CHANDRAKANT M. JOSHI
INDIAN PATENT ATTORNEYS

PATENT & TRADE MARK ATTORNEYS
MEMBER: INTERNATIONAL BAR ASSOCIATION
501, Vishwa Nanak, Chakala Road,
Andheri (East), Mumbai-400 099.

Tel. : 838 - 0848, 820-5425, 838-9839
Fax: (022) 838-0737, (022) 806-6294

भारत सरकार पेटेंट कार्यालय मुंबई
21 SEP 1998

02/09/98

PT/8248

The Controller of Patents & Designs,
Mumbai.

भारत सरकार पेटेंट कार्यालय मुंबई
21 SEP 1998
3392

Dear Sirs,

Subject : Patent Registration Application

Invention : A PROCESS OF MANUFACTURING CUTLERY AND GOLD ORNAMENTS THROUGH LASER TECHNOLOGY

Applicant : BHARAT BHOGILAL PATEL

Under the instruction of our client, we are forwarding herewith application for Patent registration with enclosures. We request you to Patent the invention under the Patent Act 1970.

1. Form No. 1 in Triplicate.
2. Complete Specification in quadruplicate with drawings.
3. Form No 6.
4. Letter Of Authority in form GP .
5. Requisite Fee

Thanking you,

Yours truly,

CHANDRAKANT M. JOSHI
PATENT & TRADE MARK ATTORNEYS.

RMD - 2

sarju LASER

7 (2)

GOVERNMENT OF INDIA
PATENT OFFICE BRANCH
TODI ESTATES, IIIRD FLOOR,
SUN MILL COMPOUND, LOWER PAREL(WEST),
MUMBAI-400 013

Tel. No. : 492 4058
492 5092
496 1370
Telegram : PATOFFICE
Fax No. : 495 0622

No. 610/Bom/98

To, Chandrakant m Joshi,
Patent & Trade mark Attorneys
501, Vishwanath Chakala Rd
Andheri (E) Mumbai -99

Date: 3/4/01

Sub : **Preliminary Examination Report of Application No.** 610/Bom/98

[Please note that this is NOT a First Examination Report u/s 12 of The Patents Act, 1970]

Sir/Madam,

The following requirements marked √ are to be complied with within 15 days from receipt of this letter.

1) One/Two copies of Application/Provisional Specification/Complete Specification should be filed.

2) The drawings referred to in the specification should be prepared in accordance with the instructions contained in Rules 16 to 19 of the Patents Rules, 1972 (as amended in 1999) and filed in Triplicate.

3) The proof of title/right to make this application should be filed.

4) The proof of right to make the application has not been filed within the stipulated period of 3 months u/r 11 of the Patents Rules, 1972 therefore, a petition u/r 124 requesting the Controller for extending the said time limit should be filed.

5) Power of Attorney in your favour should be produced.

6) The complete specification filed by you does not contain any claim/meaning full claims. You may therefore request the Controller of Patents to treat your complete specification as provisional specification U/S 9(3) and file the complete specification within the stipulated time U/S 9(1) along with declaration of inventorship (Form -5).

RMID - 2

7) Declaration of Inventorship (Form-5/6) has not filed along with complete specification.

8) You have intimated about the change in Name/address/address for service/corrections in the specification which will be considered only after your filing a request in the prescribed manner on Form-13 with prescribed fee, U/S 57 of the Act.

9) For mentioning the name of inventor on the specification, you are required to file a request in the prescribed manner on Form-8 with prescribed fee, U/S 28 of the Act.

10) For the change of applicant, you are required to file a request in the prescribed manner on Form-6 with prescribed fee, U/S 20 of the Act.

11) Your request on Form-6/10 has been allowed and therefore, you should file an application and other documents in the name of claimant in triplicate.

12) The certified copy of the priority (convention) application should be filed.

13) A statement and undertaking regarding the application filed outside India on Form 3 as required under sub- section (8) (1) of the Act should be filed.

14) Petition u/r 123/124 should be filed for taking the particulars of corresponding foreign applications filed, on record.

15) Details regarding the search and/or examination report in respect of the applications filed outside India, as provided under Section 8 (2) of the Act, 1970 should be filed.

16) A copy of the Patent, as accepted in a country outside India should be submitted.

17) An abstract of the invention limited to 200 words should be filed.

18) If you intend *to file your above said application U/S 5(2) of the Act, please intimate immediately to this office accordingly.*

If no response is received within 15 days from the date of the report, it will be presumed that the applicant are no longer interested to proceed further with the application and no further action on the said application will be taken by the Office.

Yours faithfully,

EXAMINER OF PATENTS & DESIGNS

RMID - 2

sarju LASER

(3)

GOVERNMENT OF INDIA
PATENT OFFICE BRANCH
TODI ESTATES, IIIRD FLOOR
SUN MILL COMPOUND, LOWER PAREL (WEST),
MUMBAI-400 013.

Tel. No.4924058
4925092
4961370
Fax No.4950622
E-Mail:patmum@vsnl.net

No.610/BOM/1998 5272 Date: 21 NOV 2001

To
C.M.Joshi,
501, Vishwa Nanak, Chakala Road,
Andheri (East), Mumbai – 400 099

Sub : Patent Application No. 610/BOM/1998
By BHARAT BHOGILAL PATEL

An examination of the above quoted application made under Section 12 of the Patents Act, 1970 (as amended in 1999) discloses the defects as mentioned on the reverse.

The documents noted in the margin are enclosed herewith for amendment in those respects and should be returned to this office at an early date, together with any observations that you would like to offer in connection therewith.

The application referred to will be deemed to have been abandoned unless all the requirements imposed by the said Act and the Patents Rules,1972(as amended in 1999) are complied with within fifteen months from the date of this statement. The said period of fifteen months can be extended up to eighteen months by making an application on Form 4 with the prescribed fee of Rs.250/- or Rs.1000/- per month (Rs.250/- for individual and Rs.1000/- for legal entities). Such extension of time for one, two or three months should be taken before the expiry of the said normal period of fifteen months. Further, it is pointed out that such extension of time can be granted only once.

20/11/2001

(DR. B. K. SINGH)
Examiner of Patents and Designs
For Dy./~~Asstt.~~ Controller of Patents and Designs

o/c 60

Encl: 1. Application on Form- 1/~~1A/2/2A~~
2. ~~Provisional and/or~~ Complete Specification
3. ~~Provisional Drawings and/or~~ Complete Drawings.
4. Form – 3 4.
5. Form – 3 6.
6. ~~Power of Attorney~~.

Note: All communications to be sent to the Controller of Patents at the above address

RMID - 2

1. Claims falls within the scope of sub clause of section 3 (d) of the Patents Act,1970.
2. Claims do not sufficiently define the invention.
3. Claims are not clearly worded as indicated therein.
4. Title in the application and specification to be made consistent with the opening paragraph of description and the statement of claims.
5. Distinguishing features as compared with prior art to be pinpointed clearly.
6. Application should be corrected as indicated therein.
7. Details regarding the search and/or examination report in respect of the same or substantially the same invention filed in any country outside India and any amendment effected in the specification including claims should be submitted immediately as provided under Section 8(2) of the Patents Act, 1970.
8. Patent Application number and its filing date should be given in Form-4 & 6.
9. Patent Application number ~~and~~ should be given on each drawing sheets.
10. If you desire to proceed with this application the requirements mentioned above should be complied with and the documents returned herewith should be resubmitted immediately so as to enable this office for taking necessary action.
11. If any corrections are made in any page of the specification that page should be freshly typed and filed in triplicate as otherwise the corrections, revisions and excisions made may appear in the photocopies of the specification supplied by the office. The original page should be returned to this office duly cancelled over your signature.

RMID - 2

CHANDRAKANT M. JOSHI

PATENT & TRADE MARK ATTORNEYS

501, Vishwa Nanak, Chakala Road,
Andheri (East), Mumbai - 400 099
Tel.: 838-0848, 820-5425, 832-4920, 832-4969
Fax: +91-22-838-0737, +91-22-838-9839
Email : cmjoshi@bom3.vsnl.net.in

MEMBER

THE CHARTERED INSTITUTE OF PATENT AGENTS
INTERNATIONAL TRADE MARK ASSOCIATION
ASIAN PATENT ATTORNEYS ASSOCIATION

भारत सरकार पेटेन्ट कार्यालय शाखा
3 DEC 2001
1435
मुंबई-४०० ०१३.

PT/8248
26/11/2001

To,
The Controller of Patents,
Patent Office,
Mumbai.

Dear Sirs,

Sub : Patent Application No. 610/BOM/1998
By BHARAT BHOGILAL PATEL.

Please refer to your letter no. 610/BOM/1998/5772 dated 21/11/2001 wherein a sets of objection was communicated, we give below the observation as under :-

Referring to para (1), the invention is new and useful which is a single step process of marking, etching and engraving by using laser beam technology on metals and non-metals.

Referring to para (2), the claims has been reworded to make the invention clear.

Referring to para (3), the claims are now clearly worded.

Referring to para (4), title has been made consistent with application, complete specification nd claims.

3/12/2001

Referring to para (5), distinguishing feature has compared to prior art has been given in page (2) to (4).

Referring to para (6), application has been corrected as indicated.

Referring to para (7), the same application has not been filed in any Foreign Countries.

Referring to para (8), Patent application number and date of filing has been mentioned in Form (4) & Form (6).

Referring to para (9), Patent application number has been marked in each drawing sheets.

Freshly typed pages in co-druplicate alongwith the cancelled pages are submitted.

We now request you to accept the application at an early date.

Thanking you,

Yours truly,

HIRAL CHANDRAKANT JOSHI
PATENT & TRADE MARK ATTORNEYS

RMID - 2

Encl. 1. Application
2. Complete Specification
3. Drawing
4. Form 4 & Form 6
5. Freshly types pages
6. Cancelled pages

GOVERNMENT OF INDIA
THE PATENT OFFICE BRANCH
TODI ESTATES, IIIRD FLOOR
SUN MILL COMPOUND, LOWER PAREL(WEST)
MUMBAI – 400 013.

Tel. No. 4924058
4925092
Fax No. 4950622

No. 610/BOM/ 1998/6469 Date: 18/ 12 /2001

To
Chandrakant M.Joshi,
501,Vishwa Nanak,
Chakala Road,
Andheri(East),
Mumbai 400 099.

Sub: Patent Application No. 610/BOM/ 1998

Sir,

With reference to your letter No. PT/8248 dated **26.11.2001**, I would invite your attention to the paragraphs noted below.

The marginally noted documents are returned herewith.

Yours faithfully,

19/12/2001

(DR.B.K.SINGH)
Examiner of Patents & Designs
For Dy.Controller of Patents & Designs.

Encl:
1. Application
2. Comp.specn.
3. Drwgs.

---

1. Requirement of paras 1 to 4 of this office letter dated 21.11.2001 has not been met.

2. Claims 3 & 5 are distinct from claim No.1

3. On further consideration it appears that process steps are operation of computer, it is not a manufacture within the meaning of Sec.2(1)(j).

4. Creation of aesthetic look/design is not a manner of manufacture within the meaning of section 2(1)(j)

5. If any amendment by way of correction, revision or excision is made in any page of the specification that page should be freshly typed and filed in quadruplicate.

6. If you desire to proceed with this application the requirements mentioned above should be complied with and the documents returned herewith should be resubmitted immediately so as to enable this office for taking necessary action.

7. The Normal period for putting this application in order for acceptance will expire on 21.02.2003.

tg

RMID - 2

CHANDRAKANT M. JOSHI
PATENT & TRADE MARK ATTORNEYS

501, Vishwa Nanak, Chakala Road,
Andheri (East), Mumbai - 400 099
Tel.: 838-0848, 820-5425, 832-4920, 832-4969
Fax: +91-22-838-0737, +91-22-838-9839
Email : cmjoshi@bom3.vsnl.net.in

MEMBER

THE CHARTERED INSTITUTE OF PATENT AGENTS
INTERNATIONAL TRADE MARK ASSOCIATION
ASIAN PATENT ATTORNEYS ASSOCIATION

PT/8248
08/01/2002

To,
The Controller of Patents,
Patent Office,
Mumbai.

Dear Sirs,

Sub : Patent Application No. 610/BOM/1998
By BHARAT BHOGILAL PATEL.

Please refer to your letter no. 610/BOM/1998/6469 dated 18/12/2001 wherein a sets of objection was communicated, we give below the observation as under :-

Referring to para (1), claims has been reworded to make the invention clear.

Referring to para (2), claims 3 & 5 has been deleted.

Referring to para (3), the invention is new & useful and patentable since it is not a software by itself.

Referring to para (4), the invention lies in engraving precious metals & non-metals of intricate design which are not possible in prior art system. Hence it is patentable. The objection may therefore be waived.

Referring to para (5), freshly typed pages alongwith cancelled pages are resubmitted.

We now request you to accept the application at an early date.

Thanking you,

Yours truly,

HIRAL CHANDRAKANT JOSHI
PATENT & TRADE MARK ATTORNEYS

Encl. 1. Application
2. Complete Specification
3. Freshly types pages
4. Cancelled pages

भारत सरकार पेटेन्ट कार्य
10 JAN
1627
मुंबई-४०० ०१३

RMID - 2

GOVERNMENT OF INDIA
PATENT OFFICE BRANCH
TODI ESTATES, IIIRD FLOOR
SUN MILL COMPOUND, LOWER PAREL (WEST),
MUMBAI-400 013.

Tel. No.4924058
4925092
4961370
Fax No.4950622
E-Mail:patmum@vsnl.net

Date: 4.3.2002

No. 610/BOM/1998

To
CHANDRAKANT M. JOSHI,
Patent & Trade Mark Attorneys,
501, "Vishwananak",
Chakala Road,
Andheri (East),
MUMBAI : 400 099.

Sub : Patent Application No. 610/BOM/1998

By BHARAT BHOGILAL PATEL.

Gentlemen,

With reference to your letter No. PT/8248 Dated. 08-01-2002, I would invite your attention to the paragraphs noted below.

The marginally noted documents are returned herewith.

Yours faithfully,

04/3/2002

(DR. B. K. SINGH)
Examiner of Patents & Designs
For ~~Dy./Asstt.~~ Jt. Controller of Patents & Designs

Encl.: 1) Application
2) Complete Specification
3) Drgs.

---

1. Claims are not properly worded and also do not sufficiently define the invention as marked therein & Title in the application & specification to be made consistent with claims.
2. Power of attorney in your favour should be produced immediately.
3. The process claimed in claims (1), (4) and (7) are merely operational features of the machine and hence not an invention / manufacture within measuring of section 2(1) J Patents Act. 970
4. Claim no. 3 conflicts with claim of Application No. 611/BOM/98.
5. If any amendment by way of correction, revision, or excision is made in any page of the specification that page should be freshly typed and filed in triplicate.
6. If you desire to proceed with this application the requirements mentioned above should be complied with and the documents returned herewith should be resubmitted immediately so as to enable this office for taking necessary action.
7. The Normal Period for putting this application in order for acceptance will expire on 21-02-2003

RMID - 2

sarju LASER

CHANDRAKANT M. JOSHI
PATENT & TRADE MARK ATTORNEYS

501, Vishwa Nanak, Chakala Road,
Andheri (East), Mumbai - 400 099
Tel.: 838-0848, 820-5425, 832-4920, 832-4969
Fax: +91-22-838-0737, +91-22-838-9839
Email : cmjoshi@bom3.vsnl.net.in

MEMBER
THE CHARTERED INSTITUTE OF PATENT AGENTS
INTERNATIONAL TRADE MARK ASSOCIATION
ASIAN PATENT ATTORNEYS ASSOCIATION

PT/8248
12/03/2002

To,
The Controller of Patents,
Patent Office,
Mumbai.

Dear Sirs,

Sub : Patent Application No. 610/BOM/1998
By BHARAT BHOGILAL PATEL.

Please refer to your letter no. 610/BOM/1998/8147 dated 04/03/2002 wherein a sets of objection was communicated, we give below the observation as under :-

Referring to para (1), The process claim for the manufacture of engrave design articles which was not conventionally possible is new & useful. Therefore it does not fall under 2(1) J of patents act. The objection may therefore be waived.

Referring to para (2), Power of Attorney enclosed in original. Title has been made precise.
"A process of manufacturing engraved design articles on metal or non-metal."

Referring to para (3), the process claim is new & useful and hence the objection may be waived.

Referring to para (4), claim 3 has been deleted.

Referring to para (5), freshly typed pages alongwith cancelled pages are resubmitted.

We now request you to accept the application at an early date.

Thanking you,

Yours truly,

HIRAL CHANDRAKANT JOSHI
PATENT & TRADE MARK ATTORNEYS

Encl. 1. Application
2. Complete Specification
3. Power of Attorney
4. Freshly types pages
5. Cancelled pages

RMID - 2

sarju LASER

(9)

GOVERNMENT OF INDIA
PATENT OFFICE BRANCH
TODI ESTATES, IIRD FLOOR
SUN MILL COMPOUND, LOWER PAREL (WEST),
MUMBAI-400 013.

Tel. No.4924058
4925092
4961370
Fax No.4950622
E-Mail:patmum@vsnl.net
Date : 15-04-2002

No.610/BOM/1998/619
15/4/02
To
Chandrakant M. Joshi
Patetnt & Trade Mark Attorneys,
501, "Vishwananak", Chakala Road,
Andheri (East),
Mumbai – 400 099.

Sub: Patent Application **No.** 610/BOM/1998

Gentlemen,

With reference to your letter No. PT/8248 dated 12.03.2002; I would invite your attention to the paragraphs noted below.

The marginally noted documents are returned herewith.

Yours faithfully,

15/4/2002

(DR.B.K.SINGH)
Examiner of Patents & Designs
For Asstt. Controller of Patents & Designs

Encl: 1) Application
2) Complete Specification
3) Drawings

c/c

~~1. Requirement of para 3 of this office letter dated 4.03.2002 has not been met.~~

1 2. Claims 3 to 5 distinct as worded.

2 3. If any corrections are made in any page of the specification that page should be freshly typed and filed in triplicate as otherwise the corrections, revisions and excisions made may appear in the photocopies of the specification supplied by the office. The original page should be returned to this office duly cancelled over your signature.

3 4. If you desire to proceed with this application the requirements mentioned above should be complied with and the documents returned herewith should be resubmitted immediately so as to enable this office for taking necessary action.

4 5. The Normal Period for putting this application in order for acceptance will expire on 21.02.2003.

RMID - 2

CHANDRAKANT M. JOSHI
PATENT & TRADE MARK ATTORNEYS

501, Vishwa Nanak, Chakala Road,
Andheri (East), Mumbai - 400 099
Tel.: 838-0848, 820-5425, 832-4920, 832-4969
Fax: +91-22-838-0737, +91-22-838-9839
Email : cmjoshi@bom3.vsnl.net.in

MEMBER

THE CHARTERED INSTITUTE OF PATENT AGENTS
INTERNATIONAL TRADE MARK ASSOCIATION
ASIAN PATENT ATTORNEYS ASSOCIATION

PT/8248
20/04/2002

To,
The Controller of Patents,
Patent Office,
Mumbai.

Dear Sirs,

Sub : Patent Application No. 610/BOM/1998
By BHARAT BHOGILAL PATEL.

Please refer to your letter no. 610/BOM/1998/1619 dated 15/04/2002 wherein a sets of objection was communicated, we give below the observation as under :-

Referring to para (1), claim 3 to 5 has been deleted.

Referring to para (2), freshly typed pages alongwith cancelled pages.

We now request you to accept the application at an early date.

Thanking you,

Yours truly,

24/4/2002

HIRAL CHANDRAKANT JOSHI
PATENT & TRADE MARK ATTORNEYS

Encl. 1. Application
2. Complete Specification
3. Freshly types pages
4. Cancelled pages

भारत सरकार पेटेन्ट कार्यालय मुंबई
24 APR 2002
मुंबई-४०० ०१३.

RMID - 2

(11)

GOVERNMENT OF INDIA
PATENT OFFICE BRANCH
TODI ESTATES,3RD FLOOR,
SUN MILL COMPOUND,
LOWER PAREL(WEST)
MUMBAI- 400 013.

No. 610/BOM/98 3346/30/7/02 Dated: 20.6.02

To
C.M. Joshi
501 Vishwaranak
Chakala Road
Andheri (E)
Mumbai 400 099

Sub: Patent Application No. 610/Bom/98
Acceptance Intimation thereof.

Sir/Madam,

The above mentioned application for patent has been accepted and such acceptance will be advertised in the official Gazette of India under the provisions of Section 23 of Patents Act, 1970 by the Head Office at Calcutta and consequently the notice of the same would be duly communicated to you by the said office.

Yours faithfully,

Jain
16/7/02
(Pinkesh K. Jain)
~~(D. B.K. Singh)~~
Examiner of Patents and Designs
For Dy/Asst.Controller of Patents and Designs.

9/c

9/7/dd
20.6.02

RMID - 2

GOVERNMENT OF INDIA
PATENT OFFICE BRANCH
TODI ESTATES, 3RD FLOOR,
SUN MILL COMPOUND,
LOWER PAREL(WEST),
MUMBAI-400 013

No.: 610/BOM/1998 /4600 Date: 27 AUG 2002

To,
The Joint Controller of Patents & Designs
The Patent Office
2nd M.S.Office Building,
Nizam Palace, 234/4, A.J.Bose Road,
CALCUTTA-700 020.

Sub : Acceptance of Patent Application No. : 610/BOM/1998

Sir,

I am to state that the complete specification in respect of application for Patent No. 610/BOM/1998 has been accepted in this office. A serial number may kindly be allotted to the said accepted Complete Specification and the notice of acceptance issued to the applicant(s) directly from your office and copy therefore endorsed to this office for record. The notification regarding acceptance of this application for publication in the Gazette of India, the original ~~Provisional Specification including drawings~~, complete specification including drawings as accepted, the Abridgement, Opening page, Coding Sheet and Abstract are enclosed herewith for further action in regard to publication and printing. There is/~~are~~ no corresponding application(s) filed abroad on this invention.

This application ~~relates to~~ Food/Drug, ~~under Section 5(a) of~~ the Patents Act, 1970.

The reference of Indian copending application given on page of the ~~provisional / complete~~ specification may be replaced by corresponding Patent specification No.

Triplicate copies of the application, ~~Provisional Specification including drawings~~ and complete specification including drawings are enclosed herewith for your office use.

Yours faithfully,
Pjain
23/7/02
(PINKESH K.JAIN)
EXAMINER OF PATENTS & DESIGNS
For ASSTT. CONTROLLER OF PATENTS & DESIGNS

Enclosures :
1. Application
2. ~~Prov. Specn including drawings (original & triplicate)~~
3. Complete Specification including drawings (original & triplicate) Page No. 1, 2 & 10.
4. Notification (Eight copies)
5. Abridgement
6. Coding Sheet (in Duplicate)
7. Abstract
8. Statement of the application filed
9. Alteration of date (duplicate)
10. A copy of Form-10/Form-6
11. A copy of Form-29/Form-13
12. Notification for claimant under Section 20(1)(Duplicate

RMID - 2

sarju LASER

24/11/05

Manoj G. Menda
6/7 Sorab Bharucha Rd,
Colaba,
Mumbai 400 005.

To,

The Controller of Patents.
The Patents Office,
Lower Parel,
Mumbai.

(13)

Ref:- Status of Patent Application Nos.
1) 610/BOM/1998
2) 611/Bom/1998 under S. 153 of the Patents Act

18729

Respected Sir,

I, hereby, request you to kindly furnish me with details regarding the status of the aforesaid two applications, as to whether these applications have been opposed or have been granted patent and have been sealed along with the date of sealing.

Thanking you in anticipation.

Yours faithfully,

[signature]

For, Manoj G. Menda

600/ [illegible] 18729, 24/11/05

[illegible]

RMID - 2

INTELLECTUAL
PROPERTY **INDIA**
बौद्धिक सम्पदा भारत
एकस्व / अभिकल्प / व्यापार चिन्ह / भौगोलिक संकेत
PATENTS / DESIGNS / TRADEMARKS / GEOGRAPHICAL INDICATIONS

सत्यमेव जयते
भारत सरकार /GOVERNMENT OF INDIA
पेटेन्ट कार्यालय /THE PATENT OFFICE
तोडी इस्टेट, ३ री मंजिल, सन मिल कंपाउंड, लोअर परेल (प.), मुंबई- ९३
Todi Estate, 3rd Floor, Sun Mill Compound
Lower Parel (West), Mumbai – 400 013

दूरभाष Tel 022-2492 4058
022-2492 5092
022-2496 1370
022-24949845
022-24922710
फॅक्स Fax 022-2495 0622
022-24903852
Email patmum@vsnl.net
Website www. ipindia.nic.in

No. 610/BOM/1998

6971/8/05

Date: 8/12/05

To.
Manoj G. Menda,
6/7 Sohrab Bharucha Rd.,
Colaba,
Mumbai 400 005.

Sub:Request u/s 153 in respect of Patent Application No. 610/BOM/1998

Sir.

With reference to your letter dated 24/11/2005 requesting information u/s 153 in respect of the captioned patent application No. 610/BOM/1998, I would like to inform you that patent has been granted (sealed) on 24.10.2003 to said application.

Yours faithfully,

Pjain
7/12/05

(Pinkesh Jain)
Examiner of Patents & Designs.
For Asstt. Controller of Patents & Designs.

OK
RP

RMID - 2

FORM 1

THE PATENTS ACT, 1970

APPLICATION FOR PATENT WHEN THE TRUE AND FIRST INVENTOR IS THE SOLE OR JOINT APPLICANT

(See Section 7)

I BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE(W), MUMBAI - 400 049, MAHARASHTRA, India , INDIAN national hereby declare : -

i) that I am in possession of an invention for A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS OR NON-METALS ;

ii) that I the said BHARAT BHOGILAL PATEL claim to be the true and first inventor thereof;

iii) that the complete specification filed with this application is and any amended specification which may hereafter be filed in this behalf will be true of the invention to which this application relates;

iv) that I believe that I am entitled to a patent for the said invention having regard to the provisions of the Patents Act, 1970;

v) that to the best of my knowledge, information and belief the facts and matters stated herein are correct and that there is no lawful ground of objection to the grant of patent to me on this application.

I request that a patent may be granted to me for the said invention.

BKGP
610/Bom/98
21/09/98

13 MAR 2002

RMID - 2

FORM - 4

THE PATENTS ACT, 1970.
STATEMENT AND UNDERTAKING UNDER SECTION 8

(see Rule 13)

ORIGINAL

I BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W) MUMBAI - 400 049, MAHARASHTRA India, INDIAN national who have made an application for patent Numbered 610/BOM/1998 dated 21/09/1998 for our invention relating to A PROCESS OF MARKING, ETCHING & ENGRAVING THROUGH LASER TECHNOLOGY hereby declare :-

(i) We claim the title to make the said application/deriving the title in the said invention from me/us, have made application for patent for the same/invention in the following countries namely :

(a) NONE

(ii) that the said application has/have been accepted, refused, abondened or withdrawn; NONE

(iii) that the following patent has/have been granted on such application :- NONE

** (iv) that the rights in the application have been assigned to NONE

** (v) that I undertake that upto the date of acceptance of the complete specification filed in connection with our above mentioned application, we would keep the controller informed in writing from time to time of the details regarding application for patents filed outside India from time to time for the same or substantially same invention within three months from date of filing of such application;

** (vi) that the facts and matters stated herein are true to our knowledge, information and belief.

Dated this 2nd day of September, 1998.

Bharat Patel

BHARAT BHOGILAL PATEL

To
The Controller Of Patents,
The Patent Office,
Mumbai

610 | मुंबई BOM | 1998

21 SEP 1998

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FORM 6

THE PATENTS ACT, 1970

DECLARATION AS TO INVENTORSHIP

[(See Rule 14(5)]

ORIGINAL

I BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME,VILE PARLE(W) MUMBAI - 400 049 India, INDIAN national do hereby declare that the true and first inventor of the invention disclosed in the complete specification filed in pursuance of my application Numbered 610/BOM/1998 Dated 21/09/1998 is BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W), MUMBAI - 400 049 MAHARASHTRA India, INDIAN national and that our right to apply for a patent for the invention is as follows : -

I am the true and first Inventor.

Dated this 2nd day of September 1998.

Bhat. Patel

BHARAT BHOGILAL PATEL

To
The Controller Of Patents,
The Patent Office,
Mumbai

610 | मुंबई / BOM | 1998

21 SEP 1998

RMID - 2

FORM – 3A

THE PATENTS ACT, 1970

COMPLETE
SPECIFICATION

SECTION 10

TITLE : A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS OR NON-METALS

APPLICANT:- BHARAT BHOGILAL PATEL,OF 1/43 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W), MUMBAI 400 049, MAHARASHTRA, INDIA. AN INDIAN NATIONAL.

The following Specification particularly describes and ascertains the nature of this invention and the manner in which it is to be performed : -

6. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power)

7. A process of marking, etching & engraving as claimed in claim 1 and substantially herein described.

Dated this 14th day of September, 1998.

HIRAL CHANDRAKANT JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

RMID - 2

I CLAIM :

1. A process of manufacturing engraved design articles on metals or non-metals consisting of ,

   a. marking the required design on metal or non-metal;

   b. etching the outer and inner area of the design;

   c. engraving the etched area and finally drilling the engraved area by means of laser beam through sequential command from a computer to obtain ornamented design on precious metals and non-metals.

2. A process as claimed in claim 1 wherein the metal and non-metals are Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like Chains, bracelets, necklace, bangles, jewellary boxes, rings, ear rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopedic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A laser marking & an engraving machine for carrying out the process as claimed in claim 1 as comprising of the laser head comprising of head, mirror mount to mount to regulate the apparatus so as to vary the intensity of the Laser Beam, which is further provided with a beam bender for positioning the beam in a required direction which is supported in a

RMID - 2

rail & connected to a control panel provided with power supply, RF Driver, Heat Exchanger, Chiller to generate a laser beam of required intensity for marking/etching, engraving, scrubbing, cutting as per the required design programmable through a compute on metals & non-metals through beam steared galvo's & flat field galvo's/scanning heads.

4. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser head, through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (6) for directing the laser beam on required area on the object place on the table (8).

5. A process for marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

TRPL

I CLAIM :

1. A process of manufacturing engraved design articles on metals or non-metals consisting of
   a. marking the required design on metal or non-metal;
   b. etching the outer and inner area of the design;
   c. engraving the etched area and finally drilling the engraved area by means of laser beam through sequential command from a computer to obtain ornamented design on precious metals and non-metals.

2. A process as claimed in claim 1 wherein the metal and non-metals are Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like Chains, bracelets, necklace, bangles, jewellary boxes, rings, ear rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopedic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A laser marking & an engraving machine for carrying out the process as claimed in claim 1 as comprising of the laser head comprising of head, mirror mount to mount to regulate the apparatus so as to vary the intensity of the Laser Beam, which is further provided with a beam bender for positioning the beam in a required direction which is supported in a

RMID - 2

rail & connected to a control panel provided with power supply, RF Driver, Heat Exchanger, Chiller to generate a laser beam of required intensity for marking/etching, engraving, scrubbing, cutting as per the required design programmable through a compute on metals & non-metals through beam steared galvo's & flat field galvo's/scanning heads.

4. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser head, through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (6) for directing the laser beam on required area on the object place on the table (8).

5. A process for marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

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6. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power)

7. A process of marking, etching & engraving as claimed in claim 1 and substantially herein described.

Dated this 14th day of September, 1998.

HIRAL CHANDRAKANT JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

sarju LASER

-11
-3
-D-1

FORM 3 A

THE PATENTS ACT, 1970
COMPLETE SPECIFICATION

(See Section 10)

A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS OR NON-METALS

BHARAT BHOGILAL PATEL of 1/43 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE(W), MUMBAI - 400 049, MAHARASHTRA, India, INDIAN national

The following specification particularly describes and ascertains the nature of this invention and the manner inwhich it is to be performed : -

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21/09/98

13 MAR 2002

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GRANTED

A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS AND NON METALS

The invention relates to a process of manufacturing engraved design articles on metals and non metals.

More particularly the invention relates to marking & engraving on metals and non-metals by use of Laser Beam Technology.

Conventionally these work was carried out by printing & then etching by means of mechanical as well as chemical means. The prior process of printing of required design on the object itself is a lengthy process such as making of a artwork, making of pattern, drawings, logos, symbols which is then photographed and developed to get a positive and negatives then the master copy is prepared and alternatively printing with a acid resistive ink and subsequently the etching process. The prior process has got its limitations for the Finner works & on the shape of the object and all types of metals can not be etched with this process. Apart from the difficulty in printing on the substance the process of etching is also a tedious. Conventionally as all metals are not easily dissolve by the acid treatment. The process itself is a tedious, lengthy and hence costly. To develop a intricate design on some metals or non-metals where the precision is of the prime need or the substance itself is very costly or the shape of the object is such (round or cylindrical) it is difficult to have a proper marking/etching effect in the prior process.

Due to high manufacturing and disposal cost of the inkjet markers &

& environmental concerns make acid etching chemistry to costly. Due to the cost in creating, storing, & replacing stencils or to avoid mutli-step process the inventor has done lot of research on a laser marking & engraving machine & came up with a unique laser marking system which can provide with a unique combination of speed, performance, especially imaging properties & a benefit of computer control which can lead to a clean, simple to use, one step process for making virtually any text or graphic image on almost any metals or non-metallic materials.

OBJECT OF THE INVENTION:

1. The primary object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which gives improved marking quality.

2. The another object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals to reduce the maintenance cost.

3. The further object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which eliminates secondary processes.

4. A still further object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which is safe, easy to handle, economic.

5. Still further object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which has treeability to identify through monograms, logos Batchnumber, Barcode, Codenumber & pilferproof marking on the substance through this technology.

6. Still further object of the invention is to provide such an improved machine where the marking is pilferproof which is universally acclaimed for laser marking on the substance itself for export purposes.

Accordingly there is provided a process of marking, etching & engraving by using laser beam technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparature mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos.

The instrument is further provided with mirror mount for the mounting of plurality of mirrors. Q-switch mount for Q-switch. Apperture mount for apperture. Head which is got gold cavities, lamps source (CO_2 and Nd: VAG) & etc.

The system is connected by the electronic circuit through a power supply. The description will now be claimed from the following figure 1,2,3 in the accompanying specification.

Fig. 1 is a schematic diagram of a laser marking machine.

Fig. 2 is a sectional elevation of laser head.

Fig. 3 is a sectional elevation of Galvo's.

Referring to Fig. 1 to 3 the power supply (1) main is connected to stablilizer (2) in series which is connected to the computer (3) through a control panel in series which gives input to the Galvo steared beams (5) through a RF driver; input from control panel (4) generate laser beam on the laser head (7) which is used through a galvo's consisting of beam steared galvo & flat field galvo which rotates the beam as per the required design/markings. The substance is kept below the galvo. On some table (8) which is adjustable for focusing the length of the beam. The apparatus is further provided with a chiller for chilling primary circuits in the laser head as well as deionised water cooling for the laser head internally as well as externally. The object is placed on

the table then focal point is adjusted to get the right beam spot size on the object. Then a program is being load on the computer and frequency are being set on the computer for desired result. Once the setup is ready we only adjust power according to the dept required. Then the command is given on the computer for marking on the object through the galvo's by laser beam.

Galvo's provided with frequency generator laser scanning lenses the frequency lenses can be design as per laser marking required by the customer.

F-Theta lenses have been designed for Laser Marking, Engraving, Printing, Graphic Art, Mirco-machining, Trimming, Guaging, and Surface Cleaning. These High Quality Air-Spaced F-Theta Lenses are designed to provide diffraction limited performance and low F-Theta distortion.

A table showing the spot size according to area is given as under.

Wavelength (nm)	Focal Length (mm)	Scan Area (mm)	Spot Size (um)
1064	56	20 x 20	5
1064	80	56 x 56	15
1064	100	60 x 60	14
1064	100	60 x 60	14
1064	100	60 x 60	12
1064	125	64 x 64	12
1064	125	64 x 64	12
1064	160	98 x 98	25
1064	160	98 x 98	25
1064	160	100 x 100	23
1064	160	110 x 110	23
1064	163	110 x 110	31

1064	163	100 x 100	31
1064	163	100 x 100	18
1064	164	100 x 100	29
1064	164	100 x 100	29
1064	181	72 x 72	24
1064	181	72 x 72	24
1064	235	106 x 106	31
1064	235	106 x 106	31
1064	240	168 x 168	30
1064	240	168 x 168	30
1064	254	160 x 160	22
1064	254	160 x 160	22
1064	295	254 x 254	30
1064	300	212 x 212	30
1064	300	212 x 212	30
1064	300	212 x 212	20
1064	330	225 x 225	40
1064	330	225 x 225	40
1064	350	220 x 220	33
1064	410	250 x 250	34
1064	420	285 x 285	50
1064	420	285 x 285	50
1064	810	500 x 500	55
820	401	220 x 220	25
780	88	40 x 40	8
780	296	180 x 180	30
780	508	330 x 330	22
633/670	88	40 x 40	8
633/670	156	70 x 70	32
633/670	156	70 x 70	12
633	105	30 x 30	9
633	155	70 x 70	13
532	56	18 x 18	6
532	100	50 x 50	10
532	94	55 x 55	10
532	94	55 x 55	10
532	102	53 x 53	7
532	102	53 x 53	7
532	159	100 x 100	14
532	159	100 x 100	14
532	163	80 x 80	20
532	254	150 x 150	18
532	250	150 x 150	11
532	300	175 x 175	18
532	410	225 x 225	30
532	508	350 x 350	15
532	810	500 x 500	30

488	508	330 x 330	22
355	254	100 x 100	21
355	810	400 x 400	30
308	254	100 x 100	21
10600	120	76 x 76	250
10600	157	100 x 100	325

The power ranging to 10 watts to 200 watts for different types of heads are available for different types of markings to get generated at different speeds. Laser lamps and rods & source of generating LASER are provided as per the design of the head use for manufacturing of the lasers.

In many cases there are several laser lamps available for any given laser type. Laser lamps will provide, were possible, the lamps from the manufacturer of your choice. Laser lamps are continuously being improved so that all times provide the laser lamps best suited for a given laser system and application. There are thousands of laser lamps that can readily provided. Our extensive cross-reference list should identify the compatible laser lamp model number.

Thus the apparatus has got a varsalite application in the field of metal, ceramic, plastic, jewellary, orthopedic, medical, pilferproof, optical industries, & high precision tools & equipment manufacturing.

The unique marking device by the laser technology which has a very wide range of application is generating very good demand in local as well as the market abroad. The inventor has done lot of research to improve upon the machine as well as the marking technology. Several modifications by changing the galvo's, scanning head, Q-switch, mirror, beam benders are possible on different types of materials for marking/engraving as well as designing. By deep engraving, cutting of material is also possible by a multi pass means of working.

The machine is user's friendly does not require any great skill for handling the job. This is an embodiment several modifications are possible which may be considered with the spirit & ambit of this invention.

I CLAIM :

1. A process of manufacturing engraved design articles on metals or non-metals using laser beam technology consisting of

   a. marking the required design on metal or non-metal;

   b. etching the outer and inner area of the design;

   c. engraving the etched area and finally drilling the engraved area by means of laser beam through sequential command from a computer to obtain ornamented design on precious metals and non-metals.

2. A process as claimed in claim 1 wherein the metal and non-metals are Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like Chains, bracelets, necklace, bangles, jewellary boxes, rings, ear rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopedic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A process of maanufacturing engraved designed article as claimed in claim 1 and substantially herein described.

Dated this 14th day of September, 1998.

HIRAL CHANDRAKANT JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

RMID - 2

NAME OF APPLICANT : BHARAT BHOGILAL PATEL
APPLICATION NO. : 610 /BOM/98

NO OF SHEETS :2
SHEET NO. :1

RMID - 2

21 SEP 1998

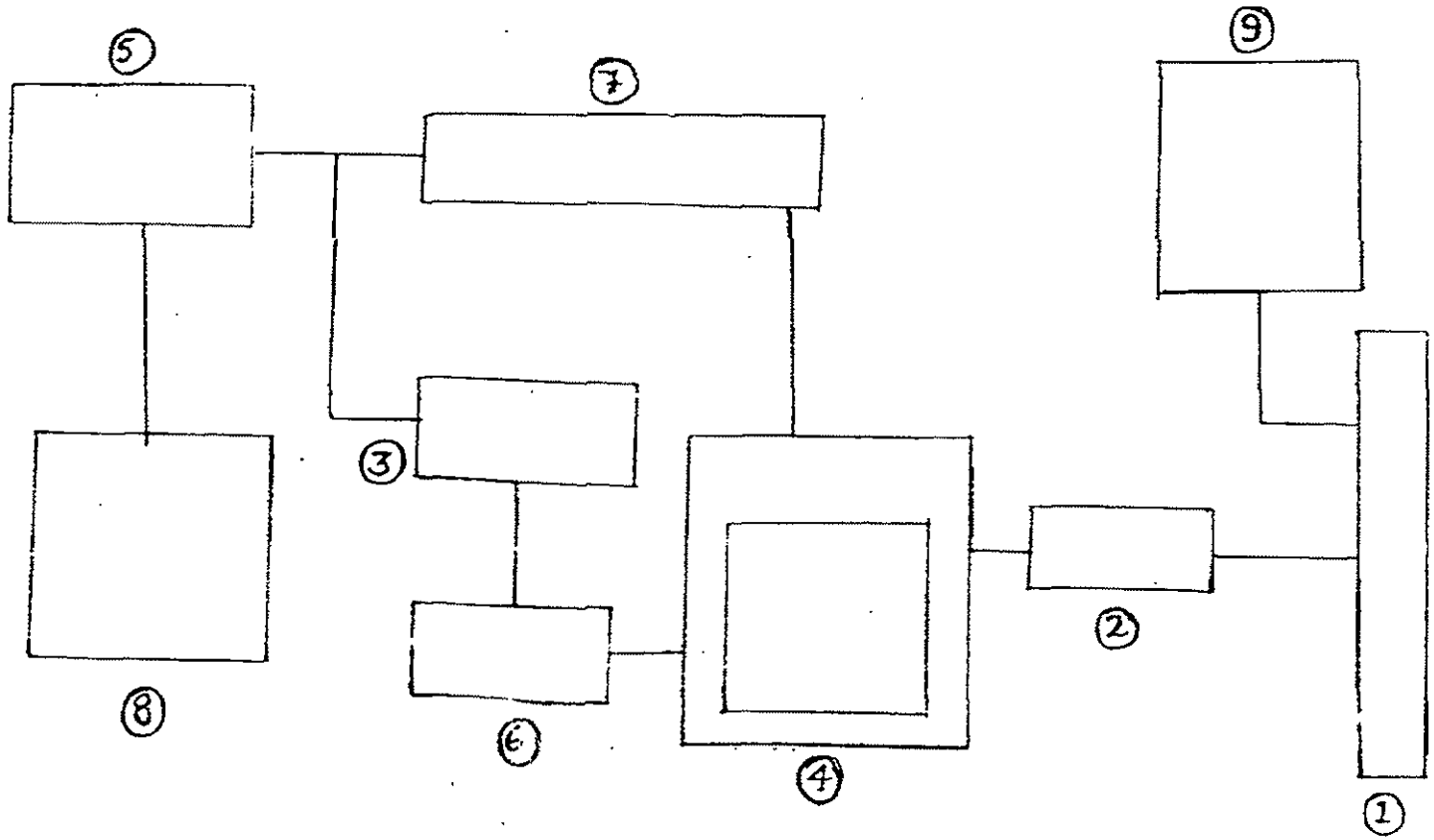

FIG.1

CHANDRAKANT M. JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

P-15
C-7
D-2

FORM 3 A

THE PATENTS ACT, 1970
COMPLETE SPECIFICATION

(See Section 10)

A PROCESS OF ~~MANUFACTURING CUTLERY AND GOLD ORNAMENTS~~ Marking, Etching & Engraving THROUGH LASER TECHNOLOGY

BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W), MUMBAI - 400 049 India, INDIAN national

The following specification particularly describes and ascertains the nature of this invention and the manner in which it is to be performed : -

PROCESS OF MARKING, ETCHING & ENGRAVING BY USING LASER BEAM TECHNOLOGY ON METALS & NON-METALS

The invention relates to a process of marking, etching & engraving by using laser beam technology on metals & non-metals. More particularly the invention relates to marking & engraving on metals and non-metals by use of Laser Beam Technology.

Conventionally these work was carried out by printing & then etching by means of mechanical as well as chemical means. The prior process of printing of required design on the object itself is a lengthy process such as making of a artwork, making of pattern, drawings, logos, symbols which is then photographed and developed to get a positive and negatives then the master copy is prepared and alternatively printing with a acid resistive ink and subsequently the etching process. The prior process has got its limitations for the Finner works & on the shape of the object and all types of metals can not be etched with this process. Apart from the difficulty in printing on the substance the process of etching is also a tedious process. Conventionally as all metals are not easily dissolve by the acid treatment. The process itself is a tedious, lengthy and hence costly. To develop a intricate design on some metals or non-metals where the precision is of the prime need or the substance itself is very costly or the shape of the object is such (round or cylindrical) it is difficult to have a proper marking/etching effect in the prior process.

Due to high manufacturing and disposal cost of the inkjet markers

& environmental concerns make acid etching chemistry to costly. Due to the cost in creating, storing, & replacing stencils or to avoid mutli-step process the inventor has done lot of research on a laser marking & engraving machine & came up with a unique laser marking system which can provide with a unique combination of speed, performance, especially imaging properties & a benefit of computer control which can lead to a clean, simple to use, one step process for making virtually any text or graphic image on almost any metals or non-metallic materials.

OBJECT OF THE INVENTION:

1. The primary object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which gives improved marking quality.

2. The another object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals to reduce the maintenance cost.

3. The further object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which eliminates secondary processes.

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4. A still further object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which is safe, easy to handle, economic.

5. Still further object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which has treeability to identify through monograms, logos Batchnumber, Barcode, Codenumber & pilferproof marking on the substance through this technology.

6. Still further object of the invention is to provide such an improved machine where the marking is pilferproof which is universally acclaimed for laser marking on the substance itself for export purposes.

Accordingly there is provided a process of marking, etching & engraving by using laser beam technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparature mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos.

The instrument is further provided with mirror mount for the mounting of plurality of mirrors. Q-switch mount for Q-switch. Apperture mount for apperture. Head which is got gold cavities, lamps source (co_2 and Nd: VAG) & etc.

The system is connected by the electronic circuit through a power supply. The description will now be claimed from the following figure 1,2,3 in the accompanying specification.

Fig. 1 is a schematic diagram of a laser marking machine.

Fig. 2 is a sectional elevation of laser head.

Fig. 3 is a sectional elevation of Galvo's.

Referring to Fig. 1 to 3 the power supply (1) main is connected to stablilizer (2) in series which is connected to the computer (3) through a control panel in series which gives input to the Galvo steared beams (5) through a RF driver; input from control panel (4) generate laser beam on the laser head (7) which is used through a galvo's consisting of beam steared galvo & flat field galvo which rotates the beam as per the required design/markings. The substance is kept below the galvo. On some table (8) which is adjustable for focusing the length of the beam. The apparatus is further provided with a chiller for chilling primary circuits in the laser head as well as deionised water cooling for the laser head internally as well as externally. The object is placed on

the table then focal point is adjusted to get the right beam spot size on the object. Then a program is being load on the computer and frequency are being set on the computer for desired result. Once the setup is ready we only adjust power according to the dept required. Then the command is given on the computer for marking on the object through the galvo's by laser beam.

Galvo's provided with frequency generator laser scanning lenses the frequency lenses can be design as per laser marking required by the customer.

F-Theta lenses have been designed for Laser Marking, Engraving, Printing, Graphic Art, Mirco-machining, Trimming, Guaging, and Surface Cleaning. These High Quality Air-Spaced F-Theta Lenses are designed to provide diffraction limited performance and low F-Theta distortion.

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1064	125	64 x 64	12
1064	160	98 x 98	25
1064	160	98 x 98	25
1064	160	100 x 100	23
1064	160	110 x 110	23
1064	163	110 x 110	31

1064	163	100 x 100	31
1064	163	100 x 100	18
1064	164	100 x 100	29
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1064	254	160 x 160	22
1064	254	160 x 160	22
1064	295	254 x 254	30
1064	300	212 x 212	30
1064	300	212 x 212	30
1064	300	212 x 212	20
1064	330	225 x 225	40
1064	330	225 x 225	40
1064	350	220 x 220	33
1064	410	250 x 250	34
1064	420	285 x 285	50
1064	420	285 x 285	50
1064	810	500 x 500	55
820	401	220 x 220	25
780	88	40 x 40	8
780	296	180 x 180	30
780	508	330 x 330	22
633/670	88	40 x 40	8
633/670	156	70 x 70	32
633/670	156	70 x 70	12
633	105	30 x 30	9
633	155	70 x 70	13
532	56	18 x 18	6
532	100	50 x 50	10
532	94	55 x 55	10
532	94	55 x 55	10
532	102	53 x 53	7
532	102	53 x 53	7
532	159	100 x 100	14
532	159	100 x 100	14
532	163	80 x 80	20
532	254	150 x 150	18
532	250	150 x 150	11
532	300	175 x 175	18
532	410	225 x 225	30
532	508	350 x 350	15
532	810	500 x 500	30

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488	508	330 x 330	22
355	254	100 x 100	21
355	810	400 x 400	30
308	254	100 x 100	21
10600	120	76 x 76	250
10600	157	100 x 100	325

The power ranging to 10 watts to 200 watts for different types of heads are available for different types of markings to get generated at different speeds. Laser lamps and rods & source of generating LASER are provided as per the design of the head use for manufacturing of the lasers.

In many cases there are several laser lamps available for any given laser type. Laser lamps will provide, were possible, the lamps from the manufacturer of your choice. Laser lamps are continuously being improved so that all times provide the laser lamps best suited for a given laser system and application. There are thousands of laser lamps that can readily provided. Our extensive cross-reference list should identify the compatible laser lamp model number.

Thus the apparatus has got a varsalite application in the field of metal, ceramic, plastic, jewellary, orthopedic, medical, pilferproof, optical industries, & high precision tools & equipment manufacturing.

The unique marking device by the laser technology which has a very wide range of application is generating very good demand in local as well as the market abroad. The inventor has done lot of research to improve upon the machine as well as the marking technology. Several modifications by changing the galvo's, scanning head, Q-switch, mirror, beam benders are possible on different types of materials for marking/engraving as well as designing. By deep engraving, cutting of material is also possible by a multi pass means of working.

The machine is user's friendly does not require any great skill for handling the job. This is an embodiment several modifications are possible which may be considered with the spirit & ambit of this invention.

I CLAIM :-

1. A process of marking, etching & engraving by using laser beam technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparature mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos. This process consisting of the following steps.

1. Selecting a design for marking.
2. Programming the said design of Step 1 in the computer.
3. Setting the object on the table for the focal length.
4. Setting the intensity of the laser beam.
5. Adjusting the frequency & speed in the computer according to the substance & design requirement.
6. Commanding the computer to complete the job which is completed automatically for the multiple pieces also.

2. A process of marking, etching, engraving & drilling by using laser beam technology on metals & non-metals as claimed in claim 1 which is used for Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like chains, bracelets, necklace, bangles, jewellary boxes, rings, ear

rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopadic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A laser marking & engraving machine consisting of the laser head comprising of head, mirror mount to mount the mirror, Q-switch to mount the Q-switch for apparative mount to regulate the apparature so as to vary the intensity of the Laser Beam, which is further provided with a beam bender for positioning the beam in a required direction which is supported in a rail & connected to a control panel provided with power supply, RF Driver, Heat Exchanger, Chiller to generate a laser beam of required intensity for marking/etching, engraving, scrubbing, cutting as per the required design programmable through a computer on metals & non-metals through beam steared galvo's & flat field galvo's/scanning heads.

4. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the

programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser head. through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (6) for directing the laser beam on required area on the object place on the table (8).

5. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

6. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power).

7. A process of marking, etching & engraving as claimed in claim 1 and substantially herein described

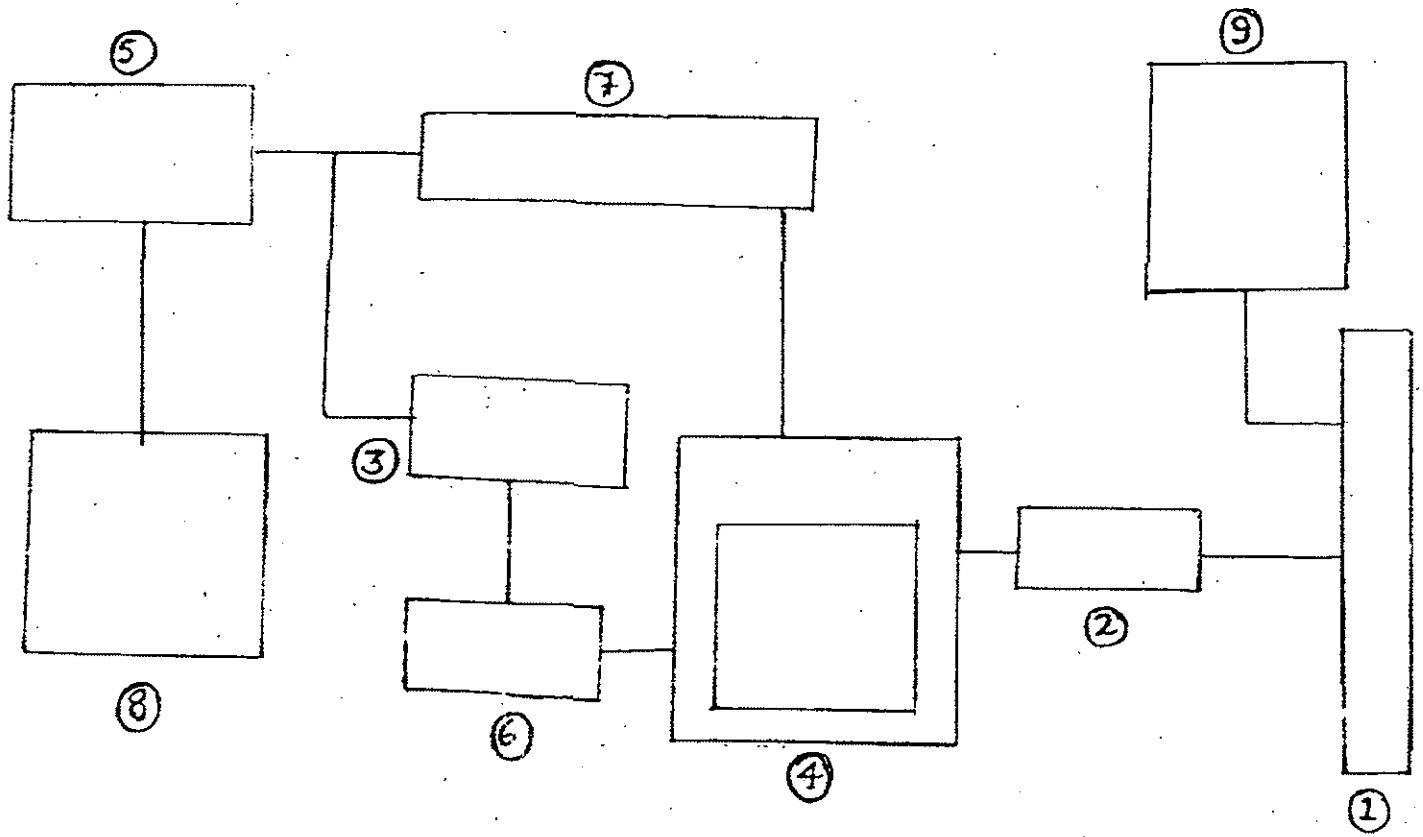
Dated on 14th September, 1998.

RMID - 2

CHANDRAKANT M. JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

NAME OF APPLICANT : BHARAT BHOGILAL PATEL
APPLICATION NO. : 610 /BOM/98

NO OF SHEETS :2
SHEET NO. :1



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21 SEP 1998

FIG.1

CHANDRAKANT M. JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

NAME OF APPLICANT : BHARAT BHOGILAL PATEL
APPLICATION NO. - 610/BOM/98

NO OF SHEETS :2
SHEET NO. :2

RMID - 2

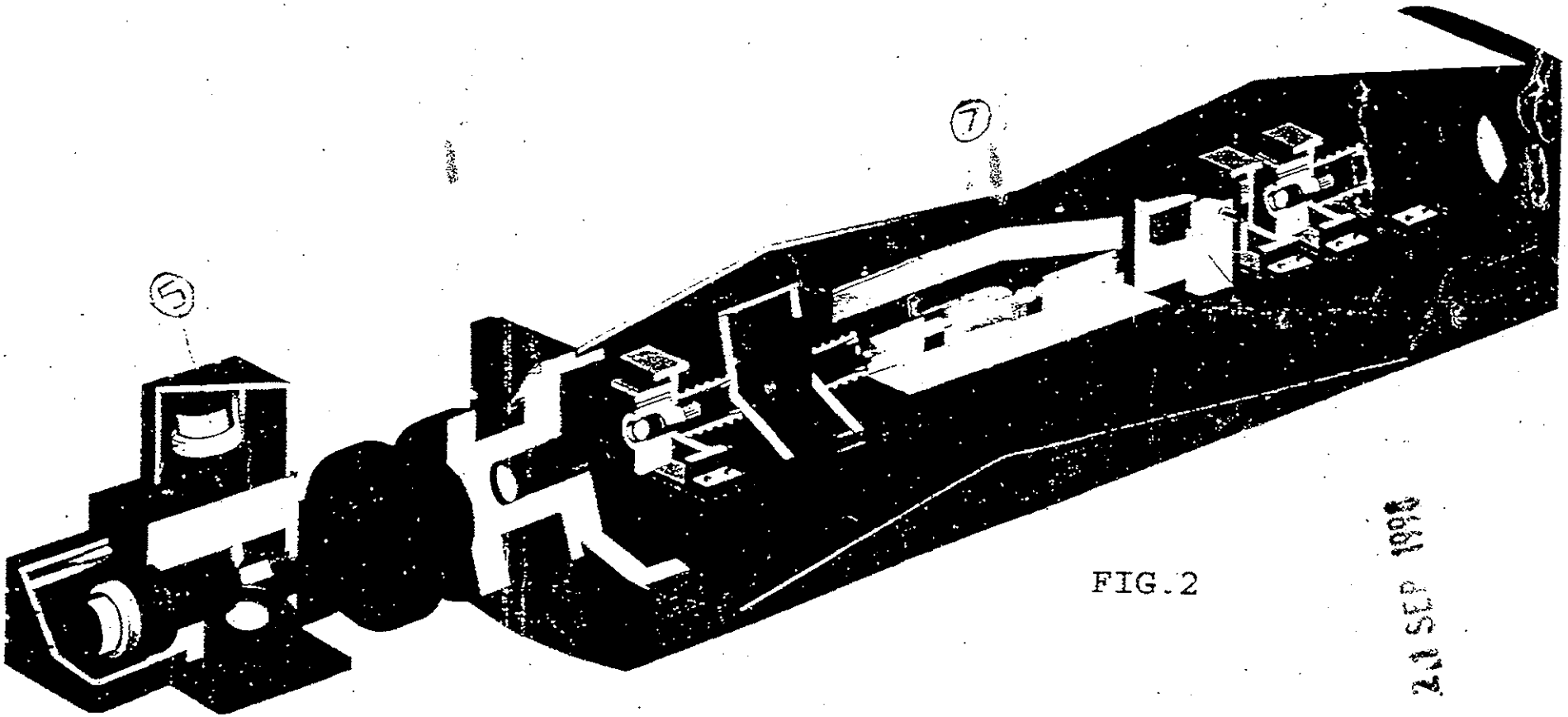

FIG.2

21 SEP 1998

FIG.3

CHANDRAKANT M. JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

ABSTRACT

A process of marking, etching & engraving by using laser beam technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparature mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos. This process consisting of the following steps.

1. Selecting a design for marking.
2. Programming the said design of Step 1 in the computer.
3. Setting the object on the table for the focal length.
4. Setting the intensity of the laser beam.
5. Adjusting the frequency & speed in the computer according to the substance & design requirement.
6. Commanding the computer to complete the job which is completed automatically for the multiple pieces also.

FORM 3 A

THE PATENTS ACT, 1970
COMPLETE SPECIFICATION

(See Section 10)

A PROCESS OF ~~MANUFACTURING CUTLERY AND GOLD ORNAMENTS~~ Marking, Etching & Engraving THROUGH LASER TECHNOLOGY

BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W), MUMBAI - 400 049 India, INDIAN national

The following specification particularly describes and ascertains the nature of this invention and the manner in which it is to be performed : -

A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS AND NON METALS

The invention relates to a process of manufacturing engraved design articles on metals and non metals.

More particularly the invention relates to marking & engraving on metals and non-metals by use of Laser Beam Technology.

Conventionally these work was carried out by printing & then etching by means of mechanical as well as chemical means. The prior process of printing of required design on the object itself is a lengthy process such as making of a artwork, making of pattern, drawings, logos, symbols which is then photographed and developed to get a positive and negatives then the master copy is prepared and alternatively printing with a acid resistive ink and subsequently the etching process. The prior process has got its limitations for the Finner works & on the shape of the object and all types of metals can not be etched with this process. Apart from the difficulty in printing on the substance the process of etching is also a tedious. Conventionally as all metals are not easily dissolve by the acid treatment. The process itself is a tedious, lengthy and hence costly. To develop a intricate design on some metals or non-metals where the precision is of the prime need or the substance itself is very costly or the shape of the object is such (round or cylindrical) it is difficult to have a proper marking/etching effect in the prior process.

Due to high manufacturing and disposal cost of the inkjet markers &

& environmental concerns make acid etching chemistry to costly. Due to the cost in creating, storing, & replacing stencils or to avoid mutli-step process the inventor has done lot of research on a laser marking & engraving machine & came up with a unique laser marking system which can provide with a unique combination of speed, performance, especially imaging properties & a benefit of computer control which can lead to a clean, simple to use, one step process for making virtually any text or graphic image on almost any metals or non-metallic materials.

OBJECT OF THE INVENTION:

1. The primary object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which gives improved marking quality.

2. The another object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals to reduce the maintenance cost.

3. The further object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which eliminates secondary processes.

4. A still further object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which is safe, easy to handle, economic.

5. Still further object of the invention is to provide a process of marking, etching & engraving by using laser beam technology on metals & non-metals which has treeability to identify through monograms, logos Batchnumber, Barcode, Codenumber & pilferproof marking on the substance through this technology.

6. Still further object of the invention is to provide such an improved machine where the marking is pilferproof which is universally acclaimed for laser marking on the substance itself for export purposes.

Accordingly there is provided a process of marking, etching & engraving by using laser beam technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparature mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos.

The instrument is further provided with mirror mount for the mounting of plurality of mirrors. Q-switch mount for Q-switch. Apperture mount for apperture. Head which is got gold cavities, lamps source (CO_2 and Nd: VAG) & etc.

The system is connected by the electronic circuit through a power supply. The description will now be claimed from the following figure 1,2,3 in the accompanying specification.

Fig. 1 is a schematic diagram of a laser marking machine.

Fig. 2 is a sectional elevation of laser head.

Fig. 3 is a sectional elevation of Galvo's.

Referring to Fig. 1 to 3 the power supply (1) main is connected to stablilizer (2) in series which is connected to the computer (3) through a control panel in series which gives input to the Galvo steared beams (5) through a RF driver; input from control panel (4) generate laser beam on the laser head (7) which is used through a galvo's consisting of beam steared galvo & flat field galvo which rotates the beam as per the required design/markings. The substance is kept below the galvo. On some table (8) which is adjustable for focusing the length of the beam. The apparatus is further provided with a chiller for chilling primary circuits in the laser head as well as deionised water cooling for the laser head internally as well as externally. The object is placed on

the table then focal point is adjusted to get the right beam spot size on the object. Then a program is being load on the computer and frequency are being set on the computer for desired result. Once the setup is ready we only adjust power according to the dept required. Then the command is given on the computer for marking on the object through the galvo's by laser beam.

Galvo's provided with frequency generator laser scanning lenses the frequency lenses can be design as per laser marking required by the customer.

F-Theta lenses have been designed for Laser Marking, Engraving, Printing, Graphic Art, Mirco-machining, Trimming, Guaging, and Surface Cleaning. These High Quality Air-Spaced F-Theta Lenses are designed to provide diffraction limited performance and low F-Theta distortion.

A table showing the spot size according to area is given as under.

Wavelength (nm)	Focal Length (mm)	Scan Area (mm)	Spot Size (um)
1064	56	20 x 20	5
1064	80	56 x 56	15
1064	100	60 x 60	14
1064	100	60 x 60	14
1064	100	60 x 60	12
1064	125	64 x 64	12
1064	125	64 x 64	12
1064	160	98 x 98	25
1064	160	98 x 98	25
1064	160	100 x 100	23
1064	160	110 x 110	23
1064	163	110 x 110	31

1064	163	100 x 100	31
1064	163	100 x 100	18
1064	164	100 x 100	29
1064	164	100 x 100	29
1064	181	72 x 72	24
1064	181	72 x 72	24
1064	235	106 x 106	31
1064	235	106 x 106	31
1064	240	168 x 168	30
1064	240	168 x 168	30
1064	254	160 x 160	22
1064	254	160 x 160	22
1064	295	254 x 254	30
1064	300	212 x 212	30
1064	300	212 x 212	30
1064	300	212 x 212	20
1064	330	225 x 225	40
1064	330	225 x 225	40
1064	350	220 x 220	33
1064	410	250 x 250	34
1064	420	285 x 285	50
1064	420	285 x 285	50
1064	810	500 x 500	55
820	401	220 x 220	25
780	88	40 x 40	8
780	296	180 x 180	30
780	508	330 x 330	22
633/670	88	40 x 40	8
633/670	156	70 x 70	32
633/670	156	70 x 70	12
633	105	30 x 30	9
633	155	70 x 70	13
532	56	18 x 18	6
532	100	50 x 50	10
532	94	55 x 55	10
532	94	55 x 55	10
532	102	53 x 53	7
532	102	53 x 53	7
532	159	100 x 100	14
532	159	100 x 100	14
532	163	80 x 80	20
532	254	150 x 150	18
532	250	150 x 150	11
532	300	175 x 175	18
532	410	225 x 225	30
532	508	350 x 350	15
532	810	500 x 500	30

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488	508	330 x 330	22
355	254	100 x 100	21
355	810	400 x 400	30
308	254	100 x 100	21
10600	120	76 x 76	250
10600	157	100 x 100	325

The power ranging to 10 watts to 200 watts for different types of heads are available for different types of markings to get generated at different speeds. Laser lamps and rods & source of generating LASER are provided as per the design of the head use for manufacturing of the lasers.

In many cases there are several laser lamps available for any given laser type. Laser lamps will provide, were possible, the lamps from the manufacturer of your choice. Laser lamps are continuously being improved so that all times provide the laser lamps best suited for a given laser system and application. There are thousands of laser lamps that can readily provided. Our extensive cross-reference list should identify the compatible laser lamp model number.

Thus the apparatus has got a varsalite application in the field of metal, ceramic, plastic, jewellary, orthopedic, medical, pilferproof, optical industries, & high precision tools & equipment manufacturing.

RMID - 2

The unique marking device by the laser technology which has a very wide range of application is generating very good demand in local as well as the market abroad. The inventor has done lot of research to improve upon the machine as well as the marking technology. Several modifications by changing the galvo's, scanning head, Q-switch, mirror, beam benders are possible on different types of materials for marking/engraving as well as designing. By deep engraving, cutting of material is also possible by a multi pass means of working.

The machine is user's friendly does not require any great skill for handling the job. This is an embodiment several modifications are possible which may be considered with the spirit & ambit of this invention.

ABSTRACT

A process of marking, etching & engraving by using laser beam technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparature mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos. This process consisting of the following steps.

1. Selecting a design for marking.
2. Programming the said design of Step 1 in the computer.
3. Setting the object on the table for the focal length.
4. Setting the intensity of the laser beam.
5. Adjusting the frequency & speed in the computer according to the substance & design requirement.
6. Commanding the computer to complete the job which is completed automatically for the multiple pieces also.

NAME OF APPLICANT : BHARAT BHOGILAL PATEL
APPLICATION NO. : 610/BOM/98

NO OF SHEETS : 2
SHEET NO. : 2

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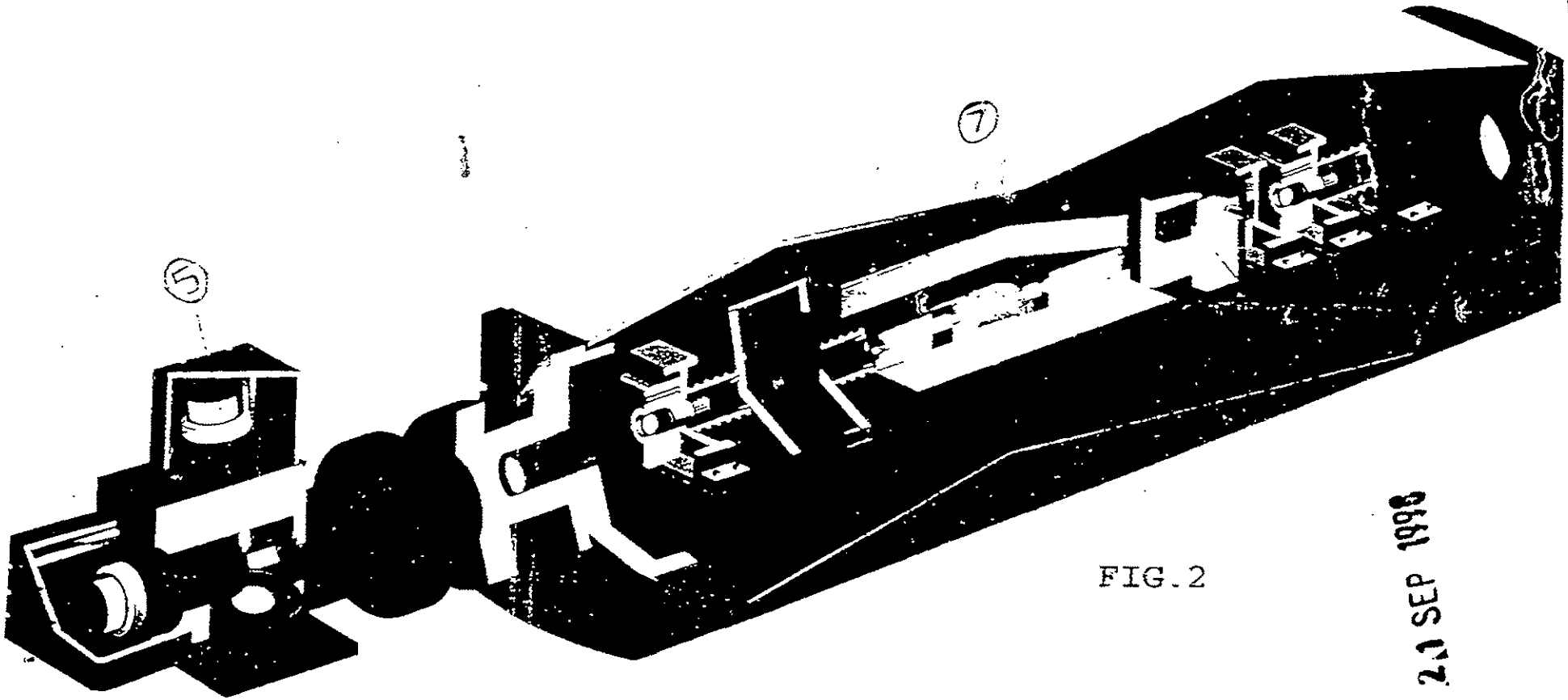

FIG.2

21 SEP 1998

FIG.3

CHANDRAKANT M. JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

FORM 3 A

THE PATENTS ACT, 1970
COMPLETE SPECIFICATION

(See Section 10)

A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS OR NON-METALS

BHARAT BHOGILAL PATEL of 1/43 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE(W), MUMBAI - 400 049, MAHARASHTRA, India, INDIAN national

The following specification particularly describes and ascertains the nature of this invention and the manner inwhich it is to be performed : -

FORM 3 A

THE PATENTS ACT, 1970
COMPLETE SPECIFICATION

(See Section 10)

A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS OR NON-METALS

BHARAT BHOGILAL PATEL of 1/43 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE(W), MUMBAI - 400 049, MAHARASHTRA, India, INDIAN national

The following specification particularly describes and ascertains the nature of this invention and the manner inwhich it is to be performed : -

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30/Bom/98
21/09/98

Patents
13 MAR 2002

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FORM 3 A

THE PATENTS ACT, 1970
COMPLETE SPECIFICATION

(See Section 10)

A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS OR NON-METALS

BHARAT BHOGILAL PATEL of 1/43 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE(W), MUMBAI - 400 049, MAHARASHTRA, India, INDIAN national

The following specification particularly describes and ascertains the nature of this invention and the manner inwhich it is to be performed : -

IPR/810/Bom/98
21/09/98

RMID - 2

FORM – 3A

THE PATENTS ACT, 1970

COMPLETE
SPECIFICATION

SECTION 10

TITLE : A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS OR NON-METALS

APPLICANT:- BHARAT BHOGILAL PATEL.OF 1/43 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W), MUMBAI 400 049, MAHARASHTRA, INDIA. AN INDIAN NATIONAL.

The following Specification particularly describes and ascertains the nature of this invention and the manner in which it is to be performed : -

PROCESS OF MARKING, ETCHING & ENGRAVING BY USING LASER BEAM TECHNOLOGY ON METALS & NON-METALS

The invention relates to a process of marking, etching & engraving by using laser beam technology on metals & non-metals. More particularly the invention relates to marking & engraving on metals and non-metals by use of Laser Beam Technology.

Conventionally these work was carried out by printing & then etching by means of mechanical as well as chemical means. The prior process of printing of required design on the object itself is a lengthy process such as making of a artwork, making of pattern, drawings, logos, symbols which is then photographed and developed to get a positive and negatives then the master copy is prepared and alternatively printing with a acid resistive ink and subsequently the etching process. The prior process has got its limitations for the Finner works & on the shape of the object and all types of metals can not be etched with this process. Apart from the difficulty in printing on the substance the process of etching is also a tedious process. Conventionally as all metals are not easily dissolve by the acid treatment. The process itself is a tedious, lengthy and hence costly. To develop a intricate design on some metals or non-metals where the precision is of the prime need or the substance itself is very costly or the shape of the object is such (round or cylindrical) it is difficult to have a proper marking/etching effect in the prior process.

Due to high manufacturing and disposal cost of the inkjet markers

I CLAIM :-

1. A process of marking, etching & engraving by using laser beam technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparatura mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos. This process consisting of the following steps.

1. Selecting a design for marking.
2. Programming the said design of Step 1 in the computer.
3. Setting the object on the table for the focal length.
4. Setting the intensity of the laser beam.
5. Adjusting the frequency & speed in the computer according to the substance & design requirement.
6. Commanding the computer to complete the job which is completed automatically for the multiple pieces also.

2. A process of marking, etching, engraving & drilling by using laser beam technology on metals & non-metals as claimed in claim 1 which is used for Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like chains, bracelets, necklace, bangles, jewellary boxes, rings, ear

Priority document

FORM 1

THE PATENTS ACT, 1970

DUPLICATE

APPLICATION FOR PATENT WHEN THE TRUE AND FIRST INVENTOR IS THE SOLE OR JOINT APPLICANT

(See Section 7)

I BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W) MUMBAI - 400 049 India, INDIAN national hereby declare : -
Maharashtra.

i) that I am in possession of an invention for A PROCESS OF MAARING, ETCHING & ENGRAVING ~~[illegible]~~ & THROUGH LASER TECHNOLOGY ;

ii) that I the said BHARAT BHOGILAL PATEL claim to be the true and first inventor thereof;

iii) that the complete specification filed with this application is and any amended specification which may hereafter be filed in this behalf will be true of the invention to which this application relates;

iv) that I believe that I am entitled to a patent for the said invention having regard to the provisions of the Patents Act, 1970;

v) that to the best of my knowledge, information and belief the facts and matters stated herein are correct and that there is no lawful ground of objection to the grant of patent to me on this application.

I request that a patent may be granted to me for the said invention.

610 मुंबई BOM 1998

21 SEP 1998

RMID - 2

I request that all the notices, requisitions and communications relating to this application may be sent to :-

CHANDRAKANT M. JOSHI
PATENT & TRADE MARK ATTORNEYS,
501, "VISHWANANAK" , CHAKALA ROAD,
ANDHERI (EAST), MUMBAI - 400 099.

Dated this 2nd day of September 1998.

Bharat Patel

BHARAT BHOGILAL PATEL

To
The Controller Of Patents,
The Patent Office,
Mumbai

RMID - 2

sarju LASER

FORM 1

THE PATENTS ACT, 1970

DUPLICATE

APPLICATION FOR PATENT WHEN THE TRUE AND FIRST INVENTOR IS THE SOLE OR JOINT APPLICANT

(See Section 7)

I BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W) MUMBAI - 400 049, India, INDIAN national hereby declare : - Maharashtra.

i) that I am in possession of an invention for A PROCESS OF MARKING, ETCHING & ENGRAVING THROUGH LASER TECHNOLOGY ;

ii) that I the said BHARAT BHOGILAL PATEL claim to be the true and first inventor thereof;

iii) that the complete specification filed with this application is and any amended specification which may hereafter be filed in this behalf will be true of the invention to which this application relates;

iv) that I believe that I am entitled to a patent for the said invention having regard to the provisions of the Patents Act, 1970;

v) that to the best of my knowledge, information and belief the facts and matters stated herein are correct and that there is no lawful ground of objection to the grant of patent to me on this application.

I request that a patent may be granted to me for the said invention.

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CHANDRAKANT M. JOSHI
PATENT & TRADE MARK ATTORNEYS,
501, "VISHWANANAK" , CHAKALA ROAD,
ANDHERI (EAST), MUMBAI - 400 099.

Dated this 2nd day of September 1998.

Bharat Patel

BHARAT BHOGILAL PATEL

To
The Controller Of Patents,
The Patent Office,
Mumbai

RMID - 2

I CLAIM :-

1. A process of marking, etching & engraving by using laser beam technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparature mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos. This process consisting of the following steps.

1. Selecting a design for marking.
2. Programming the said design of Step 1 in the computer.
3. Setting the object on the table for the focal length.
4. Setting the intensity of the laser beam.
5. Adjusting the frequency & speed in the computer according to the substance & design requirement.
6. Commanding the computer to complete the job which is completed automatically for the multiple pieces also.

2. A process of marking, etching, engraving & drilling by using laser beam technology on metals & non-metals as claimed in claim 1 which is used for Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like chains, bracelets, necklace, bangles, jewellary boxes, rings, ear

rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopadic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A laser marking & engraving machine consisting of the laser head comprising of head, mirror mount to mount the mirror, Q-switch to mount the Q-switch for apparative mount to regulate the apparature so as to vary the intensity of the Laser Beam, which is further provided with a beam bender for positioning the beam in a required direction which is supported in a rail & connected to a control panel provided with power supply, RF Driver, Heat Exchanger, Chiller to generate a laser beam of required intensity for marking/etching, engraving, scrubbing, cutting as per the required design programmable through a computer on metals & non-metals through beam steared galvo's & flat field galvo's/scanning heads.

4. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the

programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser head. through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (6) for directing the laser beam on required area on the object place on the table (8).

5. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

6. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power).

7. A process of marking, etching & engraving as claimed in claim 1 and substantially herein described

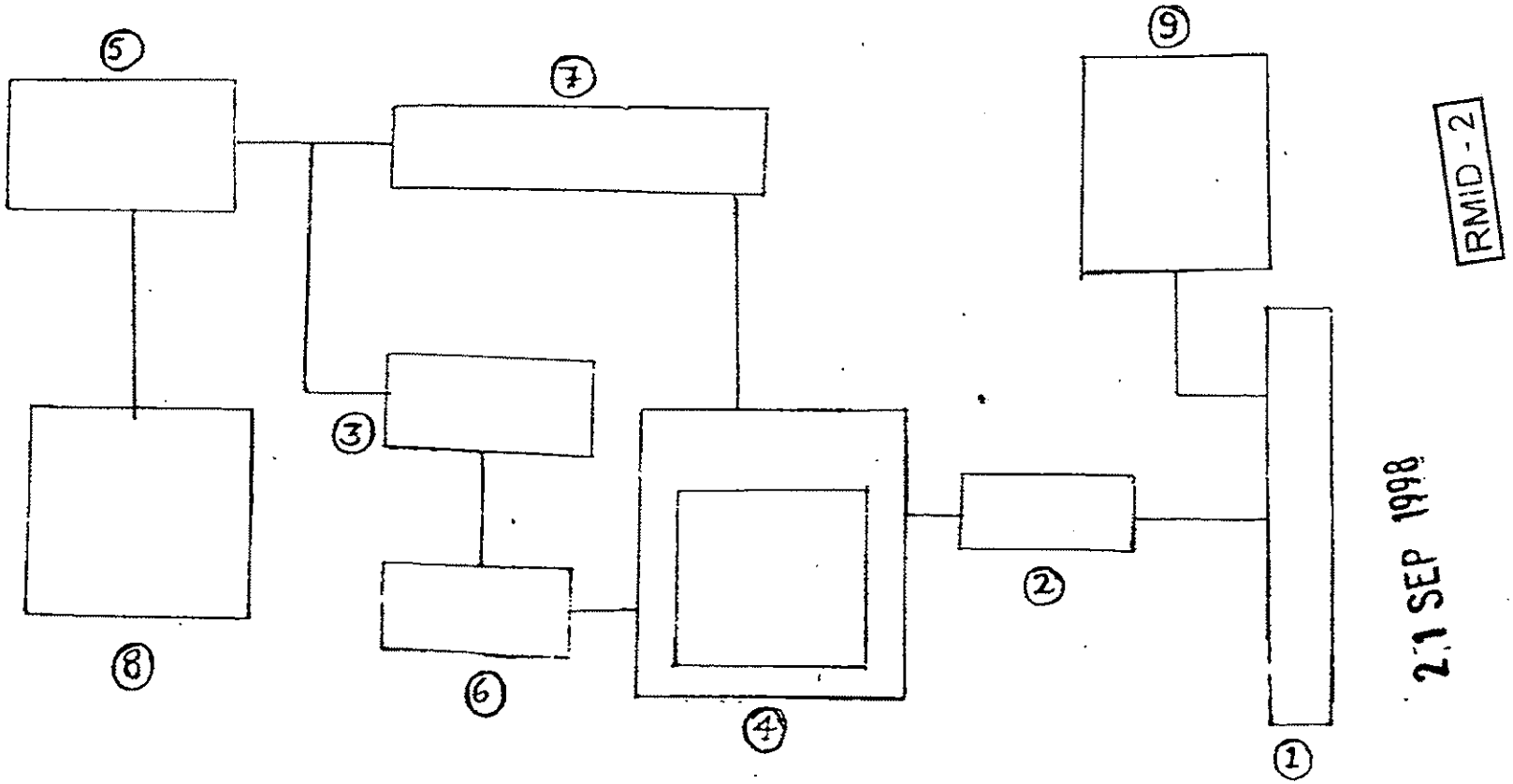
Dated on 14th September, 1998.

RMID - 2

CHANDRAKANT M. JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

NAME OF APPLICANT : BHARAT BHOGILAL PATEL
APPLICATION NO. : 610/BOM/98

NO OF SHEETS :2
SHEET NO. :1



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21 SEP 1998

FIG.1

CHANDRAKANT M. JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

NAME OF APPLICANT : BHARAT BHOGILAL PATEL
APPLICATION NO. : C/0 /BOM/98

NO OF SHEETS :2
SHEET NO. :2

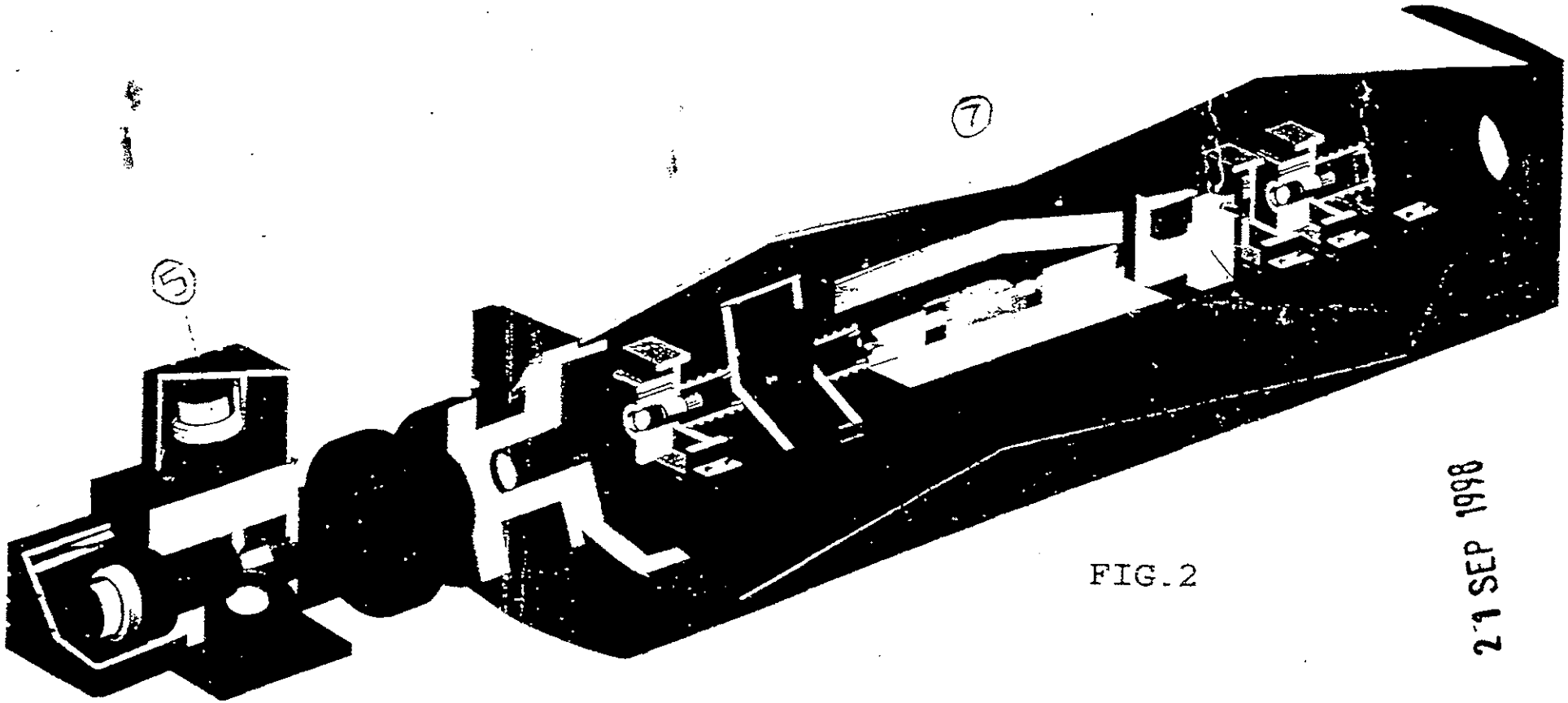

FIG.2

FIG.3

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21 SEP 1998

CHANDRAKANT M. JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

I CLAIM :

1. A process of manufacturing engraved design articles on metals or non-metals using laser beam technology consisting of

   a. marking the required design on metal or non-metal;

   b. etching the outer and inner area of the design;

   c. engraving the etched area and finally drilling the engraved area by means of laser beam through sequential command from a computer to obtain ornamented design on precious metals and non-metals.

2. A process as claimed in claim 1 wherein the metal and non-metals are Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like Chains, bracelets, necklace, bangles, jewellary boxes, rings, ear rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopedic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A process of maanufacturing engraved designed article as claimed in claim 1 and substantially herein described.

Dated this 14th day of September, 1998.

HIRAL CHANDRAKANT JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

RMID - 2

rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopadic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A laser marking & engraving machine consisting of the laser head comprising of head, mirror mount to mount the mirror, Q-switch to mount the Q-switch for apparative mount to regulate the apparature so as to vary the intensity of the Laser Beam, which is further provided with a beam bender for positioning the beam in a required direction which is supported in a rail & connected to a control panel provided with power supply, RF Driver, Heat Exchanger, Chiller to generate a laser beam of required intensity for marking/etching, engraving, scrubbing, cutting as per the required design programmable through a computer on metals & non-metals through beam steared galvo's & flat field galvo's/scanning heads.

4. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the

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programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser head. through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (6) for directing the laser beam on required area on the object place on the table (8).

5. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

6. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power).

7. A process of marking, etching & engraving as claimed in claim 1 and substantially herein described

Dated on 14th September, 1998.

CHANDRAKANT M. JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

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ABSTRACT

A process of marking, etching & engraving by using laser beam technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparature mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos. This process consisting of the following steps.

1. Selecting a design for marking.
2. Programming the said design of Step 1 in the computer.
3. Setting the object on the table for the focal length.
4. Setting the intensity of the laser beam.
5. Adjusting the frequency & speed in the computer according to the substance & design requirement.
6. Commanding the computer to complete the job which is completed automatically for the multiple pieces also.

I CLAIM :

1. A process of manufacturing engraved design articles on metals or non-metals, consisting of
   a. marking the required design on metal or non-metal;
   b. etching the outer and inner area of the design;
   c. engraving the etched area and finally drilling the engraved area by means of laser beam through sequential command from a computer to obtain ornamented design on precious metals and non-metals.

2. A process as claimed in claim 1 wherein the metal and non-metals are Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like Chains, bracelets, necklace, bangles, jewellary boxes, rings, ear rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopedic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser

Duplicate

RMID - 2

head, through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (6) for directing the laser beam on required area on the object place on the table (8).

4. A process for marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

5. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power)

6. A process of marking, etching & engraving as claimed in claim 1 and substantially herein described.

Dated this 14th day of September, 1998.

HIRAL CHANDRAKANT JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

RMID - 2

I CLAIM :

1. A process of manufacturing engraved design articles on metals or non-metals, consisting of
   a. marking the required design on metal or non-metal;
   b. etching the outer and inner area of the design;
   c. engraving the etched area and finally drilling the engraved area by means of laser beam through sequential command from a computer to obtain ornamented design on precious metals and non-metals.

2. A process as claimed in claim 1 wherein the metal and non-metals are Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like Chains, bracelets, necklace, bangles, jewellary boxes, rings, ear rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopedic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser

RMID - 2

head, through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (6) for directing the laser beam on required area on the object place on the table (8).

4. A process for marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

5. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power)

6. A process of marking, etching & engraving as claimed in claim 1 and substantially herein described.

Dated this 14th day of September, 1998.

HIRAL CHANDRAKANT JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

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sarju LASER

ORIGINAL

FORM 1

THE PATENTS ACT, 1970

भारत सरकार पेटेन्ट कार्यालय शाखा

21 SEP 1998

APPLICATION FOR PATENT WHEN THE TRUE AND FIRST INVENTOR IS THE SOLE OR JOINT APPLICANT

(See Section 7)

I BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W) MUMBAI - 400 049 MAHARASHTRA India, INDIAN national hereby declare : -

i) that I am in possession of an invention for A PROCESS OF ~~MARKING / ETCHING /~~ ENGRAVING & drilling THROUGH LASER TECHNOLOGY ;

ii) that I the said BHARAT BHOGILAL PATEL claim to be the true and first inventor thereof;

iii) that the complete specification filed with this application is and any amended specification which may hereafter be filed in this behalf will be true of the invention to which this application relates;

iv) that I believe that I am entitled to a patent for the said invention having regard to the provisions of the Patents Act, 1970;

v) that to the best of my knowledge, information and belief the facts and matters stated herein are correct and that there is no lawful ground of objection to the grant of patent to me on this application.

I request that a patent may be granted to me for the said invention.

610/Bom/98

21.9.98

Received Rs. 300/- in Cash / Cheque/M.O./I.P.O. 21/9/98 Vide Entry No. 5128 in the Register of Valuables

610 | मुंबई BOM | 1998

21 SEP 1998

RMID - 2

ORIGINAL

FORM 3 A

THE PATENTS ACT, 1970
COMPLETE SPECIFICATION

(See Section 10)

CANCELLED

A PROCESS OF MARKING, ETCHING, ENGRAVING & drilling
THROUGH LASER TECHNOLOGY

BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W), MUMBAI - 400 049, MAHARASHTRA India, INDIAN national

The following specification particularly describes and ascertains the nature of this invention and the manner in which it is to be performed : -

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I CLAIM :-

1. A process of marking, etching & engraving by using laser beam technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparature mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos consisting of the following steps;

1. Selecting a design for marking;
2. Programming the said design of Step 1 in the computer;
3. Setting the object on the table for the focal length;
4. Setting the intensity of the laser beam;
5. Adjusting the frequency & speed in the computer according to the substance & design requirement;
6. Commanding the computer to complete the job which is completed automatically for the multiple pieces also;

2. A process of marking, etching, engraving & drilling by using laser beam technology on metals & non-metals as claimed in claim 1 which is used for Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like chains, bracelets, necklace, bangles, jewellary boxes, rings, ear

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rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopadic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A laser marking & engraving machine [illegible] of the laser head comprising of head, mirror mount to mount the mirror, Q-switch to mount the Q-switch for apparative mount to regulate the apparature so as to vary the intensity of the Laser Beam, which is further provided with a beam bender for positioning the beam in a required direction which is supported in a rail & connected to a control panel provided with power supply, RF Driver, Heat Exchanger, Chiller to generate a laser beam of required intensity for marking/etching, engraving, scrubbing, cutting as per the required design programmable through a computer on metals & non-metals through beam steared galvo's & flat field galvo's/scanning heads.

4. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the

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programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser head. through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (4) for directing the laser beam on required area on the object place on the table (8).

5. A process for marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

6. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power).

7. A process of marking, etching & engraving as claimed in claim 1 and substantially herein described

Dated on 14th September, 1998.

RMID - 2

CHANDRAKANT M. JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

I CLAIM :

1. A process of manufacturing engraved design articles on metals or non-metals, using laser beam technology consisting of

   a. marking the required design on metal or non-metal;

   b. etching the outer and inner area of the design;

   c. engraving the etched area and finally drilling the engraved area by means of laser beam through sequential command from a computer to obtain ornamented design on precious metals and non-metals.

2. A process as claimed in claim 1 wherein the metal and non-metals are Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewelleries like Chains, bracelets, necklace, bangles, jewellary boxes, rings, ear rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopedic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser

head, through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (6) for directing the laser beam on required area on the object place on the table (8).

4. A process for marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

5. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power)

6. A process of ~~marking, etching & engraving~~ manufacturing engraved Designed article as claimed in claim 1 and substantially herein described.

Dated this 14th day of September, 1998.

HIRAL CHANDRAKANT JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

RMID - 2

PROCESS OF MARKING, ETCHING, ENGRAVING & DRILLING BY USING LASER BEAM TECHNOLOGY ON METALS & NON-METALS

The invention relates to a process of marking, etching, engraving & drilling by using laser beam technology on metals & non-metals. More particularly the invention relates to marking & engraving on metals and non-metals by use of Laser Beam Technology.

Conventionally these work was carried out by printing & then etching by means of mechanical as well as chemical means. The prior process of printing of required design on the object itself is a lengthy process such as making of a artwork, making of pattern, drawings, logos, symbols which is then photographed and developed to get a positive and negatives then the master copy is prepared and alternatively printing with a acid resistive ink and subsequently the etching process. The prior process has got its limitations for the finner works & on the shape of the object and all types of metals can not be etched with this process. Apart from the difficulty in printing on the substance the process of etching is also a tedious process. Conventionally as all metals are not easily dissolve by the acid treatment. The process itself is a tedious, lengthy and hence costly. To develop a intricate design on some metals or non-metals where the precision is of the prime need or the substance itself is very costly or the shape of the object is such (round or cylindrical) it is difficult to have a proper marking/etching effect in the prior process.

Due to high manufacturing and disposal cost of the inkjet markers

RMID - 2

I CLAIM :

1. A process of manufacturing engraved design articles on metals or non-metals consisting of

a. marking the required design on metal or non-metal;

b. etching the outer and inner area of the design;

c. engraving the etched area and finally drilling the engraved area by means of laser beam through sequential command from a computer to obtain ornamented design on precious metals and non-metals.

2. A process as claimed in claim 1 wherein the metal and non-metals are Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like Chains, bracelets, necklace, bangles, jewellary boxes, rings, ear rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopedic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A laser marking & an engraving machine for carrying out the process as claimed in claim 1 as comprising of the laser head comprising of head, mirror mount to mount tc regulate the apparatus so as to vary the intensity of the Laser Beam, which is further provided with a beam bender for positioning the beam in a required direction which is supported in a

rail & connected to a control panel provided with power supply, RF Driver, Heat Exchanger, Chiller to generate a laser beam of required intensity for marking/etching, engraving, scrubbing, cutting as per the required design programmable through a compute on metals & non-metals through beam steared galvo's & flat field galvo's/scanning heads.

4. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser head, through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (6) for directing the laser beam on required area on the object place on the table (8).

5. A process for marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

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6. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power)

7. A process of marking, etching & engraving as claimed in claim 1 and substantially herein described.

Dated this 14th day of September, 1998.

HIRAL CHANDRAKANT JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

RMID - 2

DUPLICATE

FORM 3 A

THE PATENTS ACT, 1970
COMPLETE SPECIFICATION

(See Section 10)

A PROCESS OF ~~MANUFACTURING CUTLERY AND GOLD ORNAMENTS~~ Marking, Etching & Engraving
THROUGH LASER TECHNOLOGY

BHARAT BHOGILAL PATEL of 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W), MUMBAI - 400 049 India, INDIAN national

The following specification particularly describes and ascertains the nature of this invention and the manner in which it is to be performed : -

PROCESS OF MARKING, ETCHING & ENGRAVING BY USING LASER BEAM TECHNOLOGY ON METALS & NON-METALS

The invention relates to a process of marking, etching & engraving by using laser beam technology on metals & non-metals. More particularly the invention relates to marking & engraving on metals and non-metals by use of Laser Beam Technology.

Conventionally these work was carried out by printing & then etching by means of mechanical as well as chemical means. The prior process of printing of required design on the object itself is a lengthy process such as making of a artwork, making of pattern, drawings, logos, symbols which is then photographed and developed to get a positive and negatives then the master copy is prepared and alternatively printing with a acid resistive ink and subsequently the etching process. The prior process has got its limitations for the Finner works & on the shape of the object and all types of metals can not be etched with this process. Apart from the difficulty in printing on the substance the process of etching is also a tedious process. Conventionally as all metals are not easily dissolve by the acid treatment. The process itself is a tedious, lengthy and hence costly. To develop a intricate design on some metals or non-metals where the precision is of the prime need or the substance itself is very costly or the shape of the object is such (round or cylindrical) it is difficult to have a proper marking/etching effect in the prior process.

Due to high manufacturing and disposal cost of the inkjet markers

I CLAIM :

1. A process of manufacturing engraved design articles on metals or non-metals consisting of
   a. marking the required design on metal or non-metal;
   b. etching the outer and inner area of the design;
   c. engraving the etched area and finally drilling the engraved area by means of laser beam through sequential command from a computer to obtain ornamented design on precious metals and non-metals.

2. A process as claimed in claim 1 wherein the metal and non-metals are Gold, Silver, Stainless Steel, Cutleries, Gold & Silver Ornaments & Jewellaries like Chains, bracelets, necklace, bangles, jewellary boxes, rings, ear rings, cuff links, spectacle frames, designer pens, buttons, precision & semi-precision stones like hametite, melakite, pearl, diamond, ruby, saphirre and etc orthopedic inplants, precision tools, measuring tools, tool holder, heart walves, cutting blades, knifes, pens all typed of plastic keyboard for computer & machineries & contact lenses, Holographic sheet, labels and transfers.

3. A laser marking & an engraving machine for carrying out the process as claimed in claim 1 as comprising of the laser head comprising of head, mirror mount to mount to regulate the apparatus so as to vary the intensity of the Laser Beam, which is further provided with a beam bender for positioning the beam in a required direction which is supported in a

rail & connected to a control panel provided with power supply, RF Driver, Heat Exchanger, Chiller to generate a laser beam of required intensity for marking/etching, engraving, scrubbing, cutting as per the required design programmable through a compute on metals & non-metals through beam steared galvo's & flat field galvo's/scanning heads.

4. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine is connected through electronic circuit consisting of main (1) which is connected through the programmable computer (3) through stabilizer (2) in series. Another phase from the main is supplied to the laser head, through a chiller, the input of a computer (3) is provided to scanning head (5) through a RF Driver (6) for directing the laser beam on required area on the object place on the table (8).

5. A process for marking, etching & engraving by using a laser beam technology on metals and non-metals wherein the laser head is provided with adjustable rods & lamps of various sizes can be provided on the laser heads for handling different types of materials where the hardness of the material is vastly differs.

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6. A process of marking, etching & engraving by using a laser beam technology on metals and non-metals as claimed in claim 1 wherein the machine can be provided with different power supply as per the need of different industries which may be range from 10 watts to 200 watts (out put power)

7. A process of marking, etching & engraving as claimed in claim 1 and substantially herein described.

Dated this 14th day of September, 1998.

HIRAL CHANDRAKANT JOSHI
AGENT FOR
BHARAT BHOGILAL PATEL

RMID - 2

INTELLECTUAL
PROPERTY INDIA
बौध्दिक सम्पदा भारत
एकस्व /अभिकल्प /व्यापार चिन्ह /
भौगोलिक संकेत
PATENTS / DESIGNS /
TRADEMARKS /
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते
भारत सरकार /GOVERNMENT OF INDIA
पेटेन्ट कार्यालय / THE PATENT OFFICE
बौध्दिक सम्पदा भवन, मुंबई-४०००३७
Boudhik Sampada Bhavan
Near Antop Hill Post Office, S.M.Road ,
MUMBAI-400037

दूरभाष Tel 022-24137701
फॅक्स Fax 022-24130387
Emai mumbai-patent@nic.in
Website www. ipindia.nic.in

THE PATENTS ACT, 1970

IT IS HEREBY CERTIFIED THAT, the annex is a true copy of the Complete Specification of the applicant, BHARAT BHOGILAL PATEL, 1/41 JUHU GOLD MIST, JUHU, GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W), Mumbai – 400 049, Maharashtra, India, An Indian National and as accepted by this Office in respect of Patent Application No.610/BOM/1998 and notified under Serial No.189027.

This certificate is issued under the powers vested in me under Section 147 (1) of Patents Act, 1970.

Dated this day of 2008.

(A.T. PATRE)
ASSTT. CONTROLLER OF PATENTS & DESIGNS.

RMD - 2

THE PATENT OFFICE
2nd M.S.O.BUILDING,
234/4,ACHARYA JAGADISH CHANDRA BOSE ROAD,
CALCUTTA-700 020

INDIAN PATENT SPECIFICATION

(51) Int. Cl : B 23 K– 26/18,

(52) Ind. Cl.: 154 C[XXXVII (1)]

A

(11) Document No. IN
Date of document: 21.09.1998

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(21) Application No. 610 BOM 1998

(22) Date of filing: 21.09.1998

(71) Applicant : BHARAT BHOGILAL PATEL,OF 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W), MUMBAI 400 049, MAHARASHTRA, INDIA. AN INDIAN NATIONAL.

(72) Inventors:
-IDEM-

(74) Agent: CHANDRAKANT M. JOSHI

Claims: 03
Text : 10 Pages: Drgs . 02 Sheets

EXAMINER: DR.B.K.SINGH

(54) Title : A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS OR NON-METALS

(57) Abstract:

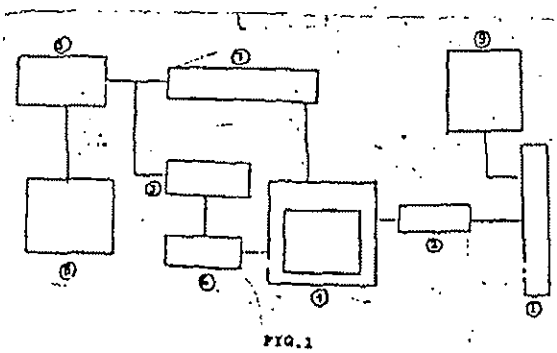


FIG.1

A process of marking, etching & engraving by using laser beam Technology on metals & non-metals consisting of a laser head comprising a head, mirror mount, apparature mount, beam bender, rail, through power supply, RF Driver, heat exchanger & chiller to generate a laser beam connected with a programmable computer system to generate the laser beam for marking & engraving the required design on the substance placed on the table through the Galvos. This process consisting of the following steps.

1. Selecting a design for marking.
2. Programming the said design of step 1 in the computer.
3. Setting the object on the table for the focal length.
4. Setting the intensity of the laser beam.
5. Adjusting the frequency & speed in the computer according to the substance & design requirement.
6. Commanding the computer to complete the job which is completed automatically for the multiple pieces also.

PRICE : THIRTY RUPEES

RMID - 2

NOTIFICATION

IND. CL.	:	154 C [XXXVII (1)]
INT. CL.	:	B 23 K– 26/18
TITLE	:	A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS OR NON-METALS
APPLICANT & INVENTORS	:	BHARAT BHOGILAL PATEL,OF 1/41 JUHU GOLD MIST, JUHU GULMOHAR ROAD, J.V.P.D. SCHEME, VILE PARLE (W), MUMBAI 400 049, MAHARASHTRA, INDIA. AN INDIAN NATIONAL.
APPLICATION NO	:	610/BOM/1998 FILED ON 21.09.1998

APPROPRIATE OFFICE FOR OPPOSITION PROCEEDINGS (RULE 4, PATENTS RULES 1972), PATENT OFFICE BRANCH, MUMBAI - 13.

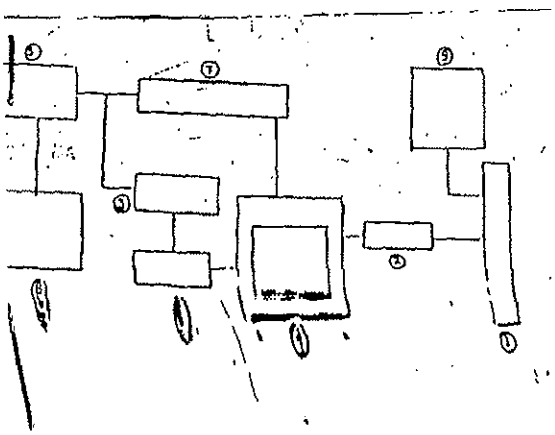
03CLAIMS

A process of manufacturing engraved design articles on metals or non-metals using laser beam Technology consisting of

a. marking the required design on metal or non-metal;

b. etching the outer and inner area of the design;

c. engraving the etched area and finally drilling the engraved area by means of laser beam through sequential command from a computer to obtain ornamented design on precious metals and non-metals.



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Please send completed forms to INPADOC
Moellwaldplatz 1040 Wien AUSTRIA

71, 75	Applicant(s)	PATEL BHARAT BHOGILAL
72	Inventor(s)	-IDEM-
54	Title	A PROCESS OF MANUFACTURING ENGRAVED DESIGN ARTICLES ON METALS OR NON-METALS
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