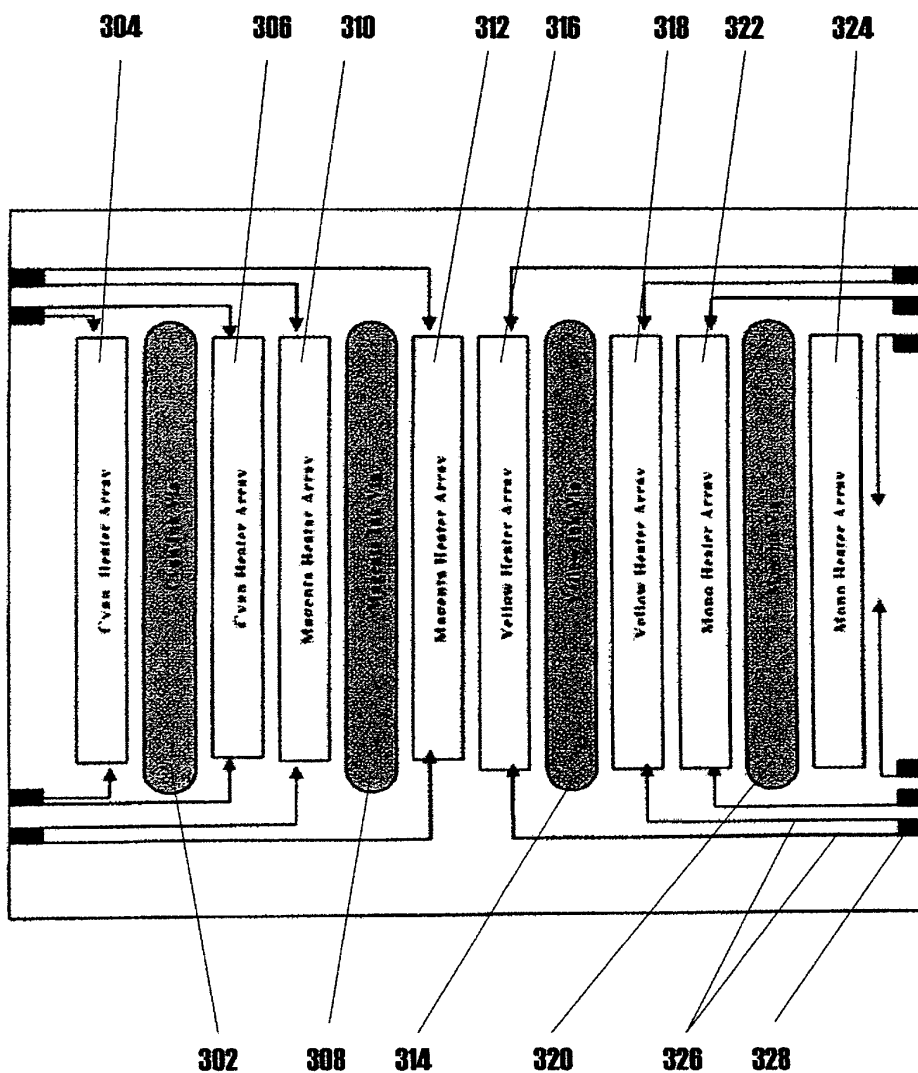


FIG. 3

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)	☒ Declaration Submitted With Initial Filing	OR	☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)	Attorney Docket Number	2005-0303.02
				First Named Inventor	David G. King
				<i>COMPLETE IF KNOWN</i>	
				Application Number	
				Filing Date	
				Art Unit	
			Examiner Name		

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Heater Chips With A Reduced Number of Bondpads

(Title of the Invention)

the specification of which

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT International

Application Number and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

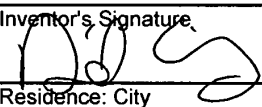
[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance completing the form, call 1-800-PTO-9199 and select option 2.

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DECLARATION — Utility or Design Patent Application

Direct all correspondence to:		☒ The address associated with Customer Number:	21972		OR	☐ Correspondence address below
Name						
Address						
City			State		ZIP	
Country		Telephone		Email		
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.						
NAME OF SOLE OR FIRST INVENTOR:				☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle [if any]) David G.				Family Name or Surname King		
Inventor's Signature 					Date 9/29/05	
Residence: City Shelbyville		State KY		Country		Citizenship U.S.
Mailing Address 66 Goldenrod Ct.						
City Shelbyville		State KY		Zip 40065		Country U.S.A.
NAME OF SECOND INVENTOR:				☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle [if any])				Family Name or Surname		
Inventor's Signature					Date	
Residence: City		State		Country		Citizenship
Mailing Address						
City		State		Zip		Country
☐ Additional inventors or a legal representative are being named on the _____ supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.						

[Page 2 of 2]

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Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number	
Filing Date	
First Named Inventor	David G. King
Art Unit	
Examiner Name	
Attorney Docket Number	2005-0303.02

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 6890064	05/10/2005	Torgerson et al.	
		US- 6488363	12/03/2002	Torgerson et al.	
		US- 6398347	06/04/2002	Torgerson et al.	
		US- 6386674	05/14/2002	Corrigan, III et al.	
		US- 6260952	07/17/2001	Fein et al.	
		US- 5812162	09/22/1998	Silverbrook	
		US- 5731828	03/24/1998	Ishinaga et al.	
		US- 5646660	07/01/1997	Murray	
		US- 5594488	01/14/1997	Tsushima et al.	
		US-			
		US-			
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		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ Number ⁴ Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875 Effective December 8, 2004

Application or Docket Number

11241079

APPLICATION AS FILED – PART I

(Column 1)		(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)		RATE (\$)	FEE (\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	150.00		N/A	300.00
SEARCH FEE (37 CFR 1.16(h), (i), or (m))	N/A	N/A	N/A	\$250		N/A	\$500
EXAMINATION FEE (37 CFR 1.16(d), (e), or (k))	N/A	N/A	N/A	\$100		N/A	\$200
TOTAL CLAIMS (37 CFR 1.16(j))	20 minus 20 =		X\$ 25 =		OR	X\$50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(n))	3 minus 3 =		X100 =			X200 =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			+180=			+360=	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1600

APPLICATION AS AMENDED – PART II

(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)
Total (37 CFR 1.16(j))	Minus	**	=	X\$ 25 =		OR	X\$50 =	
Independent (37 CFR 1.16(n))	Minus	***	=	X100 =		OR	X200 =	
Application Size Fee (37 CFR 1.16(s))						OR		
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))				+180=		OR	+360=	
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)
Total (37 CFR 1.16(j))	Minus	**	=	X\$ 25 =		OR	X\$50 =	
Independent (37 CFR 1.16(n))	Minus	***	=	X100 =		OR	X200 =	
Application Size Fee (37 CFR 1.16(s))						OR		
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))				+180=		OR	+360=	
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1460, Alexandria, VA 22313-1460.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PATENT APPLICATION SERIAL NO _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

10/05/2005 JBALINAN 00000076 121213 11241079

01 FC:1011	300.00 DA
02 FC:1111	500.00 DA
03 FC:1311	200.00 DA

PTO-1556
(5/87)

U.S. Government Printing Office: 2002 — 496-267/99033

093005



20427

U.S. PTO

PTO/SB/05 (05-05)

Approved for use through 07/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office. U.S. DEPARTMENT OF COMMERCE

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**UTILITY
PATENT APPLICATION
TRANSMITTAL**

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	2005-0303.02
First Inventor	David G. King
Title	Heater Chips With A Reduced Number of Bondpads
Express Mail Label No.	ED962465635US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ **Fee Transmittal Form** (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☐ **Applicant claims small entity status.**
See 37 CFR 1.27.
3. ☒ **Specification** [Total Pages 13]
Both the claims and abstract must start on a new page
(For information on the preferred arrangement, see MPEP 608.01(a))
4. ☒ **Drawing(s)** (35 U.S.C. 113) [Total Sheets 3]
5. **Oath or Declaration** [Total Sheets 2]
 - a. ☒ Newly executed (original or copy)
 - b. ☐ A copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
 - i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s)
name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or
Computer Program (Appendix)
☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
(if applicable, items a. - c. are required)
 - a. Computer Readable Form (CRF)
 - i. ☐ Computer Readable Form (CRF)
 - ii. ☐ Transfer Request (37 CFR 1.821(e))
 - b. Specification Sequence Listing on:
 - i. ☐ CD-ROM or CD-R (2 copies); or
 - ii. ☐ Paper
 - c. ☐ Statements verifying identity of above copies

ADDRESS TO: Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450**ACCOMPANYING APPLICATION PARTS**

9. ☒ **Assignment Papers** (cover sheet & document(s))
Name of Assignee Lexmark International, Inc.
10. ☐ **37 CFR 3.73(b) Statement** ☐ **Power of Attorney**
(when there is an assignee)
11. ☐ **English Translation Document** (if applicable)
12. ☒ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
☐ Copies of foreign patent documents,
publications, & other information
13. ☐ **Preliminary Amendment**
14. ☒ **Return Receipt Postcard** (MPEP 503)
(Should be specifically itemized)
15. ☐ **Certified Copy of Priority Document(s)**
(if foreign priority is claimed)
16. ☐ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i).
Applicant must attach form PTO/SB/35 or equivalent.
17. ☐ Other: _____

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____

Prior application information: Examiner _____ Art Unit: _____

19. CORRESPONDENCE ADDRESS☒ The address associated with Customer Number: 21972 OR ☐ Correspondence address below

Name				
Address				
City	State	Zip Code		
Country	Telephone	Email Address		

Signature		Date	<u>9/29/05</u>
Name (Print/Type)	Scott N. Barker	Registration No. (Attorney/Agent)	<u>42,292</u>

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).**FEE TRANSMITTAL**
For FY 2005☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$) 1,040.00**Complete if Known**

Application Number	
Filing Date	
First Named Inventor	David G. King
Examiner Name	
Art Unit	
Attorney Docket No.	2005-0303.02

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 12-1213 Deposit Account Name: Lexmark International, Inc.

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	1,000.00
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES**Fee Description**

Each claim over 20 (including Reissues) _____

Each independent claim over 3 (including Reissues) _____

Multiple dependent claims _____

	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50
Each independent claim over 3 (including Reissues)	200
Multiple dependent claims	360

Total Claims _____ **Extra Claims** _____ **Fee (\$)** _____ **Fee Paid (\$)** _____

20 - 20 or HP = 0 x _____ = 0.00

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims _____ **Extra Claims** _____ **Fee (\$)** _____ **Fee Paid (\$)** _____

3 - 3 or HP = 0 x _____ = 0.00

HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets _____ **Extra Sheets** _____ **Number of each additional 50 or fraction thereof** _____ **Fee (\$)** _____ **Fee Paid (\$)** _____

16 - 100 = -84 / 50 = _____ (round up to a whole number) x 250.00 = 0.00

4. OTHER FEE(S)

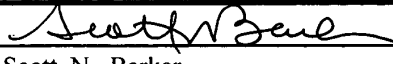
Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Recordation Fee

Fees Paid (\$)

40.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent)	42,292	Telephone	859-232-3668
Name (Print/Type)	Scott N. Barker	Date	9/29/05		

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/241,079	09/30/2005	David G. King	2005-0303.02

21972
LEXMARK INTERNATIONAL, INC.
INTELLECTUAL PROPERTY LAW DEPARTMENT
740 WEST NEW CIRCLE ROAD
BLDG. 082-1
LEXINGTON, KY 40550-0999

CONFIRMATION NO. 7417
FORMALITIES
LETTER

Date Mailed: 10/24/2005

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

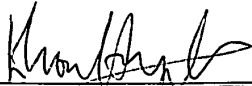
The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
 - The drawings submitted to the Office are not electronically reproducible. Drawing sheets must be submitted on paper, which is flexible, strong, white, smooth, non-shiny, and durable (see 37 CFR 1.84(e)). See Figure(s) 1-3.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

*A copy of this notice **MUST** be returned with the reply.*



Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199, or 1-800-972-6382
PART 3 - OFFICE COPY



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/241,079	09/30/2005	David G. King	2005-0303.02

CONFIRMATION NO. 7417

FORMALITIES
LETTER

21972
LEXMARK INTERNATIONAL, INC.
INTELLECTUAL PROPERTY LAW DEPARTMENT
740 WEST NEW CIRCLE ROAD
BLDG. 082-1
LEXINGTON, KY 40550-0999

Date Mailed: 10/24/2005

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

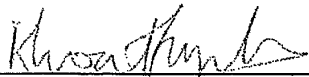
The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
 - The drawings submitted to the Office are not electronically reproducible. Drawing sheets must be submitted on paper, which is flexible, strong, white, smooth, non-shiny, and durable (see 37 CFR 1.84(e)). See Figure(s) 1-3.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

*A copy of this notice **MUST** be returned with the reply.*



Office of Initial Patent Examination (571)-272-4000, or 1-800-PTO-9199, or 1-800-972-6382
PART 2 - COPY TO BE RETURNED WITH RESPONSE



PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

King

Serial No.: **11/241,079**

Filed: **September 30, 2005**

For: **Heater Chips with a Reduced Number of
Bondpads**

Art Unit: **Not Yet Assigned**

Examiner: **Not Yet Assigned**

RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

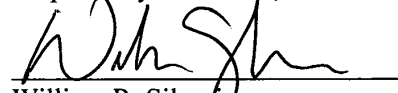
Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

Sir:

Responsive to the Notice to File Corrected Application Papers mailed October 24, 2005, Applicants hereby respectfully submits three (3) sheets of replacement drawings, labeled FIG. 1 through FIG. 3.

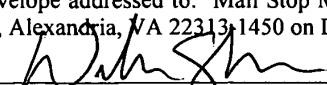
Applicants respectfully submit that the replacement drawings are in compliance with 37 C.F.R. §§ 1.84(e). If there are any issues that can be resolved by a telephone conference or an Examiner's amendment, the Examiner is invited to call the undersigned attorney at (404) 853-8214.

Respectfully submitted,


William R. Silverio
Reg. No. 45,383

SUTHERLAND ASBILL & BRENNAN, LLP
999 Peachtree Street
Atlanta, Georgia 30309
(404) 853-8000
SAB Docket: 19403-0050

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on December 7, 2005.


William R. Silverio

AO 1409209.1



Docket No.: 2005-0303.02
Inventor: David G. King
No. of Sheets: 1 of 3
Attorney: Scott N. Barker
-Replacement Drawing Sheet-

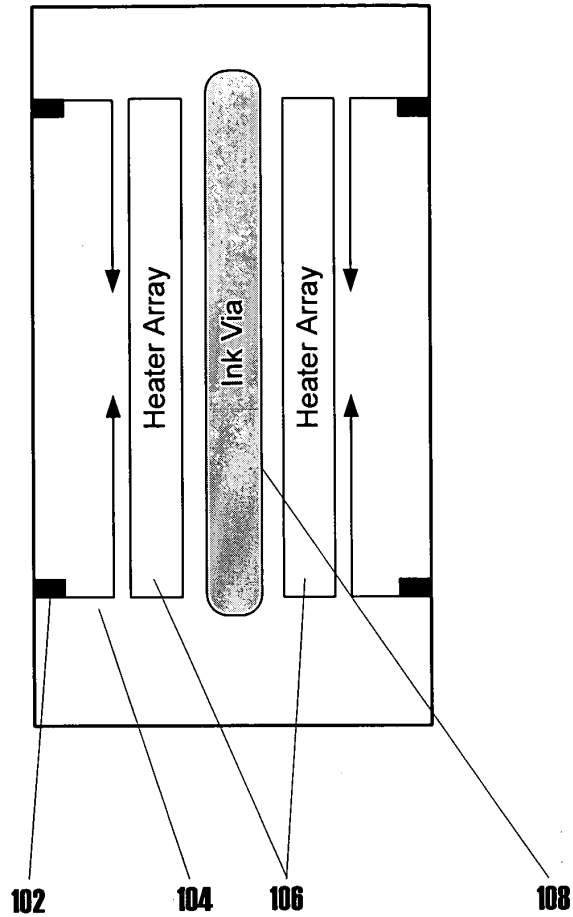


FIG. 1 [Prior Art]

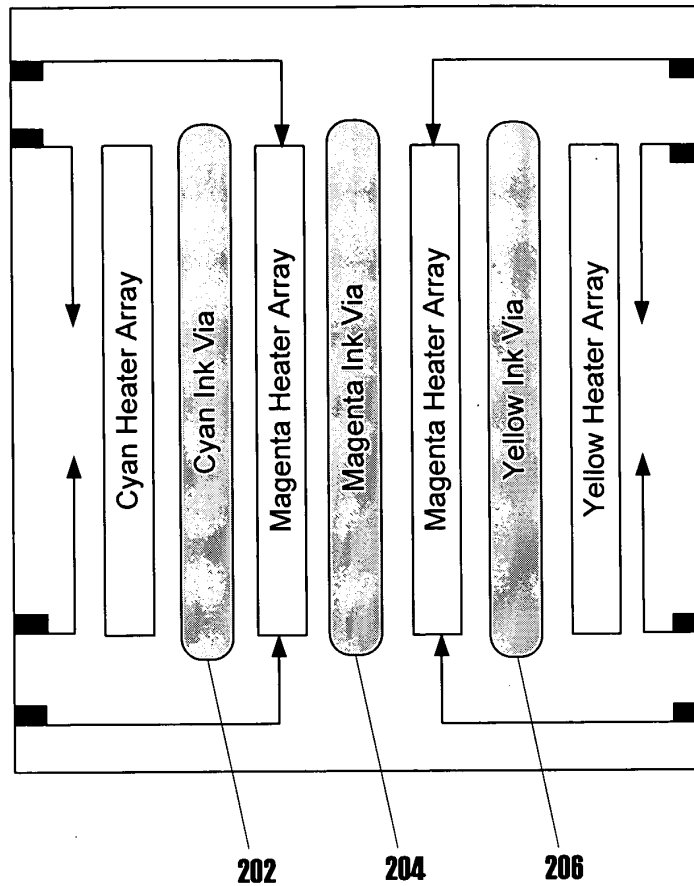


FIG. 2 [Prior Art]

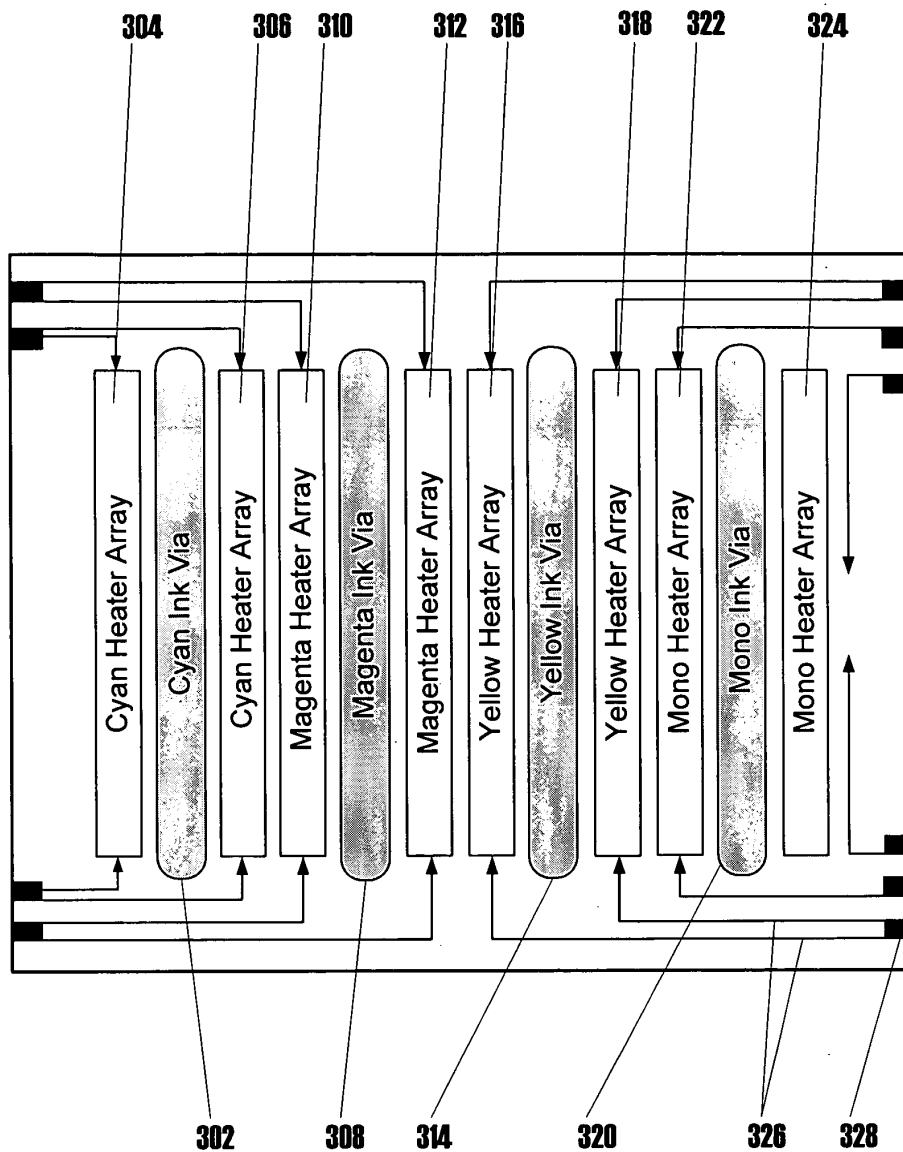


FIG. 3



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/241,079	09/30/2005	David G. King	19403-0050

CONFIRMATION NO. 7417

21972
LEXMARK INTERNATIONAL, INC.
INTELLECTUAL PROPERTY LAW DEPARTMENT
740 WEST NEW CIRCLE ROAD
BLDG. 082-1
LEXINGTON, KY40550-0999

Title: Heater chips with a reduced number of bondpads

Publication No. US-2007-0076057-A1

Publication Date: 04/05/2007

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publicly available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 703-305-3028.

Pre-Grant Publication Division, 703-605-4283

11/241,079

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	431669	(pad or contact) with (minimiz\$3 or minimum or reduc\$4)	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B
2	BRS	L2	3770	1 and "347"/\$.ccls.	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B
3	BRS	L3	64	1 and "347"/20.ccls.	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B
4	BRS	L4	210	1 and "347"/56-59.ccls.	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B

11/24/07

	Time Stamp	Comments	Error Definition	Errors
1	2007/08/16 09:19			
2	2007/08/16 09:20			
3	2007/08/16 09:22			
4	2007/08/16 11:01			

11/24/079

	Type	L #	Hits	Search Text	DBs
5	BRS	L5	268	1 and "347"/61-65.ccls.	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B
6	BRS	L6	12	1 and "347"/67.ccls.	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B
7	BRS	L7	499976	(wafer or chip or substrate) with (less or minimiz\$3 or reduc\$4)	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B
8	BRS	L8	630519	(wafer or chip or substrate) with (less or minimiz\$3 or reduc\$4 or small\$3)	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B

11/24/07

	Time Stamp	Comments	Error Definition	Errors
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6	2007/08/16 10:26			
7	2007/08/16 10:27			
8	2007/08/16 10:29			

11/24/079

	Type	L #	Hits	Search Text	DBs
9	BRS	L9	320	8 and 347/20.ccls.	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B
10	BRS	L10	95784	8 with (pad or contact or trace or electrode)	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B
11	BRS	L11	42	10 and 347/20.ccls.	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B
12	BRS	L12	141	10 and 347/56-59.ccls.	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B
13	IS&R	L13	1012	((347/20) or (347/56) or (347/57)).CCLS.	USPAT
14	IS&R	L14	483	((347/58) or (347/59) or (347/61)).CCLS.	USPAT

8/16/2007, EAST Version: 2.1.0.14

11/291,079

	Time Stamp	Comments	Error Definition	Errors
9	2007/08/16 10:29			
10	2007/08/16 10:30			
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13	2007/08/16 11:01			
14	2007/08/16 11:02			

11/24,079

	Type	L #	Hits	Search Text	DBs
15	IS&R	L15	1310	((347/62) or (347/63) or (347/54)).CCLS.	USPAT
16	IS&R	L16	992	((347/64) or (347/65) or (347/67)).CCLS.	USPAT

11/24,079

	Time Stamp	Comments	Error Definition	Errors
15	2007/08/16 11:02			
16	2007/08/16 11:02			

11/24/07

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	348424	(substrate or wafer) with (reduct\$3 or small\$3 or minimiz\$5 or conserv\$2 or minimal or less)	US-PGPUB; USPAT; JPO; DERWEN T; IBM_TDB
2	BRS	L2	5087	1 and "347"/\$.ccls.	US-PGPUB; USPAT; JPO; DERWEN T; IBM_TDB
3	BRS	L3	157	1 and "347"/20.ccls.	US-PGPUB; USPAT; JPO; DERWEN T; IBM_TDB
4	BRS	L4	106	1 and "347"/50.ccls.	US-PGPUB; USPAT; JPO; DERWEN T; IBM_TDB
5	BRS	L5	457610	(tab or pad or bond or trace or connection or bondpads) with (reduc\$4 or less\$2 or minimal or minimum or minimization or minimize or smaller)	US-PGPUB; USPAT; JPO; DERWEN T; IBM_TDB

11/24/07

	Time Stamp	Comments	Error Definition	Errors
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3	2007/08/19 13:37			
4	2007/08/19 13:47			
5	2007/08/19 13:49			

11/241,079

	Type	L #	Hits	Search Text	DBs
6	BRS	L6	195	5 and 347/50.ccls.	US- PGPUB; USPAT; JPO; DERWEN T; IBM_TD B
7	IS&R	L7	668	(347/50).CCLS.	US- PGPUB; USPAT; EPO; JPO; DERWEN T; IBM_TD B

11/241,079

	Time Stamp	Comments	Error Definition	Errors
6	2007/08/19 14:04			
7	2007/08/19 14:04			



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UNITED STATES DEPARTMENT OF COMMERCE
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NOTICE OF ALLOWANCE AND FEE(S) DUE

21972 7590 08/28/2007

LEXMARK INTERNATIONAL, INC.
INTELLECTUAL PROPERTY LAW DEPARTMENT
740 WEST NEW CIRCLE ROAD
BLDG. 082-1
LEXINGTON, KY 40550-0999

EXAMINER

STEPHENS, JUANITA DIONNE

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 08/28/2007

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/241,079	09/30/2005	David G. King	19403-0050	7417
TITLE OF INVENTION: HEATER CHIPS WITH A REDUCED NUMBER OF BONDPADS				

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$0	\$1700	11/28/2007

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
- B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
- B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

21972 7590 08/28/2007

LEXMARK INTERNATIONAL, INC.
 INTELLECTUAL PROPERTY LAW DEPARTMENT
 740 WEST NEW CIRCLE ROAD
 BLDG. 082-1
 LEXINGTON, KY 40550-0999

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/241,079	09/30/2005	David G. King	19403-0050	7417

TITLE OF INVENTION: HEATER CHIPS WITH A REDUCED NUMBER OF BONDPADS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$0	\$1700	11/28/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
STEPHENS, JUANITA DIONNE	2853	347-058000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list
 (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/241,079	09/30/2005	David G. King	19403-0050	7417
21972	7590	08/28/2007	EXAMINER	
LEXMARK INTERNATIONAL, INC. INTELLECTUAL PROPERTY LAW DEPARTMENT 740 WEST NEW CIRCLE ROAD BLDG. 082-1 LEXINGTON, KY 40550-0999			STEPHENS, JUANITA DIONNE	
			ART UNIT	PAPER NUMBER
			2853	
			DATE MAILED: 08/28/2007	

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 271 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 271 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

JS

Notice of Allowability	Application No.	Applicant(s)	
	11/241,079	KING, DAVID G.	
	Examiner	Art Unit	
	Juanita D. Stephens	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Application filed 9/30/2005.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. ☒ Notice of References Cited (PTO-892) | 5. ☐ Notice of Informal Patent Application |
| 2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>9/30/2005</u> | 7. ☐ Examiner's Amendment/Comment |
| 4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. ☒ Examiner's Statement of Reasons for Allowance |
| | 9. ☐ Other _____ |

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-20 are allowed.
2. The following is an examiner's statement of reasons for allowance:

The prior art does not teach, suggest, or render obvious the combination of a first heater array adjacent at least one portion of one side of the ink via, a second heater array adjacent at least portion of another side of the ink via and a bondpad, wherein the bondpad supplies power to at least a portion of the first heater array and to at least a portion of the second heater array, recited in claim 1. This invention solves the problem of minimizing the number of chip bondpads necessary to power the heater arrays on the chip and ensuring adequate power balancing to the heater arrays.

The prior art does not teach, suggest, or render obvious the combination of a first heater array and a second heater array adjacent at least one portion of the ink via, wherein the ink via is positioned between the first heater array and the second heater array and a bondpad having at least two traces stemming from the bondpad, wherein at least one of the traces is operatively connected to the first heater array and at least another one of the traces is operatively connected to the second heater array, recited in claim 8. This invention solves the problem of minimizing the number of chip bondpads necessary to power the heater arrays on the chip and ensuring adequate power balancing to the heater arrays.

The prior art does not teach, suggest, or render obvious the combination of at least eight heater arrays, wherein the arrays in each of the heater array pairs are

disposed substantially adjacent opposing sides of at least a portion of an ink via, and a plurality of bondpad operatively connected to the at least eight heater arrays, wherein at least one of the plurality of bondpads is operatively connected to both heater arrays within one of the heater array pairs, recited in claim 16. This invention solves the problem of minimizing the number of chip bondpads necessary to power the heater arrays on the chip and ensuring adequate power balancing to the heater arrays.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art of Drake et al. (US 5,030,971) at least teaches a printhead (Figure 3) having a plurality of heater arrays provided along the side of the corresponding slot, wherein a plurality of driver matrices correspond to the heater arrays for the purpose of reducing the number of contact pads required for a given number of heating elements, **but does not disclose** a first heater array adjacent at least one portion of one side of the ink via, a second heater array adjacent at least portion of another side of the ink via and a bondpad, wherein the bondpad supplies power to at least a portion of the first heater array and to at least a portion of the second heater array, or a bondpad having at least two traces stemming from the bondpad, wherein at least one of the traces is

operatively connected to the first heater array and at least another one of the traces is operatively connected to the second heater array, or at least eight heater arrays, wherein the arrays in each of the heater array pairs are disposed substantially adjacent opposing sides of at least a portion of an ink via, and a plurality of bondpad operatively connected to the at least eight heater arrays, wherein at least one of the plurality of bondpads is operatively connected to both heater arrays within on of the heater array pairs.

The prior art of Komuro (US 6,409,315 B2) at least teaches a printhead (Figure 6) having a first heater array adjacent at least one portion of one side of the ink via, a second heater array adjacent at least portion of another side of the ink via and pads, **but does not disclose** a first heater array adjacent at least one portion of one side of the ink via, a second heater array adjacent at least portion of another side of the ink via and a bondpad, wherein the bondpad supplies power to at least a portion of the first heater array and to at least a portion of the second heater array, or a bondpad having at least two traces stemming from the bondpad, wherein at least one of the traces is operatively connected to the first heater array and at least another one of the traces is operatively connected to the second heater array, or at least eight heater arrays, wherein the arrays in each of the heater array pairs are disposed substantially adjacent opposing sides of at least a portion of an ink via, and a plurality of bondpad operatively connected to the at least eight heater arrays, wherein at least one of the plurality of bondpads is operatively connected to both heater arrays within on of the heater array pairs.

The prior art of Conta et al. (US 7,008,047 B2) discloses at least teaches a printhead (Figure 1) having a first heater array adjacent at least one portion of one side of the ink via, a second heater array adjacent at least portion of another side of the ink via and pads, **but does not disclose** a first heater array adjacent at least one portion of one side of the ink via, a second heater array adjacent at least portion of another side of the ink via and a bondpad, wherein the bondpad supplies power to at least a portion of the first heater array and to at least a portion of the second heater array, or a bondpad having at least two traces stemming from the bondpad, wherein at least one of the traces is operatively connected to the first heater array and at least another one of the traces is operatively connected to the second heater array, or at least eight heater arrays, wherein the arrays in each of the heater array pairs are disposed substantially adjacent opposiding sides of at least a portion of an ink via, and a plurality of bondpad operatively connected to the at least eight heater arrays, wherein at least one of the plurality of bondpads is operatively connected to both heater arrays within on of the heater array pairs.

The prior art of Anderson et al. (US 6,357,863 B1) discloses at least teaches a printhead (Figure 2) having a first heater array adjacent at least one portion of one side of the ink via, a second heater array adjacent at least portion of another side of the ink via and I/O pads, **but does not disclose** a first heater array adjacent at least one portion of one side of the ink via, a second heater array adjacent at least portion of another side of the ink via and a bondpad, wherein the bondpad supplies power to at least a portion of the first heater array and to at least a portion of the second heater

array, or a bondpad having at least two traces stemming from the bondpad, wherein at least one of the traces is operatively connected to the first heater array and at least another one of the traces is operatively connected to the second heater array, or at least eight heater arrays, wherein the arrays in each of the heater array pairs are disposed substantially adjacent opposiding sides of at least a portion of an ink via, and a plurality of bondpad operatively connected to the at least eight heater arrays, wherein at least one of the plurality of bondpads is operatively connected to both heater arrays within on of the heater array pairs.

Contact Information

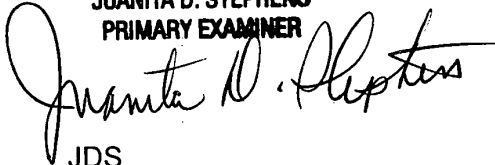
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juanita D. Stephens whose telephone number is (571) 272-2153. The examiner can normally be reached on Flex (Monday-Thursday 9:00 am -6:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2853

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JUANITA D. STEPHENS
PRIMARY EXAMINER



JDS
August 19, 2007

Juanita D. Stephens
Primary Examiner
Art Unit 2853

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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet	1	of	
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Complete if Known

Application Number	11/241,075
Filing Date	9/30/2007
First Named Inventor	David G. King
Art Unit	2853
Examiner Name	/Juanita Stephens/ (08/19/2007)
Attorney Docket Number	2005-0303.02

U. S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

[illegible]

Examiner Signature	/Juanita Stephens/ (08/19/2007)	Date Considered	08/19/2007
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Notice of References Cited	Application/Control No. 11/241,079	Applicant(s)/Patent Under Reexamination KING, DAVID G.	
	Examiner Juanita D. Stephens	Art Unit 2853	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,030,971	07-1991	Drake et al.	347/57
*	B	US-6,409,315 B2	06-2002	Komuro, Hirokazu	347/58
*	C	US-7,008,047 B2	03-2006	Conta et al.	347/58
*	D	US-6,357,863 B1	03-2002	Anderson et al.	347/58
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
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	Q					
	R					
	S					
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CONFIRMATION NO. 7417

SERIAL NUMBER 11/241,079	FILING or 371(c) DATE 09/30/2005 RULE	CLASS 347	GROUP ART UNIT 2853	ATTORNEY DOCKET NO. 19403-0050		
APPLICANTS David G. King, Shelbyville, KY; ** CONTINUING DATA ***** <i>none</i> ** FOREIGN APPLICATIONS ***** <i>none</i> ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 10/20/2005						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☐ No Verified and /JUANITA DIONNE STEPHENS/ Acknowledged Examiner's Signature		☐ Met after Allowance JDS Initials	STATE OR COUNTRY KY	SHEETS DRAWINGS 3	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 3
ADDRESS LEXMARK INTERNATIONAL, INC. INTELLECTUAL PROPERTY LAW DEPARTMENT 740 WEST NEW CIRCLE ROAD BLDG. 082-1 LEXINGTON, KY 40550-0999 UNITED STATES						
TITLE Heater chips with a reduced number of bondpads						
FILING FEE RECEIVED 1000	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees		
				☐ 1.16 Fees (Filing)		
				☐ 1.17 Fees (Processing Ext. of time)		
				☐ 1.18 Fees (Issue)		
				☐ Other _____		
			☐ Credit			

Issue Classification 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	11/241,079	KING, DAVID G.	
	Examiner	Art Unit	
	Juanita D. Stephens	2853	

ISSUE CLASSIFICATION												
ORIGINAL					CROSS REFERENCE(S)							
CLASS		SUBCLASS			CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)						
347		58			347	50						
INTERNATIONAL CLASSIFICATION												
B	4	1	J	2/05								
				/								
				/								
				/								
				/								
JUANITA D. STEPHENS PRIMARY EXAMINER <i>Juanita D. Stephens</i> Juanita D. Stephens (Primary Examiner) (Date) Total Claims Allowed: 20 <table border="1"> <tr> <td>O.G. Print Claim(s)</td> <td>O.G. Print Fig.</td> </tr> <tr> <td>1</td> <td>3</td> </tr> </table>					O.G. Print Claim(s)	O.G. Print Fig.	1	3				
					O.G. Print Claim(s)	O.G. Print Fig.						
1	3											

☒ Claims renumbered in the same order as presented by applicant										☐ CPA		☐ T.D.		☐ R.1.47	
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	30		60		90		120		150		180		210		

Search Notes (continued) 	Application/Control No. 11/241,079	Applicant(s)/Patent under Reexamination KING, DAVID G.	
	Examiner Juanita D. Stephens	Art Unit 2853	

SEARCHED			
Class	Subclass	Date	Examiner
347	20, 50, 54, 56-59, 61-65, 67	8/16/2007	JDS

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
347	58	8/16/2007	JDS

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
EAST - USPAT, USPG-PUB, EPO, JPO DERWENT, IBM-TDB TEXT	8/16/2007	JDS

Electronic Acknowledgement Receipt	
EFS ID:	2241557
Application Number:	11241079
International Application Number:	
Confirmation Number:	7417
Title of Invention:	HEATER CHIPS WITH A REDUCED NUMBER OF BONDPADS
First Named Inventor/Applicant Name:	David G. King
Customer Number:	21972
Filer:	Neill R. Kahle./Lori Woods
Filer Authorized By:	Neill R. Kahle.
Attorney Docket Number:	19403-0050
Receipt Date:	26-SEP-2007
Filing Date:	30-SEP-2005
Time Stamp:	09:34:49
Application Type:	Utility under 35 USC 111(a)

Payment information:

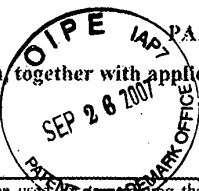
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Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	2005-0303-02IssueFee.pdf	1069402 f1be573486758cc2874ec450f550aefcb3a90dac	no	1

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/241,079

09/30/2005

David G. King

19403-0050

7417

TITLE OF INVENTION: HEATER CHIPS WITH A REDUCED NUMBER OF BONDPADS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional

NO

\$1400

\$300

\$0

\$1700

11/28/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
STEPHENS, JUANITA DIONNE	2853	347-058000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

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- ☒ Publication Fee (No small entity discount permitted)
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Authorized Signature

Neil R. Kahle, Jr.

Date

9-25-2007

Typed or printed name

Neil R. Kahle, Jr.

Registration No. 50, 383

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(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/241,079	09/30/2005	David G. King	19403-0050	7417

TITLE OF INVENTION: HEATER CHIPS WITH A REDUCED NUMBER OF BONDPADS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1400	\$300	\$0	\$1700	11/28/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
STEPHENS, JUANITA DIONNE	2853	347-058000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
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(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Lexmark International, Inc., Lexington, Kentucky

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☒ Advance Order - # of Copies 2

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 12-1213 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature Neill R. Kahle, Jr.

Date 9-25-2007

Typed or printed name Neill R. Kahle, Jr.

Registration No. 50, 383

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/241,079	11/06/2007	7290864	19403-0050	7417

21972 7590 10/17/2007
LEXMARK INTERNATIONAL, INC.
INTELLECTUAL PROPERTY LAW DEPARTMENT
740 WEST NEW CIRCLE ROAD
BLDG. 082-1
LEXINGTON, KY 40550-0999

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 271 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

David G. King, Shelbyville, KY;

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS	Patent Number	7,290,864 B2
	Issue Date	November 6, 2007
	First Named Inventor	David G. King
	Title	Heater Chips with a Reduced Number of Bondpads
	Attorney Docket Number	35968/756

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith: 01912

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified patent to:

☒ The address associated with the above-mentioned Customer Number.

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

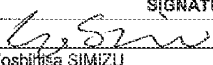
I am the:

☐ Inventor, having ownership of the patent.

OR

☒ Patent owner.
Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on _____

SIGNATURE of Inventor or Patent Owner

Signature		Date	June 7, 2013
Name	Yoshitaka SHIMIZU	Telephone	81-72-870-4353
Title and Company Senior General Manager of Intellectual Property Div., Funai Electric Co., Ltd.			

NOTE: Signatures of all the inventors or patent owners of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: FUNAI ELECTRIC CO., LTD.

Application No./Patent No.: 7,290,864

Filed/Issue Date: November 6, 2007

Titled: Heater Chips with a Reduced Number of Bondpads

FUNAI ELECTRIC CO., LTD.

, a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;
2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: David G. King To: LEXMARK INTERNATIONAL, INC.

The document was recorded in the United States Patent and Trademark Office at
Reel 017075, Frame 0093, or for which a copy thereof is attached.

2. From: LEXMARK INTERNATIONAL, INC. To: FUNAI ELECTRIC CO., LTD

The document was recorded in the United States Patent and Trademark Office at
Reel 030416, Frame 0001, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

- ☒ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Benjamin M. Halpern/

June 4, 2014 (756)

Signature

Date

Benjamin M. Halpern

46494

Printed or Typed Name

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	19482911
Application Number:	11241079
International Application Number:	
Confirmation Number:	7417
Title of Invention:	HEATER CHIPS WITH A REDUCED NUMBER OF BONDPADS
First Named Inventor/Applicant Name:	David G. King
Customer Number:	21972
Filer:	Benjamin M. Halpern/Tomiko Edmonds
Filer Authorized By:	Benjamin M. Halpern
Attorney Docket Number:	19403-0050
Receipt Date:	02-JUL-2014
Filing Date:	30-SEP-2005
Time Stamp:	17:02:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	1poa.pdf	98164 3afaa4368b7a90c9c9e496e7cfa1b413a1dc01e9	no	1
Warnings:					
Information:					

2	Assignee showing of ownership per 37 CFR 3.73.	2statement.pdf	427395 c0101c1602c854a66d1d64ac3493bfcf845ef8de	no	2
Warnings:					
Information:					
Total Files Size (in bytes):				525559	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/241,079	09/30/2005	David G. King	35968/756

1912
AMSTER, ROTHSTEIN & EBENSTEIN LLP
90 PARK AVENUE
NEW YORK, NY 10016

CONFIRMATION NO. 7417
POA ACCEPTANCE LETTER



Date Mailed: 07/09/2014

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/02/2014.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/ddinh/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas - Waco Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

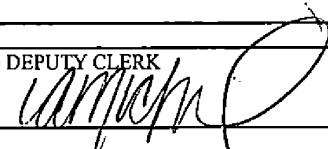
DOCKET NO. 6:19-cv-549	DATE FILED 9/20/2019	U.S. DISTRICT COURT Western District of Texas - Waco Division
PLAINTIFF Slingshot Printing, LLC		DEFENDANT HP, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 ~~See Attached~~		
2 6,213,587		
3 6,575,563		
4 6,676,246		
5 6,786,575		

7,018,012

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,195,341		
2 7,290,864		
3 7,410,246		
4 7,484,823		
5 7,559,629		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT		
CLERK Jeannette J. Clack	(BY) DEPUTY CLERK 	DATE 9/20/2019

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Austin Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

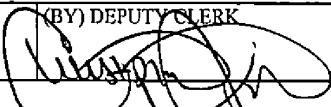
DOCKET NO. 1:20-CV-187-ADA	DATE FILED 2/19/2020	U.S. DISTRICT COURT Western District of Texas, Austin Division
PLAINTIFF Slingshot Printing LLC		DEFENDANT HP Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,213,587		Slingshot Printing LLC
2 6,575,563		Slingshot Printing LLC
3 6,676,246		Slingshot Printing LLC
4 6,786,575		Slingshot Printing LLC
5 7,018,012		Slingshot Printing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,195,341		Slingshot Printing LLC
2 7,290,864		Slingshot Printing LLC
3 7,410,246		Slingshot Printing LLC
4 7,484,823		Slingshot Printing LLC
5 7,559,629		Slingshot Printing LLC

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Jeannette J. Clack	(BY) DEPUTY CLERK 	DATE February 19, 2020
------------------------------------	---	----------------------------------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

SLINGSHOT PRINTING LLC,

Plaintiff.

v.

HP INC.,

Defendant.

Civil Action No. 6:19-cv-00549-ADA

ORDER TRANSFERRING CASE TO AUSTIN DIVISION

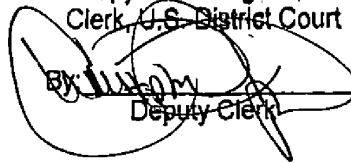
The Court, having reviewed and considered the Joint Stipulation to Transfer Venue to the Austin Division, does hereby ORDER that the above-captioned action be TRANSFERRED to the Austin Division but remain on the docket of United States District Judge Alan D Albright.

SIGNED this 19th day of February, 2020.



HONORABLE ALAN D ALBRIGHT
UNITED STATES DISTRICT COURT JUDGE

A true copy of the original, I certify.
Clerk, U.S. District Court



Deputy Clerk

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas, Austin Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

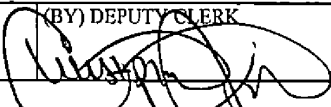
DOCKET NO. 1:20-CV-187-ADA	DATE FILED 2/19/2020	U.S. DISTRICT COURT Western District of Texas, Austin Division
PLAINTIFF Slingshot Printing LLC		DEFENDANT HP Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,213,587		Slingshot Printing LLC
2 6,575,563		Slingshot Printing LLC
3 6,676,246		Slingshot Printing LLC
4 6,786,575		Slingshot Printing LLC
5 7,018,012		Slingshot Printing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,195,341		Slingshot Printing LLC
2 7,290,864		Slingshot Printing LLC
3 7,410,246		Slingshot Printing LLC
4 7,484,823		Slingshot Printing LLC
5 7,559,629		Slingshot Printing LLC

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Jeannette J. Clack	(BY) DEPUTY CLERK 	DATE February 19, 2020
------------------------------------	---	----------------------------------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

SLINGSHOT PRINTING LLC,

Plaintiff.

v.

HP INC.,

Defendant.

Civil Action No. 6:19-cv-00549-ADA

ORDER TRANSFERRING CASE TO AUSTIN DIVISION

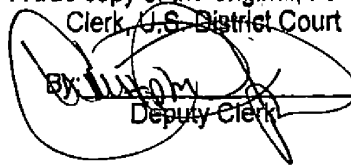
The Court, having reviewed and considered the Joint Stipulation to Transfer Venue to the Austin Division, does hereby ORDER that the above-captioned action be TRANSFERRED to the Austin Division but remain on the docket of United States District Judge Alan D Albright.

SIGNED this 19th day of February, 2020.



HONORABLE ALAN D ALBRIGHT
UNITED STATES DISTRICT COURT JUDGE

A true copy of the original, I certify.
Clerk, U.S. District Court



Deputy Clerk

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number

PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS	Patent Number	see attached Exhibit A
	Issue Date	see attached Exhibit A
	First Named Inventor	see attached Exhibit A
	Title	see attached Exhibit A
	Attorney Docket No.	

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

133676

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified patent to:

☐ The address associated with the above-identified Customer Number.

OR

☐ The address associated with the Customer Number identified in the box at right:

OR

☒ Firm or Individual Name

Goldberg Segalla LLP

Address

711 3rd Avenue, Suite 1900

City

New York

State

New York

Zip

10017

Country

USA

Telephone

314-446-3359

Email

ipdocket@goldbergsegalla.com

I am the:

☐ Applicant.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on see attached Exhibit A

SIGNATURE of Applicant or Patent Owner

Signature

Keith Machen

Date

July 14, 2020

Name

Keith Machen

Telephone

239-776-1596

Title and Company

President Slingshot Printing LLC

NOTE: Signatures of all the applicants or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☒ A total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Privacy Act Statement

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Patent Number	Issue Date	First Named Inventor	Title
US-5926195	Jul 20, 1999	Joseph E. Domhoff	Ink Jet Printhead Cartridge
US-6010208	Jan 04, 2000	James Harold Powers	Nozzle Array For Printhead
US-6027199	Feb 22, 2000	William Henry Reed	Ink Jet Cartridge System And Method Of Printing Using Plurality Of Same Color Inks With Different Intensities
US-6039439	Mar 21, 2000	Steven Robert Komplin	Ink Jet Heater Chip Module
US-6109719	Aug 29, 2000	Robert Wilson Cornell	Printhead Thermal Compensation Method And Apparatus
US-6137502	Oct 24, 2000	Frank Edward Anderson	Dual Droplet Size Printhead
US-6164762	Dec 26, 2000	Carl E. Sullivan	Heater Chip Module And Process For Making Same
US-6172692	Jan 09, 2001	Xuan-Chao Huang	Multilevel Ink Mixing Device And Method Using Diluted And Saturated Color Inks For Inkjet Printers
US-6213587	Apr 10, 2001	Charles S. Whitman	Ink Jet Printhead Having Improved Reliability
US-6217150	Apr 17, 2001	Scott Michael Heydinger	Method Of Printing With An Ink Jet Printer Using Multiple Carriage Speeds
US-6243115	Jun 05, 2001	Ronald Willard Baker	Pressurized Ink Supply And Delivery System For An Ink Jet Printer
US-6286924	Sep 11, 2001	Adam Jude Ahne	Apparatus And Method For Heating Ink Jet Printhead
US-6296350	Oct 02, 2001	Robert Wilson Cornell	Ink Jet Printer Having Driver Circuit For Generating Warming And Firing Pulses For Heating Elements
US-6299292	Oct 09, 2001	Mark Joseph Edwards	Driver Circuit With Low Side Data For Matrix Inkjet Printhead, And Method Therefor
US-6357863	Mar 19, 2002	Frank Edward Anderson	Linear Substrate Heater For Ink Jet Print Head Chip
US-6357870	Mar 19, 2002	Bradley Leonard Beach	Intermediate Transfer Medium Coating Solution And Method Of Ink Jet Printing Using Coating Solution
US-6361162	Mar 26, 2002	Michael Adam Penrod	Method And Apparatus For Fixing Ink To A Print Receiving Medium
US-6394593	May 28, 2002	Steven Robert Komplin	Vent System For Ink Jet Pen Having Internal Pressure Regulator
US-6398346	Jun 04, 2002	Frank Edward Anderson	Dual-Configurable Print Head Addressing
US-6412894	Jul 02, 2002	Benjamin Alan Askren	Ink Cartridge And Method For Determining Ink Volume In Said Ink Cartridge
US-6426801	Jul 30, 2002	William Henry Reed	Printer Apparatuses And Methods For Using The Same
US-6425655	Jul 30, 2002	Girish Shivaji Patil	Dual Curable Encapsulating Material
US-6431677	Aug 13, 2002	Frank Edward Anderson	Print Head Drive Scheme
US-6485124	Nov 26, 2002	Dave Golman King	Optical Alignment Method And Detector
US-6540334	Apr 01, 2003	Jim Michael Mrvos	Method For Making Ink Jet Printheads
US-6575563	Jun 10, 2003	Robert Wilson Cornell	Power/Volume Regime For Ink Jet Printers
US-6601934	Aug 05, 2003	Eric Todd Debusschere	Storage Of Total Ink Drop Fired Count In An Imaging Device
US-6629747	Oct 07, 2003	David G. King	Method For Determining Ink Drop Velocity Of Carrier-Mounted Printhead
US-6637866	Oct 28, 2003	Robert Wilson Cornell	Energy Efficient Heater Stack Using Dlc Island

Patent Number	Issue Date	First Named Inventor	Title
US-6665092	Dec 16, 2003	William Henry Reed	Printer Apparatuses And Methods For Using The Same
US-6666449	Dec 23, 2003	Stephen Francis Defosse	Star Wheel Surface Enhancement And Process Of Manufacture
US-6676246	Jan 13, 2004	Frank Edward Anderson	Heater Construction For Minimum Pulse Time
US-6704996	Mar 16, 2004	Jim Michael Mrvos	Method For Making Ink Jet Printheads
US-6709096	Mar 23, 2004	Bradley Leonard Beach	Method Of Printing And Layered Intermediate Used In Inkjet Printing
US-6712442	Mar 30, 2004	Peter Brown Pickett	Method Of Image Rasterization And Imaging An Address Space An Ink Jet Printers
US-6719405	Apr 13, 2004	James H. Powers	Inkjet Printhead Having Convex Wall Bubble Chamber
US-6739698	May 25, 2004	Michael James Benson	Off-Carrier Tubing Layout
US-6764163	Jul 20, 2004	Frank Edward Anderson	Heater Configuration For Tri-Color Heater Chip
US-6773088	Aug 10, 2004	Charles Stanley Aldrich	Double Lipped Printhead Maintenance Cap
US-6786575	Sep 07, 2004	Frank Edward Anderson	Ink Jet Heater Chip And Method Therefor
US-6796636	Sep 28, 2004	Kin-Ming Kwan	Two Shot Molded Inkjet Printhead Lid For Laser Welding
US-6805431	Oct 19, 2004	Frank Edward Anderson	Heater Chip With Doped Diamond-Like Carbon Layer And Overlying Cavitation Layer
US-6817707	Nov 16, 2004	John R. Fowler	Pressure Controlled Ink Jet Printhead Assembly
US-6834941	Dec 28, 2004	Byron Vencent Bell	Heater Chip Configuration For An Inkjet Printhead And Printer
US-6863381	Mar 08, 2005	George Keith Parish	Inkjet Printhead Heater Chip With Asymmetric Ink Vias
US-6890062	May 10, 2005	Byron Vencent Bell	Heater Chip Configuration For An Inkjet Printhead And Printer
US-6890065	May 10, 2005	Paul Timothy Spivey	Heater Chip For An Inkjet Printhead
US-6935795	Aug 30, 2005	Mark Walter Fagan	Method For Reducing The Effects Of Printhead Carrier Disturbance During Printing With An Imaging Apparatus
US-6951384	Oct 04, 2005	Frank Edward Anderson	Ink Jet Heater Chip And Method Therefor
US-6959979	Nov 01, 2005	Richard L. Goin	Multiple Drop-Volume Printhead Apparatus And Method
US-7014299	Mar 21, 2006	George Keith Parish	Inkjet Printhead Heater Chip With Asymmetric Ink Vias
US-7018012	Mar 28, 2006	J. Glenn Edelen	Microfluid Ejection Device Having Efficient Logic And Driver Circuitry
US-7041226	May 09, 2006	Karthik Vaideeswaran	Methods For Improving Flow Through Fluidic Channels
US-7077509	Jul 18, 2006	George Keith Parish	Inkjet Printhead Heater Chip With Asymmetric Ink Vias
US-7080896	Jul 25, 2006	Byron V. Bell	Micro-Fluid Ejection Device Having High Resistance Heater Film
US-7086713	Aug 08, 2006	Edward Lynn Triplett	Media Detack From An Intermediate Printing Member
US-7152951	Dec 26, 2006	Colin G. Maher	High Resolution Ink Jet Printhead
US-7159974	Jan 09, 2007	Trevor D. Gray	Semipermeable Membrane For An Ink Reservoir And Method Of Attaching The Same
US-7163272	Jan 16, 2007	George K. Parish	Inkjet Print Head
US-7178904	Feb 20, 2007	Frank E. Anderson	Ultra-Low Energy Micro-Fluid Ejection Device

Patent Number	Issue Date	First Named Inventor	Title
US-7195348	Mar 27, 2007	Jeffery J. Buchanan	Laser Welded Inkjet Printheads Having Non-Uniformly Thick Printhead Lids
US-7195341	Mar 27, 2007	David G. King	Power And Ground Buss Layout For Reduced Substrate Size
US-7207652	Apr 24, 2007	Bruce D. Gibson	Balanced Satellite Distributions
US-7222936	May 29, 2007	Frederick Charles Griesemer	Printhead Carrier Positioning Apparatus And Method
US-7244015	Jul 17, 2007	George Keith Parish	Inkjet Printhead Heater Chip With Asymmetric Ink Vias
US-7258434	Aug 21, 2007	Brian D. Smith	Inkjet Printheads Having Multiple Label Placement Positions For Air Diffusion Vents
US-7289243	Oct 30, 2007	Mark W. Fagan	Apparatus And Method For Data Compression Optimized By Print Head Architecture
US-7290864	Nov 06, 2007	David G. King	Heater Chips With A Reduced Number Of Bondpads
US-7311385	Dec 25, 2007	John G. Edelen	Micro-Fluid Ejecting Device Having Embedded Memory Device
US-7350888	Apr 01, 2008	Lucas D. Barkley	Composite Printhead Fire Signals
US-7364268	Apr 29, 2008	Brian C. Hart	Nozzle Members, Compositions And Methods For Micro-Fluid Ejection Heads
US-7364261	Apr 29, 2008	Marc Alan Herwald	Directionally Dependent Carrier Isolator For An Imaging Apparatus
US-7401875	Jul 22, 2008	Stuart M. Jacobsen	Inkjet Printhead Incorporating A Memory Array
US-7410246	Aug 12, 2008	Byron Vencent Bell	Heater Chip Configuration For An Inkjet Printhead And Printer
US-7413289	Aug 19, 2008	Robert W. Cornell	Low Energy, Long Life Micro-Fluid Ejection Device
US-7438397	Oct 21, 2008	James Daniel Anderson	Methods And Devices For Purging Gases From An Ink Reservoir
US-7445323	Nov 04, 2008	James Daniel Anderson	Ink Cartridge Venting
US-7452058	Nov 18, 2008	Robert Wilson Cornell	Substantially Planar Ejection Actuators And Methods Relating Thereto
US-7479203	Jan 20, 2009	David L. Bernard	Lamination Of Dry Film To Micro-Fluid Ejection Head Substrates
US-7484823	Feb 03, 2009	Lucas David Barkley	Methods And Apparatuses For Regulating The Temperature Of Multi-Via Heater Chips
US-7559629	Jul 14, 2009	David G. King	Methods And Apparatuses For Implementing Multi-Via Heater Chips
US-7559630	Jul 14, 2009	Byron Vencent Bell	Substantially Planar Fluid Ejection Actuators And Methods Related Thereto
US-7571979	Aug 11, 2009	Girish S. Patil	Thick Film Layers And Methods Relating Thereto
US-7594708	Sep 29, 2009	Lucas David Barkley	Methods And Apparatuses For Sensing Temperature Of Multi-Via Heater Chips
US-7597419	Oct 06, 2009	Marc Alan Herwald	Directionally Dependent Carrier Isolator For An Imaging Apparatus
US-7635174	Dec 22, 2009	Steven W. Bergstedt	Heater Chip Test Circuit And Methods For Using The Same
US-7673973	Mar 09, 2010	John G. Edelen	Micro-Fluid Ejecting Device Having Embedded Memory Devices
US-7690760	Apr 06, 2010	Colin G. Maher	High Resolution Ink Jet Printhead

Patent Number	Issue Date	First Named Inventor	Title
US-7766455	Aug 03, 2010	David Christopher Graham	Flexible Adhesive Materials For Micro-Fluid Ejection Heads And Methods Relating Thereto
US-7784918	Aug 31, 2010	Robert W. Cornell	Low Energy, Long Life Micro-Fluid Ejection Device
US-7784917	Aug 31, 2010	Byron Vincent Bell	Process For Making A Micro-Fluid Ejection Head Structure
US-7815289	Oct 19, 2010	David Laurier Bernard	Micro-Fluid Ejection Heads And Methods For Bonding Substrates To Supports
US-7819498	Oct 26, 2010	Jason Todd Mcreynolds	Methods And Systems Using Printhead Tank Memory To Determine Printhead Tank Configuration
US-7841712	Nov 30, 2010	Robert Muyskens	Automatic Printhead And Tank Instant Positioning
US-7850286	Dec 14, 2010	John Glenn Edelen	Micro-Fluid Ejector Pattern For Improved Performance
US-7850284	Dec 14, 2010	David L. Bernard	Method For Dry Etching Fluid Feed Slots In A Silicon Substrate
US-7918015	Apr 05, 2011	Byron V. Bell	Micro-Fluid Ejection Device Having High Resistance Heater Film
US-7938523	May 10, 2011	Charles Stanley Aldrich	Fluid Supply Tank Ventilation For A Micro-Fluid Ejection Head
US-7954929	Jun 07, 2011	John Glenn Edelen	Micro-Fluid Ejecting Device Having Embedded Memory In Communication With An External Controller
US-8113618	Feb 14, 2012	Jason Todd Mcreynolds	Methods And Systems Using Printhead Tank Memory To Determine Printhead Tank Configuration
US-8172369	May 08, 2012	Steven Wayne Bergstedt	Inkjet Printhead Substrate With Distributed Heater Elements
US-8235518	Aug 07, 2012	Robert Lee Cornell	Uv-Curable Coatings And Methods For Applying Uv-Curable Coatings Using Thermal Micro-Fluid Ejection Heads
US-8313168	Nov 20, 2012	Sam Norasak	Wind Baffles For Micro-Fluid Ejection Devices
US-8328330	Dec 11, 2012	Richard Louis Goin	Nozzle Plate For Improved Post-Bonding Symmetry
US-8491107	Jul 23, 2013	Neal D. Mcfarland	Fluid Container Having Mixing Chambers For Micro-Fluid Applications
US-8657411	Feb 25, 2014	Frank E. Anderson	Fluid Ejection Device And Method For Fabricating Fluid Ejection Device
US-8678557	Mar 25, 2014	Jiandong Fang	Substrate Structure For Ejection Chip And Method For Fabricating Substrate Structure
US-8826502	Sep 09, 2014	David Laurier Bernard	Micro-Fluid Ejection Heads And Methods For Bonding Substrates To Supports
US-8844137	Sep 30, 2014	Xiaorong Cai	Ejection Devices For Inkjet Printers And Method For Fabricating Ejection Devices
US-8882221	Nov 11, 2014	David Laurier Bernard	Modular Micro-Fluid Ejection Head Assembly

Electronic Acknowledgement Receipt	
EFS ID:	40040862
Application Number:	11241079
International Application Number:	
Confirmation Number:	7417
Title of Invention:	HEATER CHIPS WITH A REDUCED NUMBER OF BONDPADS
First Named Inventor/Applicant Name:	David G. King
Customer Number:	1912
Filer:	Lynn Ann Lehnert
Filer Authorized By:	
Attorney Docket Number:	35968/756
Receipt Date:	18-JUL-2020
Filing Date:	30-SEP-2005
Time Stamp:	19:11:28
Application Type:	Utility under 35 USC 111(a)

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	POA_Slingshot.pdf	5022502	no	6
			32e252eb2c63fe9d621d8eb8405b5102590 be2ee		
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/241,079	09/30/2005	David G. King	35968/756

1912
AMSTER, ROTHSTEIN & EBENSTEIN LLP
90 PARK AVENUE
NEW YORK, NY 10016

CONFIRMATION NO. 7417
IMPROPER CPOA LETTER



Date Mailed: 07/22/2020

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 07/18/2020. The power of attorney in this application is not accepted for the reason(s) listed below:

- The power of attorney is from an assignee and the statement required by 37 CFR 3.73(c) has not been received.

/sstephanos/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

133676
Goldberg Segalla LLP
711 3rd Avenue, Suite 1900
New York, NY 10017
UNITED STATES

PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS	Patent Number	see attached Exhibit A
	Issue Date	see attached Exhibit A
	First Named Inventor	see attached Exhibit A
	Title	see attached Exhibit A
	Attorney Docket No.	

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

133676

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☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

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Goldberg Segalla LLP

Address

711 3rd Avenue, Suite 1900

City

New York

State

New York

Zip

10017

Country

USA

Telephone

314-446-3359

Email

ipdocket@goldbergsegalla.com

I am the:

☐ Applicant.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on see attached Exhibit A

SIGNATURE of Applicant or Patent Owner

Signature

Keith Machen

Date

July 14, 2020

Name

Keith Machen

Telephone

239-776-1596

Title and Company

President Slingshot Printing LLC

NOTE: Signatures of all the applicants or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☒ A total of 2 forms are submitted.

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
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Patent No.	Application No	First Named Inventor	Title	3.73 date	Issue Date
US-7784917	11866585	Byron Vencent Bell	Process For Making A Micro-Fluid Ejection Head Structure	July 25, 2020	August 31, 2010
US-7673973	11752551	John G. Edelen	Micro-Fluid Ejecting Device Having Embedded Memory Devices	July 25, 2020	March 9, 2010
US-7594708	11323809	Lucas David Barkley	Methods And Apparatuses For Sensing Temperature Of Multi-Via Heater Chips	July 25, 2020	September 29, 2009
US-7364268	11239799	Brian C. Hart	Nozzle Members, Compositions And Methods For Micro-Fluid Ejection Heads	July 25, 2020	April 29, 2008
US-8844137	13925424	Xiaorong Cai	Ejection Devices For Inkjet Printers And Method For Fabricating Ejection Devices	July 25, 2020	Sep 30, 2014
US-8313168	12775530	Sam Norasak	Wind Baffles For Micro-Fluid Ejection Devices	July 25, 2020	Nov 20, 2012
US-8328330	12131953	Richard Louis Goin	Nozzle Plate For Improved Post-Bonding Symmetry	July 25, 2020	Dec 11, 2012
US-7954929	11858611	John Glenn Edelen	Micro-Fluid Ejecting Device Having Embedded Memory In Communication With An External Controller	July 25, 2020	Jun 07, 2011
US-7766455	11556246	David Christopher Graham	Flexible Adhesive Materials For Micro-Fluid Ejection Heads And Methods Relating Thereto	July 25, 2020	Aug 03, 2010
US-7413289	11317575	Robert W. Cornell	Low Energy, Long Life Micro-Fluid Ejection Device	July 25, 2020	Aug 19, 2008
US-7559629	11238559	David G. King	Methods And Apparatuses For Implementing Multi-Via Heater Chips	July 25, 2020	Jul 14, 2009
US-8678557	13187755	Jiandong Fang	Substrate Structure For Ejection Chip And Method For Fabricating Substrate Structure	July 25, 2020	Mar 25, 2014
US-8172369	12346189	Steven Wayne Bergstedt	Inkjet Printhead Substrate With Distributed Heater Elements	July 25, 2020	May 08, 2012
US-7841712	12006190	Robert Muyskens	Automatic Printhead And Tank Install Positioning	July 25, 2020	Nov 30, 2010
US-7815289	11848246	David Laurier Bernard	Micro-Fluid Ejection Heads And Methods For Bonding Substrates To Supports	July 25, 2020	Oct 19, 2010
US-7690760	11466674	Colin G. Maher	High Resolution Ink Jet Printhead	July 25, 2020	Apr 06, 2010
US-7445323	11314296	James Daniel Anderson	Ink Cartridge Venting	July 25, 2020	Nov 04, 2008
US-7484823	11208815	Lucas David Barkley	Methods And Apparatuses For Regulating The Temperature Of Multi-Via Heater Chips	July 25, 2020	Feb 03, 2009
US-8657411	13160568	Frank E. Anderson	Fluid Ejection Device And Method For Fabricating Fluid Ejection Device	July 25, 2020	Feb 25, 2014
US-8235518	12337488	Robert Lee Cornell	Uv-Curable Coatings And Methods For Applying Uv-Curable Coatings Using Thermal Micro-Fluid Ejection Heads	July 25, 2020	Aug 07, 2012
US-7819498	11959593	Jason Todd McCreynolds	Methods And Systems Using Printhead Tank Memory To Determine Printhead Tank Configuration	July 25, 2020	Oct 26, 2010
US-7850284	11779085	David L. Bernard	Method For Dry Etching Fluid Feed Slots In A Silicon Substrate	July 25, 2020	Dec 14, 2010
US-7452058	11427453	Robert Wilson Cornell	Substantially Planar Ejection Actuators And Methods Relating Thereto	July 25, 2020	Nov 18, 2008
US-7559630	11277161	Byron Vencent Bell	Substantially Planar Fluid Ejection Actuators And Methods Related Thereto	July 25, 2020	Jul 14, 2009
US-7635174	11208682	Steven W. Bergstedt	Heater Chip Test Circuit And Methods For Using The Same	July 25, 2020	Dec 22, 2009
US-8491107	12948122	Neal D. McFarland	Fluid Container Having Mixing Chambers For Micro-Fluid Applications	July 25, 2020	Jul 23, 2013
US-7918015	12336767	Byron V. Bell	Micro-Fluid Ejection Device Having High Resistance Heater Film	July 25, 2020	Apr 05, 2011
US-7597419	11948346	Marc Alan Herwald	Directionally Dependent Carrier Isolator For An Imaging Apparatus	July 25, 2020	Oct 06, 2009
US-7850286	11767568	John Glenn Edelen	Micro-Fluid Ejector Pattern For Improved Performance	July 25, 2020	Dec 14, 2010
US-7571979	11361731	Girish S. Patil	Thick Film Layers And Methods Relating Thereto	July 25, 2020	Aug 11, 2009
US-7244015	11269311	George Keith Parish	Inkjet Printhead Heater Chip With Asymmetric Ink Vias	July 25, 2020	Jul 17, 2007
US-7438397	11001433	James Daniel Anderson	Methods And Devices For Purging Gases From An Ink Reservoir	July 25, 2020	Oct 21, 2008
US-8113618	12909912	Jason Todd McCreynolds	Methods And Systems Using Printhead Tank Memory To Determine Printhead Tank Configuration	July 25, 2020	Feb 14, 2012
US-8882221	12195451	David Laurier Bernard	Modular Micro-Fluid Ejection Head Assembly	July 25, 2020	Nov 11, 2014
US-7938523	11762101	Charles Stanley Aldrich	Fluid Supply Tank Ventilation For A Micro-Fluid Ejection Head	July 25, 2020	May 10, 2011
US-7484823	11324167	Lucas David Barkley	Methods And Apparatuses For Regulating The Temperature Of Multi-Via Heater Chips	July 25, 2020	Feb 03, 2009
US-7290864	11241079	David G. King	Heater Chips With A Reduced Number Of Bondpads	July 25, 2020	Nov 06, 2007
US-7178904	10986338	Frank E. Anderson	Ultra-Low Energy Micro-Fluid Ejection Device	July 25, 2020	Feb 20, 2007
US-8826502	12786457	David Laurier Bernard	Micro-Fluid Ejection Heads And Methods For Bonding Substrates To Supports	July 25, 2020	Sep 09, 2014
US-7784918	12145606	Robert W. Cornell	Low Energy, Long Life Micro-Fluid Ejection Device	July 25, 2020	Aug 31, 2010

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Slingshot Printing, LLC

Application No./Patent No.: 7290864

Filed/Issue Date: November 6, 2007

Titled: Heater Chips With A Reduced Number Of Bondpads

Slingshot Printing, LLC, a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 048745, Frame 0551, or for which a copy thereof is attached.

- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
 Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Lynn Lehnert/

July 25, 2020

Signature

Date

Lynn Lehnert

54678

Printed or Typed Name

Title or Registration Number

[Page 2 of 2]

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	40104898
Application Number:	11241079
International Application Number:	
Confirmation Number:	7417
Title of Invention:	HEATER CHIPS WITH A REDUCED NUMBER OF BONDPADS
First Named Inventor/Applicant Name:	David G. King
Customer Number:	1912
Filer:	Lynn Ann Lehnert
Filer Authorized By:	
Attorney Docket Number:	35968/756
Receipt Date:	25-JUL-2020
Filing Date:	30-SEP-2005
Time Stamp:	19:45:09
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	Slingshot_POA.pdf	2555101	no	3
			df5cd9bfe8579edf0848b57b61bd4dca349ed9d9		
Warnings:					

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	7290864_3_73_Statement.pdf	208382 d74aba8f3055a9b554e0aaa89d9b4629aca9ca020	no	3
Warnings:					
Information:					
Total Files Size (in bytes):			2763483		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/241,079	09/30/2005	David G. King	

133676
Goldberg Segalla LLP
711 3rd Avenue, Suite 1900
New York, NY 10017

CONFIRMATION NO. 7417
POA ACCEPTANCE LETTER



OC000000118776667

Date Mailed: 07/29/2020

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/25/2020.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/nrhayden/



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/241,079	09/30/2005	David G. King	35968/756

1912
AMSTER, ROTHSTEIN & EBENSTEIN LLP
90 PARK AVENUE
NEW YORK, NY 10016

CONFIRMATION NO. 7417
POWER OF ATTORNEY NOTICE



Date Mailed: 07/29/2020

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/25/2020.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/nrhayden/

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
 filed in the U.S. District Court Western District of Texas, Austin Division on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 1:20-CV-187-ADA	DATE FILED 2/19/2020	U.S. DISTRICT COURT Western District of Texas, Austin Division
PLAINTIFF Slingshot Printing LLC		DEFENDANT HP Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,213,587		Slingshot Printing LLC
2 6,575,563		Slingshot Printing LLC
3 6,676,246		Slingshot Printing LLC
4 6,786,575		Slingshot Printing LLC
5 7,018,012		Slingshot Printing LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1 7,195,341		Slingshot Printing LLC	
2 7,290,864		Slingshot Printing LLC	
3 7,410,246		Slingshot Printing LLC	
4 7,484,823		Slingshot Printing LLC	
5 7,559,629		Slingshot Printing LLC	

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT Order of dismissal attached.
--

CLERK Jeannette J. Clack	(BY) DEPUTY CLERK 	DATE 4/1/21
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

SLINGSHOT PRINTING LLC,

Plaintiff,

v.

HP INC.,

Defendant.

§
§
§
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§
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§

CIVIL ACTION NO. 1:20-CV-187-ADA

ORDER OF DISMISSAL WITH PREJUDICE

The Court is of the opinion that the Stipulated Dismissal with Prejudice agreed to by Slingshot Printing LLC ("Slingshot") and HP Inc. ("HP") should be GRANTED.

IT IS THEREFORE ORDERED that the above-entitled cause and all claims made by Slingshot against HP therein are hereby DISMISSED WITH PREJUDICE to the re-filing of same. All costs and expenses relating to this litigation (including attorney and expert fees and expenses) shall be borne solely by the party incurring the same.

IT IS FURTHER ORDERED that this Court shall retain jurisdiction over this action and the parties for purposes of enforcing the terms of the Settlement, Release and License Agreement entered into by and between the parties.

This is a final judgment.

SIGNED this 1st day of April, 2021


HONORABLE ALAN D ALBRIGHT
UNITED STATES DISTRICT JUDGE

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of New York on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 22cv1852(GRB)(ARL)	DATE FILED 4/1/2022	U.S. DISTRICT COURT Eastern District of New York
PLAINTIFF Slingshot Printing LLC		DEFENDANT Canon U.S.A., Inc. and Canon Solutions America, Inc.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,484,823	2/3/2009	Holder: Slingshot Printing LLC
2 7,594,708	9/29/2009	Holder: Slingshot Printing LLC
3 7,290,864	11/6/2007	Holder: Slingshot Printing LLC
4		(See Attached Complaint and Exhibits)
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK Brenna B. Mahoney	(BY) DEPUTY CLERK Laura Jakubowski	DATE 4/4/2022
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy