



Travail Encadré de Recherche

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2024-2025

Agenda

- Fundamentals of Patent Law
- PatentMatch Dataset
- Dataset RoadMap

What is a patent? Patents and IR?



Official certificates given by an institution that grant inventors or their assignees the exclusive right to make, use, sell, and import an invention for a certain period, usually 20 years.



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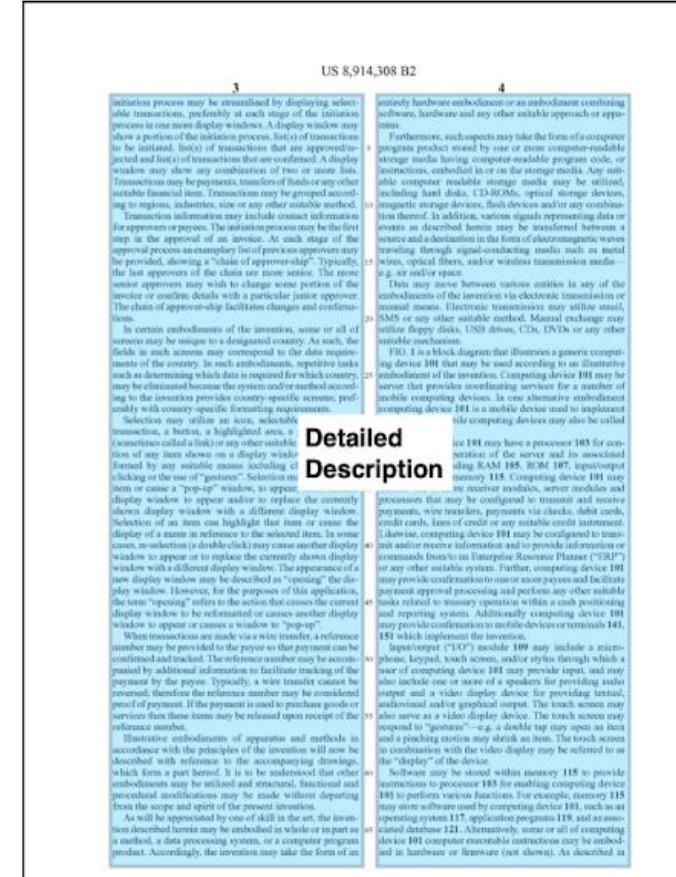
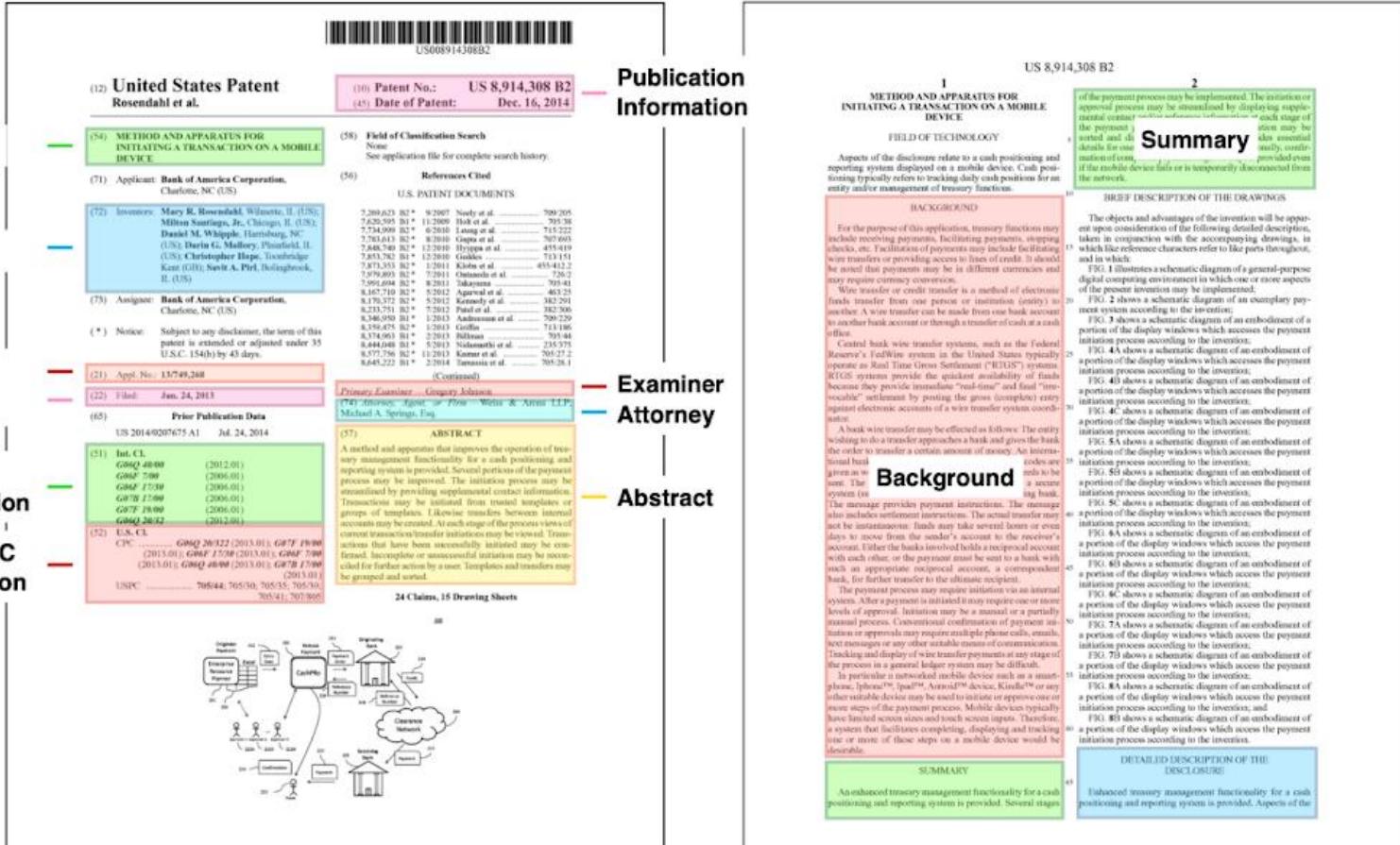
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NATIONAL INTELLECTUAL PROPERTY ADMINISTRATION, PRC



Structure of USA Patents - USPTO



(12)

EUROPEAN PATENT APPLICATION
published in accordance with Art. 153(4) EPC

(43) Date of publication
19.01.2022 Bulletin 2022/03

(21) Application number 20770428.9

(22) Date of filing: 05.03.2020

(86) International application number
PCT/BY2020/000003(51) International Patent Classification (IPC)
A63F 9/16 (2006.01) A63H 1/00 (2018.01)(52) Cooperative Patent Classification (CPC):
A63H 1/00(86) International application number:
WO 2020/181352 (17.09.2020 Gazette 2020/38)(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LT LU LV MC MK MT NL NO
PL PT RO SE SI SK SM TR

Designated Extension States:

BA ME

Designated Validation States:

KH MA MD TN

(30) Priority: 12.03.2019 EA 201900215

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(54) SPINNER TOY AND METHOD OF ROTATING SAME

(57) The invention relates to the sphere of entertainment and is intended for developing motor skills of the fingers and hands through play. The technical result consists in operational autonomy from an outside energy source, increased duration of rotation, and improved entertainment qualities for a spinner. A rotating element (1) of a spinner toy is configured to be centrally balanced relative to a central axis of rotation (9) and is equipped with a means of rotation (2) in the form of a ball bearing and screw converter (10) having a housing (6) in the form of a hollow sleeve (11) which is capable of converting

The reciprocating motion of a pusher (19) of the means of rotation (2) into unidirectional rotational motion without slowing the rotating element (1). The present method includes imparting rotation to the rotating element (1) without interrupting the use of the spinner toy by a user by means of mechanically converting the reciprocating motion of the pusher (19) of the means of rotation (2) in the form of a ball bearing and screw converter (10) into unidirectional rotational motion without slowing the rotating element (1).

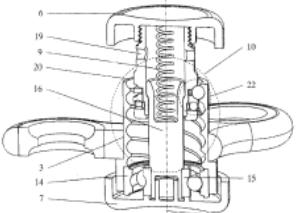


Fig. 1

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(11) EP 3 939 678 A1

Description

FIELD OF INVENTION

[0001] The invention relates to the field of entertainment and is intended for gaming purposes, and can also be used for the therapy of the psychoemotional state of a person and the development of motor skills of fingers and hands.

BACKGROUND ART

[0002] There are many different designs of spinner toys that rotate in the user's hands, characterized by the presence of a flat body, in which a ball bearing is centrally installed, located in the central hole of the flat body, several, at least two, loads are mounted, which are made in the form of a sandwich and are placed with the possibility of at least bipolar distribution of their weight. Each load contains at least one hole for adjusting its weight. The flat body comprises at least one load mounting hole at each end and designed to align with at least one load mounting hole in each load.

At each end of the planar body, designed to accommodate at least one balancing mass, a groove is located between two loads in the form of a sandwich at each end. The first and second bearing caps contain a pair of supporting caps, the first bearing cap contains a first hole in the bearing cap and the second bearing cap contains a second hole in the bearing caps. A pair of supporting caps are secured to each other by a bearing cap, with the bearing cap post extending through a ball bearing and screws into each bearing cap, while a center support screw passes through a first hole in the first bearing cap and through a center hole. Also, the center support bolt passes through the second hole of the second bearing cap and is threaded into the center hole to engage with the center support screw. A flat (planar) body is made solid with a plurality of loads that are built into it; it also contains an element selected from the group consisting of two or three polar ends with two or three ends.

[0003] The patent [1] describes a finger spinner that includes a main body with a hole in the center into which a bearing in a protective casing is inserted. The bearing contains two end surfaces and means for connecting to an axial hole. The spinner has a central concave end surface rigidly mounted in the central hole. [1, 2, 3, 4, 5, 6]

[0004] There is also a finger spinner [2] made of composite material. The spinner contains a gyroscopic body, a central body with covers and ball bearings on the central axis of the lower surface of the body. The upper bearing is installed in the cover of the central tubular shaft in the hole in the lower cover on the lower surface of the tubular shaft. The spinner is characterized by smooth spinning, high strength and light weight.

[0005] The patents [3, 4] also describe a hand spinner with a flat body containing several, at least three, blades mounted on the outer edge of the rotating body. The rotating body contains a central through hole in which a bearing is installed and is closed by the bottom and top covers, and holes are provided in the cover bodies. The cover bodies are connected to each other by a threaded joint. The spinner has an elongated shape and is characterized by the ease of rotation of the blades with the user's fingertip.

[0006] The patent [5] describes a spinner with a rotating flat body and an assembly unit that includes a central roller bearing of the rotation mechanism. The assembly unit is equipped with release arms with blades. The arms of the blades contain light modules that are activated when the first arm is applied with the user's finger to drive the spinner's flat body in rotation.

[0007] A common disadvantage of the known analogs is the impossibility to maintain a long rotational motion of a flat body, since the rotation mechanism is driven exclusively by a single tangential action of the user's finger on the peripheral surface of the flat body. The disadvantage is also the impossibility to speed up the spinner's rotation by touching it again during its rotation, since such an impact leads to its slowdown.

[0008] There is also a device designed for rotation in the hands of the user and represents a spinner, which in

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technical essence is the closest to the proposed invention and was chosen as a prototype [6]. The device contains a structural element in the form of a flat (planar) body with a centrally mounted ball bearing located in the central hole of the flat body and a button for holding the spinner between the user's fingers, while the body has a flat hub and spoke shape. The outer ring of the ball bearing is attached to the flat body, and the button contains a pair of bearing caps attached to each other through a ball bearing and clamped against the internal stroke of the ball bearing, while during the operation of the spinner, the button is held between the user's thumb and forefinger, and the flat body rotates freely together with the outer ring of the ball bearing. At opposite ends of the flat body, several, at least two, loads are mounted, which are made in the form of a sandwich and are placed with the possibility of at least bipolar distribution of their weight. Each load contains at least one hole for adjusting its weight. The flat body comprises at least one load mounting hole at each end and designed to align with at least one load mounting hole in each load.

At each end of the planar body, designed to accommodate at least one balancing mass, a groove is located between two loads in the form of a sandwich at each end. The first and second bearing caps contain a pair of supporting caps, the first bearing cap contains a first hole in the bearing cap and the second bearing cap contains a second hole in the bearing caps. A pair of supporting caps are secured to each other by a bearing cap, with the bearing cap post extending through a ball bearing and screws into each bearing cap, while a center support screw passes through a first hole in the first bearing cap and through a center hole.

[0009] The disadvantage of the prototype is the inability to maintain the initial rotation of the spinner for a long enough time, since a flat (planar) body is brought into rotation by the mechanical tangential action of the user's finger on its peripheral surface, while a repeated similar action leads to interruption of the spinner rotation cycle and the process of rotation of the planar body needs to be repeated anew.

[0010] The patent [7] describes a magnetic spinner toy and a method of its rotation, selected as a prototype. A spinner toy contains many, but at least three, rotating bodies. On each rotating body, magnets are mounted on the peripheral surface. The spinner is equipped with an electric motor with a power source, and the electromagnetic mechanism of the motor is designed to interact with

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the magnetic poles of a magnet of at least one of the rotating bodies. The spinner rotation method includes the interaction of magnetic poles with the electric mechanism of the engine and their alternating attraction and repulsion, which leads to rotational motion of the spinner's rotating bodies.

[0011] The disadvantage of the method - a prototype and a magnetic spinner toy based on it - is the use of a magnetoelectric drive as a means of rotation, since its implementation requires replaceable electric batteries or a battery that requires periodic replacement or recharging, which ties the user to a source of third-party electrical energy and complicates or makes it impossible to use the toy without an outside source of energy.

[0012] The aim of the invention is to eliminate these disadvantages and increase the attractiveness of the spinner toy for the user.

[0013] The technical result is the autonomy of the spinner, regardless of an external energy source and an increase in the duration of rotation of a flat (planar) body without interrupting the spinner rotation cycle, which is limited only by the user's desire. The technical result of the invention is also the improvement of the playing qualities of the spinner toy due to the high technological effectiveness of the design, which is free from outside energy sources.

[0014] The technical result is achieved due to the fact that a spinner toy contains a rotating element of a predetermined shape with a centrally mounted means of rotation, which is mounted in the neutral hole of the rotating element, and the outer surface of the body of the means of rotation is attached to the rotating element; the top and lower button covers are connected to each other through the means of rotation and made with the possibility of holding them between the user's fingers, while the rotating element is provided with symmetrically placed and massive elements and is made with the possibility of free rotation around the central axis, according to the invention, the rotating element is made centrally balanced with respect to the central axis of rotation, and the means of rotation is made in the form of a ball bearing and screw converter of reciprocating motion into unidirectional rotational motion of a rotating element, while the body of the ball bearing and screw converter is a hollow sleeve, the inner surface of which is provided with a helical groove of a given profile, and in the lower end of the hollow sleeve a rotation bearing is mounted, closed lower cover-button and a guide rod upper end, is installed in the inner ring of the rotation bearing, the rod contains a blind cavity and is kinematically connected to the pusher, which is located on the upper end of the hollow sleeve and is made to slide along the guide rod, wherein the pusher is made in the form of a hollow cylinder, in the lower end of which a thrust bearing is installed, top cover-button is mounted in the upper end of the pusher cylinder,

it is removable and a spring is installed under it, one end of which is recessed in the blind cavity of the guide rod, and the other rests against the top cover-button, while the spring is made with the ability to return the pusher to its original upper position after the user has removed the load from the top cover-button when rotating the rotating element.

[0015] The rotating element has a shape similar to a flat disc and is rotatable about a central vertical axis that runs perpendicular to the flat surface of the disc.

[0016] The rotating element has the shape of a volumetric body, which is made with the possibility of rotation about a vertical axis passing through the center of gravity of the volumetric body.

[0017] On the inner surface of the body of the hollow sleeve, at least two helical grooves of a given profile are made, while their beginning and end are made turning into circular single-turn grooves.

[0018] The technical result is also achieved due to the method of rotation of the spinner toy described above, including imparting rotation to the rotating element with the centrally installed means of rotation, according to the invention, the rotation movement of the rotating element is imparted without interrupting the use of the spinner toy by the user by continuously maintaining its rotation by means of mechanical transformation of the reciprocating motion of the pusher of the means of rotation in the form of a ball bearing and screw converter into unidirectional rotational motion without slowdown of the rotating element.

[0019] The reciprocating motion of the pusher of the ball bearing and screw converter is performed by periodically pressing the spring-loaded top button cover of the ball bearing and screw converter, followed by the return of the pusher with the help of the spring to its original upper position, with simultaneously holding the spinner toy with a rotating element in the playing position between the user's fingers.

[0020] The essence of the invention is illustrated in drawings in Fig. 1-10.

Fig. 1 is a longitudinal sectional view of a spinner toy.

Fig. 2 is a cross-sectional view of the thrust ball bearing of the ball bearing and screw converter.

Fig. 3 is a cross-sectional view of a hollow sleeve of the body with a helical groove.

Fig. 4 and 5 are views of the separator with wedge-shaped and circular cutouts, respectively.

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Fig. 6 is a spinner toy with a rotating element in the form of a flat body.

Fig. 7 and 8 are spinner toys with barrel-shaped and cylindrical rotating elements, respectively.

Fig. 9 is a longitudinal sectional view of a spinner toy with a ballbearing and screw converter of reciprocating motion into unidirectional rotational motion of a rotating element with helical grooves on the pusher.

Fig. 10 is a fragment of a longitudinal section of a spinner toy with a thrust sliding bearing.

DETAILED DESCRIPTION

[0021] The spinner toy includes a rotating element 1 with a central hole 3, a central axis of rotation 9 and massive elements 8, means of rotation 2 in the form of a ball bearing and screw converter 10 of reciprocating motion into unidirectional rotational motion of the rotating element 1; the ball bearing and screw converter 10 contains a housing 5 in the form of a hollow sleeve 11 with an outer surface 4, a removable top 6 button cover in the upper end of the pusher 19 cylinder and a lower 7 button cover, which are connected to each other through a means of rotation 2; the hollow sleeve 11 is provided with helical grooves 12 of a given profile on the inner surface, turning into circular single-turn grooves 30, and a rotation bearing 14 and a lower 7 button cover are installed on the lower end 21 of the pusher 19; the rotation bearing 14 is in the inner 15 ring contains a guide rod 16 with a blind cavity 18 in the upper end 17, which is connected with a pusher 19 located on the upper 20 end of the hollow sleeve 11; the pusher 19 in the lower end 21 contains a thrust ball bearing 22 with a thrust washer 23 attached to the lower end 21 of the pusher 19; the thrust ball bearing 22 includes a separator 24 with an oblique wedge-shaped cutout 31 and the thrust bearing 22 is placed in the sleeve 11 (see Fig. 9). Both in the first and in the second case, the ball bearing and screw converter 10 of reciprocating motion into unidirectional rotational motion of the rotating element 1 is possible, when the screw grooves 12 are made on the surface of the pusher 19, and the thrust bearing 22 is placed in the sleeve 11 (see Fig. 9).

[0022] For a specialist it is obvious that the thrust ball bearing 22 can be replaced with a sleeve bearing (see Fig. 10), while instead of a ball and a separator, a slide washer 37 is used, and an intermediate washer 36 is made without semicircular grooves, while the rolling friction in the bearing is replaced by sliding friction.

[0023] Also, it is clear to the specialist that a variant of the design of the ball bearing and screw converter 10 of reciprocating motion into unidirectional rotational motion of the rotating element 1 is possible, when the screw grooves 12 are made on the surface of the pusher 19, and the thrust bearing 22 is placed in the sleeve 11 (see Fig. 9).

[0024] For a specialist it is obvious that the thrust ball bearing 22 can be replaced with a sleeve bearing (see Fig. 10), while instead of a ball and a separator, a slide washer 37 is used, and an intermediate washer 36 is made without semicircular grooves, while the rolling friction in the bearing is replaced by sliding friction.

[0025] Also, it is clear to the specialist that a variant of the design of the ball bearing and screw converter 10 of reciprocating motion into unidirectional rotational motion of the rotating element 1 is possible, when the screw grooves 12 are made on the surface of the pusher 19, and the thrust bearing 22 is placed in the sleeve 11 (see Fig. 9).

[0026] Also, it is clear to the specialist that a variant of the design of the ball bearing and screw converter 10 of reciprocating motion into unidirectional rotational motion of the rotating element 1 is possible, when the screw grooves 12 are made on the surface of the pusher 19, and the thrust bearing 22 is placed in the sleeve 11 (see Fig. 9).

[0027] When holding the top 6 button cover after pressing in the lower position, the ball 26 takes a stable position in the grooves 12 of the sleeve 11 and rolls freely along the semicircular groove 33 of the intermediate washer 28 and along the semicircular groove 35 of the pusher 19. Free rolling of the ball 26 due to the low rolling friction value, has a minimal slowdown effect on the sleeve 11, which contributes to the long-term rotation of element 1, which is also supported by the moment of inertia of massive elements 8 located symmetrically to the axis of rotation 9 at the periphery of the rotating element 1. When released after pressing the top 6 button cover, the spring 29 returns pusher 19 to its original position, which, through the thrust ball bearing 22, moves the ball 26 along the helical grooves 12 of the sleeve 11, while the rotating sleeve 11 rotates the ball 26 about the axis of rotation 9 of the rotating element 1. The rotation of the ball 26 in the thrust bearing 22 causes the intermediate washer 28 to rotate and the ball 27, which rolls over the thrust washer 23, exerting minimal impact on it and does not transfer rotation to it. Thus, the support ball bearing 22 prevents the rotation of the pusher 19 and the button cover 6. After the pusher 19 returns to its original upper position, the process is repeated, as in the case of holding the top button cover 6.

[0028] The invention is implemented as follows.

[0029] Separate parts are made and the spinner toy is assembled in accordance with the technological regulations.

The rotating element 1 is made with a central hole 3, in which, coaxially with the central axis 9 of rotation, a means of rotation 2 is placed, i.e. a ball bearing and screw converter 10 of reciprocating motion into unidirectional rotational motion of a rotating element 1. For this, on the outer surface 4 of the hollow sleeve 11 of the housing 5,

returns the pusher 19 to the upper initial position, while the user simultaneously holds the spinner toy with the rotating element 1 in the play position (not shown in the drawing) and provides a unidirectional rotational motion to the rotating element 1 due to the mechanical transformation of the reciprocating motion of the pusher 19 along the guide rod 16 of the ball bearing and screw converter 10, which is installed coaxially with the axis of rotation 9 of the rotating element 1 in the rotational movement of the latter. Continuity of rotation without slowing down the rotating element 1 is achieved by periodically, as necessary, pressing the pusher 19 through the spring-loaded top 6 button cover of the ball bearing and screw converter 10, by returning the pusher 19 to its original upper position by the spring 29. When the pusher 19 moves to the lower position, the ball 26 moves along the axis of the sleeve 11, while the ball 26 rolls along the helical grooves 12 and drives the sleeve 11 into rotation, connected through the outer surface 4 by a tight fit with the body 5 of the ball bearing and screw converter 10, thereby imparting a torque to the rotating element 1 with massive elements 8 located symmetrically to the axis of rotation 9 at the periphery of the rotating element 1.

[0030] When holding the top 6 button cover after pressing in the lower position, the ball 26 takes a stable position in the grooves 12 of the sleeve 11 and rolls freely along the semicircular groove 33 of the intermediate washer 28 and along the semicircular groove 35 of the pusher 19. Free rolling of the ball 26 due to the low rolling friction value, has a minimal slowdown effect on the sleeve 11, which contributes to the long-term rotation of element 1, which is also supported by the moment of inertia of massive elements 8 located symmetrically to the axis of rotation 9 at the periphery of the rotating element 1. When released after pressing the top 6 button cover, the spring 29 returns pusher 19 to its original position, which, through the thrust ball bearing 22, moves the ball 26 along the helical grooves 12 of the sleeve 11, while the rotating sleeve 11 rotates the ball 26 about the axis of rotation 9 of the rotating element 1. The rotation of the ball 26 in the thrust bearing 22 causes the intermediate washer 28 to rotate and the ball 27, which rolls over the thrust washer 23, exerting minimal impact on it and does not transfer rotation to it. Thus, the support ball bearing 22 prevents the rotation of the pusher 19 and the button cover 6. After the pusher 19 returns to its original upper position, the process is repeated, as in the case of holding the top button cover 6.

REFERENCES

[0028]

1. TW No. M551522, 11.11.2017.
2. CN No. 107754323, 06.03.2018.
3. JP No. 3212430, 07.09.2017.

3. The spinner toy according to claim 1, characterized in that the rotating element (1) has the shape of a volumetric body, which is configured to rotate about a vertical axis passing through the center of gravity of the volumetric body.

4. The spinner toy according to claim 1, characterized in that at least two screw grooves (12) of a given profile are made on the inner surface of the body (5) of the hollow sleeve (11), while their beginning and end are made turning into circular single turn grooves (30).

5. A method of rotating a spinner toy according to claim 1 of the formula, comprising imparting rotation to a rotating element (1) with a centrally installed means of rotation (2), characterized in that the rotation movement to the rotating element (1) is imparted without interrupting the use of the spinner toy by the user by continuously maintaining its rotation by means of mechanical transformation of the reciprocating motion of the pusher (19) of the means of rotation (2) in the form of a ball bearing and screw converter (10) into unidirectional rotational motion without slowing down the rotating element (1).

6. The method of rotation of the spinner toy according to claim 5, characterized in that the reciprocating motion of the pusher (19) of the ball bearing and screw converter (10) is performed by periodically pressing the spring-loaded top (6) button cover of the ball bearing and screw converter (10), followed by the return of the pusher (19) by the spring (29) to the initial upper position, while simultaneously holding the spinner toy with the rotating element (1) in the play position between the user's fingers.

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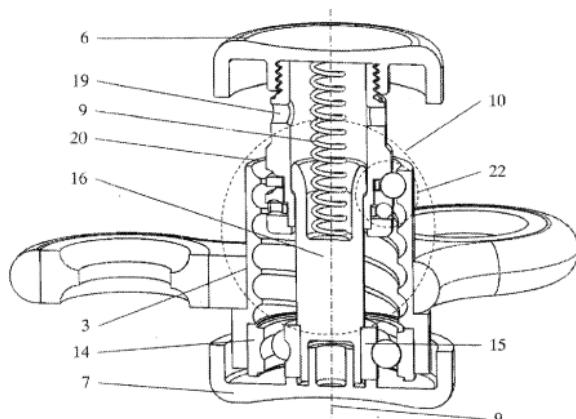


Fig. 1

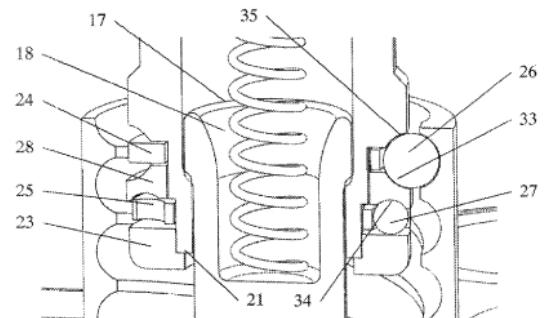


Fig. 2

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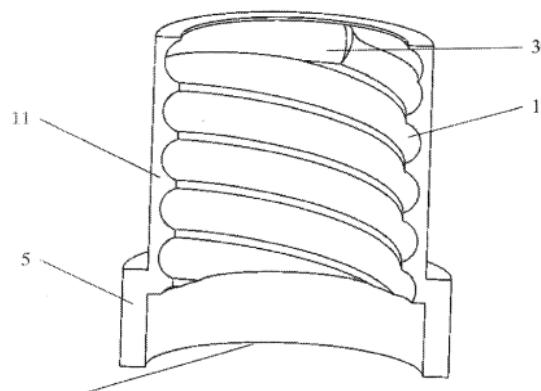


Fig. 3

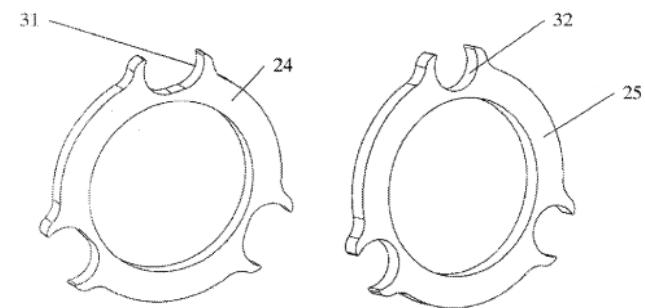


Fig. 4

Fig. 5

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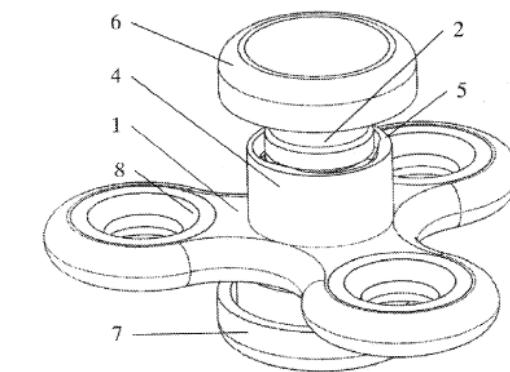


Fig. 6

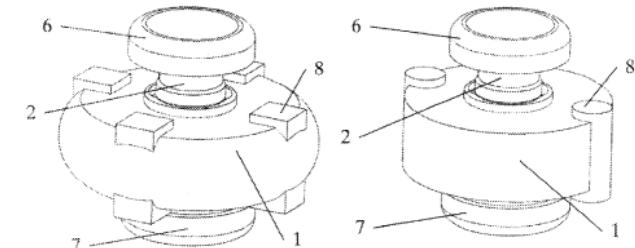


Fig. 7

Fig. 8

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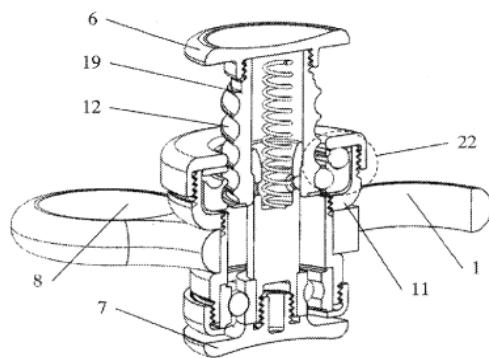


Fig. 9

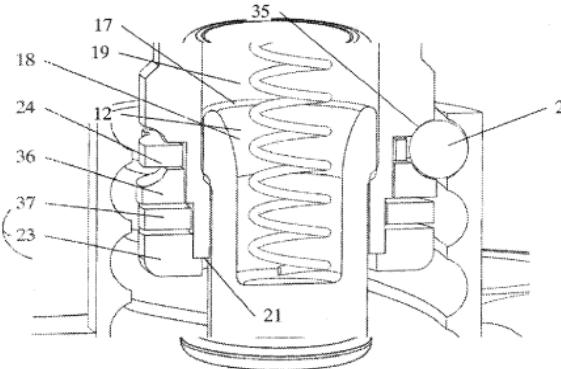


Fig. 10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/BY 2020/000003

A.	CLASSIFICATION OF SUBJECT MATTER A63F 9/16 (2006.01) A63H1/00 (2019.01)	
B.	FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) A63F	
C.	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched	
D.	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Espacenet, PatSearch, PAJ, WIPO, USPTO, RUPTO	
E.	DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5135425 A (ANDREWS MELVIN R; ANDREWS ROGER W) 04.08.1992	1-6
A	US 9914063 B1 (MCCOSKERY MICHAEL SCOTT et al.) 13.03.2018	1-6
A	US 2017326468 A1 (KINMONT JR RICHARD C et al.) 16.11.2017	1-6
A	CN 107638699 A (DONGGUAN DAVANTECH CO LTD) 30.01.2018	1-6

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:
 "A" document defining the general state of the art which is not considered to be of particular relevance;
 "E" earlier application or patent but published on or after the international filing date;
 "L" document which may disclose details on priority claim(s) or which is cited to establish the publication date of another citation or other special reasons as specified;
 "T" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step without the disclosure in this document;
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 "D" document referring to an oral disclosure, use, exhibition or other means;
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Date of the actual completion of the international search: 14 May 2020 (14.05.2020) Date of mailing of the international search report: 21 May 2020 (21.05.2020)
 Name and mailing address of the ISA/ Authorized officer
 Facsimile No. Telephone No.

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- TW M551522 [0028]
- TW 11112017 [0028]
- CN 107754323 [0028]
- CN 06032018 [0028]
- US 9895620 B [0028]
- US 99114063 B [0028]
- JP 3212430 B [0028]
- JP 07092017 B [0028]
- CN 107638699 [0028]

Structure of EU Patents - EPO

- What are the citations? How do they work?



- A – Found documents that form technological **background** but are **not relevant** to the novelty.

- X – **Not new** or is obvious in light of this prior art.

- Y – Found documents that are **relevant** to the novelty or inventive step of a claim **but do not directly challenge its patentability**.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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See patent family annex

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- TW M551522 [0028]
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- US 99114063 B [0028]
- US 5135425 A [0028]

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EUROPEAN SEARCH REPORT

Application Number

EP 18 21 4053

DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages		
X	EP 1 351 172 A1 (SHIMA SEIKI MFG [JP]) 8 October 2003 (2003-10-08) * paragraph [0027] - paragraph [0028] * * paragraph [0060] * * paragraph [0070] - paragraph [0074] * -----	1, 3-9 2	INV. G06K9/00 G06Q30/06
Y			TECHNICAL FIELDS SEARCHED (IPC)
			G06K

Figure 1: In this excerpt from a search report, a patent examiner cites paragraph numbers of the published patent document EP1351172A1 for assessing the novelty of claim 1 and 3-9 of application EP18214053.

PatentMatch Dataset

- What is the PatentMatch Dataset?



Claims from patent applications



Paragraphs from prior art

Refers to anything related to your invention idea that has been made public before your patent application

Descriptions of inventions and what makes them unique

Data File - Example

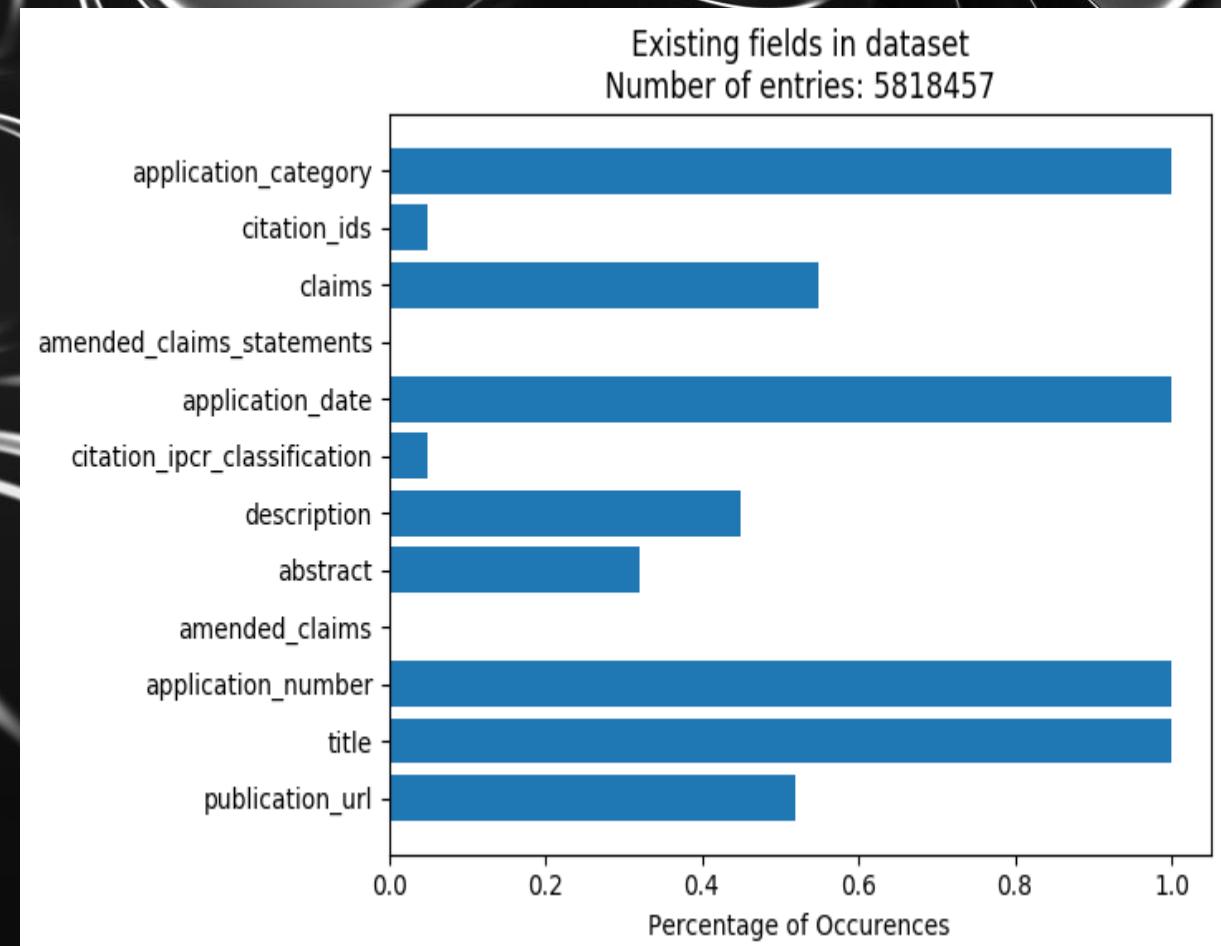
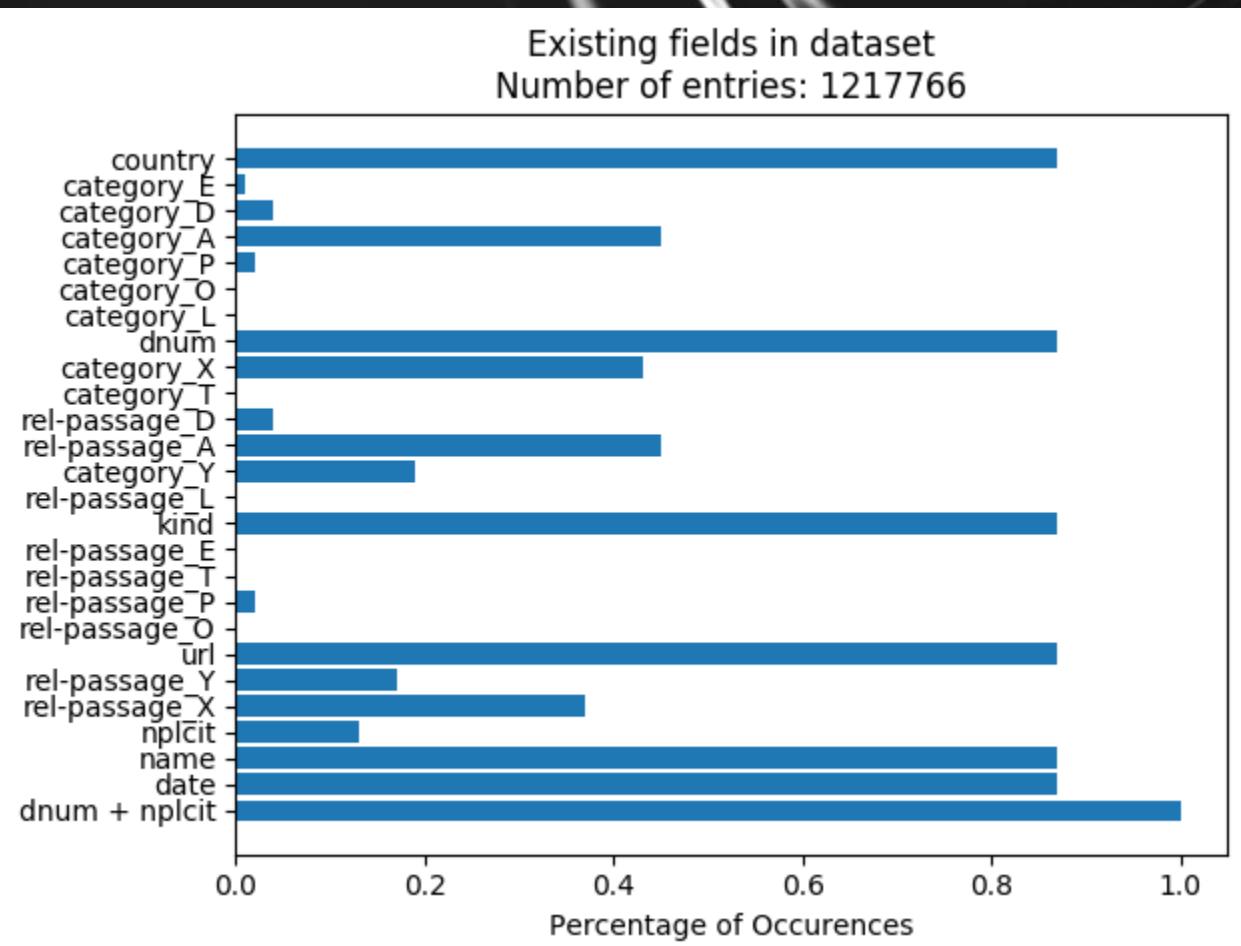
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1	EP	0051309	B2	2000-12-06	de	TITLE	1	Fenster
2	EP	0051309	B2	2000-12-06	en	TITLE	1	Window
3	EP	0051309	B2	2000-12-06	fr	TITLE	1	Fenêtre
4	EP	0051309	B2	2000-12-06	de	DESCR	1	<p id="p0001" num="0001">Die Erfindung betrifft eine Mehrzahl von Grundbauarten von Fenstern oder dergleichen, umfassend einen Blendrahmen (2010),
5	EP	0051309	B2	2000-12-06	de	CLAIM	1	<claim id="c-de-01-0001" num="0001"><claim-text>Fenster oder dergleichen, umfassend einen Blendrahmen (2010),
6	EP	0051309	B2	2000-12-06	en	CLAIM	2	<claim id="c-en-01-0001" num="0001"><claim-text>A window or the like, comprising a window frame (2010),
7	EP	0051309	B2	2000-12-06	fr	CLAIM	3	<claim id="c-fr-01-0001" num="0001"><claim-text>Fenêtre ou similaire comportant un châssis dormant (2010),
8	EP	0051309	B2	2000-12-06	de	PDFEP	1	https://data.epo.org/publication-server/pdf-document?cc=EP&pn=0051309&ki=B2&pd=2000-12-06
9	EP	0092898	B2	2000-02-09	de	TITLE	1	Verfahren zum Umschmelzen von Polyamiden
10	EP	0092898	B2	2000-02-09	en	TITLE	1	Process for remelting polyamides
11	EP	0092898	B2	2000-02-09	fr	TITLE	1	Procédé pour refondre des polyamides
12	EP	0092898	B2	2000-02-09	en	DESCR	1	<p id="p0001" num="0001">This invention relates to a process for melting polyamide polymer.</p><p id="p0002" num="0002">
13	EP	0092898	B2	2000-02-09	en	CLAIM	1	<claim id="c-en-01-0001" num="0001"><claim-text>A process for the production of a shaped article from a polyamide polymer.
14	EP	0092898	B2	2000-02-09	de	CLAIM	2	<claim id="c-de-01-0001" num="0001"><claim-text>Ein Verfahren zur Herstellung eines geformten Gegenstands aus einem Polyamid-Polymeren.
15	EP	0092898	B2	2000-02-09	fr	CLAIM	3	<claim id="c-fr-01-0001" num="0001"><claim-text>Procédé pour la production d'un article façonné à partir d'un polymère de polyamide.
16	EP	0092898	B2	2000-02-09	en	PDFEP	1	https://data.epo.org/publication-server/pdf-document?cc=EP&pn=0092898&ki=B2&pd=2000-02-09
17	EP	0098070	B2	2000-12-13	de	TITLE	1	Flüssigkristall-Vorrichtungen
18	EP	0098070	B2	2000-12-13	en	TITLE	1	Liquid crystal devices
19	EP	0098070	B2	2000-12-13	fr	TITLE	1	Dispositifs à cristal liquide
20	EP	0098070	B2	2000-12-13	en	DESCR	1	<p id="p0001" num="0001">This invention relates to liquid crystal devices. Such devices typically comprise
21	EP	0098070	B2	2000-12-13	en	CLAIM	1	<claim id="c-en-01-0001" num="0001"><claim-text>A liquid crystal device incorporating an amount of a plasticizer.
22	EP	0098070	B2	2000-12-13	de	CLAIM	2	<claim id="c-de-01-0001" num="0001"><claim-text>Flüssigkristallvorrichtung, die eine Menge an einem plasticizer.
23	EP	0098070	B2	2000-12-13	fr	CLAIM	3	<claim id="c-fr-01-0001" num="0001"><claim-text>Dispositif à cristaux liquides incorporant une certaine quantité de plasticizer.
24	EP	0098070	B2	2000-12-13	en	PDFEP	1	https://data.epo.org/publication-server/pdf-document?cc=EP&pn=0098070&ki=B2&pd=2000-12-13
25	EP	0098733	B2	2000-10-25	de	TITLE	1	Verfahren zur Behandlung von Eiern
26	EP	0098733	B2	2000-10-25	en	TITLE	1	Egg processing system
27	EP	0098733	B2	2000-10-25	fr	TITLE	1	Système de traitement des oeufs
28	EP	0098733	B2	2000-10-25	en	DESCR	1	<p id="p0001" num="0001">This invention relates generally to an egg processing system in which eggs are
29	EP	0098733	B2	2000-10-25	en	CLAIM	1	<claim id="c-en-01-0001" num="0001"><claim-text>An egg transfer apparatus comprising a first, continuous

XML Format

PatentMatch Statistics

- 40 txt files (each ~5Gb)



Data Extraction to ElasticSearch



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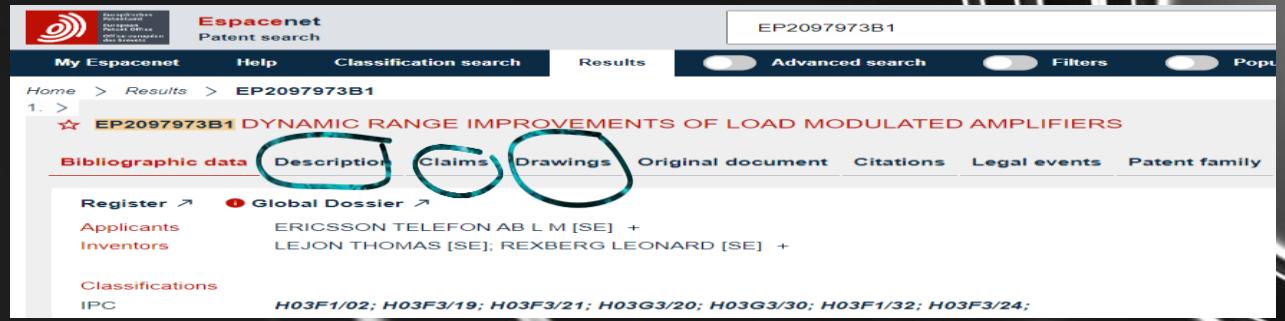


ElasticVue Insights – Patent Applications

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6   "description": "EPO <DP n=\"1\"> --><heading id='\h0001'>TECHNICAL FIELD OF THE INVENTION</heading><p id='\p0001'>The present invention relates generally to power amplifiers and amplifying methods and more specifically to high efficiency power amplifiers.</p><heading id='\h0002'>DESCRIPTION OF RELATED ART</heading><p id='\p0002'>In radio transmitters for broadcast, cellular and satellite systems the power amplifier in the transmitter has to be very linear in addition to being able to simultaneously amplify many radio channels (i.e. frequencies) spread across a wide bandwidth. High linearity is required since nonlinear amplifiers would cause leakage of interfering signal energy between channels and distortion within each channel.</p><p id='\p0003'>In the wireless communication industry a premium is placed on the ability to amplify wide bandwidth signals, e.g. spread spectrum signals, in highly efficient manner. To limit the size of the DC power supply and cooling equipment in a radio base station, it is essential to keep a high overall power efficiency. Various attempts have been made to address this problem, however it remains difficult to design a high efficiency power amplifier system that is at the same time also able to linearly amplify wide bandwidth signals.</p><p id='\p0004'>One such system is the Feed forward amplification system, in which the output signal from the amplifier stage is compared to the input signal to be able to determine the difference-signal. To outbalance the non-desired distortion components due to non-linear amplification, said difference-signal is amplified to a suitable amount and added in reversed phase to the output signal from the power amplifier.!-- EPO <DP n=\"2\"> --></p><p id='\p0005'>In a pre-distortion amplifier system however, the input signal first passes a non-linear pre-distorter, which is an inverse non-linear function to the transfer function of the power stage. Thus, the pre-distortion of the input signal will automatically compensate for the distortion generated by the power stage. In an adaptive pre-distortion system, correction values are stored in a look-up table arrangement of which the output is due to the incoming vector amplitude and the output signals amplitude and phase.</p><p id='\p0006'>Another known method and system for power amplifying is EER (Envelope Elimination and Restoration). The method is to determine the envelope of the input signal and regenerate it on the output by means of a modulating step. The amplifier operates with constant gain and output amplitude.</p><p id='\p0007'>Further, another known system and method is called Envelope Tracking. By this, the output signal is compared to the input drive signal for generating an amplifier control signal. Said signal controls the gain of the system and compensates for deviations. The system comprises
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- Application_Category
- Citation_IDs, Claims
- Amended_Claims_Statement
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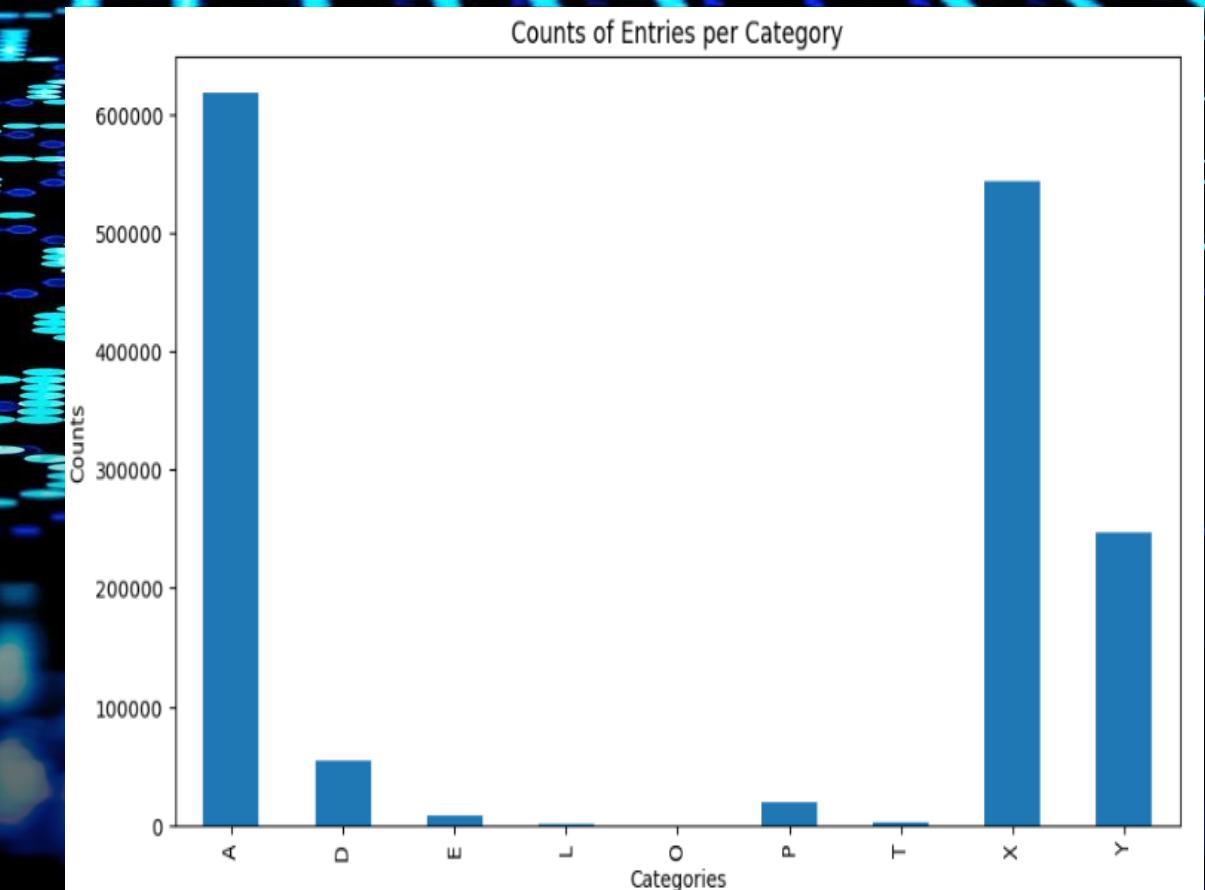
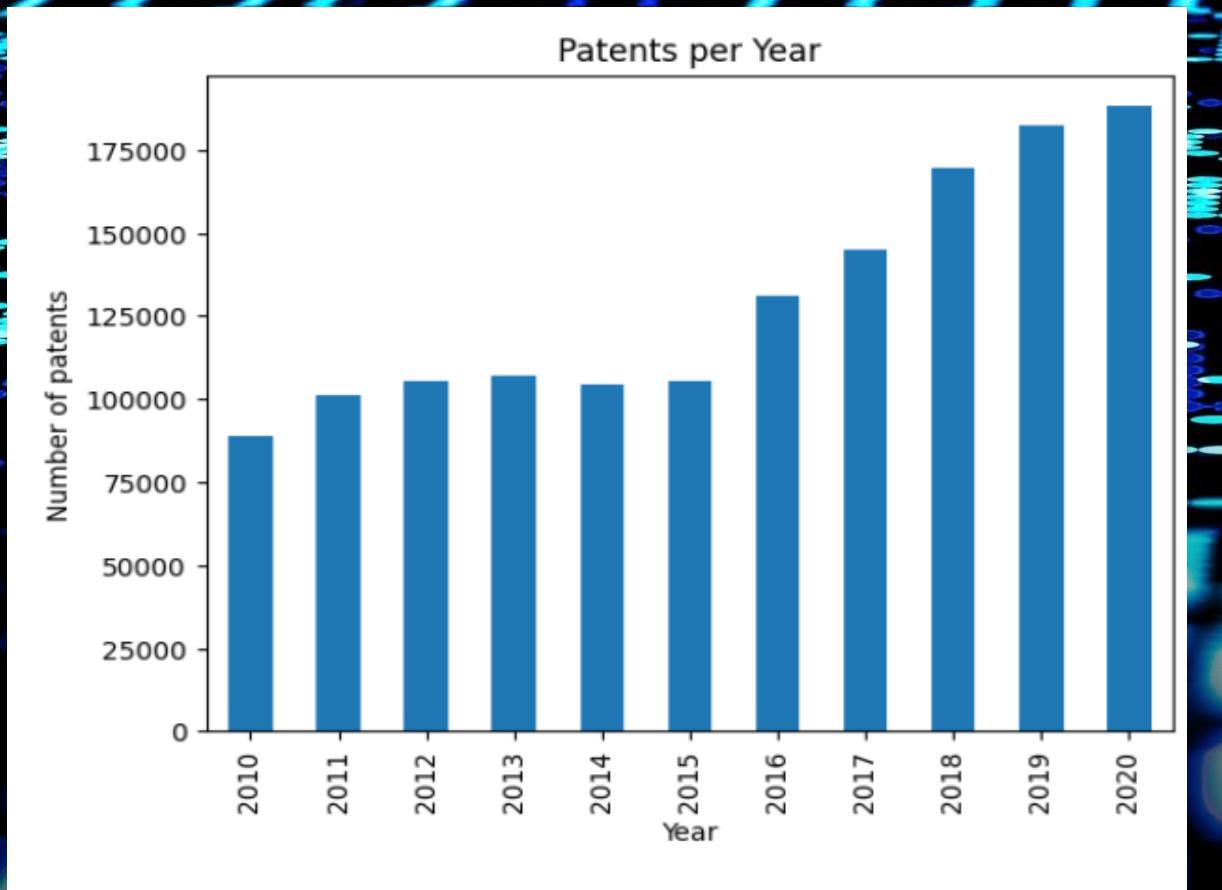
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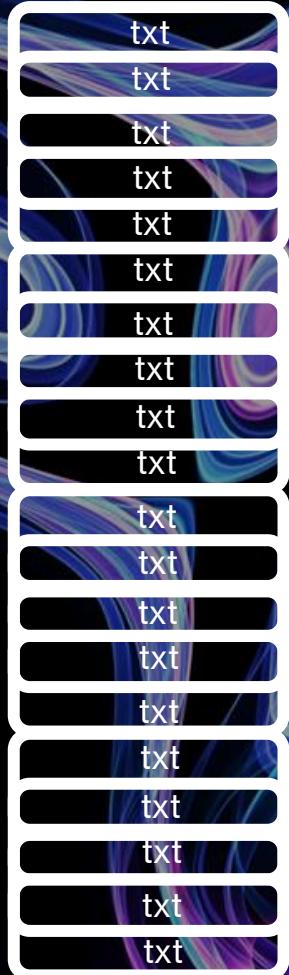
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Questions & Answers

- EspaceNet (to look for the specific patents): <https://worldwide.espacenet.com/patent/>
- Paper (Paper on PatentMatch): <https://arxiv.org/abs/2012.12919>
- GitHub (PatentMatch overview): <https://github.com/julian-risch/PatentMatch?tab=readme-ov-file>
- BERT paper: <https://arxiv.org/abs/1810.04805>
- SBERT paper: <https://arxiv.org/abs/1908.10084>
- BERT for Patents:
https://services.google.com/fh/files/blogs/bert_for_patents_white_paper.pdf
- Example code that shows how to use the dataset to train a BERT model is also available on Github here: <https://github.com/julian-risch/PatentMatch-FARM>