US00D832803S

(12) United States Design Patent

Beas Bujanos et al.

(10) Patent No.: US D832,803 S
(45) Date of Patent: ** Nov. 6, 2018

(54) **HEATER ASSEMBLY FOR A LASER DIODE**

(71) Applicant: **ARRIS Enterprises LLC**, Suwanee, GA (US)

(72) Inventors: **Joaquin Beas Bujanos**, Escobedo (MX); **Carlos Gonzalez Inda**, Guadalupe (MX); **Mariano Cruz Cinco**, Apodaca (MX)

(73) Assignee: **ARRIS Enterprises LLC**, Suwanee, GA (US)

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

(21) Appl. No.: **29/586,697**

(22) Filed: **Dec. 6, 2016**

(51) **LOC (11) Cl.** **13-03**

(52) **U.S. Cl.**
USPC **D13/182**

(58) **Field of Classification Search**
USPC D8/320, 333, 343, 352, 356, 363, 367, D8/371, 377, 390, 396, 499; D13/160, D13/172, 178, 180, 181, 182, 184, 199
CPC G02B 6/28; G02B 6/2804; G02B 6/2821; G02B 6/2835; G02B 6/42; G02B 6/2856; G02B 6/4202; G02B 6/4203; G02B 6/424; G02B 6/4245
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,093,878	A *	3/1992	Haley	B29C 45/14 250/227.11
5,100,507	A *	3/1992	Cholewa	C03C 25/108 216/109
6,244,754	B1 *	6/2001	Takagi	G02B 6/4201 385/88
6,247,852	B1 *	6/2001	Joyce	G02B 6/4226 385/88
D483,338	S *	12/2003	Takagi	D13/182
D484,105	S *	12/2003	Takagi	D13/182
D494,147	S *	8/2004	Takagi	D13/182
D503,385	S *	3/2005	Hosokawa	D13/147
6,865,199	B2	3/2005	Miguelez et al.	
7,157,664	B2	1/2007	Best et al.	
7,200,294	B2	4/2007	Uchida	
7,570,679	B2	8/2009	Gibson et al.	
D748,591	S *	2/2016	Krishnan	D13/180

(Continued)

OTHER PUBLICATIONS

Wavelength stabilized single mode fiber coupled laser diode, posted at Qphotonics.com, posted on Apr. 7, 2015, site visited Jan. 3, 2018. onlines Available from Internet: https://web.archive.org/web/20150407070952/http://www.qphotonics.com/Wavelength-stabilized-single-mode-fiber-coupled-laser-diode-4mW-1570nm.html.*

(Continued)

Primary Examiner — Mary Ann Calabrese
Assistant Examiner — Catherine Ho
(74) *Attorney, Agent, or Firm* — Lori Anne D. Swanson

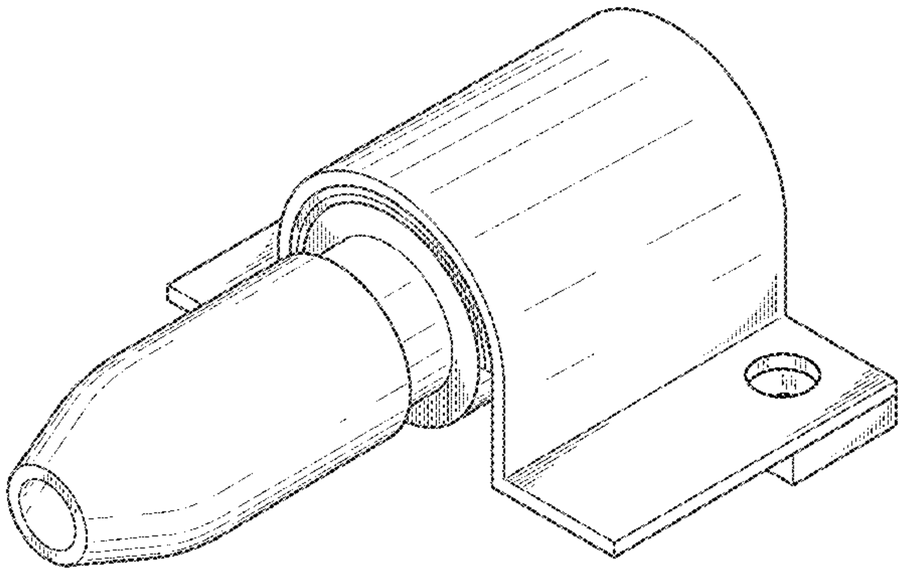
(57) **CLAIM**

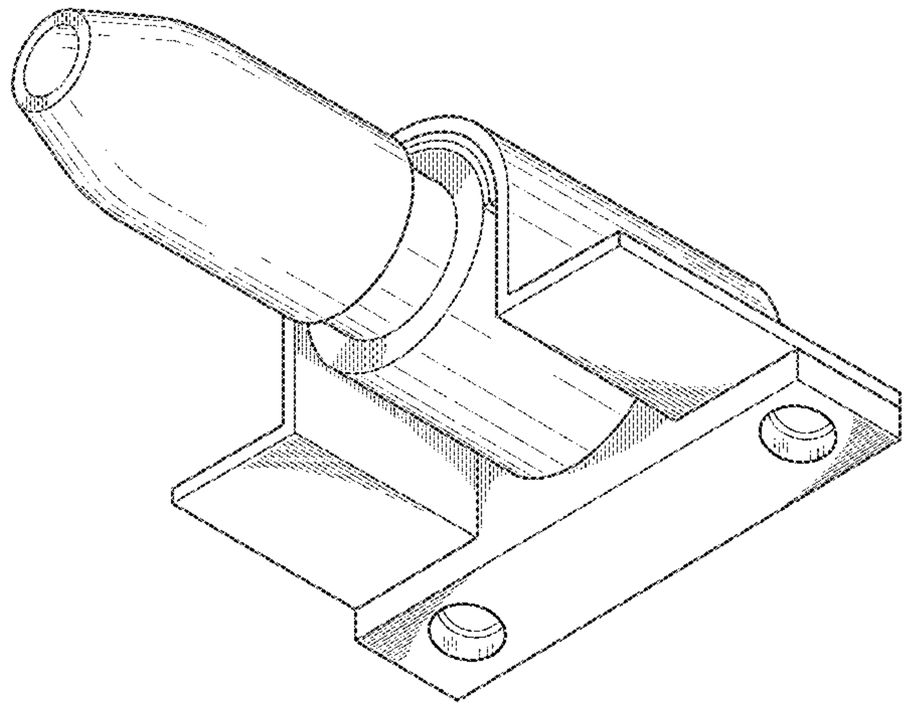
The ornamental design for a heater assembly for a laser diode, as shown and described.

DESCRIPTION

FIG. **1** is a perspective view of a heater assembly for a laser diode, showing my new design;
FIG. **2** is a second perspective view thereof;
FIG. **3** is a right side elevation view thereof;
FIG. **4** is a left side elevation view thereof;
FIG. **5** is a front elevation view thereof;
FIG. **6** is a rear elevation view thereof;
FIG. **7** is a top plan view thereof; and,
FIG. **8** is a bottom plan view thereof.
The broken line portion of the figure drawings is included to show environment that forms no part of the claimed design.

1 Claim, 6 Drawing Sheets





(56) **References Cited**

U.S. PATENT DOCUMENTS

2005/0254759	A1*	11/2005	O'Brien	G02B 6/4202 385/92
2006/0022213	A1	2/2006	Posamentier	
2008/0080575	A1	4/2008	Murry	
2008/0267233	A1	10/2008	Deng et al.	
2013/0051413	A1	2/2013	Chen et al.	
2015/0131687	A1*	5/2015	Oh	H01S 5/02469 372/36
2016/0181762	A1*	6/2016	Dawson	H01S 5/02469 372/6

OTHER PUBLICATIONS

Sumitomo Electric, posted at Businesswire.com, posted on Aug. 28, 2008, site visited Jan. 3, 2018. online, Available from Internet: https://www.businesswire.com/news/home/20080828005277/en/Sumitomo-Electric-Develops-New-Coaxial-Laser-Diode.*

CWDM DFB Laser Diode, posted at Oemarket.com, posted on May 11, 2007, site visited Jan. 3, 2018. online, Available from Internet: https://web.archive.org/web/20140305080933/http://www.oemarket.com/catalog/product info.php/cwdm-dfb-laser-diode-coaxial-pigtailed-p-162.*

ITU-T Recommendation G.694.2, "Spectral grids for WDM applications: CWDM wavelength grid", Telecommunication Standardization Sector of ITU; Series G: Transmission Systems and Media, Digital Systems and Networks; Transmission media characteristics—Characteristics of optical components and subsystems, Dec. 14, 2003.

* cited by examiner

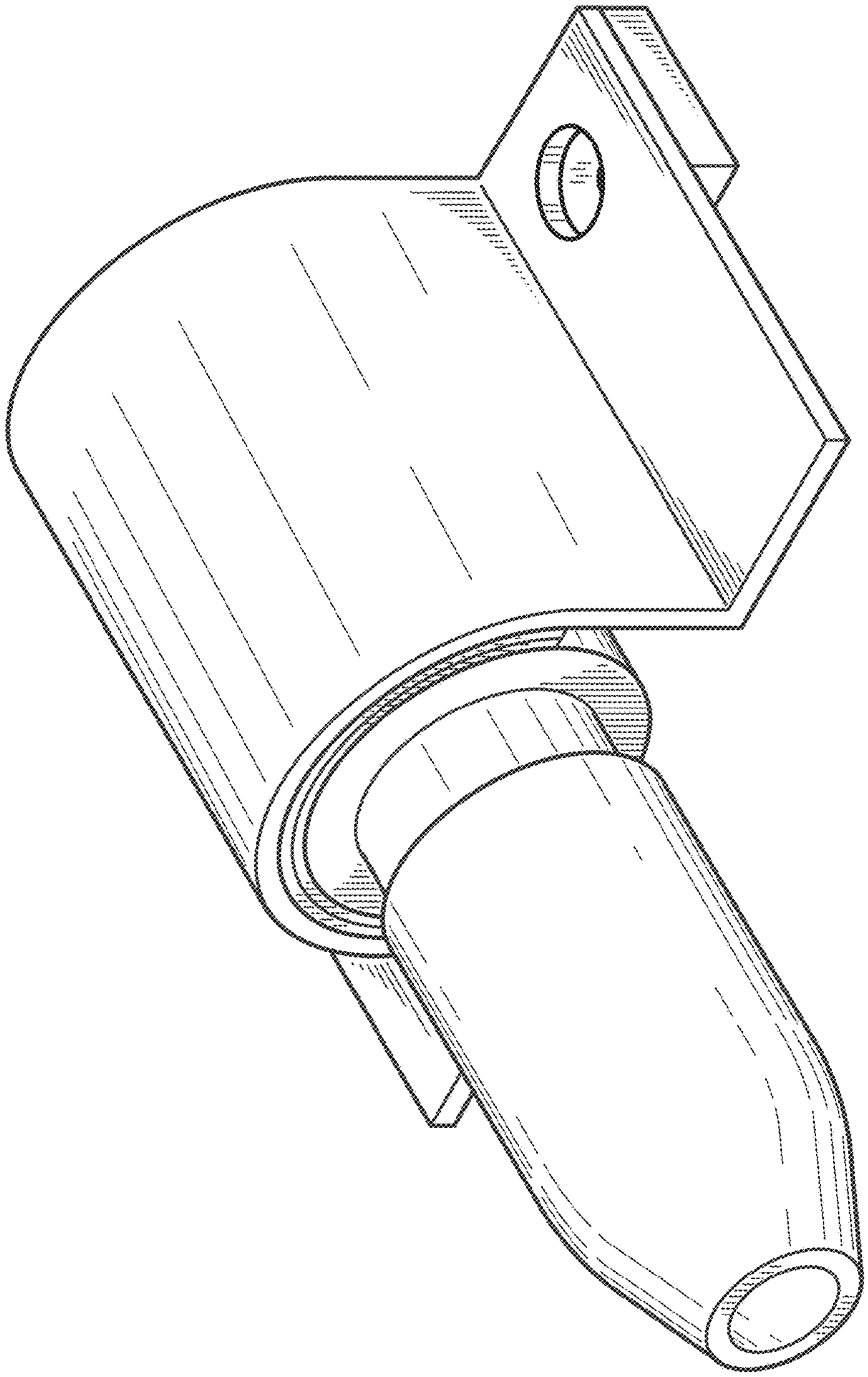


FIG. 1

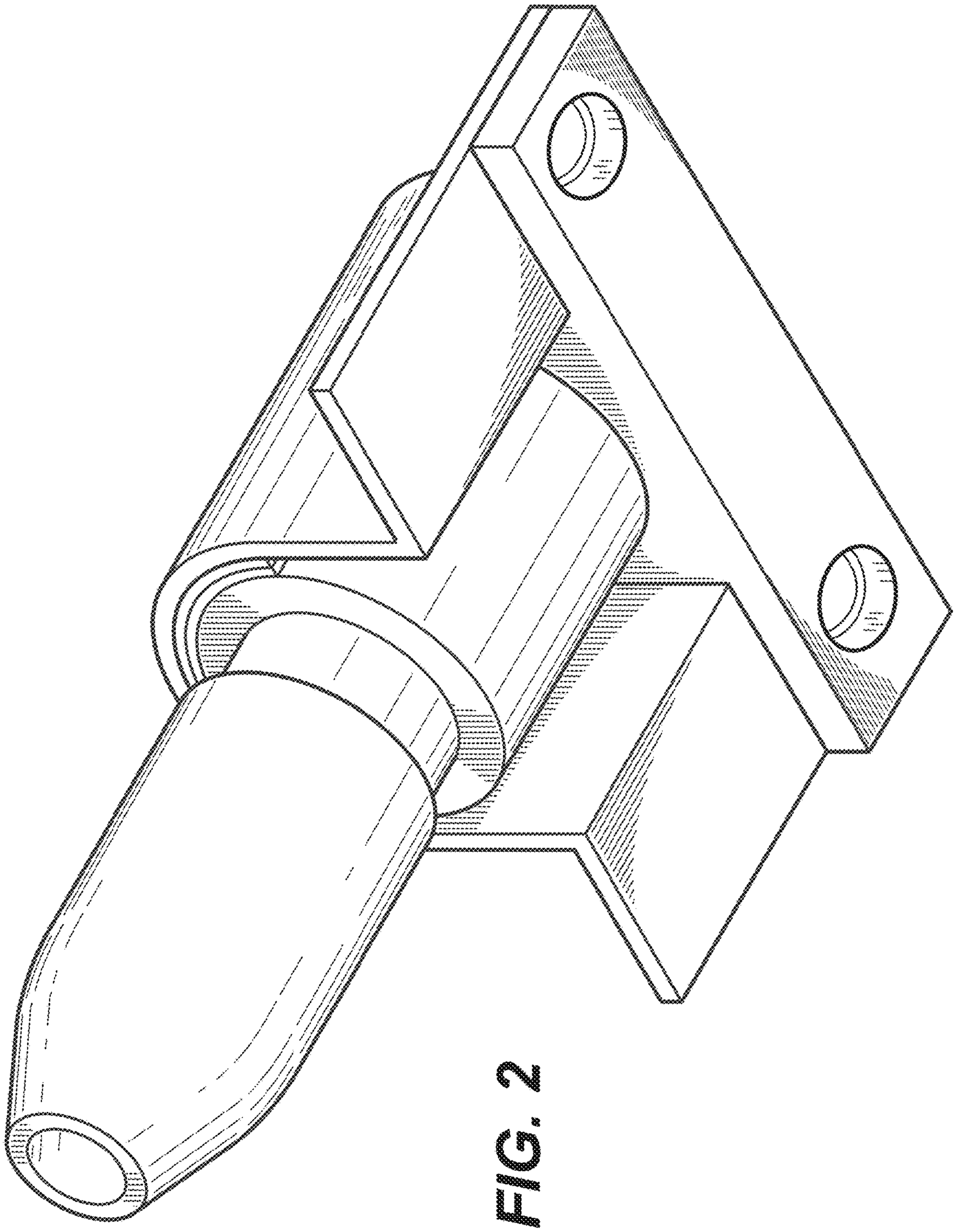


FIG. 2

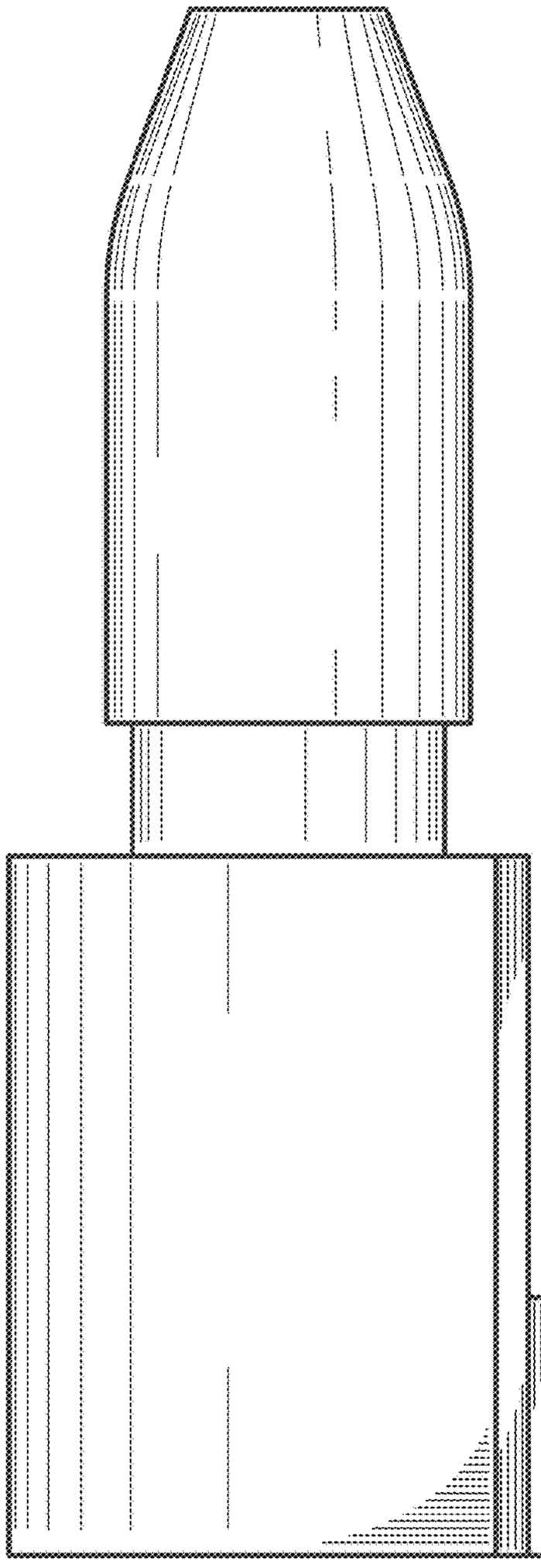


FIG. 3

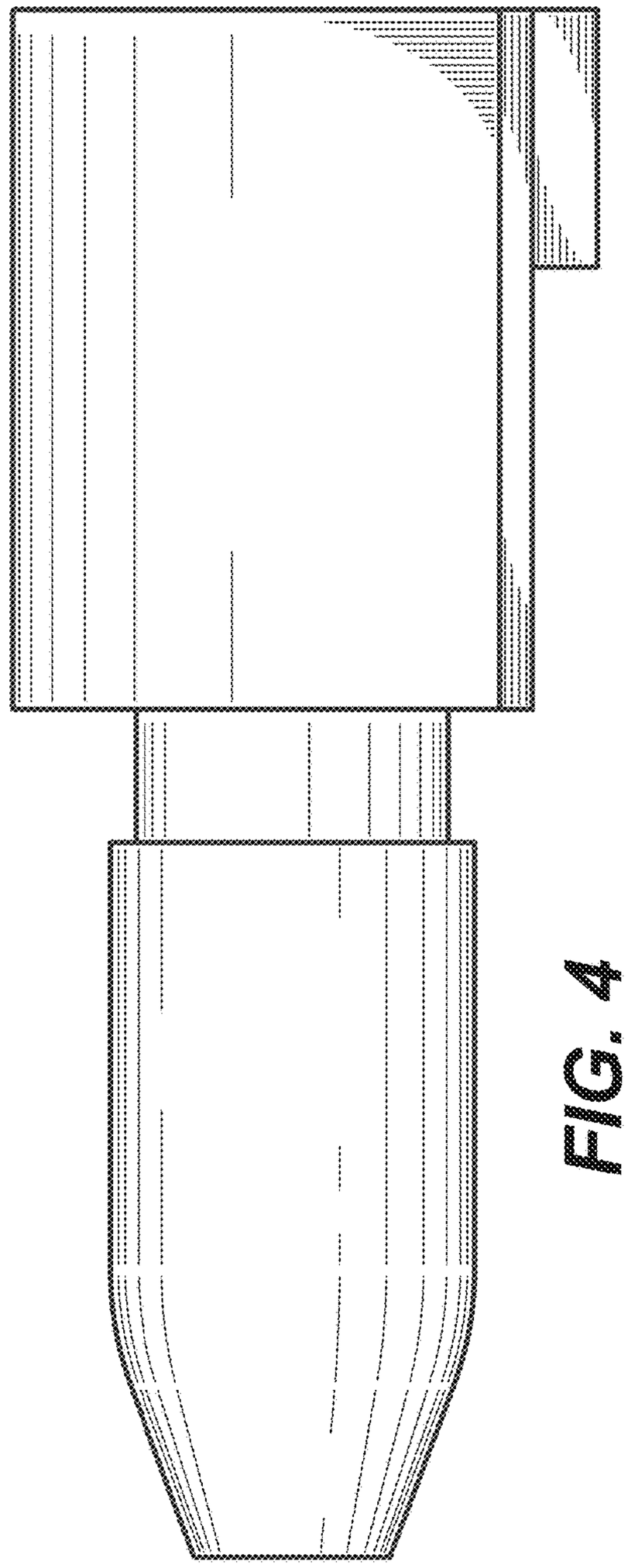


FIG. 4

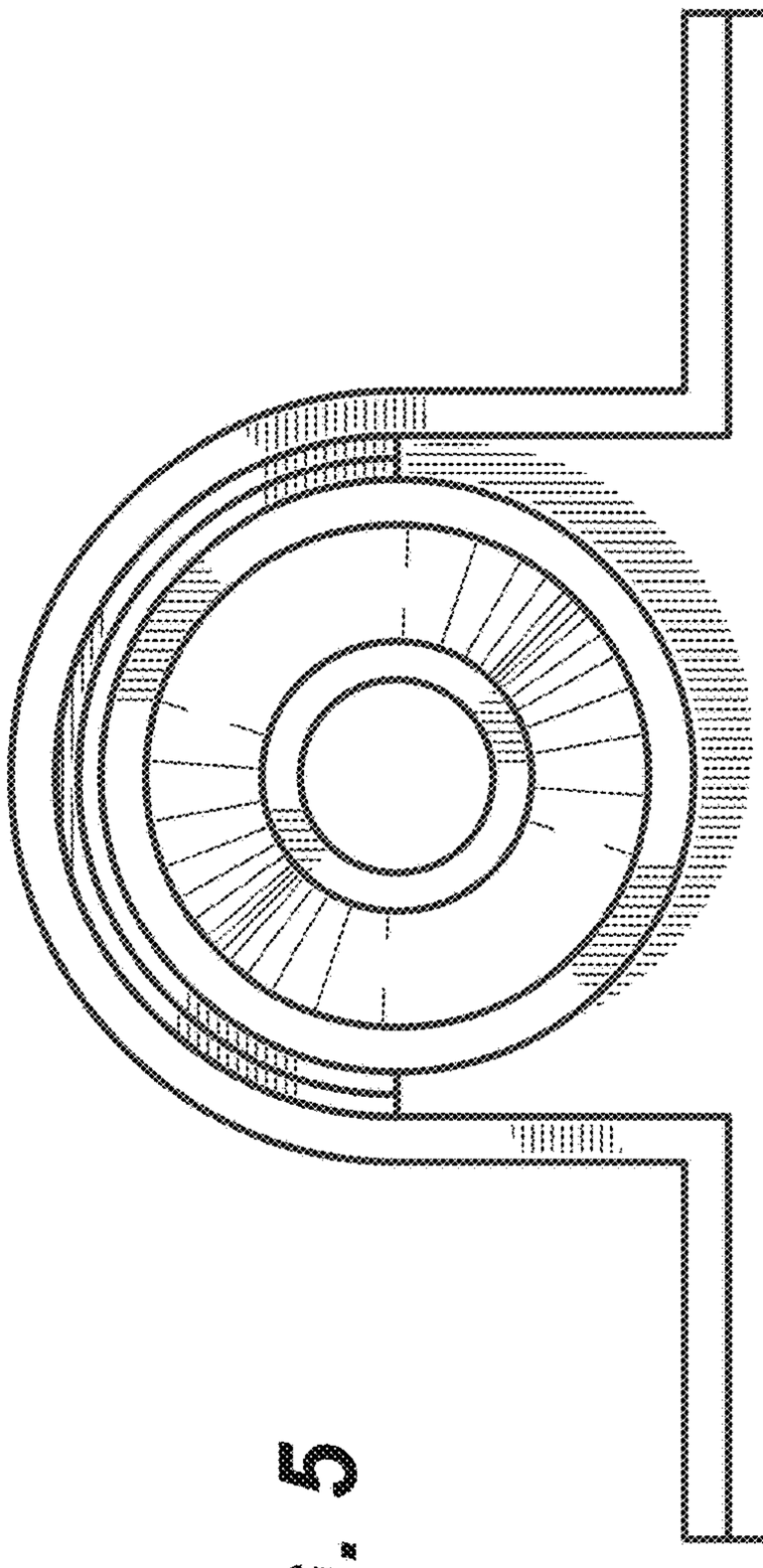


FIG. 5

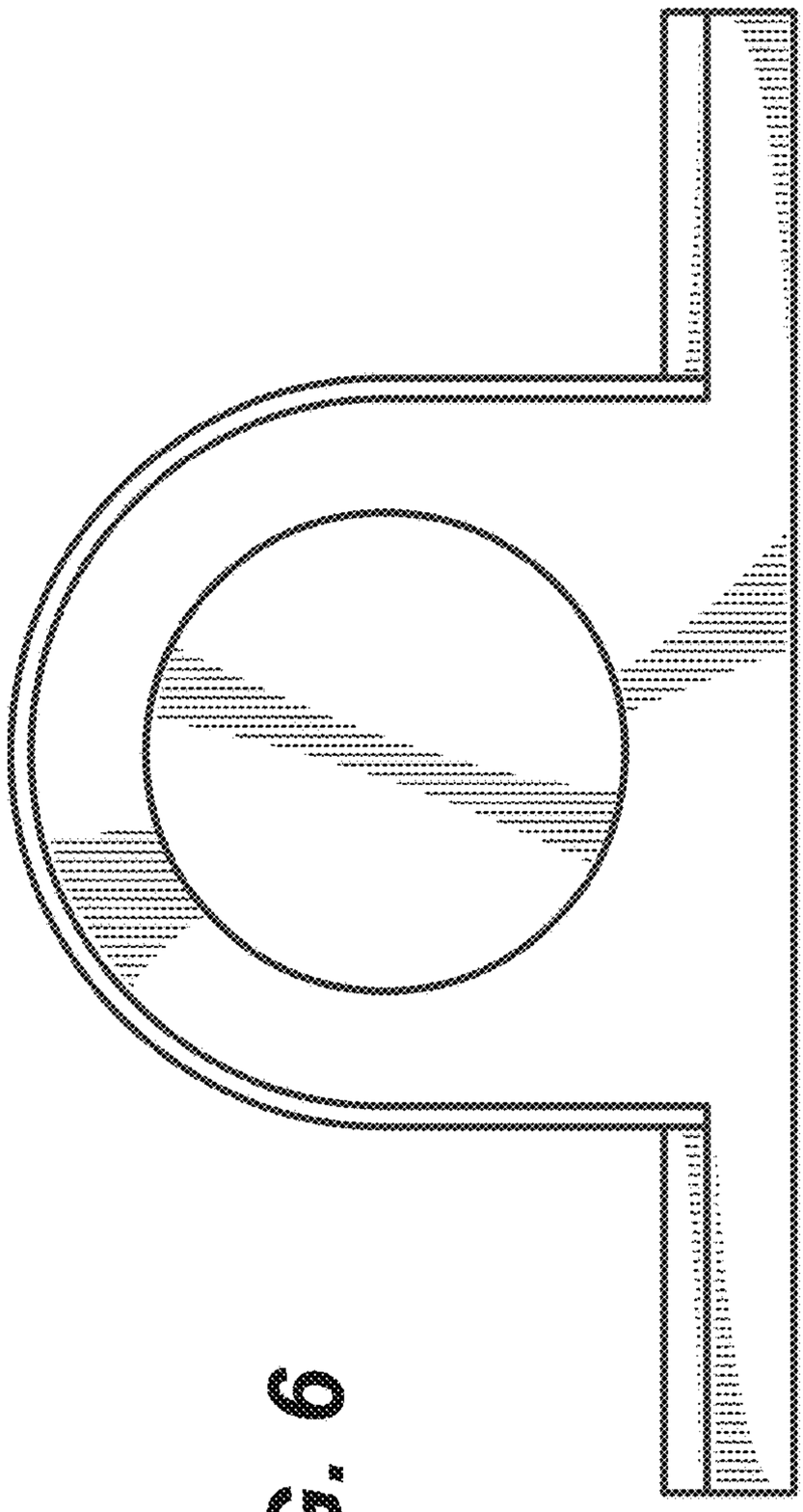


FIG. 6

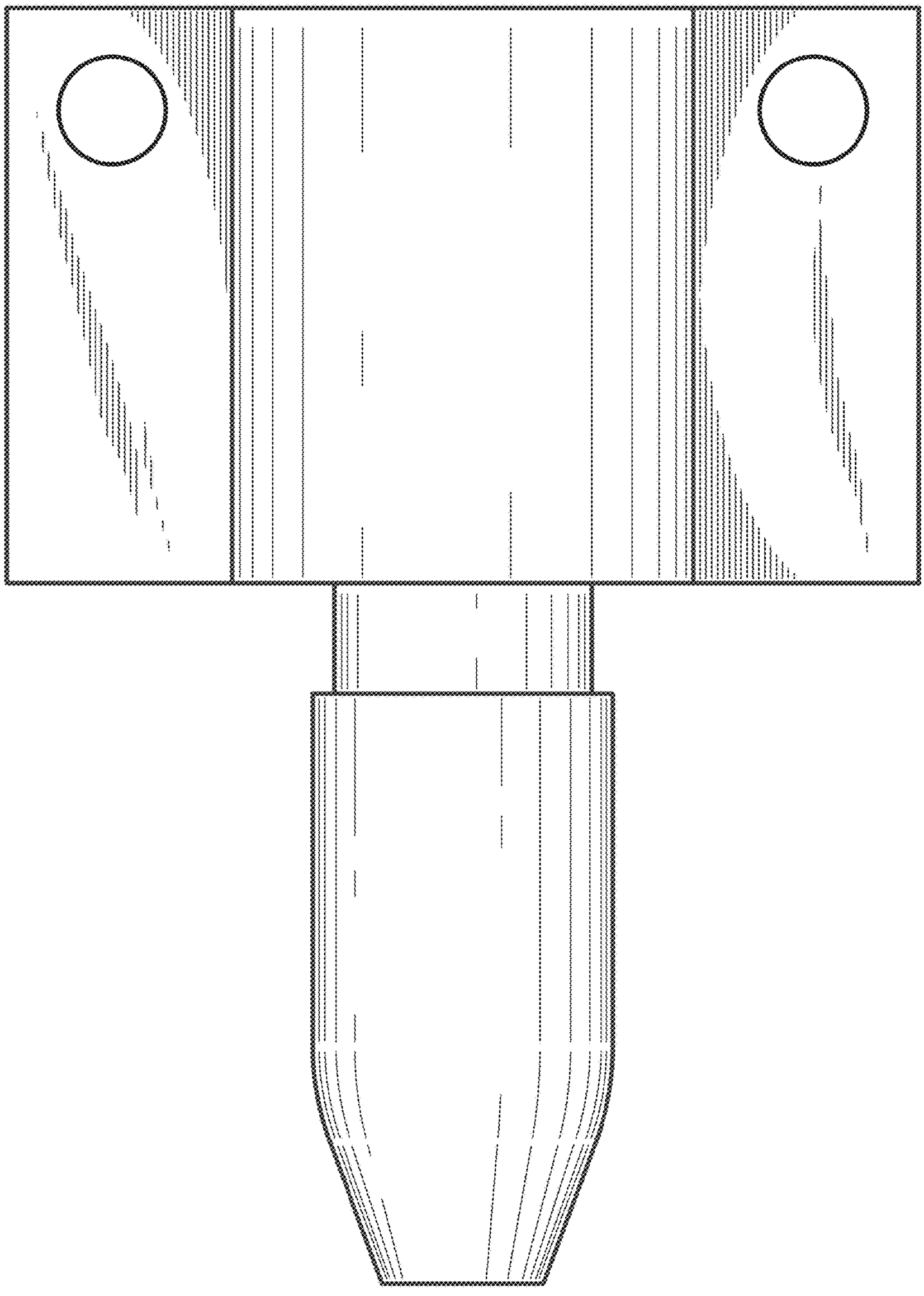


FIG. 7

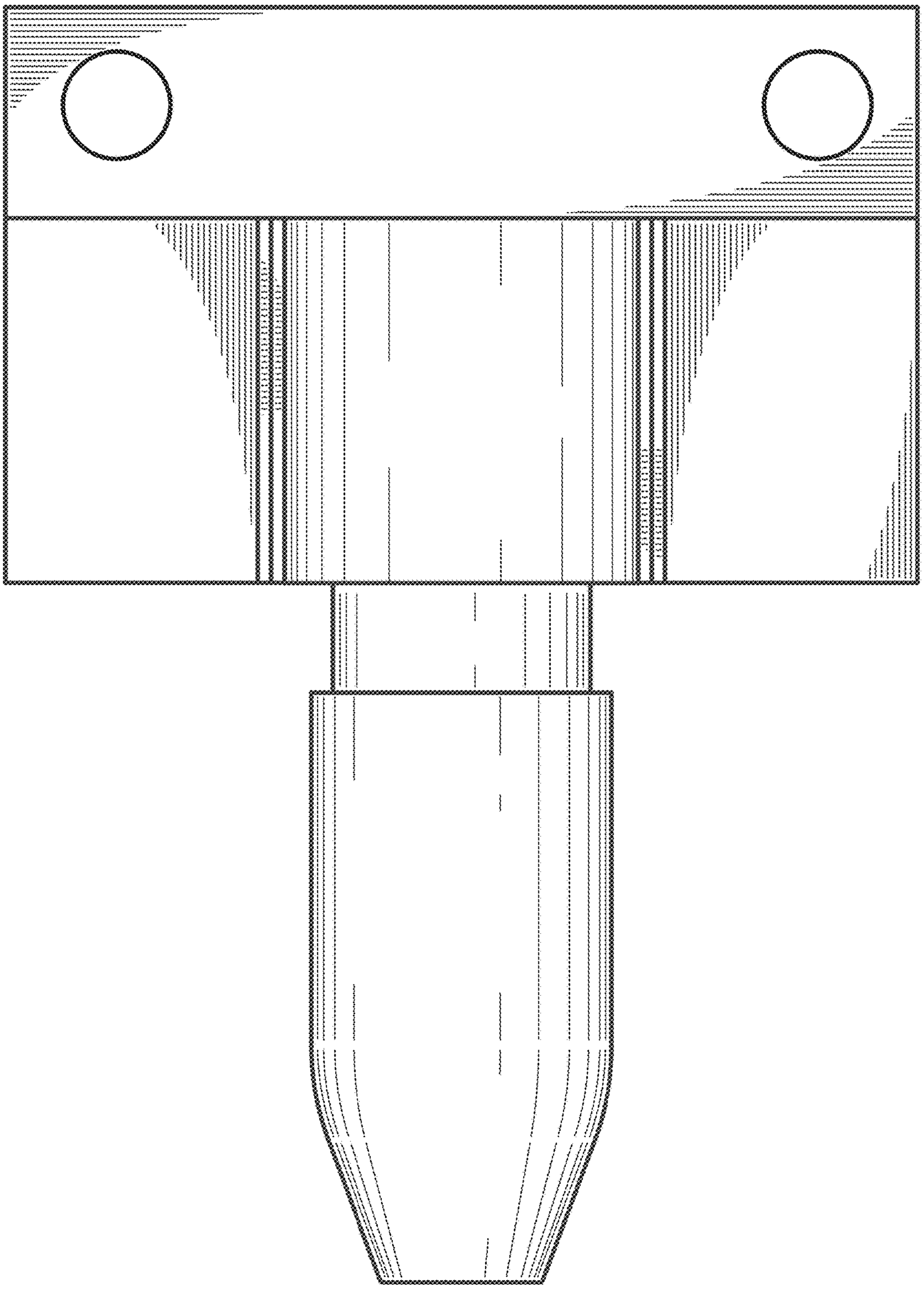


FIG. 8