

# AI TOOLS FOR IP OFFICES

ANGEL ALEDO LOPEZ | CTO/COO | APRIL 25 | VERSION: 1



Enable efficient granting of high-quality patents by reducing examiners' administrative and cognitive load through AI assistance in a streamlined end-to-end workflow



Better integration of the search and examination phases into a single workflow



Collaboration within the division and with the applicant



Maintaining high standards of service quality through AI assistance



Pre-processing applicant submissions to generate application's status overview

# SUPPORTING EXAMINERS AND FORMALITIES OFFICERS WITH AI







## A HUMAN-CENTRIC APPROACH

AI supports and complements human decision-making – but does not replace it.

- The combination of human + AI provides best results in quality and efficiency
- Final decisions at the Office will be taken by human intervention
- Accountability and responsibility for such decisions remains with the Office in relationship to third parties, in line with our legal framework



## OVERWHELMING INTEREST - STATS

- Total on the list = 537 colleagues (including some late arrivals)
- First and rough assessment of input re AI experience and motivation
  - AI expert = 133
  - AI advanced user = 91
  - 313 neither AI expert nor AI advanced user
- This assessment might not be so accurate: **Self-Reflection on Skills and Roles**, also based on interest and availability
- OPPO and Exam Oral proceedings pilot: 185 (34 EXA, 151 OPPO) colleagues – 41 applied for AI Task Force

## Artificial Intelligence Essentials

### Computer Vision


- Patent figures
- Facsimiles parsing e.g., tables
- Understanding figure content

### Natural Language Processing

- Managing patent language
- Patent syntax in general
- e.g., Claim syntax specifically

### Machine Translation

- Specific to our business needs
- Build on patent content
- Proven to improve Pre-Search

(19)  Deutsches Patent- und Markenamt

(10) DE 10 2017 212 839 A1 2019.01.31

(12) **Offenlegungsschrift**

(21) Aktenzeichen: 10 2017 212 839.9 (51) Int. CL: **G06N 3/00** (2006.01)  
 (22) Anmeldetag: 26.07.2017 G06F 15/30 (2006.01)  
 (43) Offenlegungstag: 31.01.2019

(71) Anmelder: Robert Bosch GmbH, 70469 Stuttgart, DE (72) Erfinder: Kleemann, Ralf, 71726 Benningen, DE

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen.

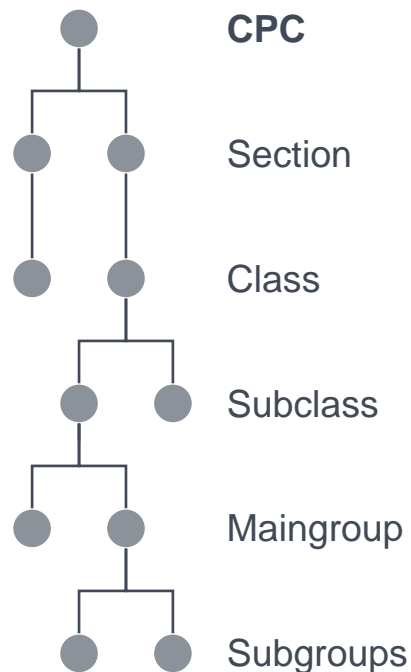
(54) Bezeichnung: **Kontrollmodul für Künstliche Intelligenz**

(57) Zusammenfassung: Kontrollmodul (3) für ein System (1), das eine oder mehrere Eingangsgrößen (11) mit einem Künstliche-Intelligenz-Modul, KI-Modul (2), in eine oder mehrere Ausgangsgrößen (21) übersetzt, wobei die Ausgangsgröße (21) von einem Ausgang (22) des KI-Moduls (2) zurückgeführt ist, wobei das Kontrollmodul (3) einen Eingang (31), der mit dem Ausgang (22) des KI-Moduls (2) verbindbar ist, und einen Ausgang (32), der mit dem Ausgang (13) des Systems (1) verbindbar ist, aufweist und dazu ausgebildet ist, einen an seinem Eingang (31) empfangenen Wert der Ausgangsgröße (21) des KI-Moduls (2) nur dann an seinen Ausgang (32) weiterzugeben, wenn dieser Wert mindestens einer in dem Kontrollmodul (3) hinterlegten Randbedingung (33) genügt.

System (1), das eine oder mehrere Eingangsgrößen (11) mit einem Künstliche-Intelligenz-Modul, KI-Modul (2), in eine oder mehrere Ausgangsgrößen (21) übersetzt, wobei die Ausgangsgröße (21) von einem Ausgang (22) des KI-Moduls (2) sowohl zu einem Ausgang (13) des Systems (1) geführt ist als auch als Rückkopplung in einen Eingang (22) des KI-Moduls (2) zurückgeführt ist, wobei das Kontrollmodul (3) einen Eingang (31), der mit dem Ausgang (22) des KI-Moduls (2) verbindbar ist, und einen Ausgang (32), der mit dem Ausgang (13) des Systems (1) verbindbar ist, aufweist und dazu ausgebildet ist, einen an seinem Eingang (31) empfangenen Wert der Ausgangsgröße (21) des KI-Moduls (2) nur dann an seinen Ausgang (32) weiterzugeben, wenn dieser Wert mindestens einer in dem Kontrollmodul (3) hinterlegten Randbedingung (33) genügt.

System (1), das eine oder mehrere Eingangsgrößen (11) mit einem Künstliche-Intelligenz-Modul, KI-Modul (2), in eine oder mehrere Ausgangsgrößen (21) übersetzt, wobei die Ausgangsgröße (21) von einem Ausgang (22) des KI-Moduls (2) sowohl zu einem Ausgang (13) des Systems (1) geführt ist als auch als Rückkopplung in einen Eingang (22) des KI-Moduls (2) zurückgeführt ist, wobei ein Kontrollmodul (3) vorgesehen ist, wobei der Eingang (31) des Kontrollmoduls (3) mit einem Ausgang (22) des KI-Moduls (2) und der Ausgang (32) des Kontrollmoduls (3) mit einem Ausgang (13) des Systems (1) verbunden ist.

Zugehöriges ...



Data  
available



~250 000 symbols in CPC

No aggregation

220.0000 symbols in our  
latest EP-AutoCla model

Training on 6.9M (2002-2023)

Test on 0.83M

800k families from 2023:

Unique symbols coverage:  
(100%)

Total symbols coverage:  
(100%)

New release in April:  
based on ModernBert



Canopee - v1.05.0 - Google Chrome

https://batavia.internal.epo.org/ansear/master/canopee/?mode=ansear/#/((browser.details,row,60),class-alloc.col,60)/info

Class Browser 4. CPC 5. KW 6. FI 7. FT 8. Info 9. IPC +3

Symbol - Title Find in the scheme Detail Actions

**EP24157040A - AI suggestion**

- ✓ A01B69/00 Steering of agricultural machines or implements; Guiding agricultural machines or implements on a desired track
  - A01B69/001 [Steering by means of optical assistance, e.g. television cameras (steering devices for road marking vehicles E01C23/163)]
- ✓ A01B76/00 Parts, details or accessories of agricultural machines or implements, not provided for in groups A01B51/00 - A01B75/00
- ✓ A01B79/00 Methods for working soil
  - A01B79/005 [Precision agriculture]
- ✓ A01C5/00 Making or covering furrows or holes for sowing, planting or manuring (ploughs for making ridges A01B13/02)
- ✓ • A01C5/06 Machines for making or covering drills or furrows for sowing or planting
- ✓ •• A01C5/066 [Devices for covering drills or furrows]
- ✓ ••• A01C5/068 [Furrow packing devices, e.g. press wheels]
- ✓ A01C7/00 Sowing

Click on the icons in order to see here more detail

Class Alloc - EP24157040A Additional info Add note

AI suggestion	CPC other offices	Confirmed	Circulation	Unreviewed
G06T7/0002 (58.0%)	G06T7/50 (US)	A01C7/203 (Weinmüller, C.)	Closed Herter J. G06T7/00	
A01B79/005 (39.8%)	G06V20/188 (US)	A A01C7/205 (Weinmüller, C.)	G06T7/20 Image Analysis (Clifton dossier)	
A G06T2207/30188 (36.2%)				
A G06T2207/30168 (34.9%)				

Add symbol Add admin circulation Finish

Class Browser Class History Class Alloc Cromo Detail window Multiple selection Contacts User Preferences OQC & QA Search Reset layout

## AI suggestion

G06T7/0002 (58.0%)

A01B79/005 (39.8%)

A G06T2207/30188 (36.2%)

A G06T2207/30168 (34.9%)

A G06T2207/10016 (31.3%)

G06T7/0004 (29.9%)

G06Q50/02 (26.8%)

G06V10/993 (24.1%)

A01C7/205 (21.0%)

A01B69/001 (20.4%)

G06V20/56 (19.9%)

Allocate symbol as  
Invention or  
Additional  
information

- a) Auto-Cla AI explained  
b) Section explained.



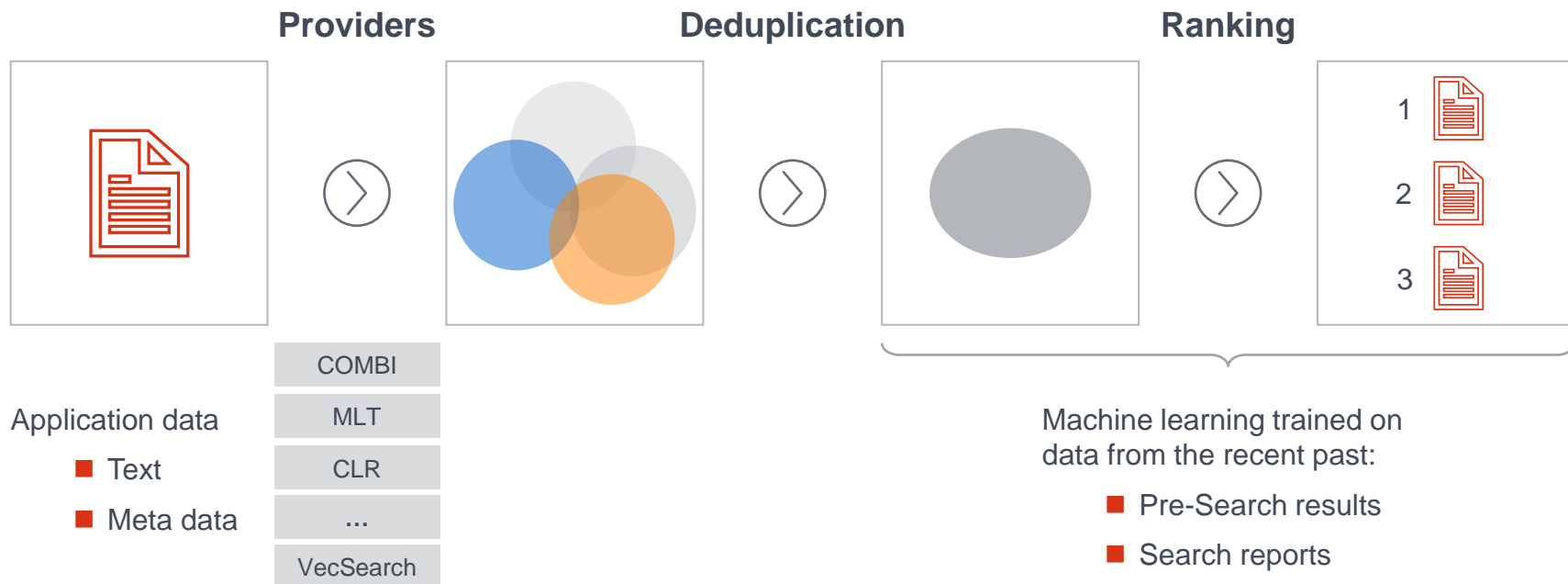
✓	A61M60/00	Blood pumps; Devices for mechanical circulatory actuation; Balloon pumps for circulatory assistance (heart stimulation <a href="#">A61H31/00</a> ; heart stimulators for electrotherapy <a href="#">A61N1/362</a> )	<a href="#">D</a> <a href="#">I</a>
✓	• A61M60/10	Location thereof with respect to the patient's body	
✓	•• A61M60/122	Implantable pumps or pumping devices, i.e. the blood being pumped inside the patient's body	
✓	••• A61M60/126	implantable via, into, inside, in line, branching on, or around a blood vessel	
	•••• A61M60/13	by means of a catheter allowing explantation, e.g. catheter pumps temporarily introduced via the vascular system	<a href="#">0.43</a> <a href="#">S</a> <a href="#">A</a>
	•••• A61M60/148	in line with a blood vessel using resection or like techniques, e.g. permanent endovascular heart assist devices	<a href="#">0.07</a> <a href="#">S</a> <a href="#">A</a>
✓	• A61M60/80	Constructional details other than related to driving	
✓	•• A61M60/802	of non-positive displacement blood pumps	
		usings	<a href="#">0.44</a> <a href="#">S</a> <a href="#">A</a>
		or blades, e.g. static flow guides	<a href="#">0.32</a> <a href="#">S</a> <a href="#">A</a>
		s	
		or blades	
		ally adapted for deformable impellers, e.g. expandable i	<a href="#">0.16</a> <a href="#">S</a> <a href="#">A</a>

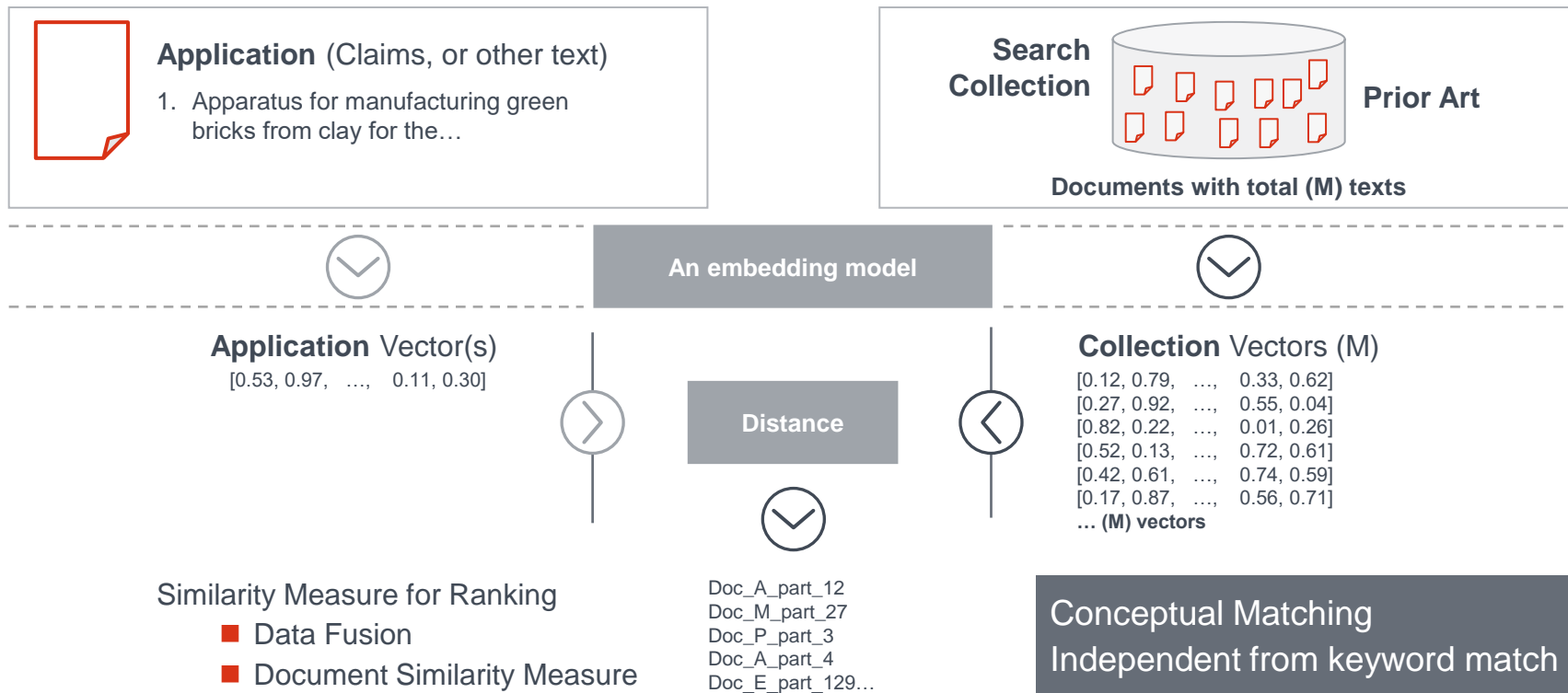
- a) The application describes the force acting on the blood contacting member being mechanical, transmitted by a shaft or cable, and generated by an electromotor, as seen in paragraphs 1, 7, 12, and the description of FIG. 1.



- b) The selection does not mention the force acting on the blood contacting member being electromagnetic. The force is described as mechanical, transmitted by a shaft or cable, and generated by an electromotor.

# COLLECTION OF AUTOMATED SEARCH STRATEGIES (I.E., PROVIDERS)





## Automated Generated ANSERA Markers

Recall (Citations)

Markers generated

PreSearch  
 20976  
 47.9%

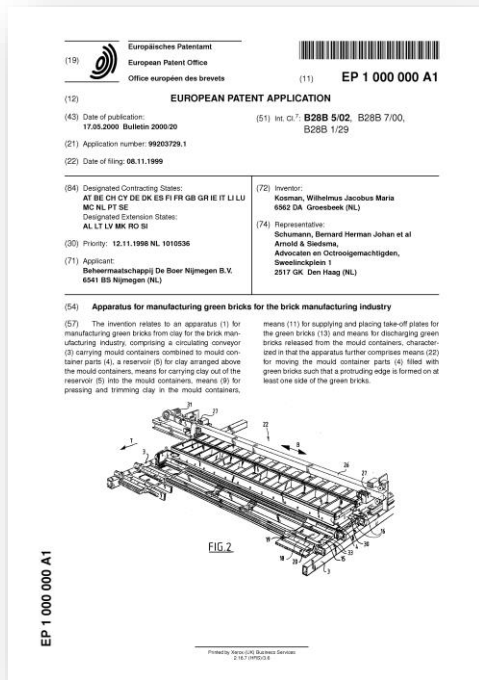
Missing X Citations  
 12425  
 28.4%

LLM Marker  
 1534  
 3.5%

Overlap  
 8863  
 20.2%

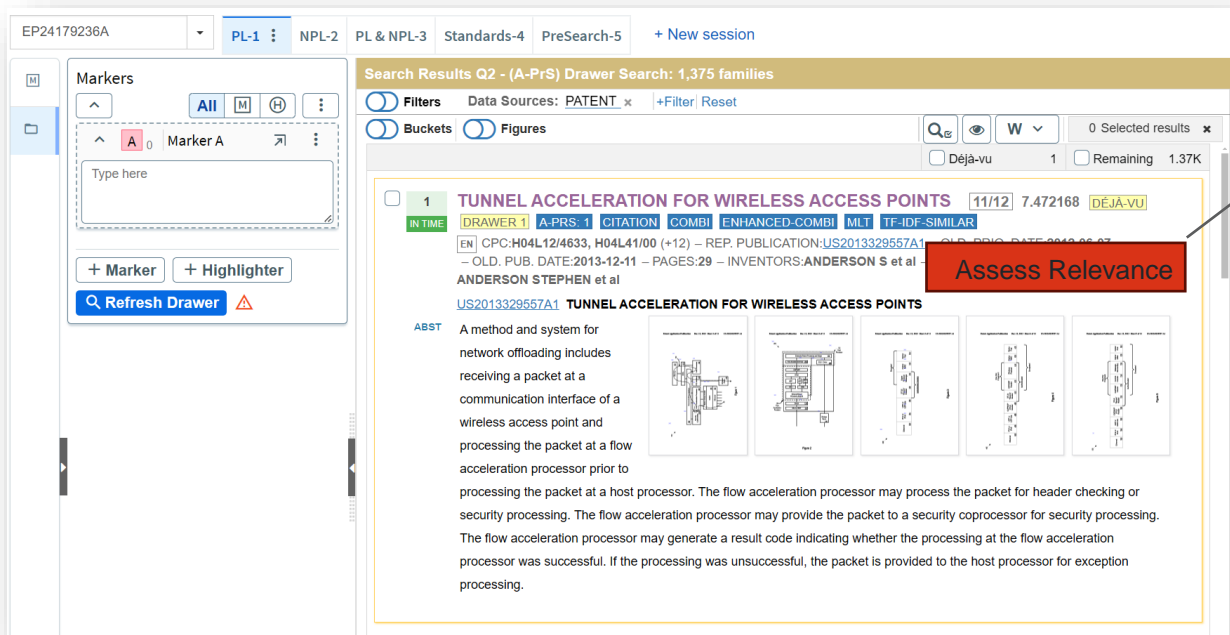
(edge?, border?, edge-forming, border-forming)  
 3D (means, system?, device?)

brick+ 3D (manufactur+, product+)





# IS MY PRESEARCH RESULT RELEVANT?



EP24179236A PL-1 NPL-2 PL & NPL-3 Standards-4 PreSearch-5 + New session

Search Results Q2 - (A-PrS) Drawer Search: 1,375 families

Filters Data Sources: PATENT x +Filter Reset

Buckets Figures

Qs W 0 Selected results x

Déjà-vu 1 Remaining 1.37K

1 **TUNNEL ACCELERATION FOR WIRELESS ACCESS POINTS** 11/12 7.472168 [DÉJÀ-VU]

IN TIME DRAWER 1 A-PRS: 1 CITATION COMBI ENHANCED-COMBI MLT TF-IDF-SIMILAR

EN CPC:H04L12/4633, H04L41/00 (+12) - REP. PUBLICATION:US2013329557A1 OLD PBO. DATE:2013-05-07

- OLD. PUB. DATE:2013-12-11 - PAGES:29 - INVENTORS:ANDERSON S et al - ANDERSON STEPHEN et al

US2013329557A1 **TUNNEL ACCELERATION FOR WIRELESS ACCESS POINTS**

ABST A method and system for network offloading includes receiving a packet at a communication interface of a wireless access point and processing the packet at a flow acceleration processor prior to processing the packet at a host processor. The flow acceleration processor may process the packet for header checking or security processing. The flow acceleration processor may provide the packet to a security coprocessor for security processing. The flow acceleration processor may generate a result code indicating whether the processing at the flow acceleration processor was successful. If the processing was unsuccessful, the packet is provided to the host processor for exception processing.

**Assess Relevance**

--- Not directly relevant ---

The application uses flow descriptors and context to determine how to process packets, including DTLS-specific context such as epoch and sequence numbers. - \*\*Prior Art\*\*: The prior art uses flow descriptors and context for general packet processing but does not specifically address DTLS-specific context or flow descriptors. ##### Conclusion: While the prior art describes a method and system for offloading packet processing tasks to a dedicated processor, it does not specifically address the selective offloading of DTLS packets or the detailed criteria and steps for DTLS processing described in the application. The prior art is more general and focuses on offloading various types of packet processing tasks, whereas the application is specifically concerned with DTLS processing and selective offloading of DTLS packets. Therefore, the prior art is not directly relevant to the specific claims and features of the application related to DTLS selective software offload.

Application - EP17803591

Tri 145 of 152 EP201926372012111A1

1<sup>a</sup> A loudspeaker resin molding component comprising:  
 carbonized bamboo fibers that are refined to have a microfibril status; and resin.

2<sup>1</sup> The loudspeaker resin molding component according to claim 1, wherein the refined carbonized bamboo fibers have a freeness of 37 cc or less.

3<sup>1</sup> The loudspeaker resin molding component according to claim 1, wherein the refined carbonized bamboo fibers are included at 3 weight % or more and 30 weight % or less.

4<sup>1</sup> The loudspeaker resin molding component according to claim 1 further comprising natural fibers.

5<sup>1</sup> The loudspeaker resin molding component according to claim 4, wherein the natural fibers are non-carbonized bamboo fibers.

6<sup>1</sup> The loudspeaker resin molding component according to claim 5, wherein a sum of the refined carbonized bamboo fibers and the non-carbonized bamboo fibers is 3 weight % or more and 60 weight % or less.

7<sup>1</sup> The loudspeaker resin molding component according to claim 5, wherein the non-carbonized bamboo fibers are refined to have a microfibril status having a freeness of 37 cc or less.

8<sup>1</sup> The loudspeaker resin molding component according to claim 1, further comprising a bamboo powder.

9<sup>1</sup> The loudspeaker resin molding component according to claim 1, further comprising pulverized bamboo charcoal.

10<sup>1</sup> The loudspeaker resin molding component according to claim 1, further comprising compatibilizer consisting of a silane compound having a vinyl group.

11<sup>1</sup> The loudspeaker resin molding component according to claim 1, wherein the resin is polypropylene.

12<sup>1</sup> The loudspeaker resin molding component according to claim 1, wherein the resin is engineering plastic.

13<sup>1</sup> The loudspeaker resin molding component according to claim 1, wherein the resin is plant-derived polylactic acid.

US2011/0164764 A1, Par. 0007  
 The speaker diaphragm of the present invention includes a fabric layer in which impregnated thermosetting resin is thermally cured, and a paper layer integrated on a rear face of this fabric layer. Fluffs of the paper layer filling stitches of the fabric layer are entangled with threads of the fabric layer from the surface of the fabric layer. The fabric layer and the paper layer are further integrated by thermosetting resin.

US2010/0296688 A1, Par. 0017  
 The present invention is configured to include resin and carbonized bamboo. The configuration does not largely reduce internal loss of resin as compared to other inorganic fillers and presents high rigidity of a carbonized bamboo material, efficiently in the resin. Keeping the resistance of resin to moisture and Water increases the degree of flexibility in setting physical properties of the speaker diaphragm, and injection molding allows yielding speaker diaphragms With high productivity. Hence, the present invention gives a large degree of flexibility in adjusting characteristics as a speaker and sound quality; secures moisture-proof reliability and strength; and improves productivity.

US 2010/0296688 A1, par. 0043  
 An inner circumference end of resilient second edge 21, which has a ring-like cross section, is connected to this voice coil 16 via suspension holder 21a at a portion between a lead-out point of leader line 20 and a portion inside magnetic gap 13. The other end of this second edge 21 is connected to an inner middle portion of frame 17.

US 2010/0296688 A1, par. 0052  
 Furthermore, in speaker diaphragm 5, a two-layer structure of paper layer 7 formed by fine linear fibers and fabric layer 6 enables fiber fluffs 7 a of paper layer 7 to enter stitches 10, and allows fluffs 7a to entangle with warps Ba and wefts Sb of fabric layer 6 from the surface of fabric layer 6. Accordingly, unlike conventional speaker diaphragm 204 with a general structure that only the rear face of fabric layer 6 is attached to paper layer 7, fabric layer 6 and paper layer 7 are integrated. As a result, speaker diaphragm 5 is strengthened, and achieves high Young's modulus, compared to that of conventional speaker diaphragm 204, improving the sound quality.

US2010/0172533 A1, Par. 0054  
 Bamboo charcoal 67B is granular and is obtained by cutting a bamboo material into an appropriate size, carbonizing the material at a high temperature of about 800° C., and then, pulverizing the carbonized material.

Drafter assistant helps you parse the application and prior art text for relevant passages.

While writing your communication, you are shown the application and prior art texts and relevant sections thereof, making it easier to make arguments.

**EP 1234 567 89** EN TOC/CB/AIA

> Table of contents

Date	Code	Title	Comments
26.06.2020	2021A	Application deemed to be withdrawn ...	
26.06.2020	STATUS	Application deemed withdrawn; date ...	
22.01.2020	2001	Communication from the Examining D...	
22.01.2020	2906	Annex to the communication	US14497451
22.01.2020	STATUS	Send COMM, NDA, TELT, INTT, INTN	KR20-2014-00...
21.01.2020	STATUS	Central File Store MU 2 IN	KR20-2015-00...
23.12.2019	STATUS	Communication	
26.08.2019	STATUS	Date of payment of renewal fee RFEEL...	
26.08.2019	STATUS	Central File Store MU 2 OUT	
22.08.2019	STATUS	Paperfile update for EXRE(3) carried o...	
22.08.2019	CLMS-INBA	Amended claims with annotations	

Cited Documents  
User area  
Shared area

Back Folders

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**Acknowledgement of receipt**

We hereby acknowledge receipt of the following subsequently filed document(s):

Submission number	8315534	
Application number	EP1951010	
Date of receipt	29 February 2020	
Receiving Office	European Patent Office, The Hague	
Your reference	A326-B-41858 EP	
Applicant	All applicants as on file	
Documents submitted	package-data.xml ep11038.pdf (1 p.)	ep-sds-request.xml ORAL - 1.pdfEPO Letter - Technical information - 05.02.2020.pdf (2 p.)
Submitted by	CN=Eric Derjagan 26780	
Method of submission	Online	
Date and time receipt generated	29 February 2020 16:01 (CET)	
Message Digest	0A.D0.26.D3.AE.E5.E3.9C.9B.2B.42.5A.4A.EB.F7.65.B8.34.8D.34	

**Correction by the EPO of errors in debit instructions filed by eOLP**  
Errors in debit instructions filed by eOLP that are caused by the editing of Form 1038E entries or the continued use of outdated software (all forms) may be corrected automatically by the EPO, leaving the payment date unchanged (see decision T 152/02, OJ EPO 1984, 301 and point 6.3 of AIA). Supplement to OJ EPO 102007).

European Patent Office

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(EPU) Formalities

EAPP - Reference to an Earlier Application Information

Filing Details

Request received on (DREC11\_MACH): 12.02.2023  
Procedural language (PROL1): DE - German

Title of invention

Title of invention (TTIL1): [Placeholder text]

Applicant / Representative

Applicant (GAPP11\_MACH):  
Agent / Applicant reference (AREF01\_MACH):  
For attention of (ATTN11\_MACH):  
Representative address (REPRI1):

Priority Claim

Earliest priority date (PRIOD1):

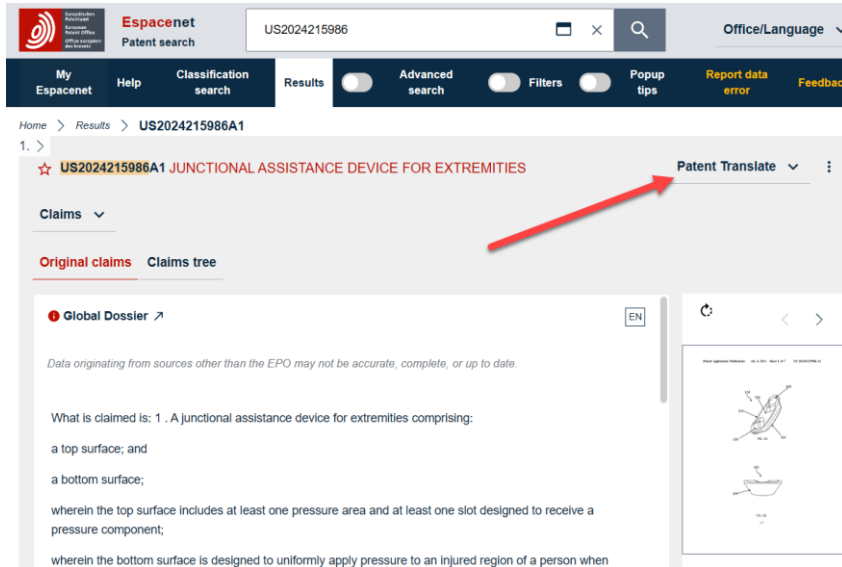
No. of sheets

No. of sheets (SHEE11\_MACH):

Restore Version Enter your prompt

# LOWERING THE BARRIER TO ACCESS INFORMATION WITH AI



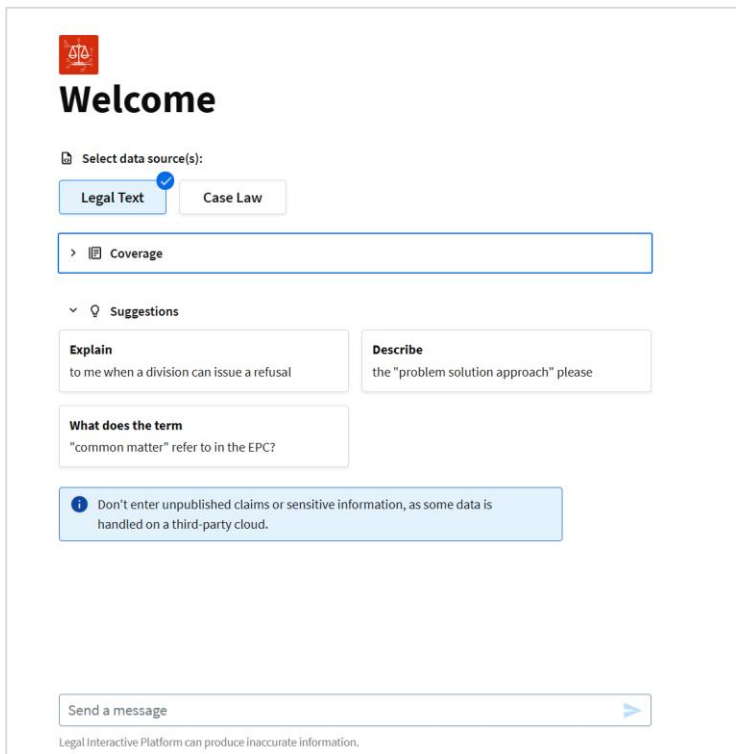


The screenshot shows the Espacenet Patent search interface. At the top, there is a search bar with the text 'US2024215986'. Below the search bar, there are several tabs: 'My Espacenet', 'Help', 'Classification search', 'Results', 'Advanced search', 'Filters', 'Popup tips', 'Report data error', and 'Feedback'. The 'Results' tab is selected. Below the tabs, there is a breadcrumb trail: 'Home > Results > US2024215986A1'. The main content area shows the patent details for 'US2024215986A1 JUNCTIONAL ASSISTANCE DEVICE FOR EXTREMITIES'. A red arrow points to the 'Patent Translate' button in the top right corner of the patent details section. The 'Claims' section is expanded, showing the 'Original claims' and 'Claims tree'. The 'Global Dossier' section is also visible, showing a list of claims and a diagram of the device.

We are currently deploying epo-translate for Espacenet making us more independent from commercial tools

- EPC Languages: German, French Italian, Greek, Dutch, Spanish, Portuguese, Turkish
- Non-EPC: Chinese, Japanese, Korean and Russian





The screenshot shows the 'Welcome' interface of the Legal Interactive Platform. At the top left is the EPO logo. Below it, the word 'Welcome' is displayed. A section titled 'Select data source(s):' contains two buttons: 'Legal Text' (which is selected and has a blue checkmark) and 'Case Law'. Below this is a search bar with a magnifying glass icon and the text 'Coverage'. Underneath the search bar is a 'Suggestions' section with a dropdown arrow and a speech bubble icon. It contains three input boxes: 'Explain' with the text 'to me when a division can issue a refusal', 'Describe' with the text 'the "problem solution approach" please', and 'What does the term' with the text '"common matter" refer to in the EPC?'. Below these is a blue information box with an 'i' icon and the text: 'Don't enter unpublished claims or sensitive information, as some data is handled on a third-party cloud.' At the bottom is a 'Send a message' input field with a blue arrow button. A small disclaimer at the very bottom reads: 'Legal Interactive Platform can produce inaccurate information.'

The new Legal Interactive platform uses a Large Language Model to allow internal and external users to interact and search EPOs legal literature

- European Patent Convention
- Case Law
- Boards of Appeal Decisions
- Unitary Patent Guidelines

# THANK YOU FOR YOUR ATTENTION

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