



US00D967022S

(12) **United States Design Patent**
Nishimura et al.

(10) **Patent No.:** **US D967,022 S**

(45) **Date of Patent:** **** Oct. 18, 2022**

(54) **WIRELESS POWER TRANSFER DEVICE**

(74) *Attorney, Agent, or Firm* — Volpe Koenig

(71) Applicant: **IHI Corporation**, Tokyo (JP)

(57) **CLAIM**

(72) Inventors: **Kenji Nishimura**, Tokyo (JP); **Seishiro Nakajima**, Tokyo (JP); **Tatsuya Matsui**, Tokyo (JP)

The ornamental design for a wireless power transfer device, as shown and described.

(73) Assignee: **IHI CORPORATION**, Tokyo (JP)

DESCRIPTION

(**) Term: **15 Years**

(21) Appl. No.: **29/692,050**

(22) Filed: **May 22, 2019**

(30) **Foreign Application Priority Data**

Mar. 29, 2019 (JP) 2019-006865

(51) **LOC (13) Cl.** **13-02**

(52) **U.S. Cl.**
USPC **D13/110**

(58) **Field of Classification Search**
USPC D13/103, 105–110, 118, 119, 184, 199;
D14/230, 234

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

D390,432 S * 2/1998 Shaffer D8/29
D449,271 S 10/2001 Tong et al.

(Continued)

OTHER PUBLICATIONS

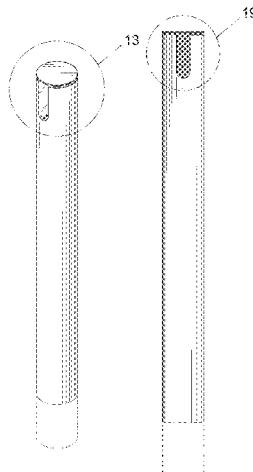
Applicant's Exhibit 1: Online Press Release for IHI Forum 2018 Exhibition, where Applicant exhibited its Wireless Power Transfer Device (Nov. 14, 2018 to Nov. 17, 2018) (with English concise explanation of relevance provided by English translation of relevant portions of document).

(Continued)

Primary Examiner — Christy Nemeth

FIG. 1 is a perspective view of an wireless power transfer device with a first image displayed on a display portion; FIG. 2 is a front view thereof; FIG. 3 is a front view thereof with a second image displayed on a display portion; FIG. 4 is a front view thereof with a third image displayed on a display portion; FIG. 5 is a front view thereof with a fourth image displayed on a display portion; FIG. 6 is a front view thereof with a fifth image displayed on a display portion; FIG. 7 is a front view thereof with a sixth image displayed on a display portion; FIG. 8 is a rear view thereof; FIG. 9 is a top plan view thereof; FIG. 10 is a bottom view thereof; FIG. 11 is a right side view thereof; FIG. 12 is a left side view thereof; FIG. 13 is an enlarged fragment shown encircled in FIG. 1, showing a first image displayed on a display portion; FIG. 14 is an enlarged fragment shown encircled in FIG. 2, showing a first image displayed on a display portion; FIG. 15 is an enlarged fragment shown encircled in FIG. 3, showing a second image displayed on a display portion; FIG. 16 is an enlarged fragment shown encircled in FIG. 4, showing a third image displayed on a display portion; FIG. 17 is an enlarged fragment shown encircled in FIG. 5, showing a fourth image displayed on a display portion; FIG. 18 is an enlarged fragment shown encircled in FIG. 6, showing a fifth image displayed on a display portion; FIG. 19 is an enlarged fragment shown encircled in FIG. 7, showing a sixth image displayed on a display portion; and, FIG. 20 is a perspective view of the wireless power transfer device, showing a first image displayed on a display portion, and in an environment of use.

(Continued)



The dot-dot broken lines are for the purpose of illustrating environmental subject matter and portions of the article that form no part of the claimed design. The dot-dash broken lines are for the purpose of illustrating a boundary and form no part of the claimed design. The dot-dot-dash broken lined in FIGS. 1-7 and 13-19 depict the limits of the enlarged fragments and form no part of the claimed design. The grey-toned shading depicts a contrast of appearance. The appearance of the display portion sequentially transitions between the images shown in FIGS. 2-7 and 14-19. The process or period in which one image transitions to another image forms no part of the claimed design.

1 Claim, 20 Drawing Sheets

(58) Field of Classification Search

CPC .. H01Q 1/36; H01Q 1/38; H01Q 7/00; H01Q 9/285; H01Q 13/10; H01Q 19/12; H01Q 19/30; H04B 1/0475; H04B 1/034; H05K 11/00; Y02E 60/10; Y02E 60/12; Y02E 60/122; Y02E 60/124; Y02E 60/50; H01M 2/02; H01M 2/022; H01M 2/0202; H01M 2/0207; H01M 2/0212; H01M 2/1061; H01M 10/44; H01M 10/46; H01M 10/465; H01M 10/482

See application file for complete search history.

(56)

References Cited

U.S. PATENT DOCUMENTS

D532,366	S	*	11/2006	Koizumi	.....	D14/155
D532,412	S	*	11/2006	Yang	.....	D14/234
D546,277	S		7/2007	Andre et al.		
D585,435	S	*	1/2009	Wafer	.....	D14/230
D597,937	S	*	8/2009	Haw	.....	D13/107
D606,490	S	*	12/2009	Sasada	.....	D13/102
D624,011	S		9/2010	Bertagnole et al.		
D686,155	S	*	7/2013	Nguyen	.....	D13/103
D690,262	S		9/2013	Huang et al.		
D719,141	S	*	12/2014	Chou	.....	D14/230
D719,505	S		12/2014	Kim et al.		
D729,163	S		5/2015	Meyer		
D743,887	S		11/2015	Dasbach		
D748,079	S	*	1/2016	Dinsdale	.....	D14/230
D751,054	S	*	3/2016	Chou	.....	D14/230
D782,973	S		4/2017	Zhou		
D786,791	S		5/2017	Jeong et al.		
D800,651	S		10/2017	Voller et al.		
D808,939	S	*	1/2018	Tinaphong	.....	D14/230
D809,491	S	*	2/2018	Tinaphong	.....	D14/230
D812,024	S	*	3/2018	Lewis	.....	D13/184
D812,556	S		3/2018	Xu		
D812,595	S	*	3/2018	Kang	.....	D14/230
D813,155	S	*	3/2018	Yamada	.....	D27/101
D835,574	S		12/2018	Trongone		
D845,897	S		4/2019	Kim		
D849,679	S		5/2019	Tian et al.		
D863,270	S	*	10/2019	Naweed	.....	D14/230
D863,271	S	*	10/2019	Zhang	.....	D14/234
D866,458	S		11/2019	Chen et al.		
D871,321	S		12/2019	Chung		
D875,041	S		2/2020	Chen et al.		

D875,042	S		2/2020	Ye		
D875,678	S		2/2020	Kim et al.		
D876,356	S		2/2020	Tanaka		
D881,856	S	*	4/2020	Zhao	.....	D14/230
D884,528	S	*	5/2020	Woeber	.....	D10/102
D884,618	S		5/2020	Vahle et al.		
D887,970	S		6/2020	Himeno		
D893,423	S	*	8/2020	Nishimura	.....	D13/110
D896,753	S	*	9/2020	Alali	.....	D13/110
D897,878	S		10/2020	Lian		
D900,023	S	*	10/2020	Derouineau	.....	D13/107
D901,468	S	*	11/2020	Zhao	.....	D14/230
D902,187	S	*	11/2020	Coleman	.....	D14/230
D918,079	S		5/2021	Scalisi et al.		
D919,605	S	*	5/2021	Chen	.....	D14/230
D920,242	S		5/2021	Lebreux et al.		
D921,511	S		6/2021	Li		
D921,577	S	*	6/2021	Nishimura	.....	D13/103
D923,505	S		6/2021	Scalisi et al.		
D926,066	S		7/2021	England et al.		
D926,067	S		7/2021	Jacob et al.		
D927,338	S		8/2021	Smalley et al.		
D928,005	S		8/2021	Smalley et al.		
D935,337	S		11/2021	Huang		
D937,206	S		11/2021	Romano et al.		
2014/0357094	A1		12/2014	Kim		
2015/0042268	A1		2/2015	Chen et al.		
2016/0352390	A1		12/2016	Park et al.		
2017/0250574	A1		8/2017	Min et al.		
2019/0165610	A1		5/2019	Hong et al.		
2020/0244327	A1*		7/2020	Bojer	.....	H01Q 9/40

OTHER PUBLICATIONS

Applicant's Exhibit 2: Official Website for Nikkei Xtrend Expo 2018 Exhibition, where Applicant exhibited its Wireless Power Transfer Device, (Nov. 28, 2018 to Nov. 29, 2018) (with English concise explanation of relevance provided by English translation of relevant portions of document).

Applicant's Exhibit 3: Official Website for "Latest Trends in Electric Vehicle Technology—The Future of Electric Vehicle Technology as Seen by JSAE—" Symposium, where Applicant exhibited its Wireless Power Transfer Device (Jan. 24, 2019) (with English concise explanation of relevance provided by English translation of relevant portions of document).

Applicant's Exhibit 4: Applicant's Website Featuring Applicant's Wireless Power Transfer Device, Available at: <https://www.ihl.co.jp/mobility/ev/> (Nov. 27, 2018).

Ring Smart Lighting Low Voltage Lighting Transformer. 2020. Best Buy. <https://www.bestbuy.com/site/ring-smart-lighting-low-voltage-lighting-transformer-12-15v-200w-black-ring-bridge-required-black/6350267.p?skuId=6350267&ref=212&loc=1&gclid=EAlaQobChMI1Mjinn9TS9AIVSuKzCh1dAAOsEAQYDiABEGJE4PDBwE&gclsrc=aw.ds>.

Ring Video Doorbell. 2020. Wasserstein Home. <https://wasserstein-home.com/products/16v-30va-doorbell-transformer-power-supply-compatible-with-ring-video-doorbell-1-doorbell-2-doorbell-pro-and-nest-hello-doorbell>.

Video Doorbell Power Supply. Before Dec. 9, 2020. Home Depot. <https://www.homedepot.com/p/Video-Doorbell-Power-Supply-Compatible-with-Nest-Hello-No-Existing-Wiring-Required-Black-db-nes-001/315554974>.

Wireless Power Supply. (Design—© Questel) orbit.com. [Online PDF compilation of references] 74 pgs. Print Dates Range May 18, 2021-Apr. 17, 2019. [Retrieved Dec. 7, 2021].

* cited by examiner

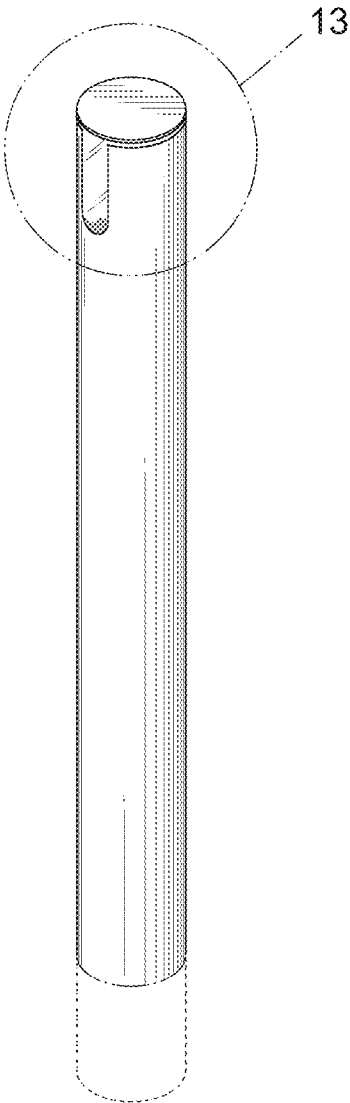


FIG. 1

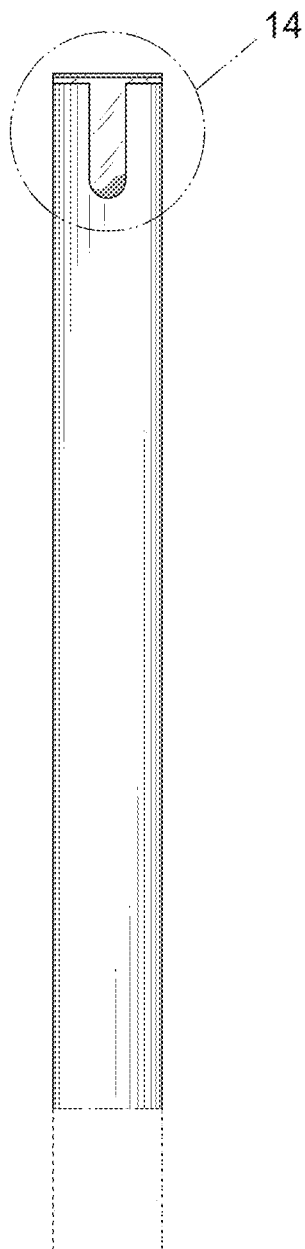


FIG. 2

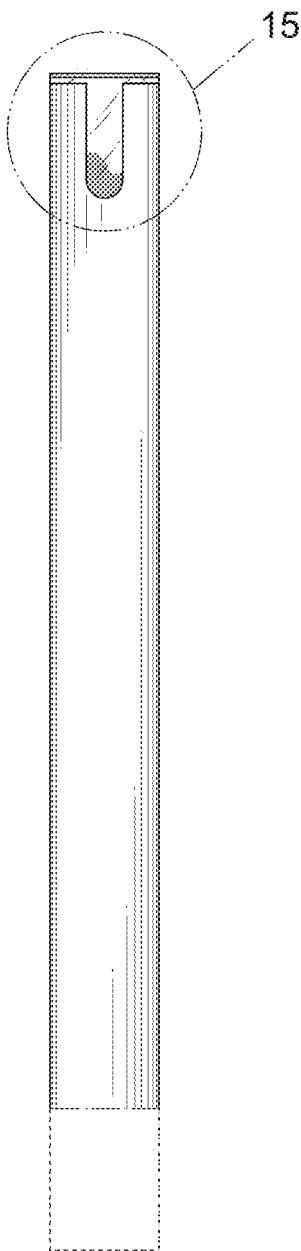


FIG. 3

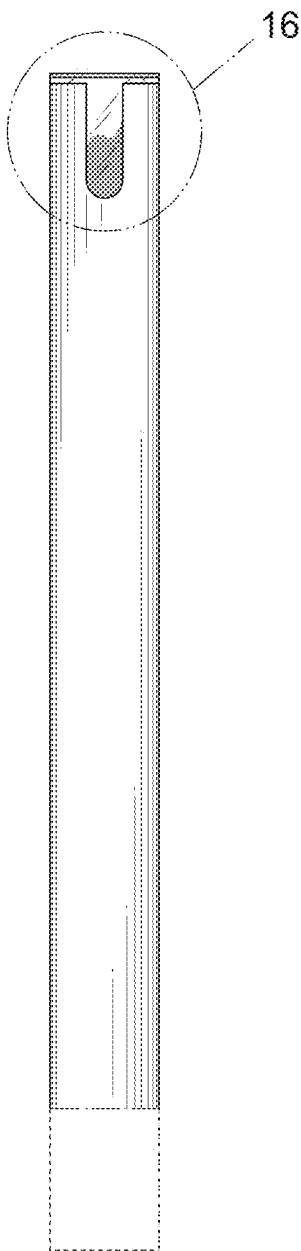


FIG. 4

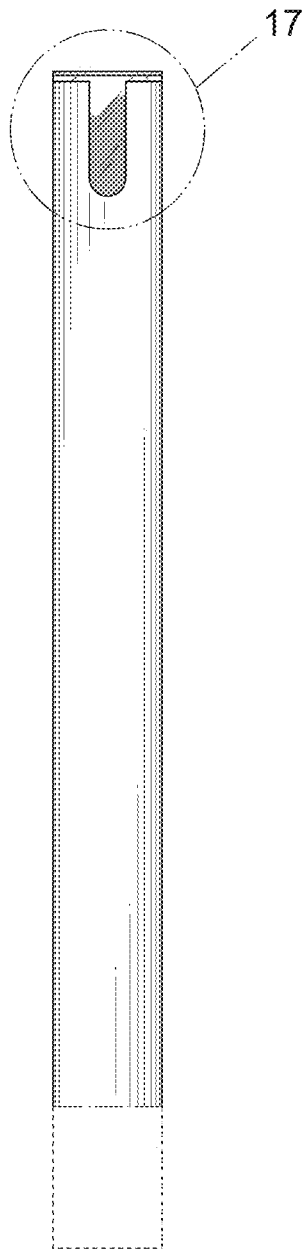


FIG. 5

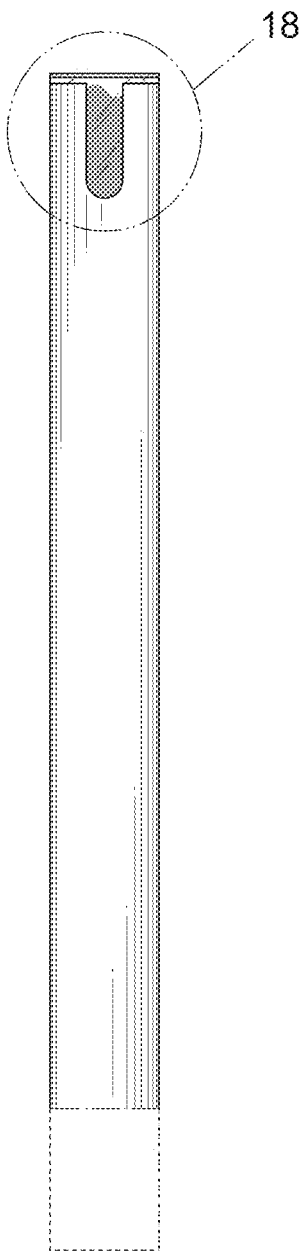


FIG. 6

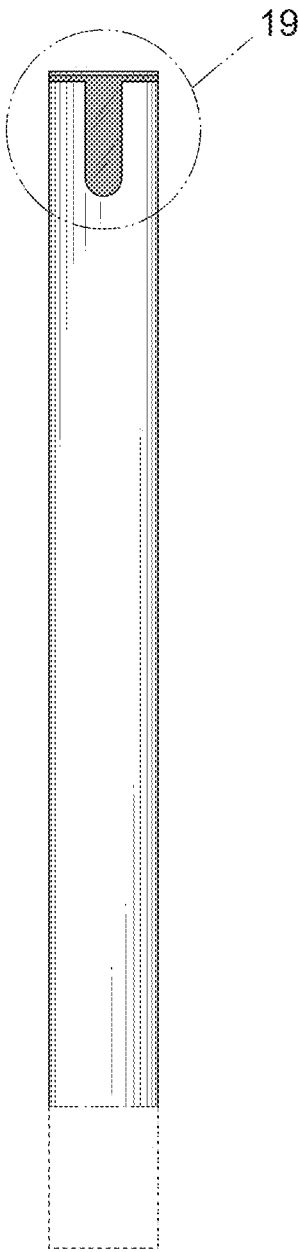


FIG. 7

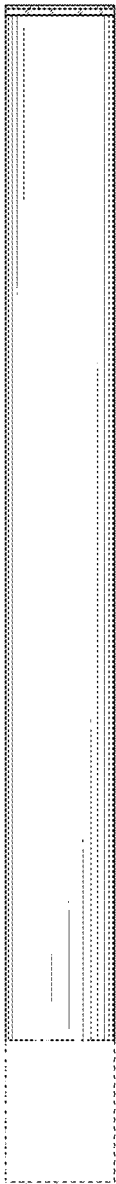


FIG. 8

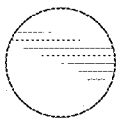


FIG. 9

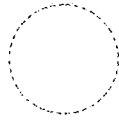


FIG. 10

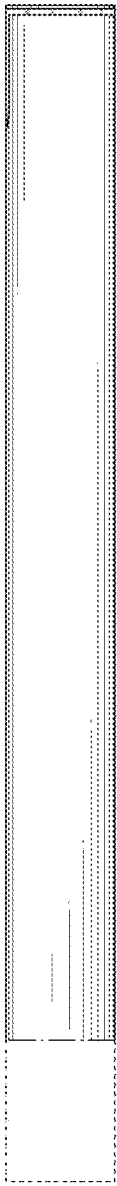


FIG. 11

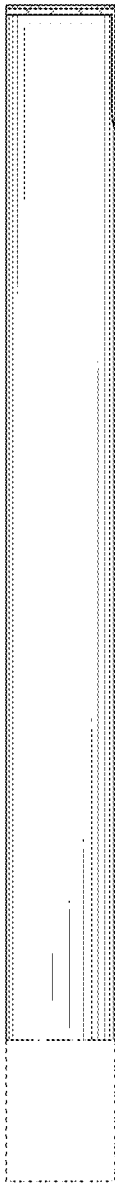


FIG. 12

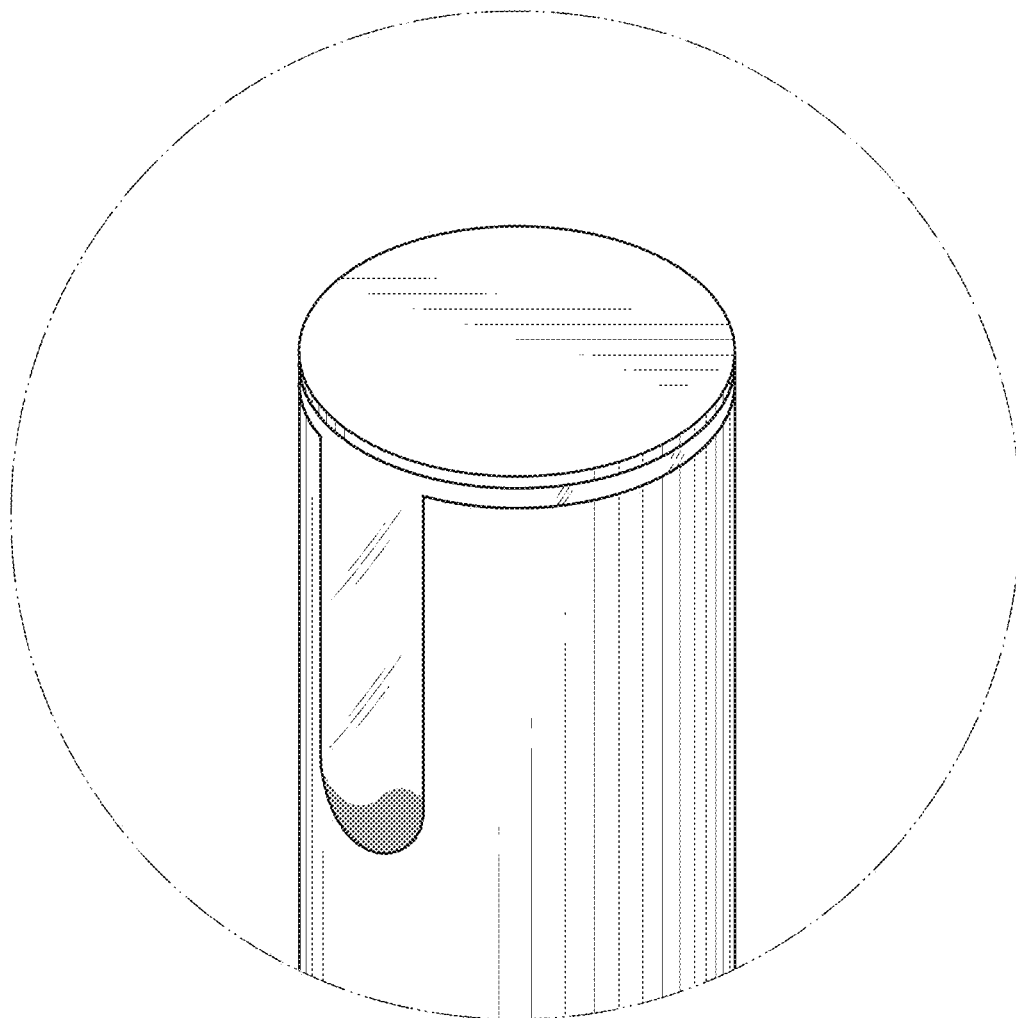


FIG. 13

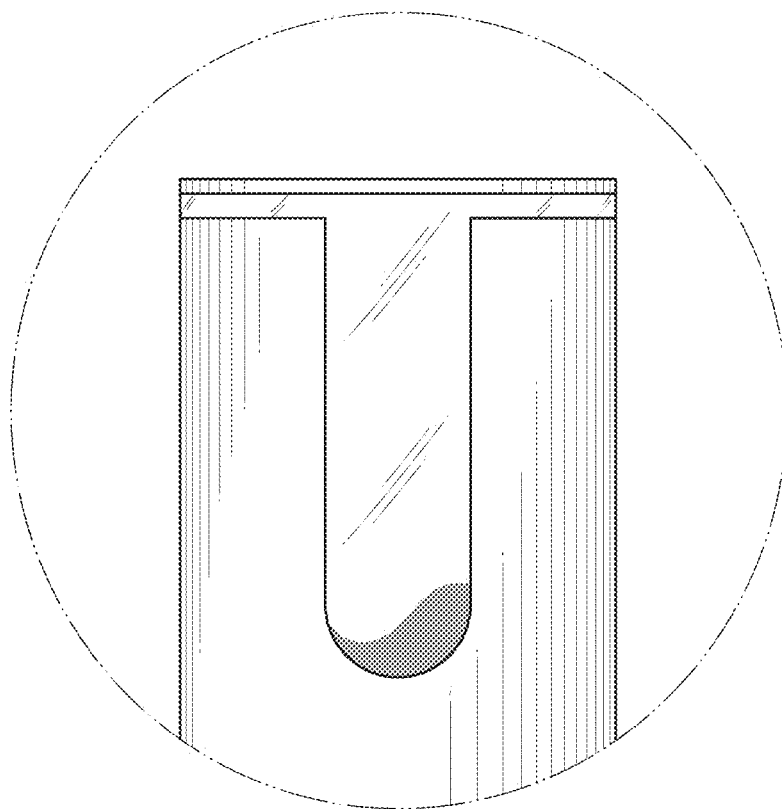


FIG. 14

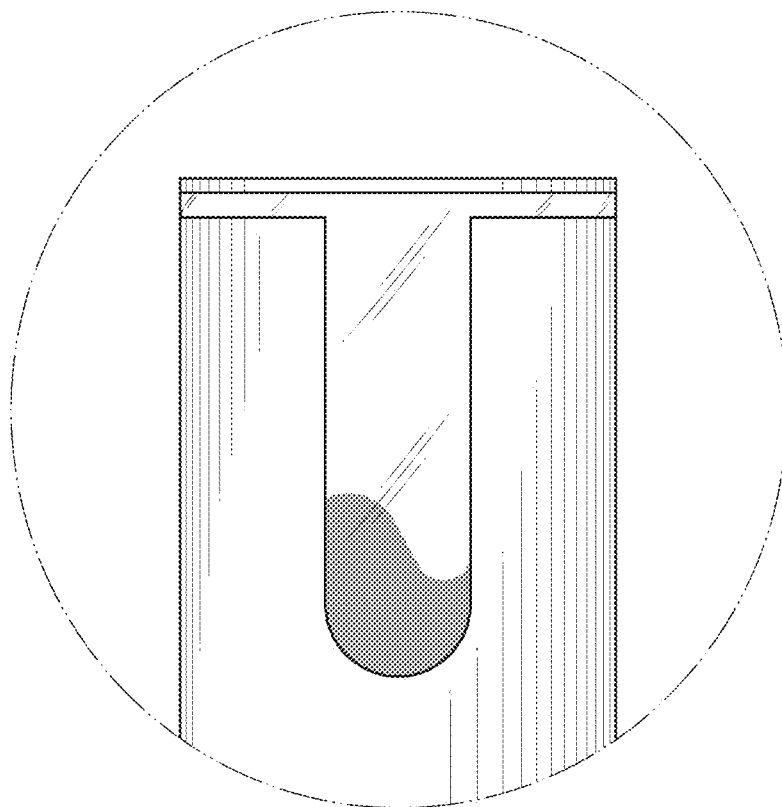


FIG. 15

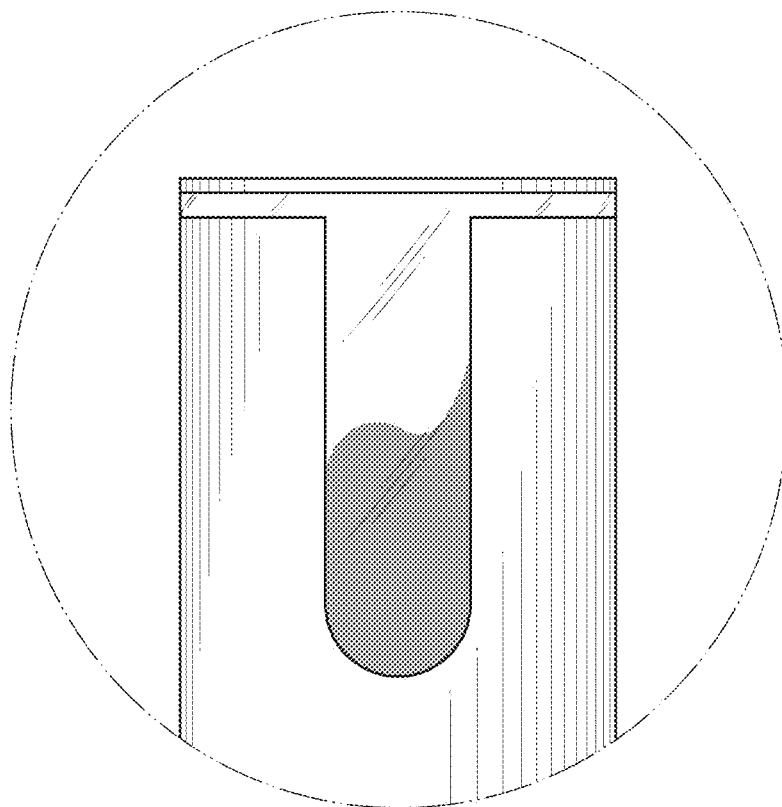


FIG. 16

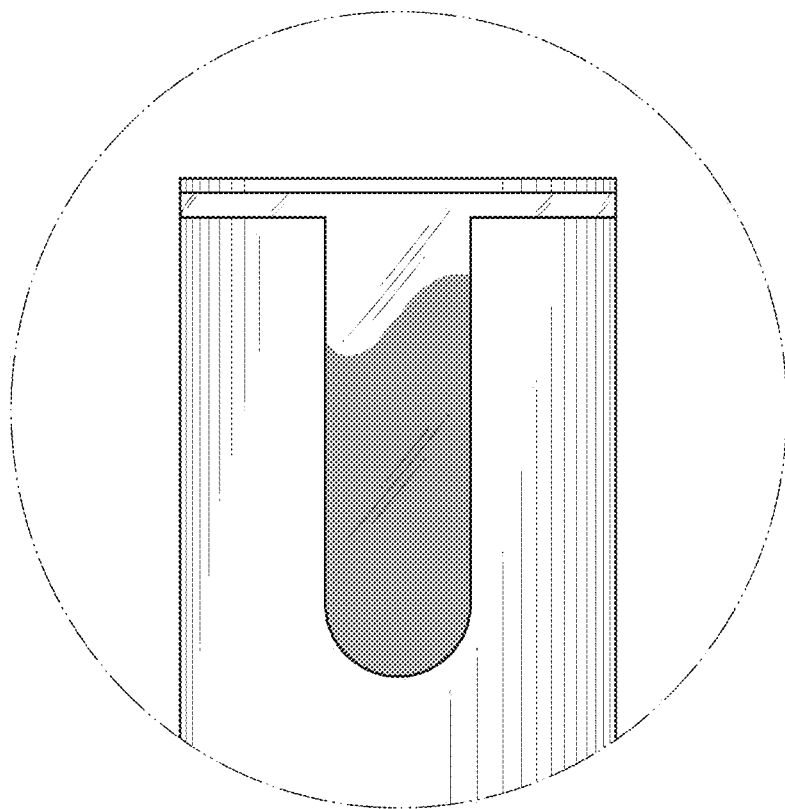


FIG. 17

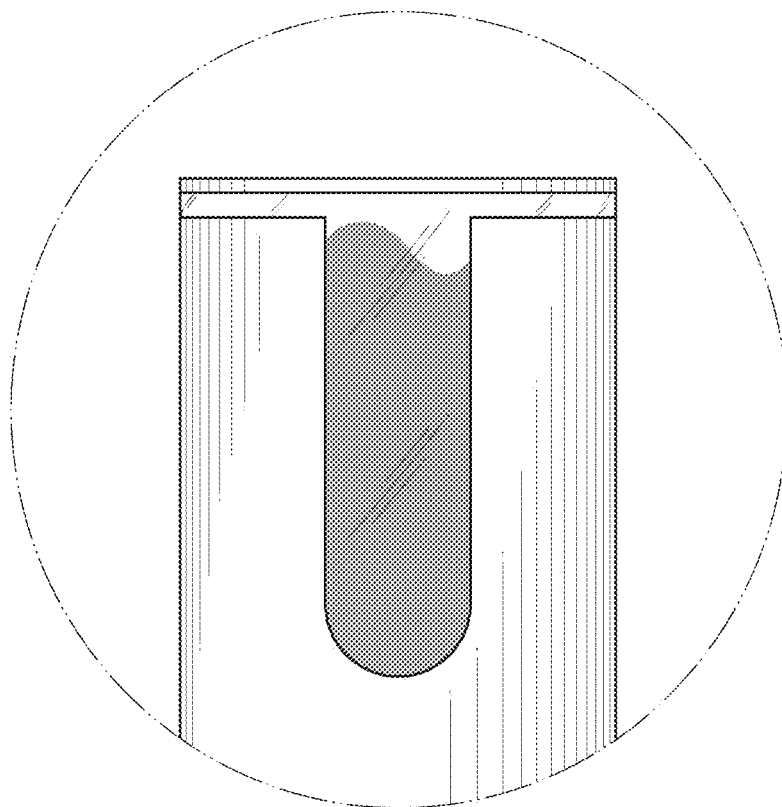


FIG. 18

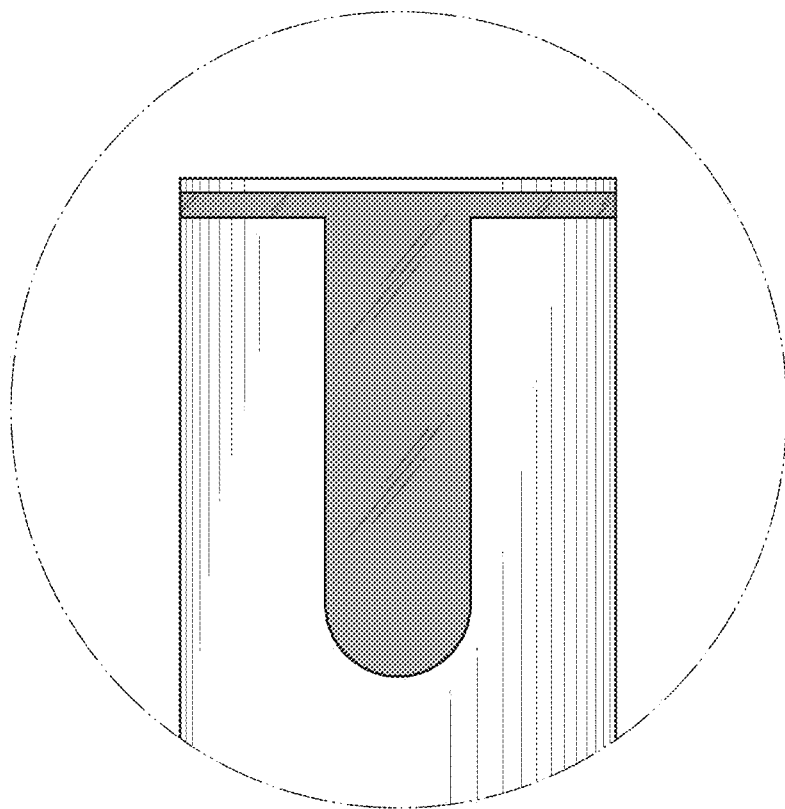


FIG. 19

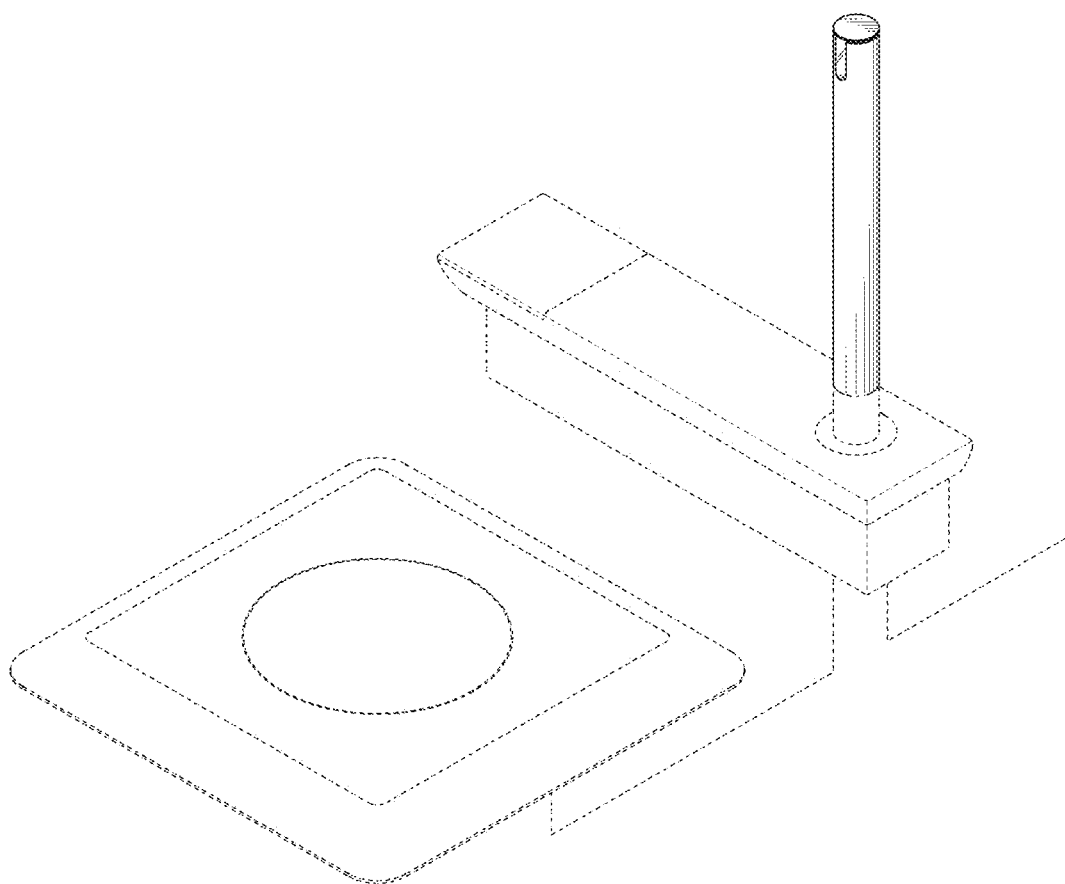


FIG. 20