Office of the Controller General of Patents, Designs & Trade Marks
Department of Industrial Policy & Promotion,
Ministry of Commerce & Industry,
Government of India

सत्यमेव जयते

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

Application Details	
APPLICATION NUMBER	201921015361
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	16/04/2019
APPLICANT NAME	**1 . Akshay Pradip Khandave** **2 . Dr. Kiran Suresh Bhole**
TITLE OF INVENTION	A SYSTEM FOR GUIDING A USER TO REPAIR A MACHINE
FIELD OF INVENTION	COMMUNICATION
E-MAIL (As Per Record)	vsasawat@gmail.com
ADDITIONAL-EMAIL (As Per Record)	vsasawat@yahoo.co.in
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	21/08/2019
PUBLICATION DATE (U/S 11A)	17/05/2019
REPLY TO FER DATE	29/09/2021

Amended Abstract- Marked Copy

ABSTRACT

A SYSTEM FOR GUIDING A USER TO REPAIR A MACHINE

The present invention relates to a system (300) for guiding a user to repair a machine, said system comprises of a toolkit (100); an ~~device for~~ augmented reality enabled device (200) for repair of a machine. The toolkit comprises of tools (23) of the toolkit for the purpose of repair of the machine. Each tool (23) is identified by a character, and each tool is placed in a base, said base has same character corresponding to the number of respective tool; a ~~micro~~controllinger module (21); an interactive display unit(20); a plurality of electronic components (22) for communicating the information from AR enabled device. The user inputs an operation ~~selected~~ into the toolkit, which interacts with the AR enabled device, based on the instructions from the user regarding kind of operation to be performed.

Figure 1.

Amended Abstract- Clean Copy

ABSTRACT

A SYSTEM FOR GUIDING A USER TO REPAIR A MACHINE

The present invention relates to a system (300) for guiding a user to repair a machine, said system comprises of a toolkit (100); an augmented reality enabled device (200) for repair of a machine. The toolkit comprises of tools (23) of the toolkit for the purpose of repair of the machine. Each tool (23) is identified by a character, and each tool is placed in a base, said base has same character corresponding to the number of respective tool; a controlling module (21); an interactive display unit(20); a plurality of electronic components (22) for communicating the information from AR enabled device. The user inputs an operation into the toolkit, which interacts with the AR enabled device, based on the instructions from the user regarding kind of operation to be performed.

Figure 1.

INTELLECTUAL PROPERTY INDIA
एकस्व/PATENTS|अभिकल्प/DESIGNS|
व्यापार चिह्न/TRADE MARKS|भौगोलिक
उपदर्शन/GEOGRAPHICAL INDICATIONS

सत्यमेव जयते
भारत सरकार
GOVERNMENT OF INDIA

एकस्व कार्यालय /THE PATENT OFFICE
बौद्धिक सम्पदा भवन/ I.P.O. BUILDING
एंटोप हिल/Antop Hill,
एस.एम.रोड/ S.M.Road,
मुंबई/ Mumbai- 400037
दूरभाष /Tel. No.: (091)(022)24153651
फ़ैक्स/ Fax: 022-24130387
ई मेल/ Email: mumbai-patent@nic.in
वेबसाइट /Website:http://ipindia.nic.in

सं.संख्या/Ref.No /आवेदन संख्या/Application No/ 201921015361 दिनांक/Date of Dispatch/Email: 10/05/2021

सेवा मे,/To
VIKAS ASAWAT,
Vikas Asawat, Registered Patent Agent & Advocate, 3/183, Ganesh Talab, Basant, Vihar Kota, Rajasthan Pin 324009 India
Email : vsasawat@gmail.com,vsasawat@yahoo.co.in

विषय: एकस्व अधिनियम, 1970 की धारा 12 व 13 तथा एकस्व नियम, 2003 के अधीन परीक्षण रिपोर्ट
Subject: Examination report under sections 12 & 13 of the Patents Act, 1970 and the Patents Rules, 2003.

1. उपर्युक्त आवेदन के संदर्भ मे परीक्षण रिपोर्ट (अर्थात, एकस्व नियम, 2003 (यथा संशोधित) के नियम 24-ख(3) में विनिर्दिष्ट आपत्तियों का प्रथम कथन) इसके साथ संलग्न है। यह रिपोर्ट परीक्षण हेतु अनुरोध दिनांक 21/08/2019 के उत्तर मे जारी की गयी है। परीक्षण रिपोर्ट का उत्तर दाखिल करने की अंतिम तिथि (अर्थात, इस रिपोर्ट में लगाई गयी सभी आवश्यकताओं के अनुपालन की अवधि) आवेदक को आपत्तियों का प्रथम कथन जारी होने की तिथि से छः माह है।
   Please find enclosed herewith an Examination Report (i.e. a first statement of objections as specified in Rule 24-B(3) of The Patents Rules, 2003 (as amended)) in respect of above-mentioned application. This report is issued with reference to a request for examination dated 21/08/2019.The last date for filing a response to the Examination Report (i.e. a period to comply with all the requirements raised in this examination report) is six months from the date on which the first statement of objections is issued to the Applicant.

2. यदि रिपोर्ट के अंतर्गत लगाई गयी आवश्यकताओं का अनुपालन एकस्व नियम, 2003 (यथा संशोधित) के नियम 24 ख(5) में विनिर्दिष्ट अवधि के भीतर अंदर अनुपालन नहीं किया गया तो एकस्व अधिनियम 1970 की धारा 21(1) के अधीन वर्तमान आवेदन को परित्यक्त माना जाएगा।
   The instant application shall be deemed to have been abandoned under Section 21(1) of The Patents Act, 1970, unless all the requirements raised in this report are complied with in the period as specified in Rule 24-B (5) of The Patents Rules, 2003 (as amended).

3. आपका ध्यान एकस्व नियम, 2003 के नियम 24 ख(6) के प्रावधानों की ओर भी आमंत्रित किया जाता है।
   Your attention is also invited to the provisions of Rule 24-B (6) of the Patents Rules 2003.

4. आपको सलाह दी जाती है कि शीघ्र निपटान हेतु अपना उत्तर शीघ्र प्रस्तुत करें।
   You are advised to file the reply at the earliest for early disposal.

Jitendra Choure
नियंत्रक पेटेंट/ Controller of Patents

संलग्न/Enclosed: अपरोक्त अनुसार/As above

टिप्पणी: यह इलेक्ट्रोनिक रूप से उत्पन्न रिपोर्ट है।
NOTE: This is an electronically generated report.

सभी पत्राचार नियंत्रक एकस्व को उपरोल्लिखित पते पर भेजा जाये।
All communications should be sent to the Controller of Patents at the above mentioned address.

THE PATENT OFFICE

परीक्षण रिपोर्ट /Examination Report

आवेदन संख्या /Application Number	201921015361
दाखिल करने की तिथि /Date of Filing	16/04/2019
पूर्विक्ता दिनांक /Date of Priority	--
पीसीटी अंतर्राष्ट्रीय आवेदन की संख्या व दिनांक / PCT International Application No. & Date	--
आवेदक /Applicant	Akshay Pradip Khandave
परीक्षण हेतु अनुरोध की संख्या व दिनांक /Request for Examination No. & Date	R20192025931 21/08/2019
प्रकाशन की तिथि /Date of Publication	17/05/2019

इस परीक्षण रिपोर्ट के चार भाग हैं, अर्थात रिपोर्ट का सारांश, विस्तृत तकनीकी रिपोर्ट, औपचारिक आवश्यकताएँ तथा रिकॉर्ड मे दस्तावेज़ /
This examination report consists of four parts, namely summary of the report, detailed technical report, formal requirements and documents on record.

भाग -1: रिपोर्ट का सारांश
PART-I: SUMMARY OF THE REPORT

क्र. सं. /Sl. No.	अधिनियम के तहत आवश्यकताओं पर विस्तृत टिप्पणियां /Requirements under the Act		दावों की संख्या /Claim Numbers	टिप्पणी /Remarks
1.	धारा 2(1)(ञ) के तहत आविष्कार /Invention u/s 2(1)(j)	नवीनता /Novelty	दावे /Claims: 1-5	हाँ /Yes
			दावे /Claims:	नहीं /No
		आविष्कारी कदम / Inventive step	दावे /Claims:	हाँ /Yes
			दावे /Claims: 1-5	नहीं /No
		औद्योगिक उपयोगिता /Industrial Applicability	दावे /Claims: 1-5	हाँ /Yes
			दावे /Claims:	नहीं /No
2.	धारा 3 के अधीन पेटेंट-अयोग्यता (यदि हाँ, खंड 3(क-त) /Non-patentability u/s 3 (if yes, specify section3(a-p))		दावे /Claims: 1-5	हाँ /Yes k
			दावे /Claims:	नहीं /No
3.	[धारा 10(5) व 10(4) (ग)] के अधीन दावे /Claims [u/s 10(5) & 10(4) (c)]	स्पष्टता/ संक्षिप्तता /Clarity / Conciseness	दावे /Claims:	हाँ /Yes
			दावे /Claims: 1-5	नहीं /No
		परिभाषिकता /Definitive	दावे /Claims: 1-5	हाँ /Yes
			दावे /Claims:	नहीं /No
		विवरण द्वारा समर्थित /Supported by description	दावे /Claims: 1-5	हाँ /Yes
			दावे /Claims:	नहीं /No
		क्षेत्र /Scope	दावे /Claims: 1-5	हाँ /Yes
			दावे /Claims:	नहीं /No

भाग –II विस्तृत तकनीकी रिपोर्ट
PART-II: DETAILED TECHNICAL REPORT

क. उद्धरित दस्तावेजों की सूची /A.List of documents cited:

(क) पेटेंट साहित्य / (a). Patent Literature :

क्र. सं. / Sl no	दस्तावेज़ों का विवरण /Details of documents	प्रकाशन तिथि(दिन/माह/वर्ष) / Publication date	उद्धरित दस्तावेज़ का प्रासंगिक विवरण (पृष्ठ व अनुच्छेद संख्या) / Relevant description	उद्धरित दस्तावेज़ के प्रासंगिक दावे / Relevant claims of	अभिकथित आविष्कार के दावे /Claims of alleged invention

Sl.no	documents	Publication date	(page and paragraph no.) of cited document	cited document	alleged invention
1	D2: WO 2018/059934 Al	05/04/2018	(abstract, page 16, lines 12-17)	1-17	1-5

(ख) गैर-पेटेंट साहित्य /(b).Non-patent literature

क्र. सं. / Sl.no	दस्तावेज़ों का विवरण /Details of documents	प्रकाशन तिथि(दिन/माह/वर्ष) /Publication date	उद्धरित दस्तावेज़ का प्रासंगिक विवरण (पृष्ठ व अनुच्छेद संख्या) /Relevant description (page and paragraph no.) of cited document	अभिकथित आविष्कार के दावे /Relevant claims of cited document	अभिकथित आविष्कार के दावे /Claims of alleged invention
1	D1: "Application of Augmented Reality Techniques in Through-life Engineering Services" author: G. Dini, M. Dalle Mura DOI: https://doi.org/10.1016/j.procir.2015.07.044	31/12/2015	whole document		1-5

ख. अधिनियम के तहत आवश्यकताओं पर विस्तृत टिप्पणियां /B. Detailed observations on the requirements under the Act:

(1).आविष्कारी कदम / INVENTIVE STEP:

(I) ऊपर उद्धरित दस्तावेज़(जों) के संदर्भ मे स्पष्ट अध्यापन(नों) को ध्यान मे रखते हुए, निम्नलिखित कारणों से दावा(वों) (1-5) मे आविष्कारी कदम की कमी है
Claim(s) (1-5) lack(s) inventive step, being obvious in view of teaching (s) of cited document(s) above under reference for the following reasons:

Subject matter of claims 1-5 does not constitute an invention under section 2(1) (j) of the Patents Act, 1970 (as amended) because it does not involve an inventive steps in view of D1 and D2.

D1: "Application of Augmented Reality Techniques in Through-life Engineering Services" author: G. Dini, M. Dalle Mura DOI: https://doi.org/10.1016/j.procir.2015.07.044 pub 31/12/2015

D2: WO 2018/059934 Al pub 05/04/2018

Document D1 discloses (the references in parentheses applying to this document): Application of Augmented Reality Techniques in Through-life Engineering Services, which includes real-time interaction with the system, able to react to user's, where main hardware components required for performing, which provides a AR based repair guidance, Tool selection, removal of bolts, and part disassembly, are supported byvisual labels, 3D virtual models and 3D animation AR applications and their functions computer, display device, Interaction tools, Tool selection, removal of bolts, and part disassembly, are supported by visual labels, 3D virtual models and 3D animations inputs, an voice-controlled AR device, An interesting example of self-maintenance is reported in. I-Mechanic is one of the first examples of AR application for smartphones to support people in ordinary maintenance of their car. With this mobile application, based on a computer vision 3D tracking software, the user is able to contextually access the instructions required to accomplish simple maintenance operations. (abstract, introduction, section 2, section 4).

Document D2 discloses (the references in parentheses applying to this document): o an augmented reality (AR) communication system, where the AR interaction device (101) is configured to provide a user (107) of the AR interaction device (101) with information (106) based on the reality data (102) enriched with the AR data, AR glasses as described in this disclosure can be applied for real-time repair of complex machines as described in the following: Real-time repair of complex machines, like realtime surgery, with instructions for maintenance / repair of the machine, e.g. proper tool, action to be performed with optical superimposition to real machine (e.g. rotary movement to the right place with screwdriver). (abstract, page 16, lines 12-17)

In view of the disclosure of D1 and D2 the subject matter of independent claim -1 of instant application lack inventive step.

The dependent claim 2-5 do not constitute any additional feature hence these claims also lack inventive step.

Hence all main features of the instant application are disclosed in documents D1 and D2. If the teaching of D1 and D2 are used, a person skilled in the art, without being inventive would readily arrive at the subject matter of claims (all). Therefore these claims lack inventive steps under section 2(1) (ja) of, The Patents Act, 1970. Therefore instant application does not constitute an invention under section 2(1) (j) of, The Patents Act, 1970.

(2).पेटेंट अयोग्यता /NON PATENTABILITY:

(I) निम्नलिखित कारणों से धारा 3 के खंड (k)के प्रावधान के तहत दावा(वे) (1-5) सांविधिक रूप से पेटेंट योग्य नहीं हैं /
Claim(s) (1-5) are statutorily non-patentable under the provision of clause (k) of Section 3 for the following reasons:

1. Claims 1-5 define the "microcontroller....." which means the characterizing feature of the invention i.e, the microcontroller is programmed to carry out the functions set out by the algorithm. Thus in absence of any structural limitation/modification the invention claimed in said claims, though claimed as a device, attracts the provision of section 3(k) of the Act.

(3).प्रकटन की दक्षता /SUFFICIENCY OF DISCLOSURE:

(4).स्पष्टता एवं संक्षिप्तता /CLARITY AND CONCISENESS:

(I) दावा(वे) 1-5 के संबंध मे स्पष्ट रूप से परीभाषित नहीं हैं.
Claim(s) 1-5 are not clearly worded in respect of:

1. The independent claims should be cast in the two- part form, with those features known in combination from the prior art being placed in the preamble and the remaining features being included in the characterizing part.
2. The present set of claims, claims a system for guiding a user to repair a machine and toolkit for repair of a machine, thus the nature and scope of the invention is not properly understood. It is advisable to amend present set of claims into a suitable number of claims preferably bringing out the main inventive feature as principal claim and other supporting features as dependent claims. The claims shall be amended to bring more clarity to the scope of the claimed invention, as required under section 10(4(a)), section 10(4(b)) and section 10(4(c)) of the Patent Act, 1970.
3. The invention and its operation or use and the method by which it is to be performed is not fully and particularly described in the complete specification as per section 10(4) of the Patents Act, 1970 (as amended). The complete specification should disclose the best method of performing the invention, which is known to the applicant and for which he is entitled to claim protection.

(5).अन्य आवश्यकताएँ /OTHERS REQUIREMENTS:

(I)

1. In case the applicant decides to amend the claims subsequent to this report, the same shall be drafted afresh to include the technical advancement over the prior art cited in FER as required under section 2(1)(j) of the Patents Act. Please indicate in the response communication the support for such amended claims in the original specification, as required under section 10(4) of the Act. Care shall be taken that requirement section 59 (1) of the Act is also met. Please provide an additional copy of marked-up amendments (highlighting the amendments) wherever applicable.
2. Reference numerals shall be inserted in the claims to enhance the intelligibility of the claims.
3. Reference numerals shall be stated in the abstract for better clarity.

भाग – III: औपचारिक आवश्यकताएँ /PART-III: FORMAL REQUIREMENTS

आपत्तियां /Objections	टिप्पणी /Remarks
Date and Signature of Applicant	1. Form 5 dated 18.04.2019 has not been filed with the complete specification as mentioned in the rule 13(6) of patents rules, 2003 (as amended).
Other Deficiencies	1. All the submitted documents, declarations and forms like PA/GPA etc. have been presumed as originally signed by the authorized signatory under the provisions of the Patents Act, 1970. If not, submit the original signed copy of the same in the prescribed format, failing to which the document may not be considered filed. 2. Form 5 dated 18.04.2019 has not been filed with the complete specification as mentioned in the rule 13(6) of patents rules, 2003 (as amended).

भाग-IV: रिकॉर्ड मे दस्तावेज़ /PART-IV: DOCUMENTS ON RECORD

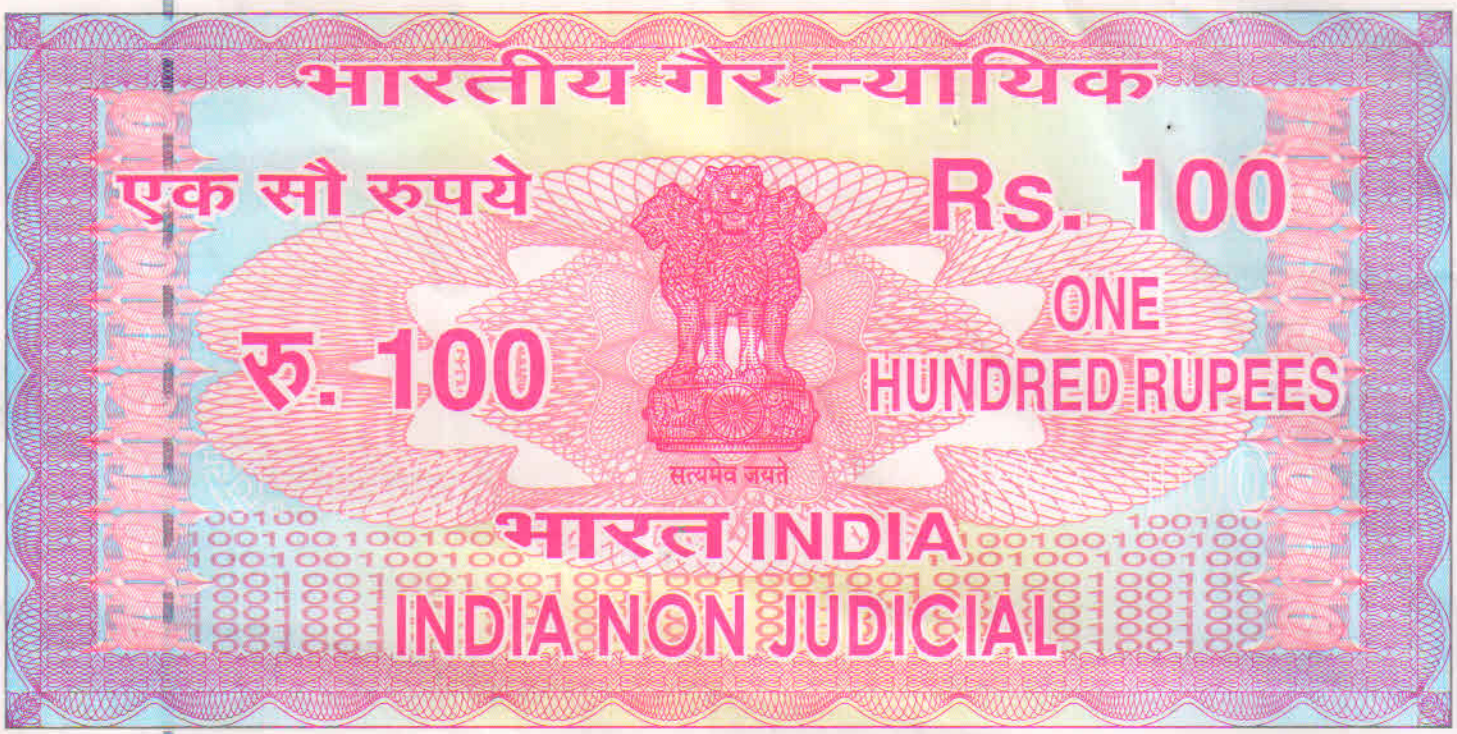
निम्नलिखित दस्तावेज़ों के आधार पर यह परीक्षण रिपोर्ट तैयार की गयी है
The examination report has been prepared based on the following documents:

कार्यसूची तिथि / Docket Date	कार्यसूची संख्या /Docket Number	पूर्विष्टि संख्या विवरण /Entry Number Description
16 Apr 2019	21809	1-New Application For Patent With Provisional /Complete Specification
18 Apr 2019	21969	3-Statement & Undertaking - Form 3
18 Apr 2019	21970	5-Declaration As To Inventorship - Form 5
26 Apr 2019	23339	OTHERS(NON CASH)
30 Apr 2019	24097	45-Form Of Authorisation Of Patent Agent - Form 26
01 May 2019	24135	12-Request For Early Publication - Form 9
06 May 2019	24998	OTHERS(NON CASH)
21 Aug 2019	44182	28(i)-Request For Examination After 18 months Publication - Form 18

नियंत्रक का नाम /Name of the Controller: Jitendra Choure

नियंत्रक स्थान /Controller Location: Mumbai

टिप्पणी: परीक्षण रिपोर्ट का उत्तर दाखिल करने की अंतिम तिथि / Note: Last date for filing response to the Examination Report: 10/11/2021



महाराष्ट्र MAHARASHTRA ◑ 2019 ◑ UX 854055

16 APR 2019

10 APR 2019

ज्या कारणासाठी ज्यानी मुद्रांक खरेदी केला त्यानाच त्याच कारणासाठी मुद्रांक खरेदी केल्या पासून 6 महिन्यात वापरणे बंधनकारक आहे

FORM 26
THE PATENT ACT, 1970 (39 of 1970)
FORM OF AUTHORISATION OF PATENT AGENT
IN A MATTER OR PROCEEDING UNDER THE ACT
(See Sections 127 and 132; Rule 135)

We, Akshay Pradip Khandave, "Ashirwad" Near Anand Hospital, Opposite to Green Aura Building, Tapkir Nagar, Kalewadi, Pune 411017 Maharashtra India; Dr. Kiran Suresh Bhole, A-601, Shree Manoshi Complex, In front of Ghansoli Railway Station. Sector-03, Ghansoli, Navi Mumbai- 400701 Maharashtra India ;both being Indian National; do hereby authorize VIKAS ASAWAT, Registered Patent Agent INPA 1407 and Dr. Meetu Singh, Registered Patent Agent INPA 1333, both being Indian National, having postal communication address 3/183 Ganesh Talab, Basant Vihar, Kota Rajasthan Pin 324009, India, to act on our behalf in connection with Patent filing and further prosecution, filing of assignments and any document related thereto, with reference to our patent application no. 201921015361 dated 16/04/2019 and request that all notices, requisitions and communications relating thereto may be sent to such person at the above address unless otherwise specified. He is also authorized to substitute another attorney to attend hearings (if any) in relation to the patent. We hereby revoke all previous authorizations, if any, in respect of same matter or proceeding. We hereby assent to the action already taken by the said persons in the above matter.

Dated-17/04/2019

Akshay PK
Akshay Pradip Khandave

Dr. Kiran Suresh Bhole

To , The Controller of Patents,
The Patent Office Mumbai

Accepted
VIKAS ASAWAT
PATENT AGENT & ADVOCATE

Amended Claims- Marked Copy

We claim:

1. A system (300) for guiding a user to repair a machine, said system comprises:

~~of~~ a toolkit (100) comprising tools (23) required for repairing the machine;

an augmented reality (AR) enabled device (200) capable for vision through augmented reality ~~for~~in order to repair ~~of a~~the machine~~,~~

characterized in that:

~~said toolkit comprises:~~

~~tools of the toolkit for the purpose of repair of the machine,~~ each tools (23) ~~is~~being identified by a character~~, and each tool~~ is placed in a base, said base ~~has same~~ being assigned a character corresponding to ~~the~~ a number of ~~respective~~ tool (23) wherein each of the tools (23) is placed back at respective position in said base after being used for repairing the machine;

a ~~micro~~controll~~er~~ing module (21) adapted for communicating with an AR interface being enabled to provide a list of operations to be performed for repairing the machine so that the AR enabled device selects one or more tools required for selected operation from the list of operations to be performed to repair the machine, wherein the AR enabled device scans a quick response (QR) code of operation to be performed for repairing the machine using the AR interface;

an interactive display unit (20) being adapted to display a tool number of the tools required for selected operation; and

a plurality of electronic components (22) for communicating ~~the~~ an information from the AR enabled device to the toolkit~~;~~, wherein ~~the~~ a user inputs the QR code of ~~an~~ the operation to be performed ~~selected~~ into the toolkit~~, which interacts~~ wherein the QR code is communicated ~~with~~to the AR device~~,~~ based on ~~the~~ an instruction~~s~~ from the user regarding ~~kind of~~ the operation to be performed.

~~1.~~2. The ~~toolkit for repair of a machine~~ system (300) as claimed in claim 1, wherein the operation to be performed is recognized by ~~the~~ augmented reality vision and ~~said operation~~ is input to the toolkit.

~~2.~~3. The ~~toolkit for repair of a machine~~ system (300) as claimed in claim 1, wherein the operation to be performed is selected from car repair, a~~ny~~ medical surgical operation, or repair of an~~y~~ industrial machine.

~~3.~~4. The ~~toolkit for repair of a machine~~ system (300) as claimed in claim 1, wherein the ~~software application can itself~~ AR interface is enabled to identify the operation to be performed, on input of errors faced by the user.

~~4.~~5. The ~~toolkit for repair of a machine~~ system (300) as claimed in claim 1, wherein the character is a number, an alphabet or both.

Dated this 16/04/2019

Vikas Asawat
Patent Agent & Advocate
INPA 1407
On Behalf of Applicant
Digitally Signed

Amended Claims- Clean Copy

We claim:

1. A system (300) for guiding a user to repair a machine, said system comprises:

a toolkit (100) comprising tools (23) required for repairing the machine;

an augmented reality (AR) enabled device (200) capable for vision through augmented reality in order to repair the machine characterized in that:

each tools (23) being identified by a character is placed in a base, said base being assigned a character corresponding to a number of tool (23) wherein each of the tools (23) is placed back at respective position in said base after being used for repairing the machine;

a controlling module (21) adapted for communicating with an AR interface being enabled to provide a list of operations to be performed for repairing the machine so that the AR enabled device selects one or more tools required for selected operation from the list of operations to be performed to repair the machine, wherein the AR enabled device scans a quick response (QR) code of operation to be performed for repairing the machine using the AR interface;

an interactive display unit (20) being adapted to display a tool number of the tools required for selected operation; and

a plurality of electronic components (22) for communicating an information from the AR enabled device to the toolkit,

wherein a user inputs the QR code of the operation to be performed into the toolkit wherein the QR code is communicated to the AR device based on an instruction from the user regarding the operation to be performed.

2. The system (300) as claimed in claim 1, wherein the operation to be performed is recognized by augmented reality vision and is input to the toolkit.

3. The system (300) as claimed in claim 1, wherein the operation to be performed is selected from car repair, a medical surgical operation, or repair of an industrial machine.

4. The system (300) as claimed in claim 1, wherein the AR interface is enabled to identify the operation to be performed, on input of errors faced by the user.

5. The system (300) as claimed in claim 1, wherein the character is a number, an alphabet or both.

Dated this 16/04/2019

Vikas Asawat
Patent Agent & Advocate
INPA 1407
On Behalf of Applicant
Digitally Signed

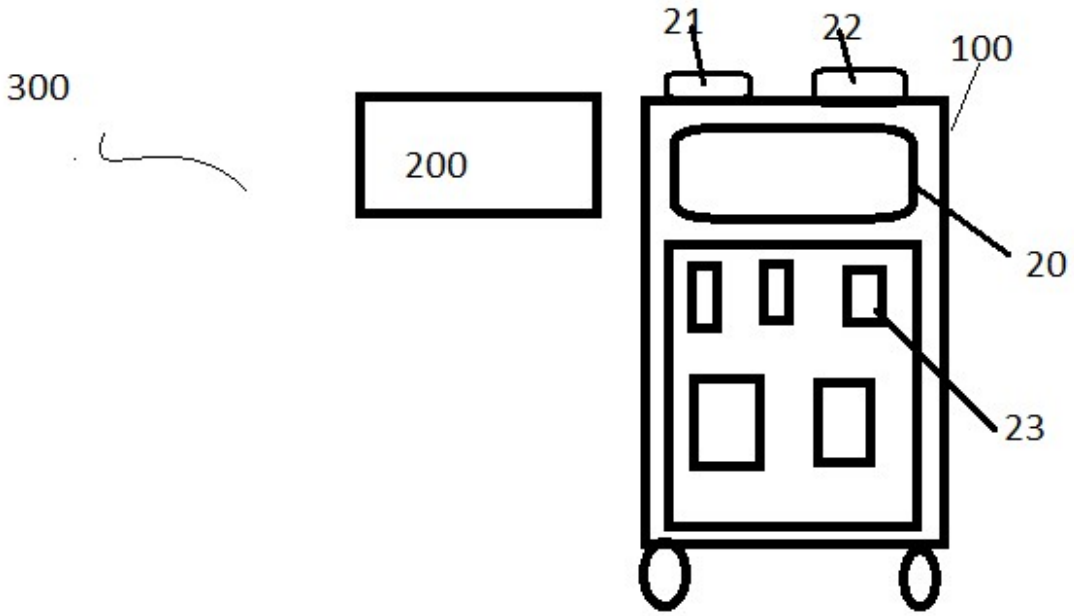
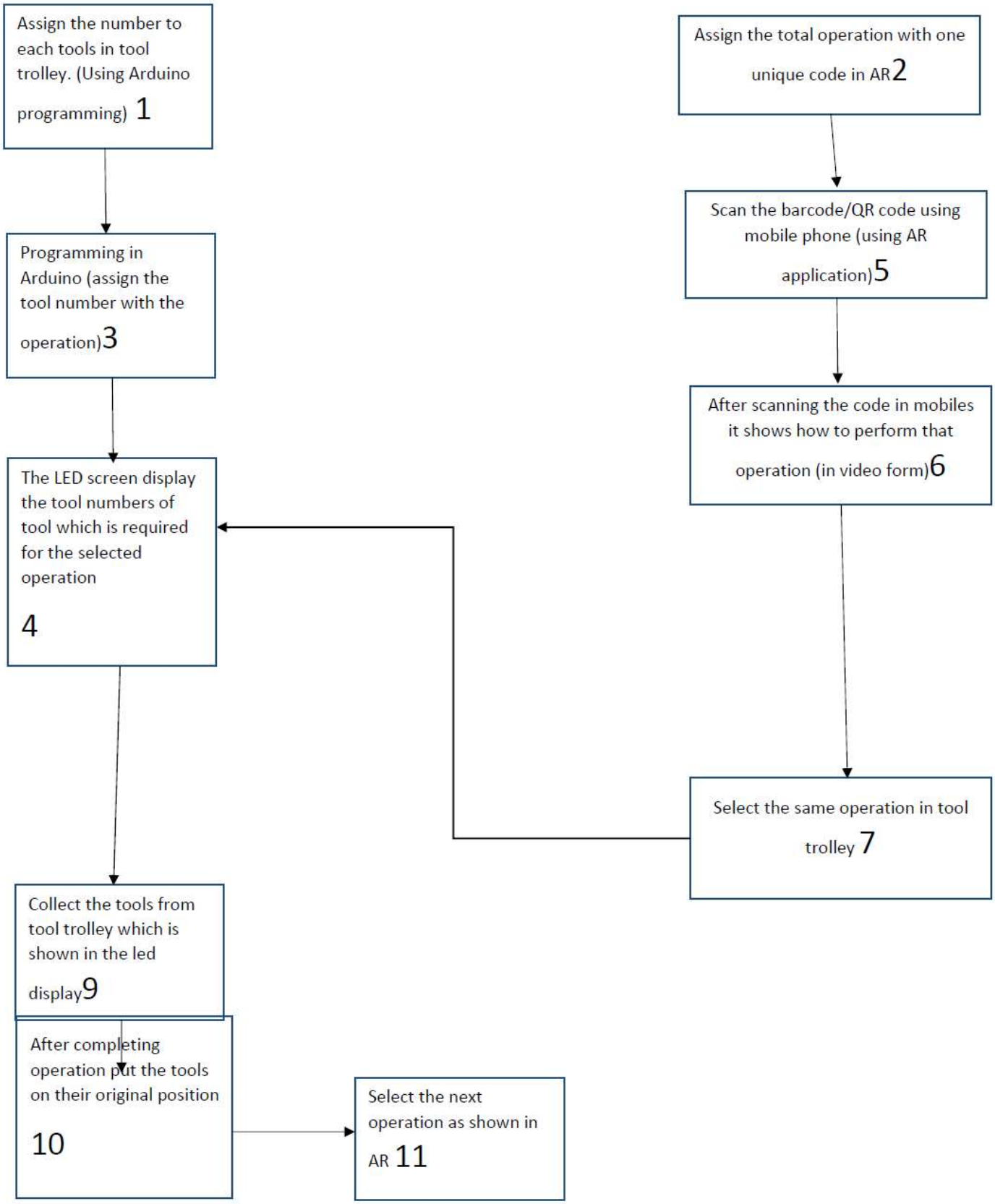


Figure 1

Dated this 16/04/2019

Vikas Asawat
Patent Agent & Advocate
On Behalf of Applicant
Digitally Signed



Dated this 16/04/2019

Vikas Asawat
Patent Agent & Advocate
On Behalf of Applicant
Digitally Signed

FORM 5

THE PATENT ACT, 1970
(39 of 1970)
&
THE PATENTS RULES, 2003

DECLARATION AS TO INVENTORSHIP

[See section 10(6) and rule 13(6)]

1. NAME OF APPLICANT(S) **Akshay Pradip Khandave, Dr. Kiran Suresh Bhole,**

hereby declare that the true and first inventor(s) of the invention disclosed in the complete specification filed in pursuance of my/our application numbered **201921015361** dated **16/04/2019** is/are

2. INVENTOR(S)

Name	Country	Nationality	Address
Akshay Pradip Khandave	India	India	"Ashirwad" Near Anand Hospital, Opposite to Green Aura Building, Tapkir Nagar, Kalewadi, Pune 411017 Maharashtra India
Dr. Kiran Suresh Bhole	India	India	A-601, Shree Manoshi Complex, In front of Ghansoli Railway station. Sector-03, Ghansoli, Navi Mumbai-400701 Maharashtra India

Dated this. **18/04/2019** Day of **2019**

Signature

VIKAS ASAWAT
PATENT AGENT & ADVOCATE

Name of the signatory

3. DECLATRATION TO BE GIVEN WHEN THE APPLICATION IN INDIA IS FILED BY THE APPLICANT(S) IN THE CONVENTION COUNTRY:-NOT APPLICABLE

We the applicant(s) in the convention country hereby declare that our right to apply for a patent in India is by way of assignment from the true and first inventor(s).

Dated this. **18/04/2019**.Day of **2019**

Signature

VIKAS ASAWAT
PATENT AGENT & ADVOCATE

Name of the signatory

4. STATEMENT (to be signed by the additional inventor(s) not mentioned in the application form) **NOT APPLICABLE**

I/We assent to the invention referred to in the above declaration, being included in the complete specification filed in pursuance of the stated application.

Dated this(Final Payment Date): **18/04/2019**

Signature

Name of the signatory

VIKAS ASAWAT
PATENT AGENT & ADVOCATE

RESPONSE TO THE FIRST EXAMINATION REPORT

Patent Application No. 201921015361

Vide E- Filing

The Controller of Patents,
Intellectual Property Office Building,
Antop Hill, SM Road, Mumbai – 400037

Re: Indian Patent Application No.: 201921015361
Applicant:
Date of Filing: 16/04/2019
Date of FER: 10/05/2021
6-Month Due Date: 10/11/2021
Ld. Controller: Shri Jitendra Choure

Respected Sir,

We write with reference to the First Examination Report issued in relation to the aforesaid application and here-below provide our response to the various objections as contained therein.

Objection 1:

Lack of inventive step in view of D1-"Application of Augmented Reality Techniques in Through-life Engineering Services" author: G. Dini, M. Dalle Mura, DOI: https://doi.org/10.1016/j.procir.2015.07.044 and D2- 2018/059934 Al.

Response:

Applicant notes that claims have been objected as lacking in Inventive step over a combined reading of "Application of Augmented Reality Techniques in Through-life Engineering Services" author: G. Dini, M. Dalle Mura, DOI: https://doi.org/10.1016/j.procir.2015.07.044 and D2- 2018/059934 Al.

It is humbly submitted that claims have been amended in order to meet with Learned Controller's objection. The marked-up copy and clean copy of claims has been attached herewith. The amended Claim 1 recites:

A system (300) for guiding a user to repair a machine, said system comprises:
a toolkit (100) comprising tools (23) required for repairing the machine;
an augmented reality (AR) enabled device (200) capable for vision through augmented reality in order to repair the machine
characterized in that:

each tools (23) being identified by a character is placed in a base, said base being assigned a character corresponding to a number of tool (23) wherein each of the tools (23) is placed back at respective position in said base after being used for repairing the machine;
a controlling module (21) adapted for communicating with an AR interface being enabled to provide a list of operations to be performed for repairing the machine so that the AR enabled device selects one or more tools required for selected operation from the list of operations to be performed to repair the machine, wherein the AR enabled device scans a quick response (QR) code of operation to be performed for repairing the machine using the AR interface;
an interactive display unit (20) being adapted to display a tool number of the tools required for selected operation; and
a plurality of electronic components (22) for communicating an information from the AR enabled device to the toolkit, wherein a user inputs the QR code of the operation to be performed into the toolkit wherein the QR code is communicated to the AR device based on an instruction from the user regarding the operation to be performed.

At the outset, we respectfully submit that Manual of Patent Practice and Procedure guides that while determining the inventive step, invention as a whole shall be considered. It is not sufficient to draw the conclusion that a claimed invention does not involve an inventive step merely because individual parts of the claims taken separately are known or might be found to be obvious.

The applicant respectfully submits that document D1 describes application of Augmented Reality Techniques in Through-life Engineering Services, which includes real-time interaction with the system, able to react to users, where main hardware components required for performing, which provides a AR based repair guidance, Tool selection, removal of bolts, and part disassembly, are supported

by visual labels, 3D virtual models and 3D animation AR applications and their functions computer, display device, Interaction tools, Tool selection, removal of bolts, and part disassembly, are supported by visual labels, 3D virtual models and 3D animations inputs, an voice-controlled AR device.

Document D1, however, does not disclose a system for guiding a user to repair a machine wherein a toolkit comprising a plurality of tools required for repairing the machine is linked with an augmented reality (AR) enabled device capable for vision through augmented reality. In accordance with present invention, each of the plurality of tools being identified by a character is placed in a base, said base being assigned a character corresponding to a number of tool wherein each of the plurality of tools is placed back at respective position in said base after being used for repairing the machine. It is to be noted that D1 fails to disclose a base being assigned a character corresponding to a number of tool wherein each of the plurality of tools is placed back at respective position in said base after being used for repairing the machine. Further, the AR enabled device scans a QR code of operation to be performed for repairing the machine using an AR interface wherein the AR interface is controlled by a controlling module adapted for communicating with the AR interface. The AR interface provides a list of operations to be performed for repairing the machine so that the AR enabled device selects one or more tools required for selected operation from the list of operations to be performed to repair the machine, wherein each selected operation is assigned a unique QR code. Furthermore, D1 fails to teach an interactive display unit being adapted to display a tool number of the tools required for selected operation. In accordance with present invention, a plurality of electronic components are provided for communicating an information from the AR enabled device to the toolkit, wherein a user inputs the QR code of the operation to be performed into the toolkit being communicated to the AR device based on an instruction from the user regarding the operation to be performed. Thus, D1 does not disclose a system that guides the user to perform specified operation in AR. The present invention provides information about the tools required from tool box for performing an operation to repair the machine. It is to be noted that the assigned number or alphabet to the tool is displayed on an interactive display unit. Further, D1 does not disclose a base being assigned a character corresponding to a number of tool wherein each of the plurality of tools is placed back at respective position

in said base after being used for repairing the machine. Thus, the present invention is inventive in view of document D1.

D2 discloses an augmented reality (AR) communication system, where the AR interaction device is configured to provide a user of the AR an interaction device with information based on the reality data enriched with the AR data, AR glasses as described in this disclosure can be applied for real-time repair of complex machines as described in the following: Real-time repair of complex machines. D2, however, does not disclose a system for guiding a user to repair a machine wherein a toolkit comprising a plurality of tools required for repairing the machine is linked with an augmented reality (AR) enabled device capable for vision through augmented reality. In accordance with present invention, each of the plurality of tools being identified by a character is placed in a base, said base being assigned a character corresponding to a number of tool wherein each of the plurality of tools is placed back at respective position in said base after being used for repairing the machine. It is to be noted that D2 fails to disclose a base being assigned a character corresponding to a number of tool wherein each of the plurality of tools is placed back at respective position in said base after being used for repairing the machine. Further, the AR enabled device scans a QR code of operation to be performed for repairing the machine using an AR interface wherein the AR interface is controlled by a controlling module adapted for communicating with the AR interface. The AR interface provides a list of operations to be performed for repairing the machine so that the AR enabled device selects one or more tools required for selected operation from the list of operations to be performed to repair the machine, wherein each selected operation is assigned a unique QR code. Furthermore, D1 fails to teach an interactive display unit being adapted to display a tool number of the tools required for selected operation. In accordance with present invention, a plurality of electronic components are provided for communicating an information from the AR enabled device to the toolkit, wherein a user inputs the QR code of the operation to be performed into the toolkit being communicated to the AR device based on an instruction from the user regarding the operation to be performed. Thus, D2 does not disclose a system that guides the user to perform specified operation in AR. The present invention provides information about the tools required from tool box for performing an operation to repair the machine. It is to be noted that the assigned number or

alphabet to the tool is displayed on an interactive display unit. Further, D2 does not disclose a base being assigned a character corresponding to a number of tool wherein each of the plurality of tools is placed back at respective position in said base after being used for repairing the machine. The invention finds its application in the field of automobile repair, surgical operations, or any other operations wherein specific tools are required. The toolkit is specifically designed and tagged, for example with a number. For more convenience of the user the case wherein each tool has to be placed is also tagged with corresponding number, to enable the user to place right tools at their designated place. Thus, the present invention is inventive in view of document D2.

Further, combined teachings of D1 and D2 do not suggest an augmented reality enabled guiding system to repair a machine which eliminates human intervention. The present invention automates the steps of selecting the tools required for repairing a machine and putting the tools back at their respective position in the base in order to perform specified operation in AR. The assigned number or alphabet is displayed on an interactive display device. Thus, the present invention is technically advanced over combined reading of cited prior art documents D1 and D2. Hence, the present invention is inventive over D1 and D2.

The Applicant humbly submits that a combination of Documents D1 and D2 would still not teach ALL limitations as contained in claims of the present application. Hence, the present invention is inventive over a combined reading of D1 and D2 and hence patentable.

In view of the above, Applicant requests the Ld. Controller to reconsider and waive this objection.

Objection 2

Non patentability u/s 3(k). Applicant notes that claims have been held to be non patentable as Claims 1-5 define the "microcontroller....." which means the characterizing feature of the invention is programmed to carry out the functions set out by the algorithm. Thus in absence of any structural limitation/modification the invention claimed in said claims, though claimed as a device, attracts the provision of section 3(k) of the Act.

Response:

It is submitted that the claims have been suitably amended to address the above objection. It is further submitted that the subject matter as claimed does not fall

under the category of algorithms under section 3(k). The claimed subject matter relates to a system including various hardware features including a toolkit comprising a plurality of tools required for repairing a machine, an augmented reality enabled device, a controlling module, an interactive display unit, a plurality of electronic components for communicating an information from the AR enabled device to the toolkit. It is submitted that the claimed invention does not relate to an algorithm under section 3(k). The details of the construction of the system including toolkit comprising a plurality of tools required for repairing a machine, an augmented reality enabled device, a controlling module, an interactive display unit, a plurality of electronic components for communicating an information from the AR enabled device to the toolkit has been clearly indicated. The invention finds its application in the field of automobile repair, surgical operations, or any other operations wherein specific tools are required. The toolkit is specifically designed and tagged with a number. For more convenience of the user, the case wherein each tool has to be placed is also tagged with corresponding number, to enable the user to place right tools at their designated place. Thus, the claimed invention includes pure hardware technical features including toolkit comprising a plurality of tools required for repairing a machine, an augmented reality enabled device, a controlling module, an interactive display unit and a plurality of electronic components. Further, in accordance with present invention, a controlling module adapted for communicating with the AR interface provides a list of operations to be performed for repairing the machine so that the AR enabled device selects one or more tools required for selected operation from the list of operations to be performed to repair the machine, wherein each selected operation is assigned a unique QR code.

In view of the above discussion and amended claims, Applicant requests the Ld. Controller to reconsider and waive this objection.

Objection 4: Clarity and Conciseness

1. The independent claims should be cast in the two- part form, with those features known in combination from the prior art being placed in the preamble and the remaining features being included in the characterizing part.

2. The present set of claims, claims a system for guiding a user to repair a machine and toolkit for repair of a machine, thus the nature and scope

of the invention is not properly understood. It is advisable to amend present set of claims into a suitable number of claims preferably bringing out the main inventive feature as principal claim and other supporting features as dependent claims. The claims shall be amended to bring more clarity to the scope of the claimed invention, as required under section 10(4(a)), section 10(4(b)) and section 10(4(c)) of the Patent Act, 1970.
3. The invention and its operation or use and the method by which it is to be performed is not fully and particularly described in the complete specification as per section 10(4) of the Patents Act, 1970 (as amended). The complete specification should disclose the best method of performing the invention, which is known to the applicant and for which he is entitled to claim protection.

Response:

(1) Claims have been amended to overcome the objections. Claim 1 has been cast in two part form and claim 1 has been characterized.

(2) Claim1 has been characterized. Amended claims clearly define the nature and scope of the invention.

(3) Complete specification fully and particularly describes the invention. All the essential inventive features have been included in amended claim1 and claim 1 has been characterized. It is further submitted that complete specification discloses the best method of performing the invention. For example, the following figures and their description clearly define the invention.

Figure 1 shows a block diagram for the components of the system of the invention.
Figure 2 shows a flow chart for the process steps of the process of tool recognition.
It is submitted that working of the invention is clearly mentioned on page 5 and 6 of complete specifications. Further, claims are fully supported by the description on page 5 and 6 of complete specification.

*Figure 1 shows a block diagram showing the system **300** of the invention. The system **300** comprises of a toolkit **100**and a device **200** capable for vision through Augmented Reality (AR). The toolkit **100**comprises of an interactive display **20**, a microcontroller **21** and electric components **22** for being capable of run an Arduino program. Each tool **23** in the toolkit **100** is assigned a character using Arduino programming **(shown in 1)**.The program (application) is fed various operations **(shown in 2)** such as flat tire, heated engine, battery discharged, in case of an automobile, with a unique code. Based on the operation, the tools are selectedby the program/application**(shown in 3)**.The application provides list of operations and corresponding unique code. The unique code is entered and input to the application. The interactive unit displays the tool numbers of tool which is required for the selected operation **(shown in 4)**.*

*A QR code is scanned with the AR device **200 (shown in 5).** TheAR device **200** shows how to perform the operation **(shown in 6)**. The AR device **200** shows how to assemble or dissemble the product but it doesn't show by using which tools have to assemble or dissemble. So, the operation is selected in the toolkit **(shown in 7).** The toolkit also comprises of a microcontroller which communicates with the application. The code input into the application is also input to the toolkit **(shown in 8)**. The interactive display then shows which tool is to be picked up **(shown in 9)**. The tools are then placed in their respective position (**shown in 10**). A next operation can then be selected thereafter **(shown in 11)**.*

In view of the above discussion and amended claims, waiver of objections is humbly requested.

<u>Objection 5:</u> Other Requirements

In case the applicant decides to amend the claims subsequent to this report, the same shall be drafted afresh to include the technical advancement over the prior art cited in FER as required under section 2(1)(j) of the Patents Act. Please indicate in the response communication the support for such amended claims in the original specification, as required under section 10(4) of the Act. Care shall be taken that requirement section 59 (1) of the Act is also met. Please provide an additional copy of marked-up amendments (highlighting the amendments) wherever applicable.

2. Reference numerals shall be inserted in the claims to enhance the intelligibility of the claims.

3. Reference numerals shall be stated in the abstract for better clarity.

<u>Response:</u>

Applicant respectfully submits that claims have been amended to meet with the objections of Ld. Controller. Amended claims clearly include technical advancement over cited prior arts. Reference numerals have been incorporated in parenthesis. Reference numerals have also been stated in the abstract. The marked-up and clean copy of claims and abstract are attached herewith.

Objection 6: Formal Requirements

Form 5 dated 18.04.2019 has not been filed with the complete specification as of Applicant mentioned in the rule 13(6) of patents rules, 2003.

<u>Response</u>: We have filed petition under rule 137 to condone the delay. It is requested to allow the petition and withdraw the objection.

(2) (a) All the submitted documents, declarations and forms like PA/GPA etc. have been presumed as originally signed by the authorized signatory under the

provisions of the Patents Act, 1970. If not, submit the original signed copy of the same in the prescribed format, failing to which the document may not be considered filed.

Response: All the documents have been duly signed and submitted in accordance with Patent Office requirement. In view of above submission, we request the Learned Controller to withdraw the objection.

(b) Form 5 dated 18.04.2019 has not been filed with the complete specification as mentioned in the rule 13(6) of patents rules, 2003 (as amended).

Response: We have filed petition under rule 137 to condone the delay. It is requested to allow the petition and withdraw the objection.

In any event, before taking any adverse decision, the Learned Controller is respectfully requested to give an opportunity to the Applicant to be officially heard in the matter.

PRAYER

In view of the above submissions, we request you to kindly accept this application and proceed to grant a patent. Also, please let us know if we are required to comply with any further requirements. However, before taking any adverse action, we humbly request the Controller of Patents to give the applicant an opportunity of being heard u/s 14 of the Indian Patents Act, 1970 via Video Conferencing.

We thank you in advance for your cooperation in this regard.

Yours faithfully,

Dated: 29/09/2021

Vikas Asawat
Patent Agent INPA 1407
On Behalf of Applicant
Digitally Signed

Enclosure:
Amended Claims - Marked Copy and Clean Copy
Amended Abstract - Marked Copy and Clean Copy

FORM 18

THE PATENT ACT, 1970
(39 of 1970)
&
THE PATENTS RULES, 2003

REQUEST/EXPRESS REQUEST FOR EXAMINATION OF APPLICATION FOR PATENT

[See section 11B and rules 20(4) (ii),24B (1) (i)]

1. APPLICANT(S)/OTHER INTERESTED PERSON(S):
(a) Name :1. Akshay Pradip Khandave
2. Dr. Kiran Suresh Bhole
(b) Nationality :1 .India
2 .India
(c) Address :1 ."Ashirwad" Near Anand Hospital, Opposite to Green Aura Building, Tapkir Nagar, Kalewadi, Pune 411017 Maharashtra India
2 .A-601, Shree Manoshi Complex, In front of Ghansoli Railway station. Sector-03, Ghansoli, Navi Mumbai- 400701 Maharashtra India
(d) Date Of Publication Under Section 11A :17/05/2019 00:00:00

2. STATEMENT IN CASE OF REQUEST FOR EXAMINATION MADE BY THE APPLICANT(S)
We Akshay Pradip Khandave , Dr. Kiran Suresh Bhole hereby request that our application for patent invention number 201921015361 filed on 16 Apr 2019 for the titled A SYSTEM FOR GUIDING A USER TO REPAIR A MACHINE shall be examined under section 12 and 13 of the Act.

4. ADDRESS FOR SERVICE
Vikas Asawat, Registered Patent Agent & Advocate, 3/183, Ganesh Talab, Basant, Vihar Kota, Rajasthan Pin 324009 India

Dated this 21/08/2019

Vikas Asawat
Patent Agent & Advocate
On Behalf of Applicant

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

FORM 1 THE PATENTS ACT 1970 (39 of 1970) and THE PATENTS RULES, 2003 **APPLICATION FOR GRANT OF PATENT** (See section 7, 54 and 135 and sub-rule (1) of rule 20)	(FOR OFFICE USE ONLY)

	Application No.	
	Filing date:	
	Amount of Fee paid:	
	CBR No:	
	Signature:	

1. APPLICANT"S REFERENCE / IDENTIFICATION NO. (AS ALLOTTED BY OFFICE)	

2. TYPE OF APPLICATION [Please tick ( ) at the appropriate category]

Ordinary (✓)		Convention ( )		PCT-NP ( )	
Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )

3A. APPLICANT(S)

Name in Full	Nationality	Country of Residence	Address of the Applicant
Akshay Pradip Khandave	Indian	India	**"Ashirwad" Near Anand Hospital, Opposite to Green Aura Building, Tapkir Nagar, Kalewadi, Pune 411017 Maharashtra India**
Dr. Kiran Suresh Bhole	Indian	India	**A-601, Shree Manoshi Complex, In front of Ghansoli Railway station. Sector-03, Ghansoli, Navi Mumbai-400701 Maharashtra India**

Natural Person (✓)	Other than Natural Person		
	Small Entity ( )	Startup ( )	Others ( )

4. INVENTOR(S) [Please tick ( ) at the appropriate category]

Are all the inventor(s) same as Applicant(s) named above the applicant(s) named above?	Yes (✓)	No ( )

If "No", furnish the details of the inventor(s)

Name in Full	Nationality	Country of Residence	Address of the Inventor

5. TITLE OF THE INVENTION

A System for guiding a user to repair a Machine

6. AUTHORISED REGISTERED PATENT AGENT(S)	IN/PA No.	1407
	Name	Vikas Asawat
	Mobile No.	9915231179
7. ADDRESS FOR SERVICE OF APPLICANT IN INDIA	Name	**Vikas Asawat**
	Postal Address	**Vikas Asawat, Registered Patent Agent & Advocate, 3/183, Ganesh Talab, Basant, Vihar Kota, Rajasthan Pin 324009 India**
	Telephone No.	9915231179
	Mobile No.	9461084126
	Fax No.	07442401322
	E-mail ID	vsasawat@gmail.com

8. IN CASE OF APPLICATION CLAIMING PRIORITY OF APPLICATION FILED IN CONVENTION COUNTRY, PARTICULARS OF CONVENTION APPLICATION

Country	Application Number	Filing date	Name of the applicant	Title of the invention	IPC (as classified in the convention country)
Nil	Nil	Nil	Nil	Nil	Nil

9. IN CASE OF PCT NATIONAL PHASE APPLICATION, PARTICULARS OF INTERNATIONAL APPLICATION FILED UNDER PATENT CO-OPERATION TREATY (PCT)

International application number	International filing date
Nil	Nil

10. IN CASE OF DIVISIONAL APPLICATION FILED UNDER SECTION 16, PARTICULARS OF ORIGINAL (FIRST) APPLICATION

Original (first) application No.	Date of filing of original (first) application
Nil	Nil

11. IN CASE OF PATENT OF ADDITION FILED UNDER SECTION 54, PARTICULARS OF MAIN- NOT APPLICABLE

Main application/patent No.	Date of filing of main application
NIL	NIL

12. DECLARATIONS

(i) Declaration by the inventor(s) (NOT APPLICABLE)

(**In case the applicant is an assignee**: the inventor(s) may sign herein below or the applicant may upload the assignment or enclose the assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period).

I/We, the above named inventor(s) is/are the true & first inventor(s) for this Invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date

(ii) Declaration by the applicant(s) in the convention country : (NOT APPLICABLE)

(In case the applicant in India is different than the applicant in the convention country: the applicant in the convention country may sign herein below or applicant in India may upload the assignment from the applicant in the convention country or enclose the said assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period)

I/We, the applicant(s) in the convention country declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date

(b) Signature(s)

(c) Name(s) of the signatory

(iii) Declaration by the applicant(s)

I/We the applicant(s) hereby declare(s) that: -

☑ **I am/ We are in possession of the above-mentioned invention.**

☑ **The Complete specification relating to the invention is filed with this application.**

☐ **The invention as disclosed in the specification uses the biological material from India and the necessary permission from the competent authority shall be submitted by me/us before the grant of patent to me/us. NA**

☑ **There is no lawful ground of objection(s) to the grant of the Patent to me/us.**

☑ **I am/we are the true & first inventor(s).**

☐ **I am/we are the assignee or legal representative of true & first inventor(s).**

☒ **The application or each of the applications, particulars of which are given in Paragraph-8, was the first application in convention country/countries in respect of my/our invention(s). NA**

☒ **I/We claim the priority from the above mentioned application(s) filed in convention country/countries and state that no application for protection in respect of the invention had been made in a convention country before that date by me/us or by any person from which I/We derive the title. NA**

☒ **My/our application in India is based on international application under Patent Cooperation Treaty (PCT) as mentioned in Paragraph-9. NA**

☒ **The application is divided out of my /our application particulars of which is given in Paragraph-10 and pray that this application may be treated as deemed to have been filed on DD/MM/YYYY under section 16 of the Act. NA**

☒ **The said invention is an improvement in or modification of the invention particulars of which are given in Paragraph-11. NA**

13. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION

(a) Form 2

Item	Details	Fee	Remarks
Complete/ provisional specification)#	No. of pages: 8		
No. of Claim(s)	No. of claims 5 and No. of pages 2		
Abstract	No. of pages **1**		
No. of Drawing(s)	No. of drawings 2 No. of pages 2		

In case of a complete specification, if the applicant desires to adopt the drawings filed with his provisional specification as the drawings or part of the drawings for the complete specification under rule 13(4), the number of such pages filed with the provisional specification are required to be mentioned here.

(b) Complete specification (in conformation with the international application)/as amended before the

International
Preliminary Examination Authority (IPEA), as applicable (2 copies).
(c) Sequence listing in electronic form
(d) Drawings (in conformation with the international application)/as amended before the International Preliminary
Examination Authority (IPEA), as applicable (2 copies).
(e) Priority document(s) or a request to retrieve the priority document(s) from DAS (Digital Access Service) if the applicant had already requested the office of first filing to make the priority document(s) available to DAS.
(f) Translation of priority document/Specification/International Search Report/International Preliminary Report on
Patentability.
(g) Statement and Undertaking on Form 3
(h) Declaration of Inventorship on Form 5
(i) Power of Authority.
(j)……...

Total fee ₹ Rs. 1600/- deposited vide Net banking

Dated this 16/04/2019

Vikas Asawat
Patent Agent & Advocate
On Behalf of Applicant
Digitally Signed

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

Note: -
* Repeat boxes in case of more than one entry.
* To be signed by the applicant(s) or by authorized registered patent agent otherwise where mentioned.
* Tick (□)/cross (x) whichever is applicable/not applicable in declaration in paragraph-12.
* Name of the inventor and applicant should be given in full, family name in the beginning.

FORM 3
THE PATENT ACT, 1970
(39 of 1970)
&
THE PATENTS RULES, 2003
STATEMENT AND UNDERTAKING UNDER SECTION 8
(See section 8 and rules 12)

I/We

Sr.No.	Applicant Name	Applicant Type	Address
1	Akshay Pradip Khandave	NP	"Ashirwad" Near Anand Hospital, Opposite to Green Aura Building, Tapkir Nagar, Kalewadi, Pune 411017 Maharashtra India
2	Dr. Kiran Suresh Bhole	NP	A-601, Shree Manoshi Complex, In front of Ghansoli Railway station. Sector-03, Ghansoli, Navi Mumbai- 400701 Maharashtra India

who have made this

Application Number: **201921015361**

Date of Filing: **16/04/2019 20:32:41**

alone/jointly made for the same/substantially same invention, application(s) for patent in the other countries, the particulars of which are given below: NOT APPLICABLE

Name of the country	Application No	Date of application	Status of the application	Publication Number	Date of publication	Date of grant	Patent Number

(i) that the rights in the application(s) has/have been assigned to **NONE. The rights are held with applicants only.**
that I/We undertake that upto the date of grant of the patent by the Controller,I/We would keep him informed in writing the details regarding corresponding applications for patents file outside India within Six months from the date of filing of such application.

Dated this(Final Payment Date):18/04/2019

Vikas Asawat
Patent Agent & Advocate
On behalf of Applicant

FORM 9

THE PATENT ACT, 1970
(39 of 1970)
&
THE PATENTS RULES, 2003

REQUEST FOR PUBLICATION

[See section 11A (2) rule 24A]

I/We **Akshay Pradip KhandaveDr. Kiran Suresh Bhole** hereby request for early publication of my/our [Patent Application No.] 201921015361DATED**16 Apr 2019** UNDER SECTION 11A(2) OF THE ACT.

Dated - 30/04/2019

Vikas Asawat
Patent Agent and Advocate
INPA 1407
On behalf of Applicant

To,
The Controller of Patents,
The Patent Office
AT **MUMBAI**

23339

E101|5684|19

Vikas Asawat
Registered Patent & Trade Mark Attorney
 # 3/183, Ganesh Talab
Basant Vihar, Kota Rajasthan
Pin 324009 India

Email: vsasawat@gmail.com
Ph No.: 0744- 2401322

Ref: 201921015361 dated **16/04/2019**

200264707

To
Controller of Patents,
Intellectual Property Office
Mumbai 400037

Sub: - Submission of Form 5

Dear Sir,

We have filed **Online Patent Application** no. **201921015361** dated **16/04/2019**, **in continuation of that, please find attached the following:**

1. **Form 5 (Copy already filed vide e-filing)**

Thanking You,

Dated: 18/04/2019

Yours Sincerely

Vikas Asawat
Patent Agent INPA 1407

Enclosure:
As above

भारत सरकार, पेटेन्ट कार्यालय मुंबई ★ GOVT. OF INDIA, PATENT OFFICE MUMBAI
26 APR 2019

IPO MUMBAI 26-04-2019 16:32

FORM 5

THE PATENT ACT, 1970
(39 of 1970)
&
THE PATENTS RULES, 2003

DECLARATION AS TO INVENTORSHIP

[See section 10(6) and rule 13(6)]

1. NAME OF APPLICANT(S) **Akshay Pradip Khandave, Dr. Kiran Suresh Bhole,**

hereby declare that the true and first inventor(s) of the invention disclosed in the complete specification filed in pursuance of my/our application numbered **201921015361** dated **16/04/2019** is/are

2. INVENTOR(S)

Name	Country	Nationality	Address
Akshay Pradip Khandave	India	India	"Ashirwad" Near Anand Hospital, Opposite to Green Aura Building, Tapkir Nagar, Kalewadi, Pune 411017 Maharashtra India
Dr. Kiran Suresh Bhole	India	India	A-601, Shree Manoshi Complex, In front of Ghansoli Railway station. Sector-03, Ghansoli, Navi Mumbai-400701 Maharashtra India

Dated this. **18/04/2019**Day of **2019**

VIKAS ASAWAT
PATENT AGENT & ADVOCATE

Signature

Name of the signatory

3. DECLATRATION TO BE GIVEN WHEN THE APPLICATION IN INDIA IS FILED BY THE APPLICANT(S) IN THE CONVENTION COUNTRY:-NOT APPLICABLE

We the applicant(s) in the convention country hereby declare that our right to apply for a patent in India is by way of assignment from the true and first inventor(s).

Dated this. **18/04/2019**.Day of **2019**

VIKAS ASAWAT
PATENT AGENT & ADVOCATE

Signature

Name of the signatory

4. STATEMENT (to be signed by the additional inventor(s) not mentioned in the application form) **NOT APPLICABLE**

I/We assent to the invention referred to in the above declaration, being included in the complete specification filed in pursuance of the stated application.

Dated this(Final Payment Date): **18/04/2019**

Signature

Name of the signatory

VIKAS ASAWAT
PATENT AGENT & ADVOCATE

IN THE MATTER OF
The Patents Act 1970 and
IN THE MATTER OF
The Patents Rules 2003 and
IN THE MATTER OF
Patent Application
No. **201921015361** Filed on 16/04/2019
In the name of **Akshay Pradip Khandave**

THE CONTROLLER OF PATENTS
The Patent Office, Mumbai

PETITION UNDER RULE 137

The humble petition of the above mentioned applicant sheweth as follows:

1. Your petitioners filed the abovementioned application for patent on 16/04/2019. Your petitioners are required to submit **Form 5** by the time period under Rule 13(6).

2. Due to circumstances beyond the control of your petitioners the foregoing document could not be filed within the prescribed time period and was filed at a later date.

3. The interest of no person will be adversely affected if the said document is now taken on record.

The statements made hereinabove are true to the knowledge of your petitioners.

In the circumstances stated above, your Petitioners pray that the irregularity in procedure which has occurred through the belated submission of the **Form 5** may be corrected in exercise of the powers vested in the Controller under Rule 137 of Patent Rules 2003 and the said document be taken on record.

Dated this 29/09/2021

Vikas Asawat
Patent Agent & Advocate
INPA 1407
On Behalf of Applicant

FORM 2

THE PATENTS ACT, 1970

(39 OF 1970)

AND

THE PATENT RULES, 2003

COMPLETE SPECIFICATION

(See section 10 and rule 13)

Title

A System for guiding a user to repair a Machine

Name of Applicant	Nationality	Address
Akshay Pradip Khandave	Indian	"Ashirwad" Near Anand Hospital, Opposite to Green Aura Building, Tapkir Nagar, Kalewadi, Pune 411017 Maharashtra India
Dr. Kiran Suresh Bhole	Indian	A-601, Shree Manoshi Complex, In front of Ghansoli Railway station. Sector-03, Ghansoli, Navi Mumbai-400701 Maharashtra India

The following specification particularly describes the invention and the manner in which it is to be performed.

Field of Invention:

Present invention relates to a guided tool kit for repair of a machine. More particularly, the invention relates to a toolkit which tools can easily be recognized and suggested for the repair, through Augmented Reality or a software application.

Background of the Invention:

Augmented reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real-world are "augmented" by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, haptic, somatosensory, and olfactory. The overlaid sensory information can be constructive (i.e. additive to the natural environment) or destructive (i.e. masking of the natural environment) and is seamlessly interwoven with the physical world such that it is perceived as an immersive aspect of the real environment. In this way, augmented reality alters one's ongoing perception of a real-world environment, whereas virtual reality completely replaces the user's real-world environment with a simulated one. Augmented reality is related to two largely synonymous terms: mixed reality and computer-mediated reality.

Augmented reality - technology which takes virtual objects and layers them on top of live camera images - is being used by the car industry to help design the next generation of cars.

However, none of the existing features do not guide the user for the kind of tools to be picked up for the repair, making the whole process inconvenient. Thus, there arises a need to develop a system, wherein the AR can interact with a kind of tool kit which guides the user through the whole process.

Summary of the Invention:

In this disclosure, whenever a composition, an element or a group of elements is preceded with the transitional phrase "comprising", it is understood that we also contemplate the same composition, element or group of elements with transitional phrases "consisting essentially of", "consisting", "selected from the group of consisting of, "including", or "is" preceding the recitation of the composition, element or group of elements and vice versa.

According to an embodiment of the invention, there is provided a system for guiding a user to repair a machine, said system comprises of a toolkit; a device for augmented reality for repair of a machine,said toolkit comprises: tools of the toolkit for the purpose of repair of the machine, each tool is identified by a character, and each tool is placed in a base, said base has same character corresponding to the number of respective tool; a microcontroller; an interactive display unit; electronic components for communicating the information from AR device; wherein the user inputs an

operation selected into the toolkit, which interacts with the AR device, based on the instructions from the user regarding kind of operation to be performed.

Yet according to another embodiment of the invention, the operation is recognized by the augmented reality vision and said operation is input to the toolkit.

Yet according to another embodiment of the invention, the operation is car repair, any medical surgical operation, or repair of any industrial machine.

Yet according to another embodiment of the invention, the software application can itself identify the operation, on input of errors faced by the user.

Yet according to another embodiment of the invention, the character is a number, an alphabet or both.

Brief description of drawings:

So that the manner in which the above recited features of the present invention can be understood in detail, a more particular description of the invention, briefly summarized above, may be had by reference to embodiments, some of which are illustrated in the appended drawings. It is to be noted, however, that the appended drawings illustrate only typical embodiments of this invention and are therefore not to be considered limiting

of its scope, for the invention may admit to other equally effective embodiments.

Figure 1 shows a block diagram for the components of the system of the invention.

Figure 2 shows a flow chart for the process steps of the process of tool recognition.

Detailed description of the Invention:

The invention relates to a system for guiding a user for repair of a machine with a toolkit. More particularly, the invention relates to a system wherein the user can easily determine that which tool is required for a specific operation for repair, and also, that how the tool is to be used.

Figure 2 shows a flow chart for the process steps of the invention according to an embodiment of the invention, wherein a machine is to be repaired. Figure 1 shows a block diagram showing the system **300** of the invention. The system **300** comprises of a toolkit **100**and a device **200** capable for vision through Augmented Reality (AR). The toolkit **100**comprises of an interactive display **20**, a microcontroller **21** and electric components **22** for being capable of run an Arduino program. Each tool **23** in the toolkit **100** is assigned a character using Arduino programming **(shown in 1)**.The program (application) is fed various operations **(shown in 2)** such as flat tire, heated

engine, battery discharged, in case of an automobile, with a unique code. Based on the operation, the tools are selectedby the program/application**(shown in 3)**.The application provides list of operations and corresponding unique code. The unique code is entered and input to the application. The interactive unit displays the tool numbers of tool which is required for the selected operation **(shown in 4)**.

A QR code is scanned with the AR device **200 (shown in 5).** TheAR device **200** shows how to perform the operation **(shown in 6)**. The AR device **200** shows how to assemble or dissemble the product but it doesn't show by using which tools have to assemble or dissemble. So, the operation is selected in the toolkit **(shown in 7).** The toolkit also comprises of a microcontroller which communicates with the application. The code input into the application is also input to the toolkit **(shown in 8)**. The interactive display then shows which tool is to be picked up **(shown in 9)**. The tools are then placed in their respective position (**shown in 10**). A next operation can then be selected thereafter **(shown in 11)**.

According to an embodiment of the invention, the AR device**200** is a mobile phone.

According to an embodiment of the invention, the interactive display is speech or touch.

According to an embodiment of the invention, the character assigned to each tool is a number.

The invention finds its application in the field of automobile repair, surgical operations, or any other operations wherein specific tools are required. The toolkit is specifically designed and tagged, for example with a number. For more convenience of the user the case wherein each tool has to be placed is also tagged with corresponding number, to enable the user to place right tools at their designated place.

Yet according to another embodiment of the invention, during series of steps while performing the operation, if the tools are not picked up sequentially, as suggested by a software application of the toolkit, the software application may send a notification to the user informing picking up of new tool, as soon as the wrong tool is picked up from the tool kit.

Yet according to another embodiment of the invention, all the tools in a tool kit are strapped locked and the strap lock itself opens for the right tool, as the operation proceeds.

Further areas of applicability of the present invention will become apparent from the detailed description provided hereinafter. It should be understood that the detailed description and specific examples, while indicating the preferred embodiment of the invention, are intended for purposes of illustration only and are not intended to limit the scope of the invention.

While the embodiments of the present invention have been disclosed above, but its use is not limited to the description set forth and described embodiments, which can be applied to various fields suitable for the present invention, for the person skilled in the art, can be easily realized a further modification, thus without departing from the generic concept claims and equivalents as defined by the scope of the present invention is not limited to the specific details shown and described herein with legend.

Claims:

We claim:

1. A system for guiding a user to repair a machine, said system comprises of a toolkit;

   a device for augmented reality for repair of a machine,

   said toolkit comprises:

   tools of the toolkit for the purpose of repair of the machine,

   each tool is identified by a character,

   and each tool is placed in a base, said base has same character corresponding to the number of respective tool;

   a microcontroller;

   an interactive display unit;

   electronic components for communicating the information from AR device;

   wherein the user inputs an operation selected into the toolkit, which interacts with the AR device, based on the instructions from the user regarding kind of operation to be performed.

2. The toolkit for repair of a machine as claimed in claim 1, wherein the operation is recognized by the augmented reality vision and said operation is input to the toolkit.

3. The toolkit for repair of a machine as claimed in claim 1, wherein the operation is car repair, any medical surgical operation, or repair of any industrial machine.

4. The toolkit for repair of a machine as claimed in claim 1, wherein the software application can itself identify the operation, on input of errors faced by the user.

5. The toolkit for repair of a machine as claimed in claim 1, wherein the character is a number, an alphabet or both.

Dated this 16/04/2019

Vikas Asawat
Patent Agent & Advocate
On Behalf of Applicant
Digitally Signed

ABSTRACT

A System for guiding a user to repair a Machine

Present invention relates to a system for guiding a user to repair a machine, said system comprises of a toolkit; a device for augmented reality for repair of a machine. The toolkit comprises of tools of the toolkit for the purpose of repair of the machine. Each tool is identified by a character, and each tool is placed in a base, said base has same character corresponding to the number of respective tool; a microcontroller; an interactive display unit; electronic components for communicating the information from AR device. The user inputs an operation selected into the toolkit, which interacts with the AR device, based on the instructions from the user regarding kind of operation to be performed.