(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 October 2023 (19.10.2023)

WIPO | PCT

(10) International Publication Number
WO 2023/199301 A1

(51) International Patent Classification:
A61J 7/04 (2006.01) *A61J 1/03* (2023.01)

(21) International Application Number:
PCT/IL2023/050303

(22) International Filing Date:
22 March 2023 (22.03.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
292151 11 April 2022 (11.04.2022) IL

(72) Inventor; and
(71) Applicant: **ABU AHMAD, Bahaa** [IL/IL]; P.O.B. 351, 16940 REINE (IL).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report (Art. 21(3))*

(54) **Title:** PILL'S CELL

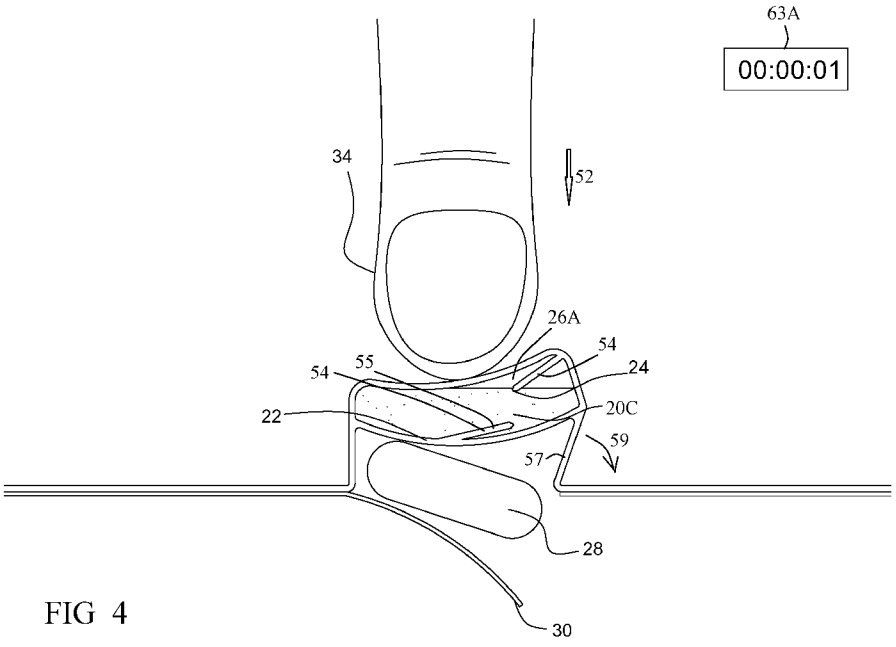


FIG 4

(57) **Abstract:** A pill's cell(10B), including: a first compartment(26C), for containing a pill(28): a second compartment(26A), for containing a first substance(20A); a third compartment(26B), for containing a second substance(20B); and a partition(54) for partitioning the second(26A) and third(26B) compartments, the partition(54) being breakable upon removing the pill(28) from the first compartment(26C), for mixing the first(20A) and second(20B) substances upon the pill removing.

WO 2023/199301 A1

PILL'S CELL

TECHNICAL FIELD

The invention relates to the field of pills' packaging.

BACKGROUND

Fig. 1 depicts a prior art pills' package.

From a package including 6 cells, each containing a pill, the user presses each time one cell, for removing its pill.

However, the user may be doubted when was the latest removing of the pill.

There is a long felt need to provide a solution to the above-mentioned and other problems of the prior art.

SUMMARY

A pill's cell, including:

- a first compartment, for containing a pill;
- compartment for containing substances for being mixed.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 depicts a prior art pills' package.

Fig. 2 depicts a pills' package according to one embodiment of the invention.

Fig. 3 depicts one of the pill's cells of Fig. 2 prior to removing the pill.

Fig. 4 depicts pill's cell of Fig. 3 upon being pressed.

Fig. 5 depicts pill's cell of Fig. 3 several hours after removing the pill.

DETAILED DESCRIPTION

Fig. 2 depicts a pills' package according to one embodiment of the invention.

A pills' package 10A according to one embodiment includes for each pill's cell 10B, substances for indicating from the consumed cells, which (81) has been removed at the last 3 (example) hours, thus advising the user not consume another one.

Fig. 3 depicts one of the pill's cells of Fig. 2 prior to removing the pill.

Pill's cell 10B includes a bottom compartment 26C and two top compartments namely 26A and 26B disposed above bottom compartment 26C and including a partition 54 therebetween.

Bottom compartment 26C houses a pill 28. The bottom of bottom compartment 26C includes as marketed, a reed 30, for being torn upon being pressed.

Top compartment 26A contains as marketed, a first substance 26A; and top compartment 26B contains as marketed, a second substance 26B.

Fig. 4 depicts pill's cell of Fig. 3 upon being pressed.

Pressing (52) top compartment 26A presses the bottom 22 of top compartment 26A on pill 28, which tears reed 30.

Pressing 52 further breaks partition 54, thus top compartments 26A and 26B merge to a single compartment, thus substances 20A and 20B of Fig. 3 mix one with the other to a third substance 20C having a third color.

Substances 20A and 20B of Fig. 3 are configured to change their color upon being mixed, to a pre-determined period, say 3 hours.

For example substance 20A may constitute a solution of water containing an indicative powder of green color plus 0.5% NaOH caustic soda (sodium hydroxide), causing the water to be a base of 8 pH; and substance 20B may constitute a solution of water including 0.5% of HCl (hydrochloric acid).

Fig. 5 depicts pill's cell of Fig. 3 several hours after removing the pill.

4 hours (example) after mixing substance 20A with 20B, mixed substance 20C of Fig. 4, turns to be a fourth substance 20D, having a fourth color.

Thus, even though pill 28 is already absent, the user is informed by the color of the mixture whether the pill has been consumed at the last 3 hours.

Referring again to Fig. 3, partition 54 may include a breaking line 24, for ensuring the breaking of partition 54.

Partition 54 preferably is tilted (Fig. 3), thereby pressing 52 (Fig. 4) rotates bottom portion 55 of partition 54 to be disposed horizontally, thereby improving the merging of top compartments 26A and 26B for increasing the mixing extent.

The Ceiling 12 of top compartment 26A is tilted and meets the top of tilted partition 54, thereby pressing 52 (Fig. 4) tilts (59) top compartments 26B and 26C, thereby improving the merging of top compartments 26A and 26B for increasing the mixing extent.

Tilting 59 of top compartments 26B and 26C is applied by bending of wall 57 of bottom compartment 26C.

- Numeral 10A denotes the pills' package according to one embodiment of the invention, including a plurality of cells 10B;
- 10B: pill's cell;
- 12: ceiling of compartment 26A;
- 20A,20B: substances as marketed;

- 20C,20D: substances produced upon mixing substances 20A,20B;
- 22: bottom of top compartment 26A;
- 24: breaking line;
- 26A,26B,26C: compartments;
- 28: pill;
- 30: reed for covering pill 28;
- 34: user's finger;
- 52: pressing for removing pill 28;
- 54: breakable partition;
- 55: bottom portion of partition 54;
- 57: wall of bottom compartment 26C;
- 59: titling of top compartments 26B and 26C;
- 63A,63B: periods;
- 81: cell 10B been consumed not more than 3 (example) hours ago;

The reference numbers in the claims should not be interpreted as limiting the claims in any form.

CLAIMS

What is claimed is:

1. A pill's cell(10B), comprising:
   - a first compartment(26C), for containing a pill(28);
   - a second compartment(26A), for containing a first substance(20A);
   - a third compartment(26B), for containing a second substance(20B), wherein said first(20A) and second substance(20B) are characterized to change colors thereof upon being mixed; and
   - a partition(54) for partitioning said second(26A) and third(26B) compartments, said partition(54) being breakable upon removing said pill(28) from said first compartment(26C), for mixing said first(20A) and second(20B) substances upon said pill removing,

   wherein said second(26A) and third(26B) compartments are disposed aside one another and above said first compartment(26C),

   thereby removal of said pill(28) is applicable by pressing(52) on at least one of said second(26A) and third(26B) compartments, to presses thereof on said first compartment(26C),

   thereby said removal of said pill(28) ensures said breaking of said partition(54) between said second(26A) and third(26B) compartments.

2. The pill's cell(10B) according to claim 1, wherein said first(20A) and second(20B) substances are characterized in

changing color to a first color after a first period(63A) after said mixing therebetween.

3. The pill's cell(10B) according to claim 1, wherein said first(20A) and second(20B) substances are characterized in changing color to a second color after a second period(63B) after said mixing therebetween.

4. The pill's cell(10B) according to claim 1, wherein said partition(54) is tilted in relation to a bottom(30) of said first compartment(26C).

5. The pill's cell(10B) according to claim 1, wherein a ceiling(12) of at least one of said first(26A) and second(26B) compartments is tilted in relation to a bottom(30) of said first compartment(26C).

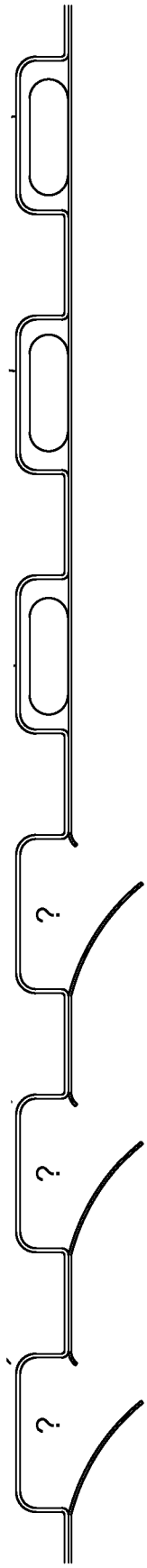


FIG 1 - PRIOR ART

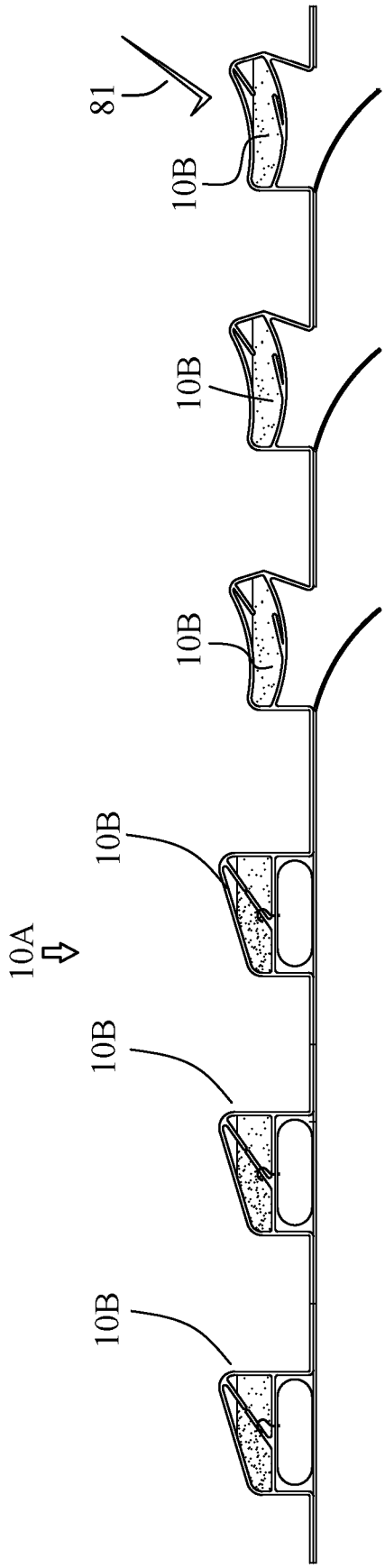


FIG 2

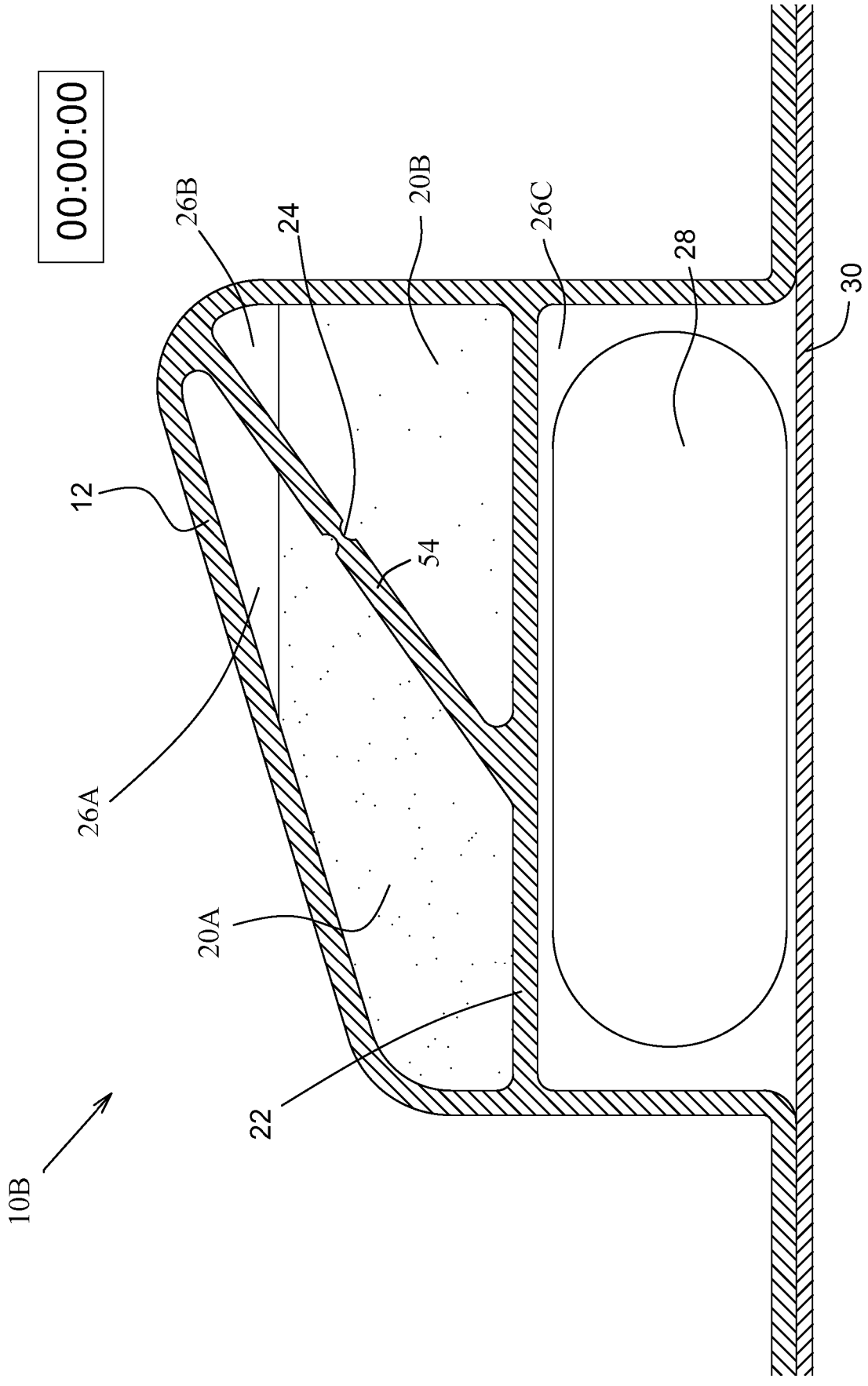


FIG 3

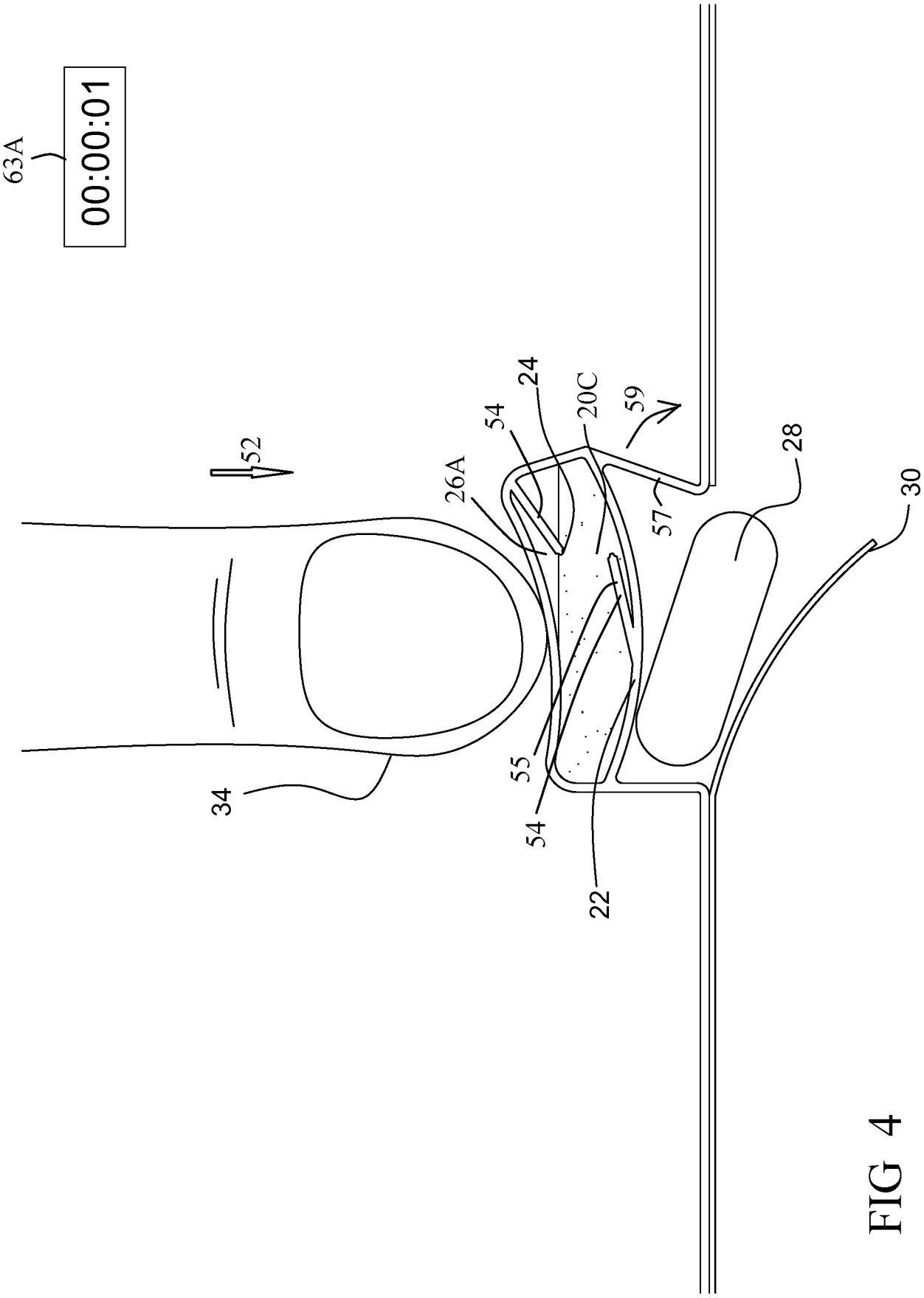


FIG 4

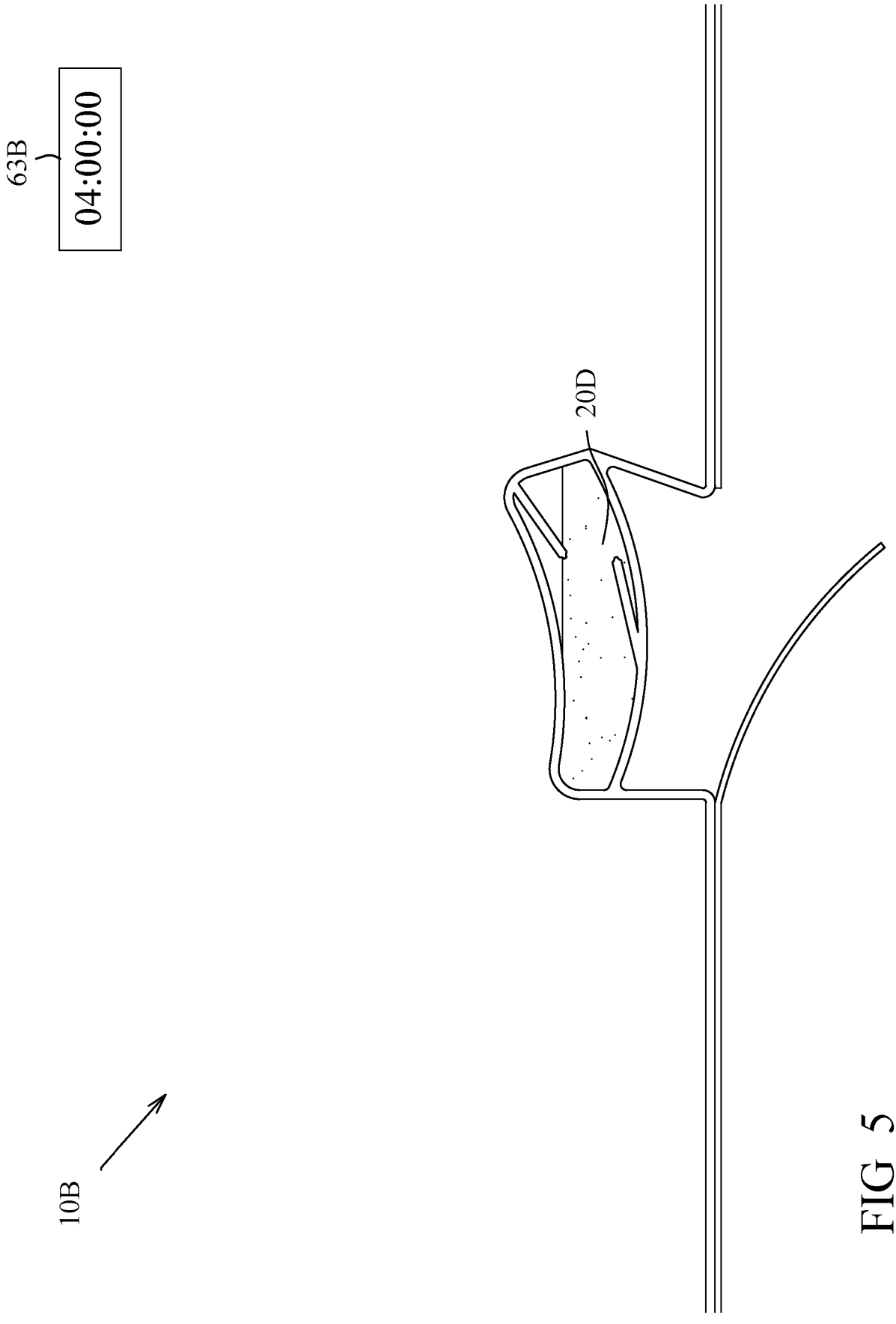


FIG 5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL2023/050303

A. CLASSIFICATION OF SUBJECT MATTER

A61J 7/04(2023.01)i; ***A61J 1/03***(2023.01)i
CPC: A61J 7/04; A61J 2205/20; A61J 1/03; A61J 1/035

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61J 7/04; A61J 1/03
CPC: A61J 7/04; A61J 2205/20; A61J 1/03; A61J 1/035

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Databases consulted: PatBase, Orbit Search terms used: (materials or substances) and (pill or capsul* or tablets) , IPC: A61J 7/04 A61J 1/035

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 3028808 A1 (Siegfried Dr. 8520 Erlangen LehrlKlaus Prof. Dr. 6200 Wiesbaden Weltner) 11 March 1982 (1982-03-11)	1-5
A	US 6938757 B2 (Harold EastmanEric Fredolin AhlquistDudley Keith Webb) 26 December 2002 (2002-12-26)	1-5

☐ 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
"D" document cited by the applicant in the international application
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
21 June 2023	**22 June 2023**

Name and mailing address of the ISA/IL	Authorized officer
Israel Patent Office **Technology Park, Bldg.5, Malcha, Jerusalem, 9695101, Israel** **Israel** Telephone No. **972-73-3927251** Email: **pctoffice@justice.gov.il**	**SIN-MALIA Yoav** Telephone No.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IL2023/050303

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
DE	3028808	A1	11 March 1982	DE	3028808	A1	11 March 1982
US	6938757	B2	26 December 2002	US	2002195413	A1	26 December 2002
				US	6938757	B2	06 September 2005
				AT	316916	T	15 February 2006
				BG	108406	A	31 August 2004
				BR	0205114	A	13 May 2003
				CN	1397471	A	19 February 2003
				CO	5550479	A2	31 August 2005
				CZ	20033287	A3	13 July 2005
				DE	60208999	D1	13 April 2006
				DE	60208999	T2	21 September 2006
				EP	1385753	A1	04 February 2004
				EP	1385753	B1	01 February 2006
				HR	P20030999	A2	31 October 2005
				HU	0301639	A2	28 October 2003
				JP	2003002344	A	08 January 2003
				KR	20020084819	A	11 November 2002
				MX	PA02004361	A	05 May 2004
				PL	366472	A1	07 February 2005
				RU	2003134958	A	27 October 2004
				WO	02090204	A1	14 November 2002
				YU	98602	A	29 August 2003
				ZA	200300071	B	25 February 2004