



US00D770593S

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

(10) **Patent No.:** **US D770,593 S**

(45) **Date of Patent:** **** Nov. 1, 2016**

(54) **PAINT SPRAY GUN**

(71) Applicant: **SATA GmbH & Co. KG**,
Kornwestheim (DE)

(72) Inventors: **Ralf Gehrung**, Stuttgart (DE);
Albrecht Kruse, Stuttgart (DE)

(73) Assignee: **SATA GmbH & Co. KG**,
Kornwestheim (DE)

(**) Term: **14 Years**

(21) Appl. No.: **29/516,082**

(22) Filed: **Jan. 29, 2015**

(30) **Foreign Application Priority Data**

Jul. 31, 2014 (CN) 2014 3 0266803

(51) **LOC (10) Cl.** **23-01**

(52) **U.S. Cl.**
USPC **D23/226**

(58) **Field of Classification Search**
USPC D23/213, 223, 226; 239/526, 690,
239/690.1, 691
CPC B05B 9/01; B05B 15/061; B05B 5/03;
B05B 5/04; B05B 5/043
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

40,433 A 10/1863 Sees
327,260 A 9/1885 Hart

(Continued)

FOREIGN PATENT DOCUMENTS

AT 153883 6/1997
AT 163577 3/1998

(Continued)

OTHER PUBLICATIONS

Printout from Internet www.ehow.com explaining how to choose a spray gun and stating in item 2 "Nozzle sizes vary between about 1 mm and 2 mm.", printed Sep. 7, 2012.

(Continued)

Primary Examiner — Robin V Webster

(74) *Attorney, Agent, or Firm* — Paul D. Bianco; Fleit Gibbons Gutman Bongini & Bianco PL

(57) **CLAIM**

The ornamental design for a paint spray gun, as shown and described.

DESCRIPTION

FIG. 1 is a first perspective view of a first embodiment of a paint spray gun according to the present invention; FIG. 2 is a second perspective view of the paint spray gun of FIG. 1;

FIG. 3 is a back view of the paint spray gun of FIG. 1; FIG. 4 is a front view of the paint spray gun of FIG. 1; FIG. 5 is a first side view of the paint spray gun of FIG. 1; FIG. 6 is a top view of the paint spray gun of FIG. 1; FIG. 7 is a bottom view of the paint spray gun of FIG. 1; FIG. 8 is a second side view of the paint spray gun of FIG. 1;

FIG. 9 is a first perspective view of a second embodiment of a paint spray gun according to the present invention; FIG. 10 is a second perspective view of the paint spray gun of FIG. 9;

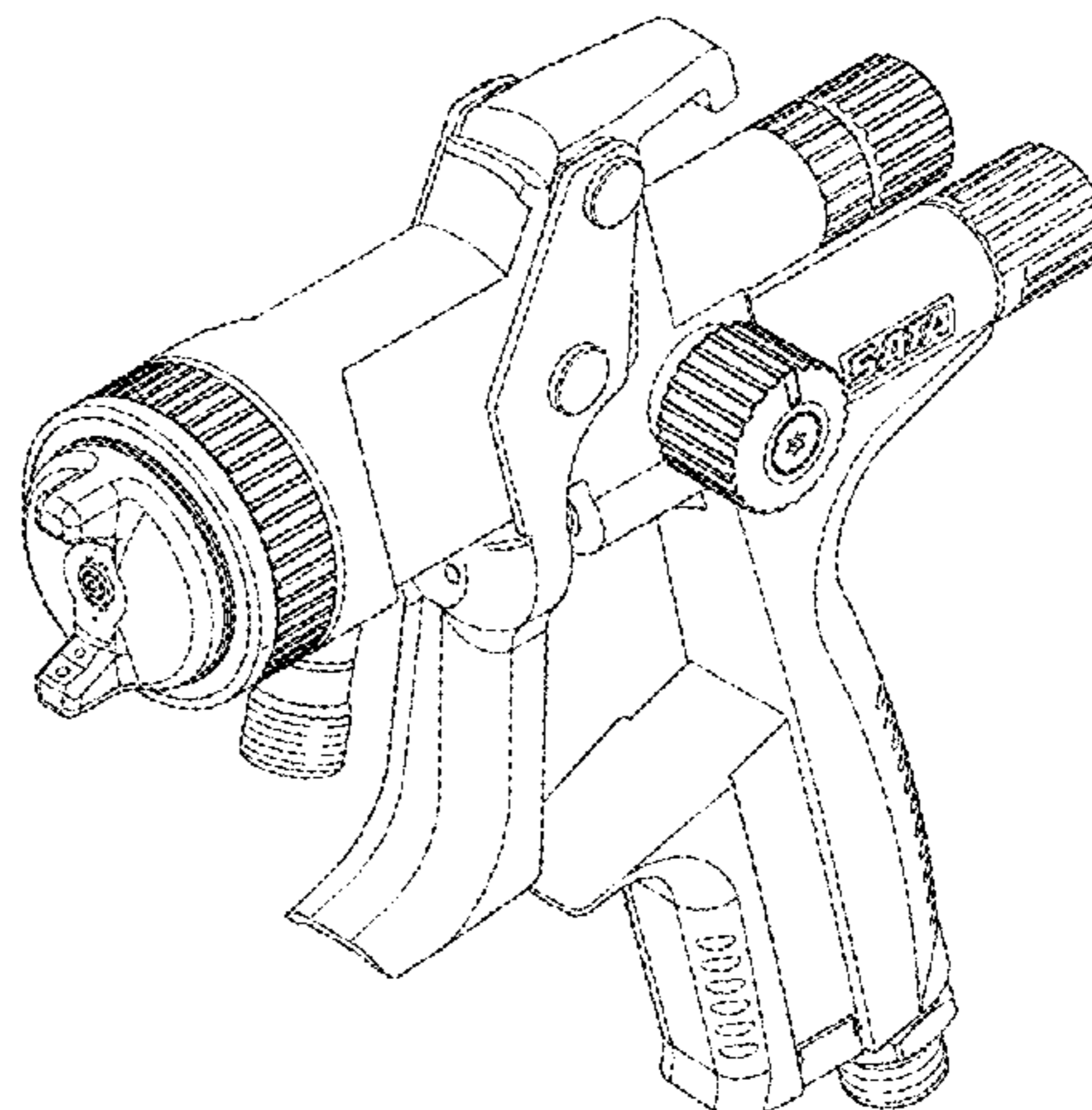
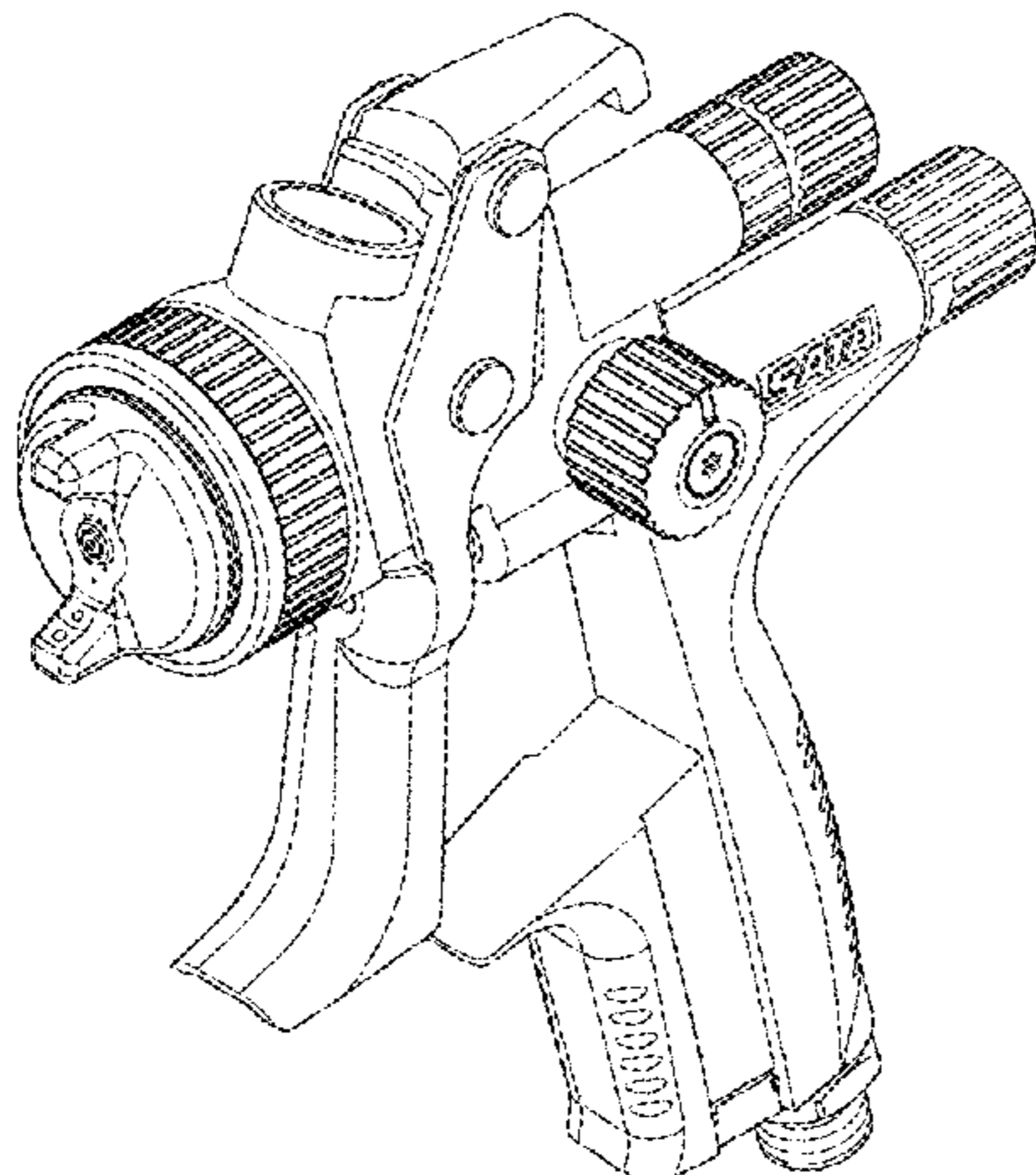
FIG. 11 is a back view of the paint spray gun of FIG. 9; FIG. 12 is a front view of the paint spray gun of FIG. 9; FIG. 13 is a first side view of the paint spray gun of FIG. 9; FIG. 14 is a top view of the paint spray gun of FIG. 9; FIG. 15 is a bottom view of the paint spray gun of FIG. 9; FIG. 16 is a second side view of the paint spray gun of FIG. 9;

FIG. 17 is a first perspective view of a third embodiment of a paint spray gun according to the present invention; FIG. 18 is a second perspective view of the paint spray gun of FIG. 17;

FIG. 19 is a back view of the paint spray gun of FIG. 17; FIG. 20 is a front view of the paint spray gun of FIG. 17; FIG. 21 is a first side view of the paint spray gun of FIG. 17; FIG. 22 is a top view of the paint spray gun of FIG. 17; FIG. 23 is a bottom view of the paint spray gun of FIG. 17; and,

FIG. 24 is a second side view of the paint spray gun of FIG. 17.

1 Claim, 18 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

459,432 A	9/1891	Anderson	D276,472 S	11/1984	Harrison
459,433 A	9/1891	Avery	D278,543 S	4/1985	Gintz
548,816 A	10/1895	Paul	4,545,536 A	10/1985	Avidon
552,213 A	12/1895	Troy	4,562,965 A	1/1986	Ihmels et al.
552,715 A	1/1896	Lugrin	4,580,035 A	4/1986	Luscher
563,505 A	7/1896	McCornack	4,585,168 A	4/1986	Even et al.
581,107 A	4/1897	Emery	4,614,300 A	9/1986	Falcoff
644,803 A	3/1900	Justi	4,643,330 A	2/1987	Kennedy
672,012 A	4/1901	Ruper	4,653,661 A	3/1987	Buchner et al.
574,880 A	5/1901	Schmidt et al.	4,667,878 A	5/1987	Behr
1,662,496 A	3/1928	Forsgard	4,713,257 A	12/1987	Luttermoller
1,703,383 A	2/1929	Birkenmaier	D293,950 S	1/1988	Ogden et al.
1,703,384 A	2/1929	Birkenmaier	4,730,753 A	3/1988	Grime
1,711,221 A	4/1929	Blakeslee	D298,372 S	11/1988	Taylor, Jr.
1,751,787 A	3/1930	Binks	4,784,184 A	11/1988	Gates
1,889,201 A	11/1932	Holveck	4,806,736 A	2/1989	Schirico
2,008,381 A	7/1935	Beeg	4,826,539 A	5/1989	Harpold
2,049,700 A	8/1936	Gustafsson	4,832,232 A	5/1989	Broccoli
2,051,210 A	8/1936	Gustafsson	4,863,781 A	9/1989	Kronzer
2,070,696 A	2/1937	Tracy	4,877,144 A	10/1989	Thanisch
2,116,036 A	5/1938	Money	D305,057 S	12/1989	Morgan
2,125,445 A	8/1938	Holveck	4,887,747 A	12/1989	Ostrowsky et al.
2,198,441 A	4/1940	Mollart	4,901,761 A	2/1990	Taylor
2,204,599 A	6/1940	Jenkins	4,906,151 A	3/1990	Kubis
2,269,057 A	1/1942	Jenkins	4,917,300 A	4/1990	Gloviak et al.
D133,223 S	7/1942	Tammen	4,946,075 A	8/1990	Lundback
2,356,865 A	8/1944	Mason	4,964,361 A	10/1990	Aebersold
2,416,856 A	3/1947	Thomsen	4,967,600 A	11/1990	Keller
2,416,923 A	3/1947	Jenkins	4,969,603 A	11/1990	Norman
2,557,593 A	6/1951	Bjorkman	4,973,184 A	11/1990	La Salle
2,557,606 A	6/1951	Liedberg	D314,421 S	2/1991	Tajima et al.
2,559,091 A	7/1951	Reasenberg	D314,588 S	2/1991	Denham
2,609,961 A	9/1952	Sapient	4,989,787 A	2/1991	Nikkel et al.
2,612,899 A	10/1952	Webb	5,020,700 A	6/1991	Krzywdziak et al.
2,646,314 A	7/1953	Peeps	D318,877 S	8/1991	Miranda et al.
2,721,004 A	10/1955	Schultz	5,042,840 A	8/1991	Rieple et al.
2,844,267 A	7/1958	Petriccione	D321,597 S	11/1991	Cerny
2,886,252 A	5/1959	Ehrensperger	5,064,119 A	11/1991	Mellette
3,090,530 A	5/1963	Peeps	5,071,074 A	12/1991	Lind
3,159,472 A	12/1964	Revell	5,074,334 A	12/1991	Onodera
D200,594 S	3/1965	Sass	5,078,323 A	1/1992	Frank
3,240,398 A	3/1966	Dalton, Jr.	5,080,285 A	1/1992	Toth
D204,306 S	4/1966	Hamm	5,088,648 A	2/1992	Schmon
D205,760 S	9/1966	Hocutt et al.	5,090,623 A	2/1992	Burns et al.
D208,903 S	10/1967	Zadron et al.	5,102,045 A	4/1992	Diana
3,344,992 A	10/1967	Norris	5,119,992 A	6/1992	Grime
3,381,845 A	5/1968	MacDonald	5,125,391 A	6/1992	Srivastava et al.
3,417,650 A	12/1968	Varrin	5,135,124 A	8/1992	Wobser
3,420,106 A	1/1969	Keller et al.	5,143,102 A	9/1992	Blaul
3,435,683 A	4/1969	Keller et al.	5,165,605 A	11/1992	Morita et al.
3,482,781 A	12/1969	Sharpe	5,170,941 A	12/1992	Morita et al.
D217,928 S	6/1970	Felske	5,190,219 A	3/1993	Copp, Jr.
3,524,589 A	8/1970	Pelton, Jr.	5,191,797 A	3/1993	Smith
3,527,372 A	9/1970	Manning	5,228,488 A	7/1993	Fletcher
3,583,632 A	6/1971	Shaffer	5,232,299 A	8/1993	Hiss
3,622,078 A	11/1971	Gronert	5,236,128 A	8/1993	Morita et al.
3,645,562 A	2/1972	Fandetti et al.	5,249,746 A	10/1993	Kaneko et al.
3,656,493 A	4/1972	Black et al.	5,289,974 A	3/1994	Grime et al.
3,714,967 A	2/1973	Zupan et al.	5,322,221 A	6/1994	Anderson
3,746,253 A	7/1973	Walberg	5,325,473 A	6/1994	Monroe et al.
3,747,850 A	7/1973	Hastings et al.	5,332,156 A	7/1994	Wheeler
3,771,539 A	11/1973	De Santis	5,333,506 A	8/1994	Smith et al.
3,840,143 A	10/1974	Davis et al.	5,333,908 A	8/1994	Dorney et al.
3,848,807 A	11/1974	Partida	5,344,078 A	9/1994	Fritz et al.
3,857,511 A	12/1974	Govindan	5,367,148 A	11/1994	Storch et al.
3,870,223 A	3/1975	Wyant	D353,836 S	12/1994	Carvelli et al.
3,873,023 A	3/1975	Moss et al.	5,381,962 A	1/1995	Teague
4,000,915 A	1/1977	Strom	5,435,491 A	7/1995	Sakuma
D245,048 S	7/1977	Pool	5,443,642 A	8/1995	Bienduga
D252,097 S	6/1979	Probst et al.	5,456,414 A	10/1995	Burns et al.
4,160,525 A	7/1979	Wagner	D365,952 S	1/1996	Gagnon et al.
4,210,263 A	7/1980	Bos	5,503,439 A	4/1996	LaJeunesse et al.
4,273,293 A	6/1981	Hastings	5,533,674 A	7/1996	Feyrer et al.
4,411,387 A	10/1983	Stern et al.	5,540,385 A	7/1996	Garlick
4,478,370 A	10/1984	Hastings	5,540,386 A	7/1996	Roman
			5,582,350 A	12/1996	Kosmyna et al.
			5,584,899 A	12/1996	Shorts
			5,588,562 A	12/1996	Sander et al.
			5,592,597 A	1/1997	Kiss

(56)

References Cited

U.S. PATENT DOCUMENTS

5,609,302 A	3/1997	Smith	6,763,964 B1	7/2004	Hurlbut et al.
5,613,637 A	3/1997	Schmon	6,766,763 B2	7/2004	Crum et al.
D380,301 S	7/1997	Kogutt	6,786,345 B2	9/2004	Richards
5,655,714 A	8/1997	Kieffer et al.	6,796,514 B1	9/2004	Schwartz
5,662,444 A	9/1997	Schmidt, Jr.	6,801,211 B2	10/2004	Forsline et al.
5,695,125 A	12/1997	Kumar	6,820,824 B1	11/2004	Joseph et al.
5,704,381 A	1/1998	Millan et al.	6,843,390 B1	1/2005	Bristor
5,718,767 A	2/1998	Crum et al.	6,845,924 B2	1/2005	Schmon
D391,403 S	3/1998	Josephs	6,855,173 B2	2/2005	Ehrnsperger et al.
RE35,769 E	4/1998	Grime et al.	6,863,310 B1	3/2005	Petkovsek
5,762,228 A	6/1998	Morgan et al.	6,863,920 B2	3/2005	Crum et al.
5,803,360 A	9/1998	Spitznagel	6,874,656 B2	4/2005	Rohr et al.
5,816,501 A	10/1998	LoPresti et al.	6,874,664 B1	4/2005	Montgomery
5,836,517 A	11/1998	Burns et al.	6,874,708 B2	4/2005	Reetz, III
D402,820 S	12/1998	Morison et al.	6,877,677 B2	4/2005	Schmon et al.
5,843,515 A	12/1998	Crum et al.	6,929,019 B2	8/2005	Weinmann et al.
5,853,014 A	12/1998	Rosenauer	6,945,429 B2	9/2005	Gosis et al.
D405,503 S	2/1999	Endo	6,955,180 B2	10/2005	Kocherlakota et al.
5,874,680 A	2/1999	Moore	6,962,432 B2	11/2005	Hofeldt
5,884,006 A	3/1999	Frohlich et al.	6,963,331 B1	11/2005	Kobayashi et al.
D409,719 S	5/1999	Kaneko	7,017,838 B2	3/2006	Schmon
5,941,461 A	8/1999	Akin et al.	7,018,154 B2	3/2006	Schmon
5,951,190 A	9/1999	Wilson	D519,687 S	4/2006	Zahav
5,951,296 A	9/1999	Klein	7,036,752 B1	5/2006	Hsiang
5,954,268 A	9/1999	Joshi et al.	7,083,119 B2	8/2006	Bouic et al.
D414,636 S	10/1999	Wiese	7,090,148 B2	8/2006	Petrie et al.
5,979,797 A	11/1999	Castellano	7,097,118 B1	8/2006	Huang
5,992,763 A	11/1999	Smith et al.	D528,192 S	9/2006	Nicholson
6,006,930 A	12/1999	Dreyer et al.	7,106,343 B1	9/2006	Hickman
6,010,082 A	1/2000	Peterson	7,165,732 B2	1/2007	Kosmyna et al.
6,017,394 A	1/2000	Crum et al.	7,172,139 B2	2/2007	Bouic et al.
6,036,109 A	3/2000	DeYoung	7,175,110 B2	2/2007	Vicentini
6,039,218 A	3/2000	Beck	7,182,213 B2	2/2007	King
6,053,429 A	4/2000	Chang	D538,050 S	3/2007	Tardif
6,056,213 A	5/2000	Ruta et al.	D538,493 S	3/2007	Zimmerle et al.
6,089,471 A	7/2000	Scholl	D538,886 S	3/2007	Huang
6,089,607 A	7/2000	Keeney et al.	7,194,829 B2	3/2007	Boire et al.
6,091,053 A	7/2000	Aonuma	D541,053 S	4/2007	Sanders
6,092,740 A	7/2000	Liu	D541,088 S	4/2007	Nesci
6,132,511 A	10/2000	Crum et al.	7,201,336 B2	4/2007	Blette et al.
D435,379 S	12/2000	Nguyen	7,216,813 B2	5/2007	Rogers
6,250,567 B1	6/2001	Lewis et al.	D545,943 S	7/2007	Rodgers et al.
6,276,616 B1	8/2001	Jenkins	7,246,713 B2	7/2007	King
D448,451 S	9/2001	Turnbull et al.	7,249,519 B2	7/2007	Rogers
6,308,991 B1	10/2001	Royer	D548,816 S	8/2007	Schmon
D457,599 S	5/2002	Karwoski et al.	7,255,293 B2	8/2007	Dodd
D459,432 S	6/2002	Schmon	7,264,131 B2	9/2007	Tsutsumi et al.
D459,433 S	6/2002	Schmon	D552,213 S	10/2007	Schmon
6,402,058 B2	6/2002	Kaneko et al.	D552,715 S	10/2007	Schmon
6,402,062 B1	6/2002	Bending et al.	D554,703 S	11/2007	Josephson
6,431,466 B1	8/2002	Kitajima	D563,505 S	3/2008	Schmon
6,435,426 B1	8/2002	Copp, Jr.	7,374,111 B2	5/2008	Joseph et al.
6,442,276 B1	8/2002	Doljack	D571,463 S	6/2008	Chesnin
6,494,387 B1	12/2002	Kaneko	7,384,004 B2	6/2008	Rogers
6,536,684 B1	3/2003	Wei	RE40,433 E	7/2008	Schmon
6,536,687 B1	3/2003	Navis et al.	D573,227 S	7/2008	Mirazita et al.
D472,730 S	4/2003	Sparkowski	D574,926 S	8/2008	Huang
6,540,114 B1	4/2003	Popovich et al.	D575,374 S	8/2008	Huang
6,543,632 B1	4/2003	McIntyre et al.	7,410,106 B2	8/2008	Escoto, Jr. et al.
6,547,884 B1	4/2003	Crum et al.	7,416,140 B2	8/2008	Camilleri et al.
6,553,712 B1	4/2003	Majerowski et al.	7,422,164 B2	9/2008	Matsumoto
6,554,009 B1	4/2003	Beijbom et al.	D579,213 S	10/2008	Aipa
D474,528 S	5/2003	Huang	D581,107 S	11/2008	Schmon
6,585,173 B2	7/2003	Schmon et al.	D581,483 S	11/2008	Bass et al.
6,595,441 B2	7/2003	Petrie et al.	D583,013 S	12/2008	Wang
6,626,382 B1	9/2003	Liu	7,458,612 B1	12/2008	Bennett
6,626,383 B1	9/2003	Campbell	7,533,678 B2	5/2009	Rosa
6,647,997 B2	11/2003	Mohn	7,540,434 B2	6/2009	Gohring et al.
6,661,438 B1	12/2003	Shiraishi et al.	7,542,032 B2	6/2009	Kruse
D485,685 S	1/2004	Zupkofska et al.	7,568,638 B2	8/2009	Gehring
6,675,845 B2	1/2004	Volpenheim et al.	D604,394 S	11/2009	Wang
6,692,118 B2	2/2004	Michele et al.	7,614,571 B2	11/2009	Camilleri et al.
6,712,292 B1	3/2004	Gosis et al.	D607,086 S	12/2009	Kosaka
6,717,584 B2	4/2004	Kulczycka	7,624,869 B2	12/2009	Primer
6,732,751 B2	5/2004	Chiang	D607,972 S	1/2010	Wang
			D608,858 S	1/2010	Baltz et al.
			D614,731 S	4/2010	Wang
			7,694,893 B2	4/2010	Zittel et al.
			7,694,896 B2	4/2010	Turnbull et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

D615,586 S	5/2010	Kudimi	2003/0164408 A1	9/2003	Schmon
D616,022 S	5/2010	Kudimi	2003/0177979 A1	9/2003	Crum et al.
D616,527 S	5/2010	Anderson et al.	2003/0189105 A1	10/2003	Schmon
7,765,876 B1	8/2010	Chen	2003/0209568 A1	11/2003	Douglas et al.
D624,668 S	9/2010	Noppe	2003/0213857 A1	11/2003	Schmon et al.
7,810,744 B2	10/2010	Schmon et al.	2003/0218596 A1	11/2003	Eschler
7,819,341 B2	10/2010	Schmon et al.	2003/0230636 A1	12/2003	Rogers
D627,039 S	11/2010	Yu	2004/0046051 A1	3/2004	Santa Cruz et al.
D627,432 S	11/2010	Escoto et al.	2004/0050432 A1	3/2004	Breda
7,823,806 B2	11/2010	Schmon	2004/0104194 A1	6/2004	Dennison
D629,623 S	12/2010	Lampe	2004/0129738 A1	7/2004	Stukas
7,913,938 B2	3/2011	Cooper	2004/0140373 A1	7/2004	Joseph et al.
7,922,107 B2	4/2011	Fox	2004/0155063 A1	8/2004	Hofeldt
D637,269 S	5/2011	Wang	2004/0177890 A1	9/2004	Weinmann
D638,121 S	5/2011	Villasana	2004/0191406 A1	9/2004	Crum et al.
D639,863 S	6/2011	Langan	2004/0217201 A1	11/2004	Ruda
D641,067 S	7/2011	Wang	2004/0233223 A1	11/2004	Schkolne et al.
D644,716 S	9/2011	Gehrung	2004/0245208 A1	12/2004	Dennison
D644,803 S	9/2011	Schmon	2005/0056613 A1	3/2005	King
D645,094 S	9/2011	Langan	2005/0082249 A1	4/2005	King
8,042,402 B2	10/2011	Brown et al.	2005/0127201 A1	6/2005	Matsumoto
D649,196 S	11/2011	Langan	2005/0145723 A1	7/2005	Blette et al.
8,052,071 B2	11/2011	Kruse	2005/0145724 A1	7/2005	Blette et al.
D655,347 S	3/2012	Gehrung	2005/0178854 A1	8/2005	Dodd
8,127,963 B2	3/2012	Gerson et al.	2005/0220943 A1	10/2005	Abrams et al.
D657,276 S	4/2012	Brose	2005/0248148 A1	11/2005	Schenck et al.
D661,742 S	6/2012	Clark	2005/0252993 A1	11/2005	Rogers
D663,960 S	7/2012	Jeronimo	2005/0252994 A1	11/2005	Rogers
8,225,892 B2	7/2012	Ben-Tzvi	2005/0268949 A1	12/2005	Rosa
8,240,579 B1	8/2012	Bennett	2005/0284963 A1	12/2005	Reedy
8,297,536 B2	10/2012	Ruda	2006/0000927 A1	1/2006	Ruda
D670,085 S	11/2012	Brookman et al.	2006/0007123 A1	1/2006	Wilson et al.
D671,988 S	12/2012	Leipold	2006/0048803 A1	3/2006	Jessup et al.
D672,012 S	12/2012	Brose et al.	2006/0081060 A1	4/2006	Forster
D674,880 S	1/2013	Schmon	2006/0113409 A1	6/2006	Camilleri et al.
8,352,744 B2	1/2013	Kruse	2006/0171771 A1	8/2006	Kruse
D681,162 S	4/2013	Kruse	2006/0192377 A1	8/2006	Bauer et al.
8,444,067 B2	5/2013	Schmon et al.	2006/0196891 A1	9/2006	Gerson et al.
8,454,759 B2	6/2013	Selsvik	2007/0029788 A1	2/2007	Adler
8,481,124 B2	7/2013	Nolte et al.	2007/0055883 A1	3/2007	Kruse
D689,590 S	9/2013	Brose	2007/0131795 A1	6/2007	Abbate et al.
D689,593 S	9/2013	Schmon	2007/0158349 A1	7/2007	Schmon et al.
D690,799 S	10/2013	Maier	2007/0205305 A1	9/2007	Vagedes
D692,530 S	10/2013	Gehrung	2007/0221754 A1	9/2007	Gehrung
D692,532 S	10/2013	Li et al.	2007/0252378 A1	11/2007	Chambers
8,616,434 B2	12/2013	Wilen	2008/0011879 A1	1/2008	Gerson et al.
D698,008 S	1/2014	Schmon et al.	2008/0019789 A1	1/2008	Dunaway et al.
8,626,674 B2	1/2014	Whitehouse	2008/0029619 A1	2/2008	Gohring et al.
8,642,131 B2	2/2014	Nolte et al.	2008/0128533 A1	6/2008	Gehrung
D704,300 S	5/2014	Li et al.	2008/0179763 A1	7/2008	Schmon et al.
8,757,182 B2	6/2014	Schmon	2008/0251977 A1	10/2008	Naruse et al.
8,807,460 B2	8/2014	Charpie et al.	2008/0264892 A1	10/2008	Nozawa
8,857,732 B2	10/2014	Brose	2008/0272213 A1	11/2008	Ting
D720,015 S	12/2014	Kruse	2008/0296410 A1	12/2008	Carey et al.
8,899,501 B2	12/2014	Fox et al.	2009/0014557 A1	1/2009	Schmon et al.
D721,785 S	1/2015	Gehrung	2009/0026290 A1	1/2009	Fox
8,925,836 B2	1/2015	Dettlaff	2009/0045623 A1	2/2009	Schmon
D733,369 S	6/2015	Tschan	2009/0072050 A1	3/2009	Ruda
D733,453 S	7/2015	Tschan	2009/0078789 A1	3/2009	Kruse
D734,571 S	7/2015	Tschan	2009/0078790 A1	3/2009	Camilleri et al.
9,073,068 B2	7/2015	Krayer et al.	2009/0143745 A1	6/2009	Langan et al.
D737,126 S	8/2015	Tschan	2009/0183516 A1	7/2009	Appler et al.
D740,393 S	10/2015	Gehrung	2009/0235864 A1	9/2009	Khoury et al.
D757,216 S	5/2016	Gherung	2009/0266915 A1	10/2009	Fedorov
D758,533 S	6/2016	Dettlaff	2010/0021646 A1	1/2010	Nolte et al.
D758,537 S	6/2016	Gehrung	2010/0059533 A1	3/2010	Unger et al.
2001/0004996 A1	6/2001	Schmon	2010/0084493 A1	4/2010	Troudt
2001/0040192 A1	11/2001	Kaneko et al.	2010/0108783 A1	5/2010	Joseph et al.
2002/0134861 A1	9/2002	Petrie et al.	2010/0126541 A1	5/2010	Schmon
2002/0148501 A1	10/2002	Shieh	2010/0206963 A1	8/2010	Huang
2002/0170978 A1	11/2002	Mohn	2011/0024524 A1	2/2011	Fox
2003/0025000 A1	2/2003	Schmon et al.	2011/0121103 A1	5/2011	Carleton et al.
2003/0066218 A1	4/2003	Schweikert	2011/0125607 A1	5/2011	Wilen
2003/0121476 A1	7/2003	McIntyre et al.	2011/0127767 A1	6/2011	Wicks et al.
2003/0127046 A1	7/2003	Zehner et al.	2011/0168811 A1	7/2011	Fox et al.
			2011/0174901 A1	7/2011	Dettlaff et al.
			2012/0012671 A1	1/2012	Brose et al.
			2012/0097762 A1	4/2012	Gehrung et al.
			2012/0132550 A1	5/2012	Gerson et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2012/0160935 A1 6/2012 Krayner et al.
 2013/0056556 A1 3/2013 Schmon et al.
 2013/0074864 A1 3/2013 Nuzzo et al.
 2013/0266734 A1 10/2013 Nolte et al.
 2013/0320110 A1 12/2013 Brose et al.
 2014/0048627 A1 2/2014 Schmon et al.
 2014/0059905 A1 3/2014 Raming
 2014/0145003 A1 5/2014 Schmon et al.
 2014/0305962 A1 10/2014 Tschan
 2015/0165463 A1 6/2015 Gehrung
 2016/0030960 A1 2/2016 Gehrung

FOREIGN PATENT DOCUMENTS

AT 250467 10/2003
 AT 322645 4/2006
 AT 383910 2/2008
 AT 461752 4/2010
 AT 461753 4/2010
 AT 475488 8/2010
 AU 637187 5/1993
 AU 2002352235 9/2003
 AU 2004315547 8/2005
 AU 2005205899 8/2005
 AU 2011257605 11/2012
 AU 2011361295 5/2013
 CA 521511 2/1956
 CA 2126957 1/1995
 CA 2277096 7/1998
 CA 2445183 10/2002
 CA 2552390 8/2005
 CA 2555607 8/2005
 CA 2690112 5/2009
 CA 2797990 12/2011
 CA 2812684 9/2012
 CA 102917803 2/2013
 CH 203 668 6/1939
 CH 542104 A 9/1973
 CH 676208 12/1990
 CN 1902002 1/2007
 CN 1909970 2/2007
 CN 1909971 2/2007
 CN 1917960 2/2007
 CN 200954482 10/2007
 CN 101125316 2/2008
 CN 100430150 11/2008
 CN 100455360 1/2009
 CN 101367066 2/2009
 CN 100478080 4/2009
 CN 101646500 2/2010
 CN 102211070 4/2011
 CN 102211069 10/2011
 DE 460381 5/1928
 DE 510362 10/1930
 DE 1425890 11/1968
 DE 2559036 9/1976
 DE 2653981 6/1978
 DE 2950341 7/1980
 DE 3016419 11/1981
 DE 8024829.9 9/1982
 DE 34 02 097 8/1985
 DE 3402945 A1 8/1985
 DE 3517122 5/1986
 DE 3505618 8/1986
 DE 3526819 2/1987
 DE 3016419 C2 8/1987
 DE 8702559 10/1987
 DE 3708472 A1 10/1988
 DE 8902223 5/1989
 DE 3742308 6/1989
 DE 8905681 11/1989
 DE G 90 01 265 5/1990
 DE 3906219 8/1990
 DE 4302911 8/1993
 DE 4230535 3/1994

DE 4321940 1/1995
 DE 19516485 11/1996
 DE 19727884 2/1999
 DE 69505433 T2 4/1999
 DE 19807973 7/1999
 DE 19824264 12/1999
 DE 19832990 1/2000
 DE 20000483 8/2000
 DE 10004105 10/2000
 DE 19958569 2/2001
 DE 199 41 362 3/2001
 DE 199 45 760 3/2001
 DE 19945760 3/2001
 DE 10031857 1/2002
 DE 10031858 1/2002
 DE 20114257 2/2002
 DE 10059406 6/2002
 DE 10135104 9/2002
 DE 102 05 831 8/2003
 DE 03069208 A1 8/2003
 DE 10205831 8/2003
 DE 10311238 10/2004
 DE 10 2004 027 789 2/2005
 DE 10 2004 027789 2/2005
 DE 29825120 2/2005
 DE 2004027789 A1 2/2005
 DE 20320781 6/2005
 DE 10 2004 014 646 7/2005
 DE 10 2004 003 438 8/2005
 DE 102004003439 8/2005
 DE 10 2004 007 733 9/2005
 DE 10 2004 021 298 11/2005
 DE 69535077 T2 11/2006
 DE 202007001031 3/2007
 DE 60200500 1173 8/2007
 DE 60206956 T2 8/2008
 DE 102007006547 8/2008
 DE 102007039106 2/2009
 DE 102007052067 5/2009
 DE 202010012449 12/2010
 DE 102009053449 2/2011
 DE 102010060086 4/2012
 DE 102011106060 1/2013
 DE 102011118120 5/2013
 EP 0092392 10/1983
 EP 524408 1/1993
 EP 567325 10/1993
 EP 0631821 1/1995
 EP 650766 5/1995
 EP 678334 10/1995
 EP 0706832 4/1996
 EP 0710506 5/1996
 EP 801002 10/1997
 EP 987060 3/2000
 EP 1081639 3/2001
 EP 1106262 6/2001
 EP 1247586 10/2002
 EP 1277519 1/2003
 EP 1294490 3/2003
 EP 1299194 4/2003
 EP 1366823 12/2003
 EP 1412669 4/2004
 EP 1424135 6/2004
 EP 1477232 A1 11/2004
 EP 1479447 A1 11/2004
 EP 1504823 A1 2/2005
 EP 1563913 8/2005
 EP 1574262 9/2005
 EP 1602412 12/2005
 EP 1708822 10/2006
 EP 1708823 10/2006
 EP 1718415 11/2006
 EP 1880771 A1 1/2008
 EP 1902766 A1 3/2008
 EP 1902786 3/2008
 EP 1902876 3/2008
 EP 1930084 6/2008
 EP 1964616 9/2008
 EP 1964616 A2 9/2008

(56)

References Cited

FOREIGN PATENT DOCUMENTS

EP	2027931	2/2009
EP	2106298	10/2009
EP	2111920	10/2009
EP	2490819	8/2012
EP	2576079	4/2013
EP	2608890	7/2013
FR	398333	6/1909
FR	789762	11/1935
FR	1410519	9/1964
FR	2444501	7/1980
FR	2462200 A1	2/1981
FR	2 570 140	3/1986
FR	2 774 928	8/1999
FR	2927824 A1	8/2009
GB	190900523	6/1909
GB	2 132 916	7/1984
GB	2153260	8/1985
GB	2372465	8/2002
GB	2411235	8/2005
HK	1100405	6/2009
HK	1096057	7/2009
HK	1125067	8/2012
HK	1138533	11/2012
JP	S5654328	5/1981
JP	S57-75246	5/1982
JP	58-119862	5/1983
JP	S5998757	6/1984
JP	S601722	1/1985
JP	H01-87805	6/1989
JP	H0530749	4/1993
JP	H05172678	7/1993
JP	674850	3/1994
JP	H06215741	8/1994
JP	H08196950	8/1996
JP	H09117697	5/1997
JP	2001259487	9/2001
JP	2003042882	2/2002
JP	2003088780	3/2003
JP	2004017044	1/2004
JP	2005138885	6/2005
JP	2007516831	6/2007
TW	491092	6/2002
TW	1220392	8/2004
TW	1303587	12/2008
TW	1309584	5/2009
WO	90/08456	8/1990
WO	91/16610	10/1991
WO	92/07346	4/1992
WO	9522409	8/1995
WO	98/32539	7/1998
WO	01/12337	2/2001
WO	0166261	9/2001
WO	01/99062	12/2001
WO	02/00355	1/2002
WO	0202242	1/2002
WO	02/18061	3/2002
WO	02/085533	10/2002
WO	03/007252	1/2003
WO	03/045575	6/2003
WO	03/069208	8/2003
WO	2004/037433	5/2004
WO	2004/052552	6/2004
WO	2005/018815	3/2005
WO	2005/068220	7/2005
WO	2005/070557	8/2005
WO	2005/070558	8/2005
WO	2005/077543	8/2005
WO	2005/115631	12/2005
WO	2006065850	6/2006
WO	2007/128127	11/2007
WO	2007133386 A2	11/2007
WO	2007/149760 A2	12/2007
WO	2009015260	1/2009
WO	2009056424	5/2009
WO	2011047876	4/2011

WO	2011147555	12/2011
WO	2012119664	9/2012
WO	2013000524	1/2013
WO	2013016474	1/2013

OTHER PUBLICATIONS

Printout from Internet www.bodyshopbusiness.com explaining how to choose nozzle setup in paragraph bridging pp. 1 and 2, giving general rule of thumb of nozzle sizes from 1.3 mm to 2.2 mm, depending on material being sprayed, printed Sep. 7, 2012.

Printout from Internet of pages from brochure of Walther Pilot showing nozzle sizes for spray guns ranging from 0.3 mm to 2.5 mm, dated 2007.

Printout from Internet www.alsacorp.com showing in the paragraph bridging pp. 2 and 3, Model VS-7200 Saber LVLP spray gun with nozzle size 1.3 mm with sizes 1.3 to 2.0 available, printed Aug. 26, 2012.

Printout from Internet of p. 28 from current 3Mtm brochure showing Tip/Nozzle/Air Cap Selection Guide with nozzle sizes from 0.5 mm to 3.0 mm.

Decision by EPO regarding opposition proceedings to revoke patent No. 99926841.0-2425/ 1108476, corresponding to '387 patent, 2012.

SATA News Publication Dan-Am Jul.- Sep. 1996.

SATA News Publication Dan-Am Oct.-Dec. 1996.

SATA News Publication Dan-Am Apr.-Jun. 1998.

Dan-Am SATA Catalog 6 for spray guns 1991.

Dan-Am SATA Catalog 8 for spray guns 1994.

Dan-Am Catalog 6—51pp published 1991.

Japanese Industrial Standards B 9809 English translation, 1992.

Japanese Industrial Standards B 9809 revised Mar. 1, 1991.

SATA News, vol. 21, 2009.

Collision Hub TV Document (image from video clip) printed Oct. 9, 2013.

MyRielsMe.com document from press release printed Oct. 9, 2013.

How to set Air pressure, Utube screenshot printed Oct. 9, 2013.

Ohio EPA Lefty to Tony Larimer, response to letter dated Aug. 2006.

Pinahs Ben-Tzvi et al, A conceptual design . . . , Mechatronics 17 (2007) p. 1-13.

On line ad from Amazon.com printed Oct. 14, 2013.

Rone et al, MEMS-Baed Microdroplet Generation with Integrated Sensing, COMSOL, 2011.

Office Action dated Dec. 31, 2015 for U.S. Appl. No. 14/572,998.

Notice of Allowance dated Jan. 19, 2016 for Design U.S. Appl. No. 29/539,615.

Notice of Allowance dated Jan. 22, 2016 for U.S. Appl. No. 13/991,285.

Notice of Allowance dated Jan. 27, 2016 for Design U.S. Appl. No. 29/510,723.

Response filed Dec. 21, 2015 to Office Action dated Jul. 20, 2015 for U.S. Appl. No. 14/113,649.

International Search Report (dated Jun. 20, 2008), Written Opinion (dated Jun. 20, 2008), and International Preliminary Report on Patentability (dated Sep. 14, 2010) from PCT/US2008/03318 filed Mar. 12, 2008.

Response filed Dec. 7, 2015 to Office Action dated Aug. 7, 2015 for U.S. Appl. No. 13/991,285.

International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2004/005381 file May 19, 2004.

International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2004/011998 filed Oct. 23, 2004.

International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2005/000435 filed Jan. 18, 2005.

International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2005/00437 filed Jan. 18, 2005.

(56)

References Cited

OTHER PUBLICATIONS

- International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2008/063344, filed Oct. 6, 2008.
- International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2010/002392 filed Apr. 20, 2010.
- International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2011/002544 filed May 21, 2011.
- International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2011/066665 filed Sep. 26, 2011.
- International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2010/003399 filed Jun. 7, 2010.
- International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2011/5842 filed Dec 2, 2010.
- International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2012/01939 filed May 5, 2012.
- International Search Report, Written Opinion and International Preliminary Report on Patentability for PCT/EP2009/06992 filed Sep. 29, 2009.
- Internet Archive Wayback Machine [online] [captured Sep. 25, 2012] [retrieved on Sep. 8, 2014] retrieved from the Internet URL: http://web.archive.org/web/20120925210554/http://www.sata.com/index.php?id=sal-check&no_cache=1&L=11.
- JP Office Action issued against JP Patent App. 2012-508926 on Feb. 25, 2014 with English translation.
- Canadian Office Action dated Nov. 21, 2012 for related application CA2741703.
- Chinese Search Report dated Dec. 5, 2012 for related application CN200980135429.9.
- Chinese Office Action dated Dec. 13, 2012 for related application CN200980135429.9.
- German Search Report for DE 20 2008 014 389.6 completed Jul. 13, 2009.
- Office Action dated Nov. 18, 2014 for U.S. Appl. No. 14/113,649.
- Notice of Allowance dated Nov. 19, 2014 for U.S. Appl. No. 29/486,223.
- Office Action dated Dec. 31, 2014 for U.S. Appl. No. 13/380,949.
- Restriction Requirement dated Jan. 9, 2015 for Design U.S. Appl. No. 29/469,049.
- Response to Office Action filed Dec. 2, 2014 for U.S. Appl. No. 29/487,679.
- Notice of Allowance dated Jan. 15, 2015 for Design U.S. Appl. No. 29/490,620.
- Office Action dated Jan. 14, 2015 for Design U.S. Appl. No. 29/447,887.
- Hercules Paint Gun Washers brochure publish date Jan. 2012, [online], [site visited Jan. 7, 2015], <http://www.herkules.us/pdfs/L00761-Hercules-Gun_Washers-4-page-brochure.pdf>.
- Jetclean GUn Cleaner Terry's Auto Supply, google publish date Aug. 4, 2011, [online], [site visited Jan. 7, 2015], <<http://secure.terrys.net/viewProduct.php?productID=FT.FHAZ1005>>.
- Restriction Requirement dated Feb. 6, 2015 for Design U.S. Appl. No. 29/486,232.
- Office Action dated Mar. 30, 2015 for U.S. Appl. No. 13/698,417.
- Response to Office Action filed Apr. 14, 2015 to Office Action dated Jan. 14, 2015 for U.S. Appl. No. 29/447,887.
- Response filed Jul. 20, 2015 for Office Action dated Mar. 30, 2015 for U.S. Appl. No. 13/698,417.
- Notice of Allowance dated Apr. 30, 2015 for U.S. Appl. No. 29/447,887.
- Chinese Office Action dated Oct. 28, 2014 and Search Report dated Oct. 15, 2014 for Chinese Application No. 2011800266029.
- Australian Examination Report dated Oct. 30, 2012 for Australian Application No. 2010268870.
- Notice of Allowance dated Apr. 24, 2015 for Design U.S. Appl. No. 29/486,232.
- Restriction Requirement dated Jan. 22, 2015 for U.S. Appl. No. 13/698,417.
- Response filed Mar. 23, 2015 to Restriction Requirement dated Jan. 22, 2015 for U.S. Appl. No. 13/698,417.
- Response filed Apr. 6, 2015 to Office Action dated Feb. 6, 2015 for Design U.S. Appl. No. 29/486,232.
- Response filed Mar. 31, 2015 to Office Action dated Dec. 31, 2014 for U.S. Appl. No. 13/380,949.
- Japanese Office Action dated Jun. 11, 2014 for Japanese Patent Application No. 2012-518769.
- Australian Examination Report dated Nov. 11, 2014 for Australian patent Application No. 2011257605.
- Japanese Notice of Allowance mailed Jan. 13, 2015 for Japanese Patent Application No. 2012/518769.
- Application filed Dec. 11, 2011 for U.S. Appl. No. 13/380,949.
- Chinese Office Action dated Jan. 28, 2014 and Search Report dated Jan. 21, 2014 for Chinese Application No. 201080030935.4.
- Search Report dated Apr. 24, 2010 for German Application No. 10 2009 032 399.6-51.
- Application filed Oct. 24, 2013 for U.S. Appl. No. 14/113,649.
- Response filed May 18, 2015 to Office Action dated Nov. 18, 2014 for U.S. Appl. No. 14/113,649.
- Application filed Dec. 17, 2014 for U.S. Appl. No. 14/572,998.
- German Search Report dated Mar. 25, 2014 for German Application No. 202013105779-7.
- Application filed Nov. 16, 2012 for U.S. Appl. No. 13/698,417.
- Application filed Jun. 2, 2013 for U.S. Appl. No. 13/991,285.
- English translation of application filed Aug. 13, 2013 for Application filed Jun. 2, 2013 for U.S. Appl. No. 13/991,285.
- Restriction Requirement dated May 27, 2015 for U.S. Appl. No. 13/991,285.
- Application filed Jan. 29, 2015 for Design U.S. Appl. No. 29/516,073.
- Final Office Action dated Jul. 20, 2015 for U.S. Appl. No. 14/113,649.
- Application filed Mar. 3, 2015, 2015 for Design U.S. Appl. No. 29/519,198.
- Response to Restriction Requirement filed Jul. 27, 2015 to Restriction Requirement dated May 27, 2015 for U.S. Appl. No. 13/991,285.
- Application filed Jul. 31, 2015 for U.S. Appl. No. 14/815,210.
- Final Office Action dated Aug. 4, 2015 for U.S. Appl. No. 13/380,949.
- Notice of Allowance dated Aug. 3, 2015 for U.S. Appl. No. 29/486,232.
- Response filed Oct. 6, 2015 to Notice of Non-Compliant Amendment for U.S. Appl. No. 13/698,417.
- Notice of Non-Compliant Amendment dated Aug. 10, 2015 for U.S. Appl. No. 13/698,417.
- Final Office Action dated Oct. 16, 2015 for U.S. Appl. No. 13/698,417.
- Extended European Search Report dated Apr. 17, 2015 for European Application No. 14004167.4.
- Office Action dated Aug. 7, 2015 for U.S. Appl. No. 13/991,285.
- Notice of Allowance dated Apr. 18, 2016 for U.S. Appl. No. 14/572,998.
- Response filed Apr. 27, 2016 to Office Action dated Jan. 29, 2016 for U.S. Appl. No. 13/380,949.
- German Search Report dated Apr. 12, 2016 for related German Application No. 10 2015 008 735.5.
- Office Action dated Feb. 19, 2016 for U.S. Appl. No. 14/113,649.
- Final Office Action dated Feb. 25, 2016 for U.S. Appl. No. 13/698,417.
- Response filed Mar. 31, 2016 to Office Action dated Dec. 31, 2016 for U.S. Appl. No. 14/572,998.
- Response to Office Action filed Feb. 16, 2016 for U.S. Appl. No. 13/698,417.
- Screen shot of a SATA product (SATAjet B) description retrieved on Feb. 12, 2016 from www.sata.com/index.php.
- "The Hot Rolling Process;" California Steel; retrieved on Feb. 12, 2016 from <http://www.californiasteel.com/GetPublicFile.aspx?id=53>.

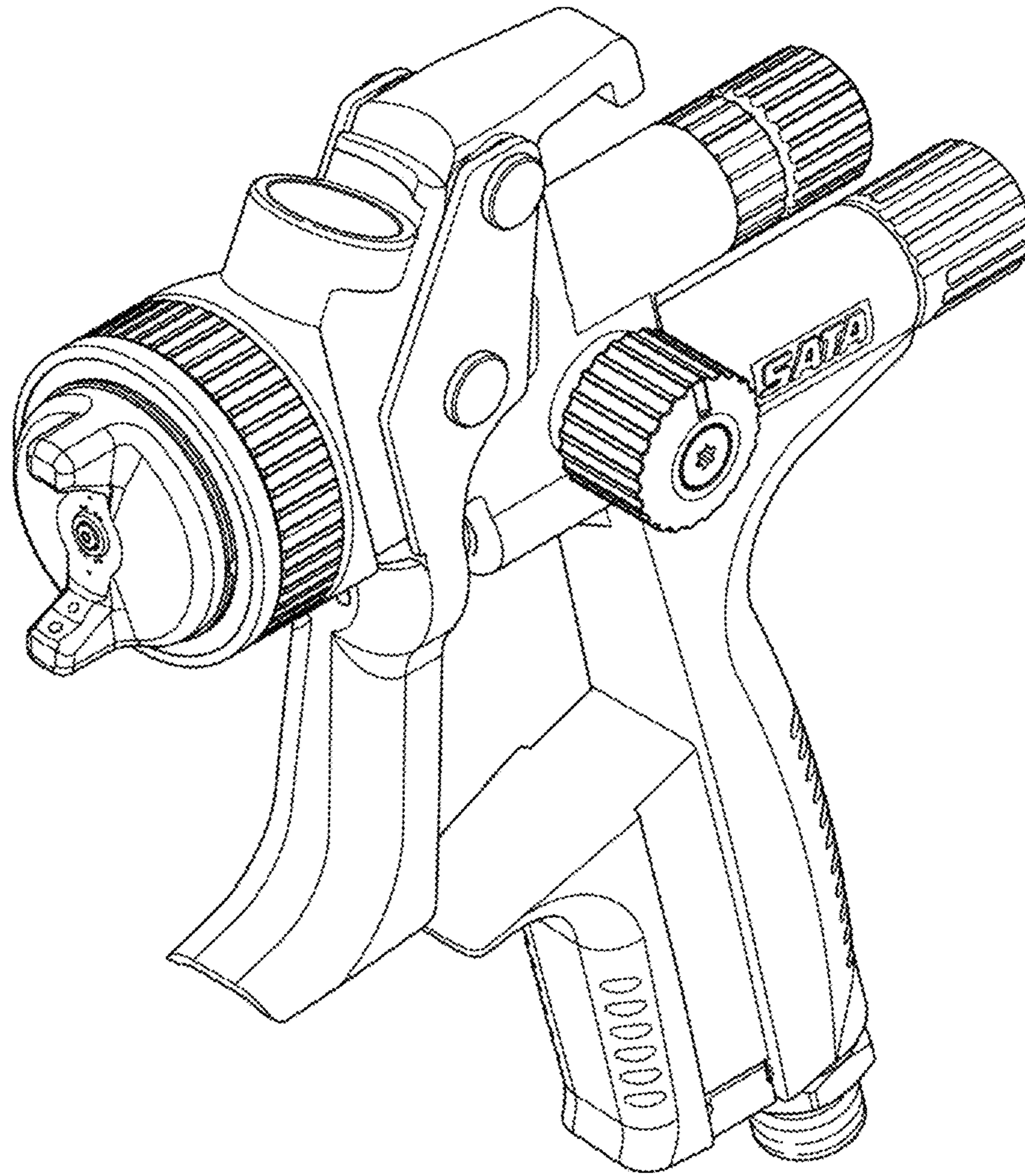


FIG. 1

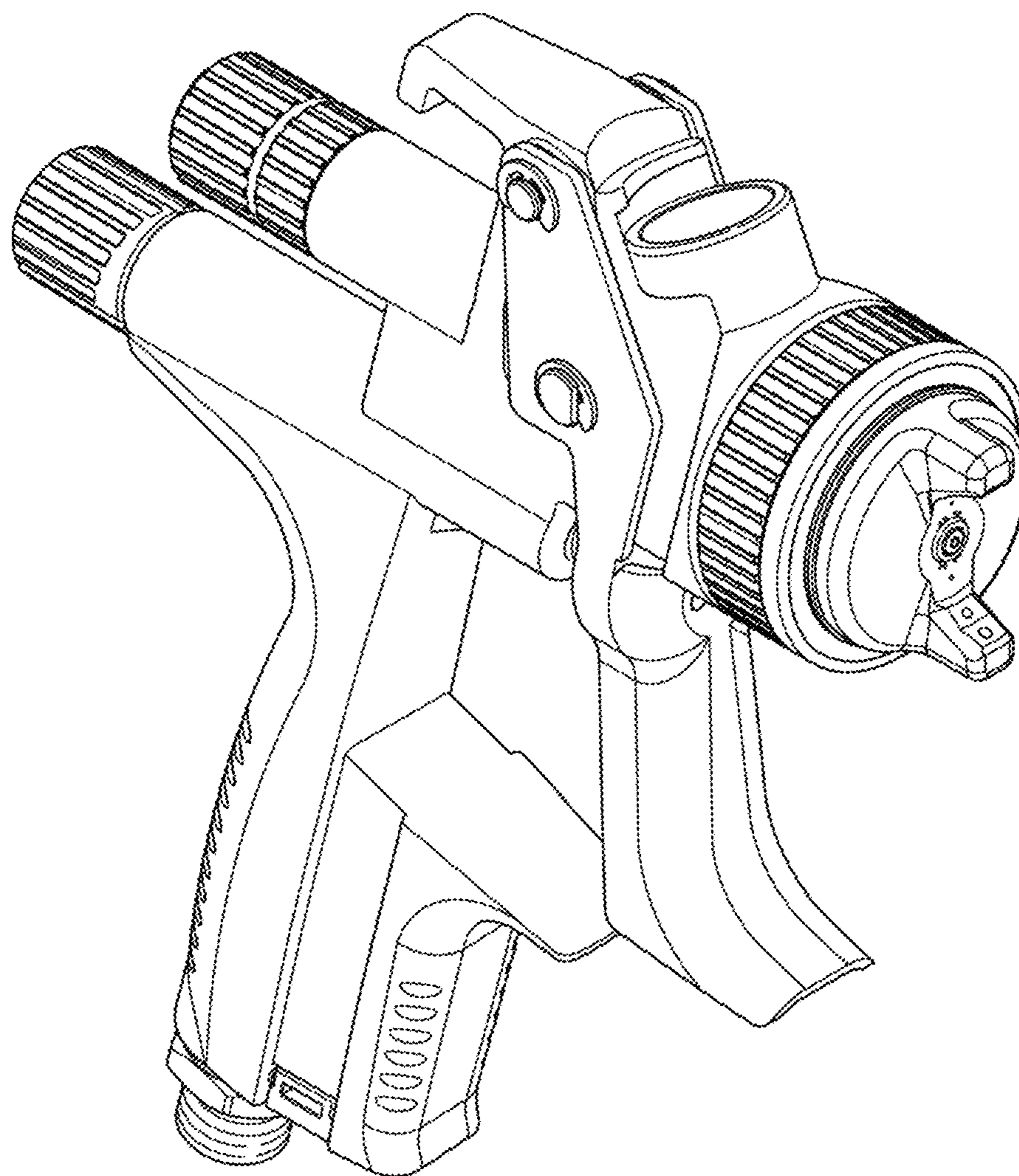


FIG. 2

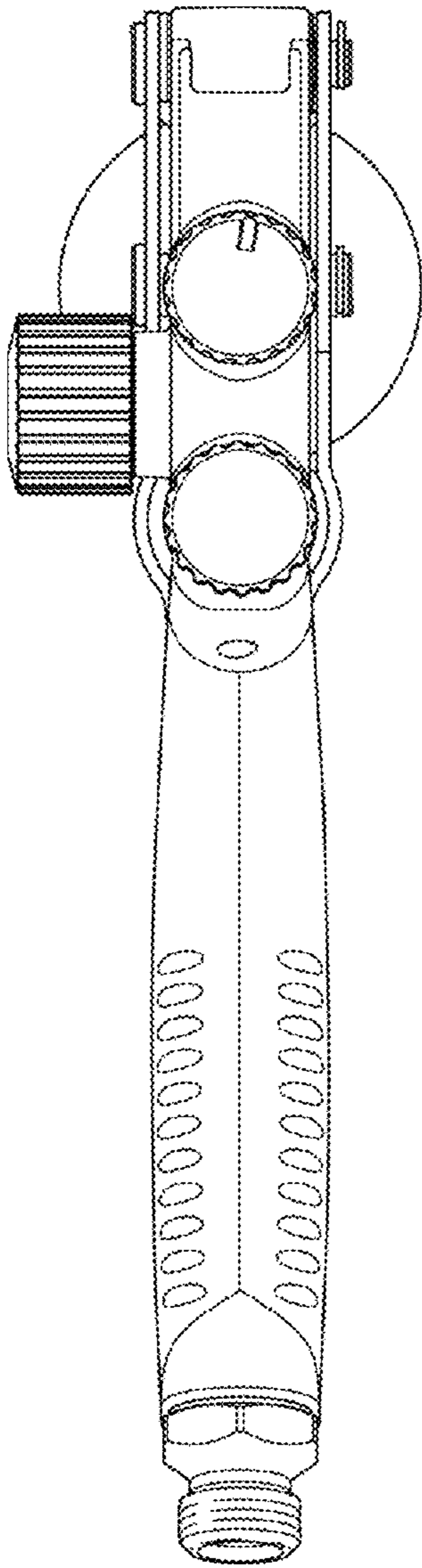


FIG. 3

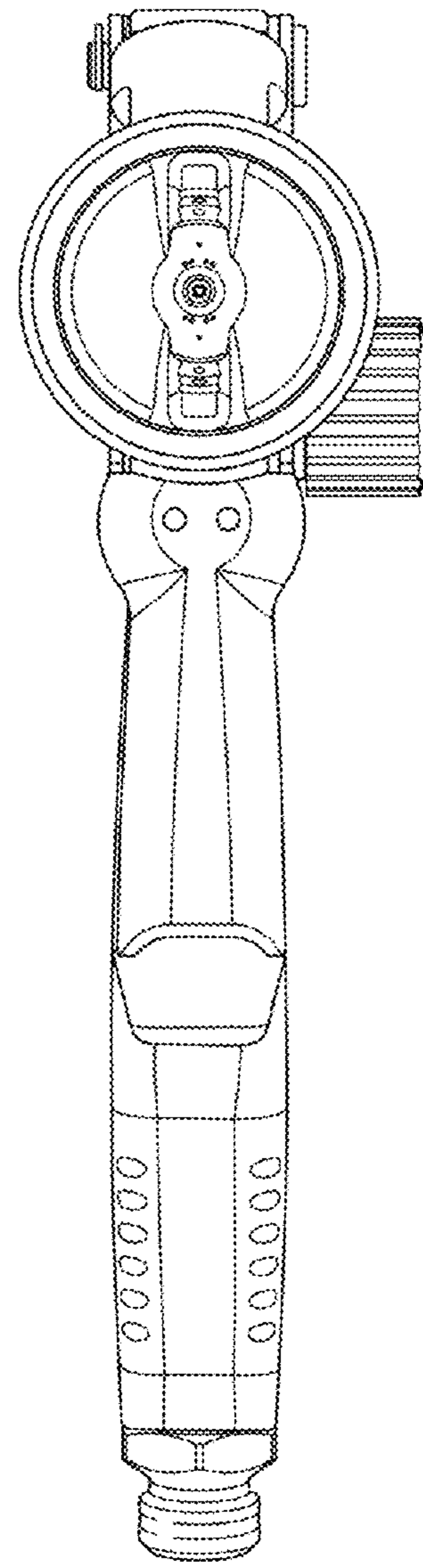


FIG. 4

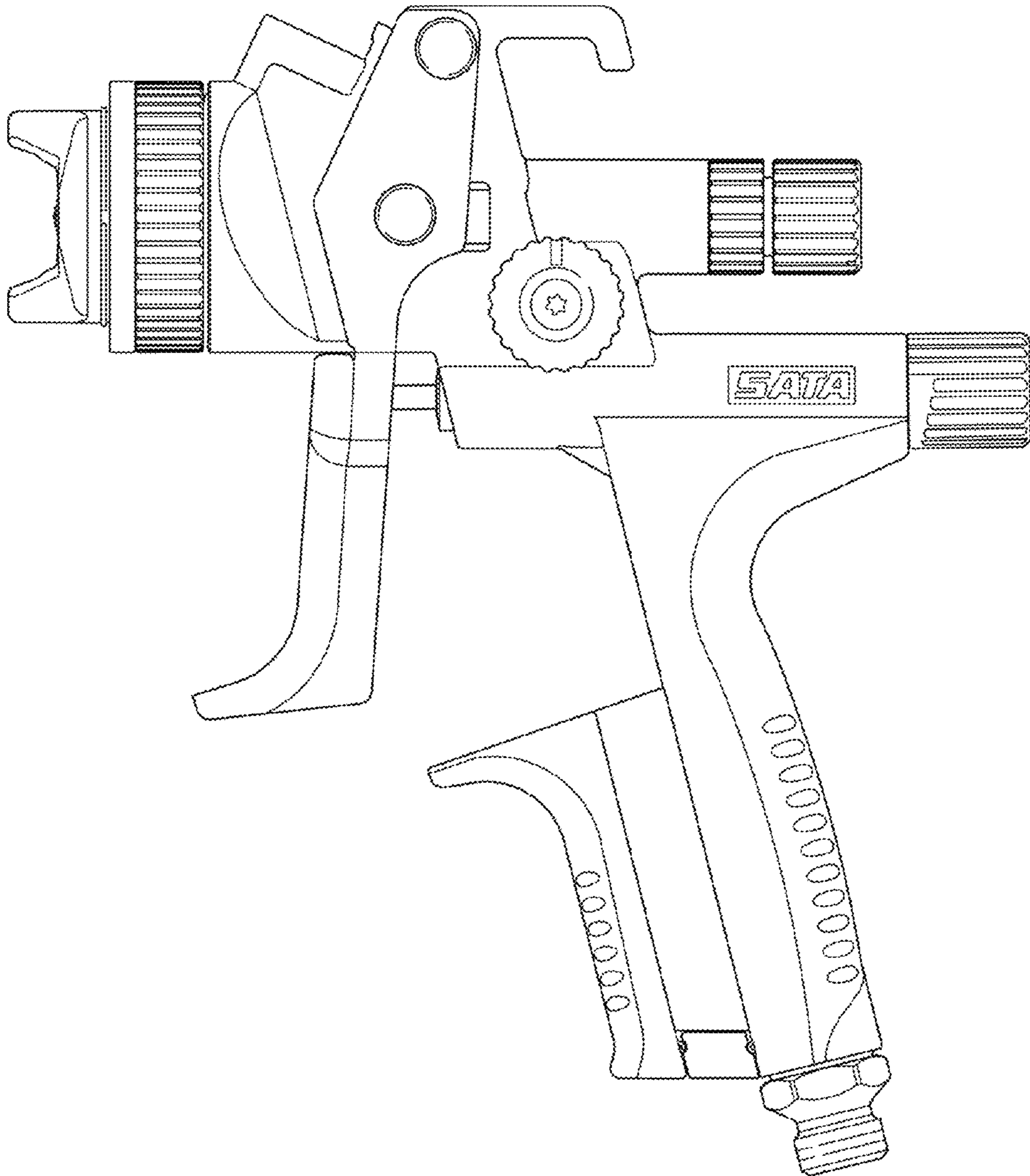


FIG. 5

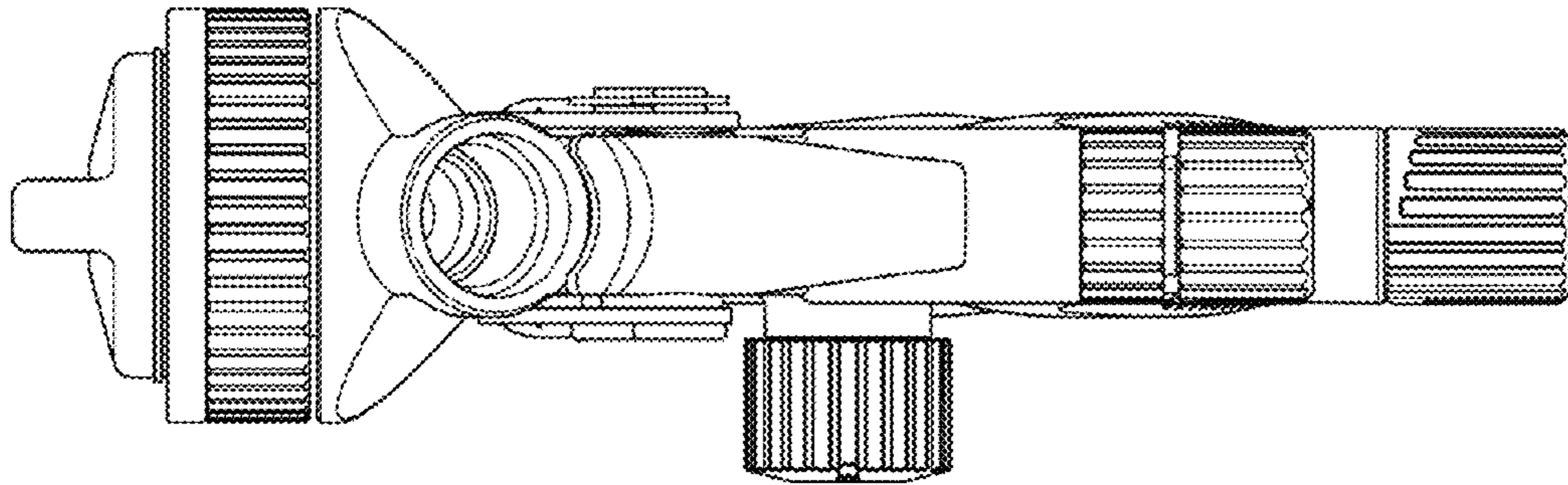


FIG. 6

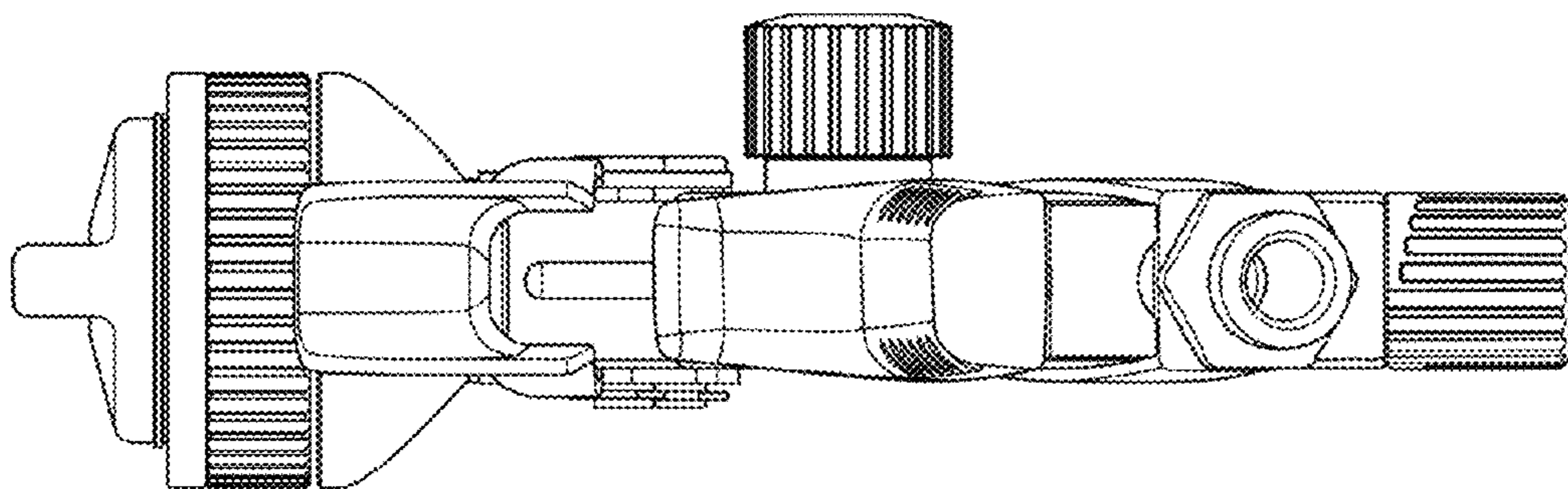


FIG. 7

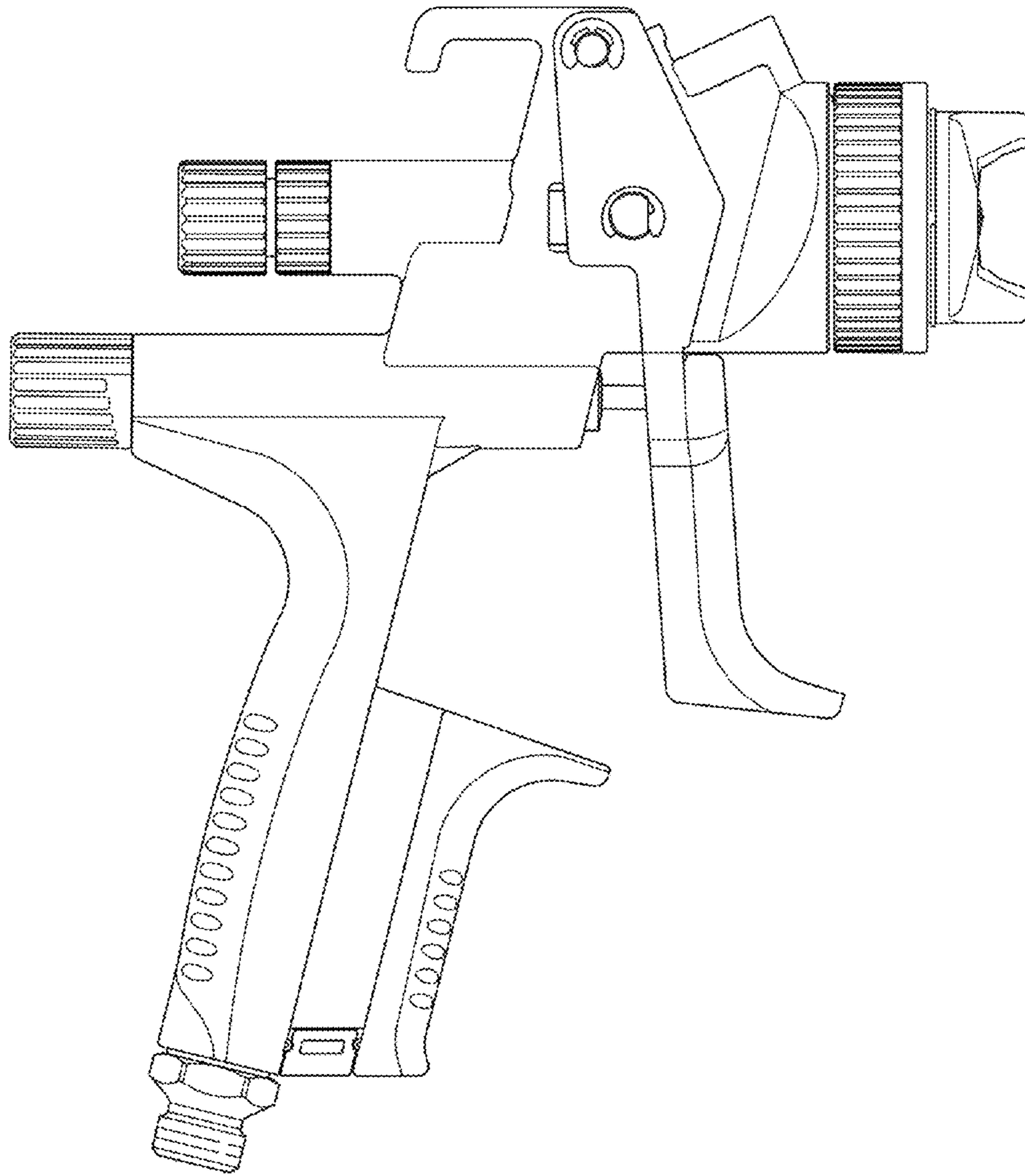


FIG. 8

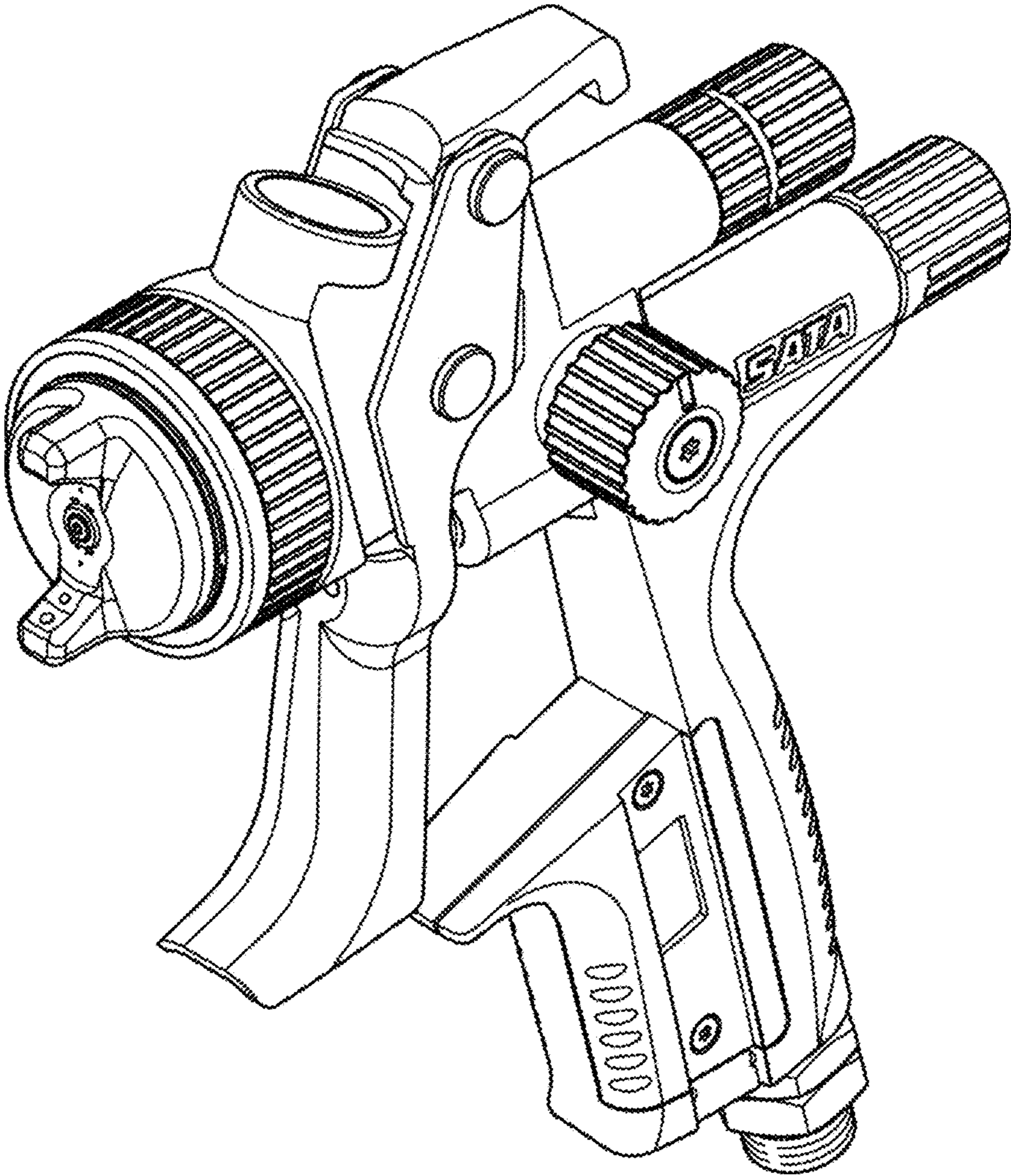


FIG. 9

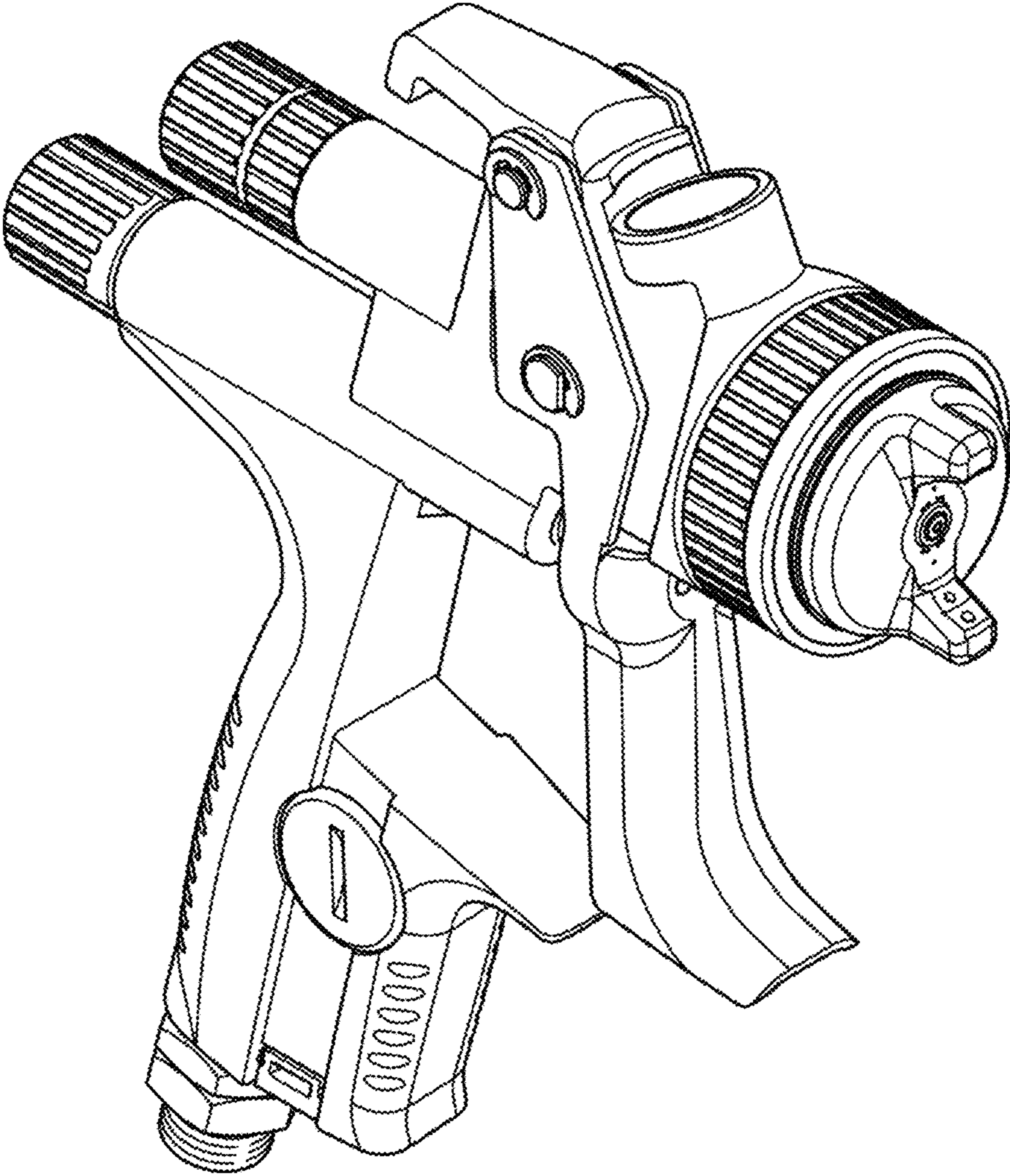


FIG. 10

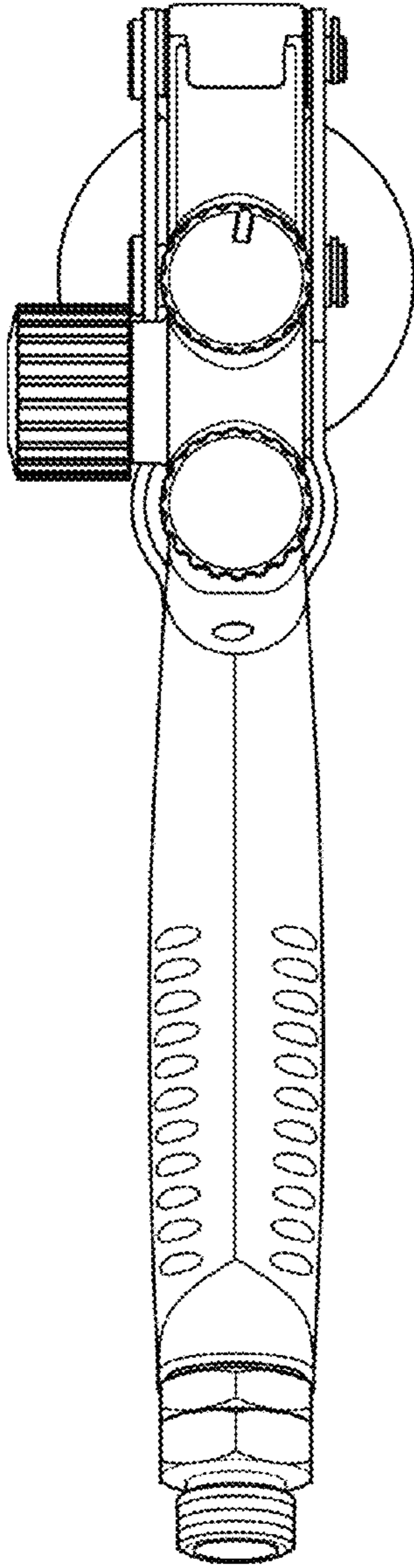


FIG. 11

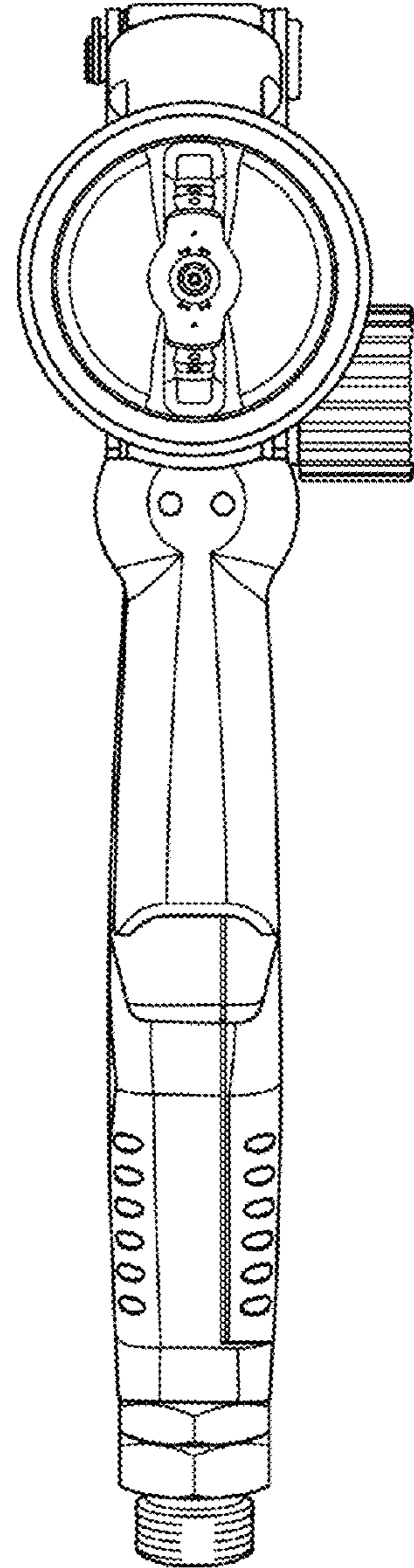


FIG. 12

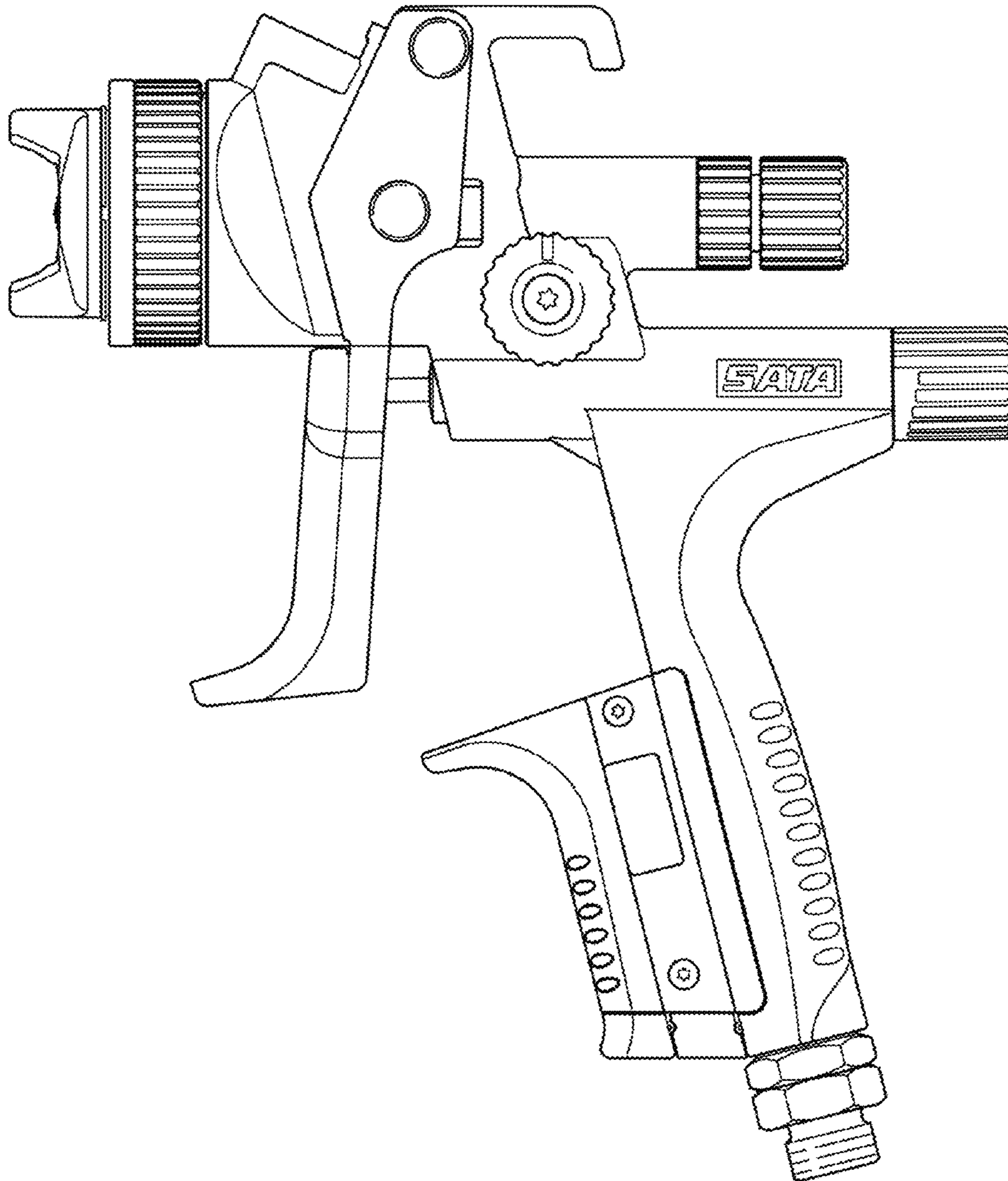


FIG. 13

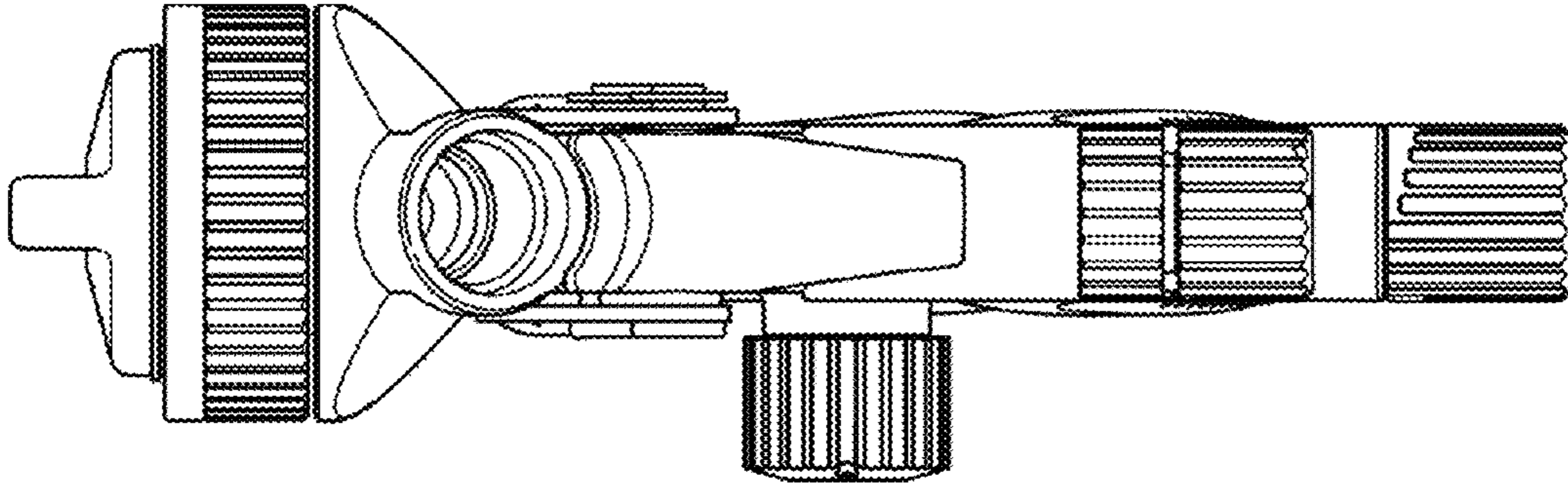


FIG. 14

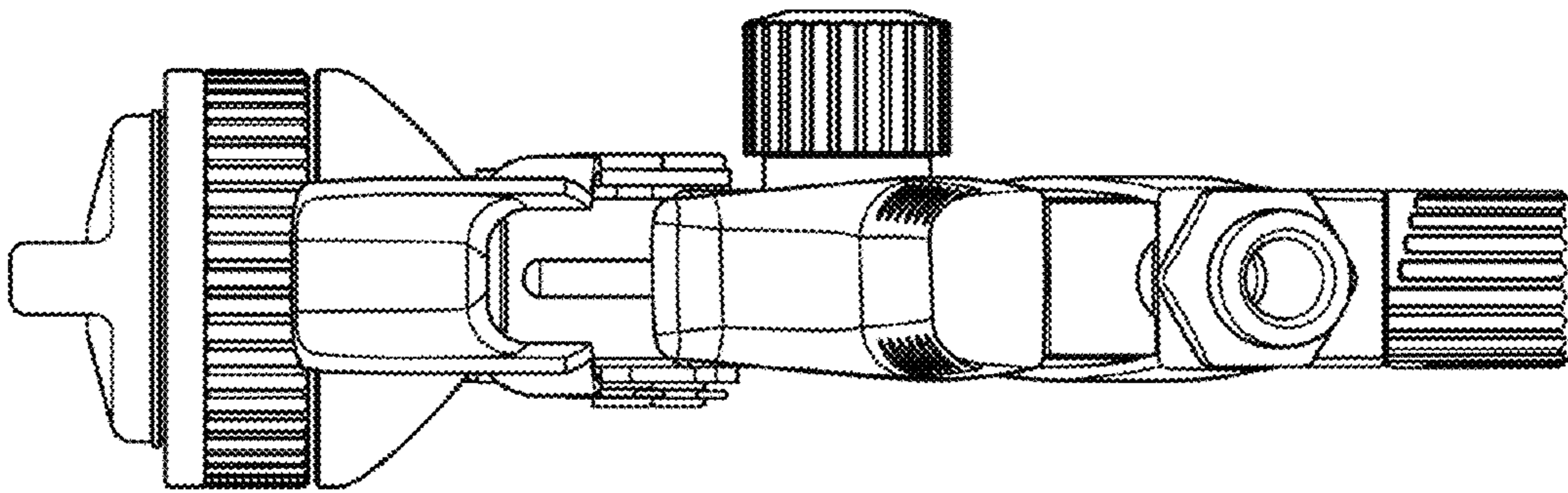


FIG. 15

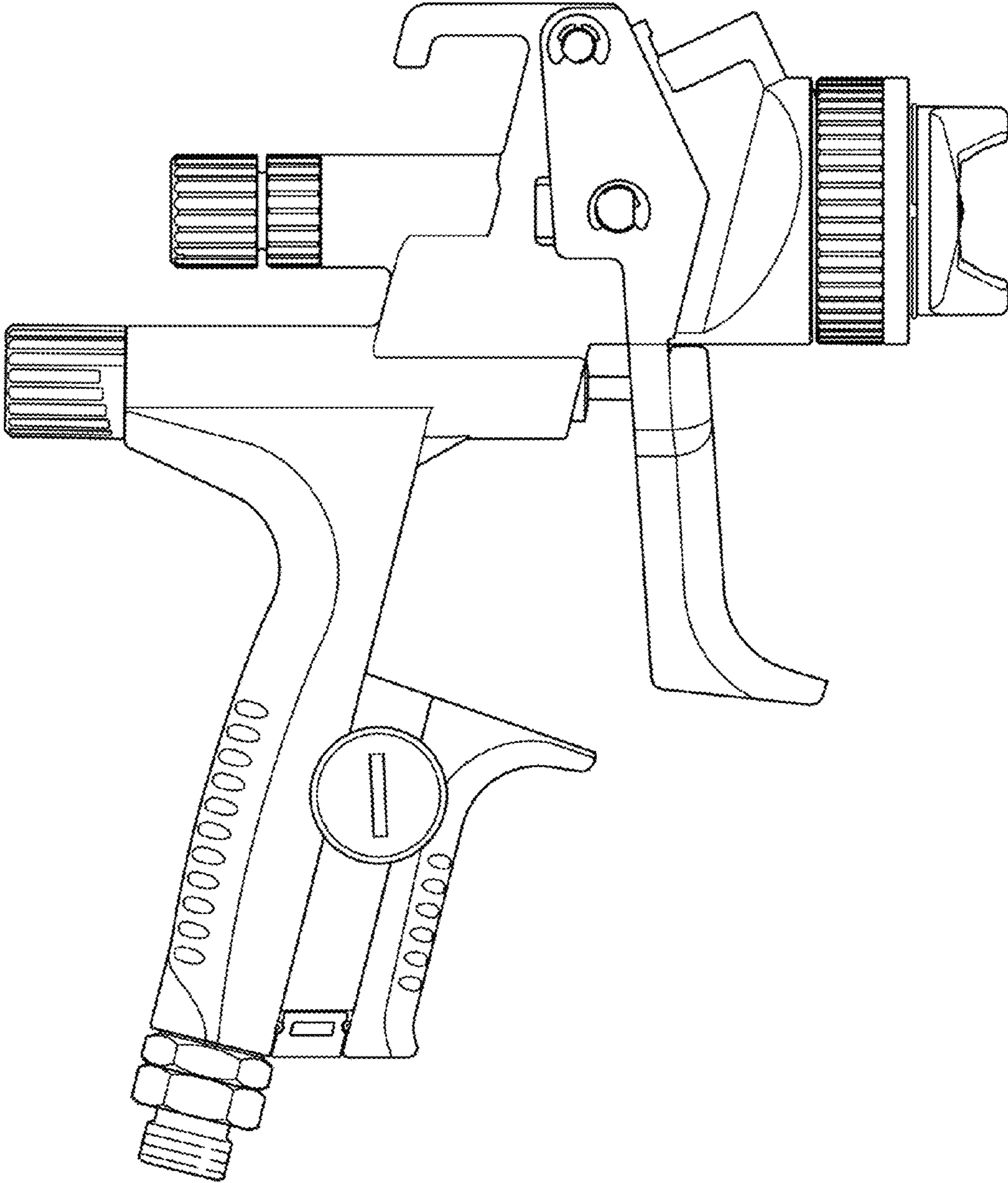


FIG. 16

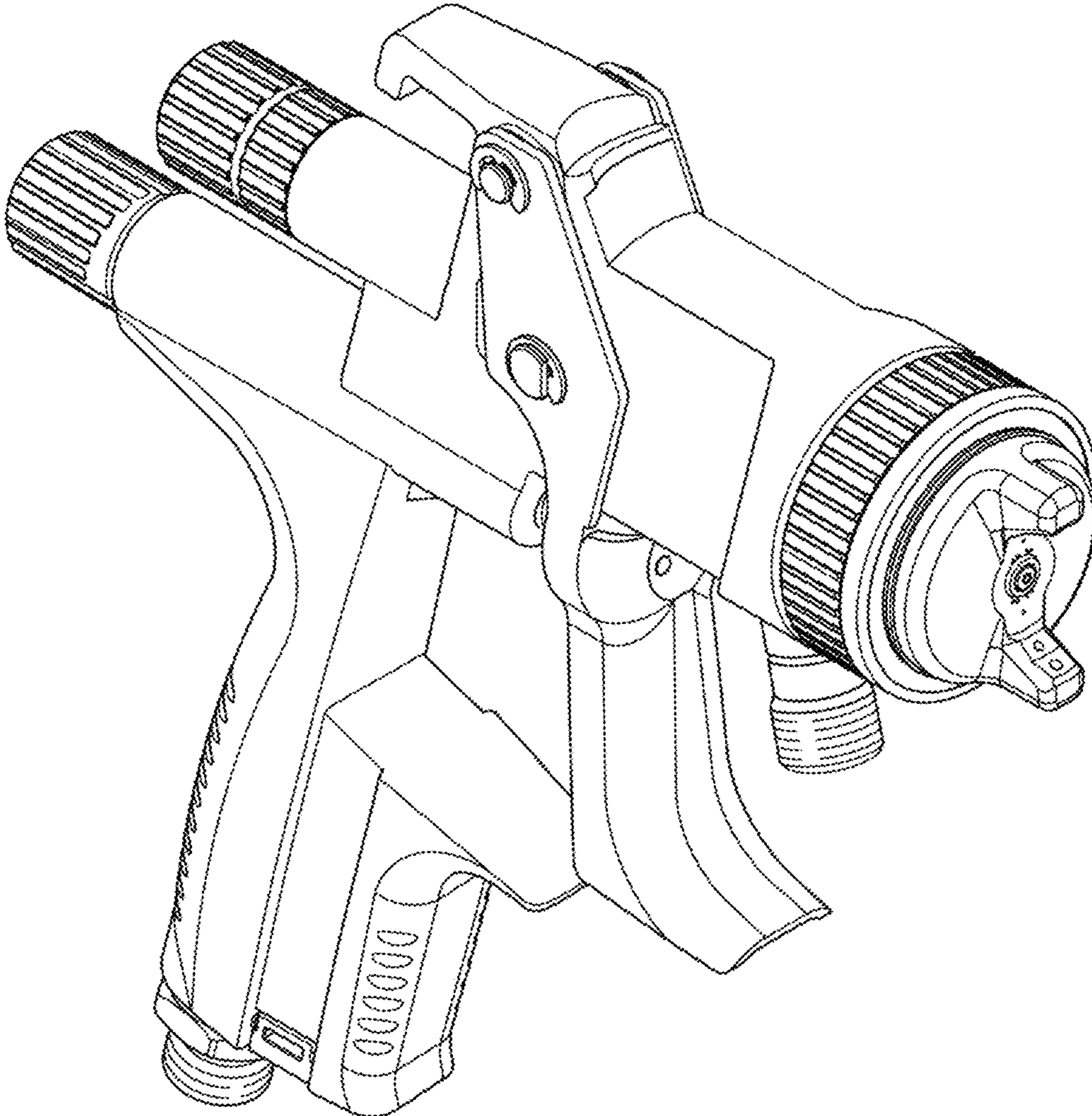


FIG. 18

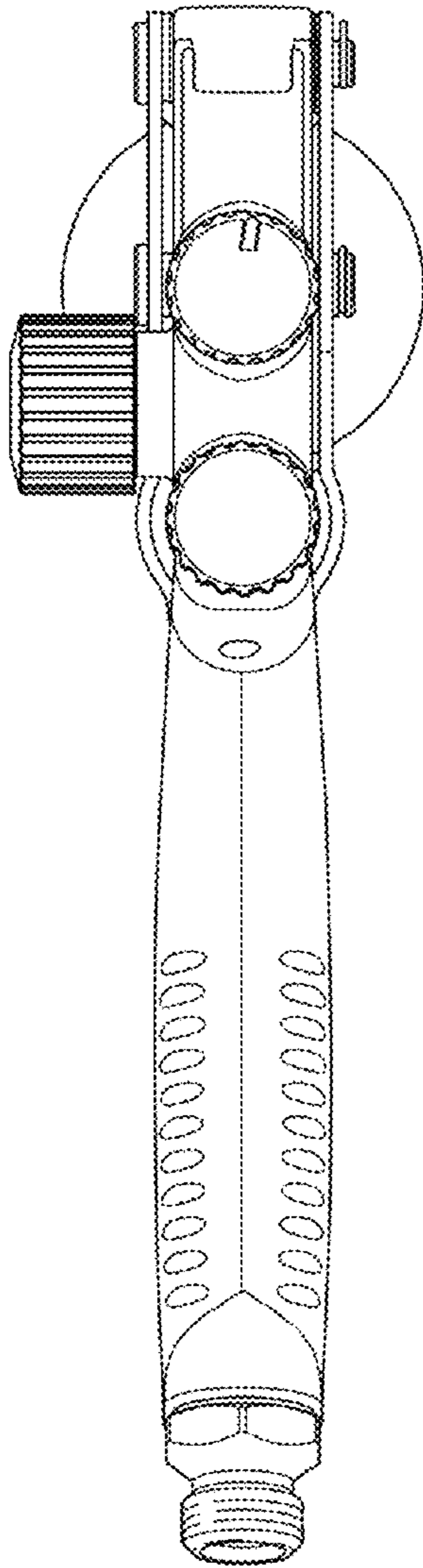


FIG. 19

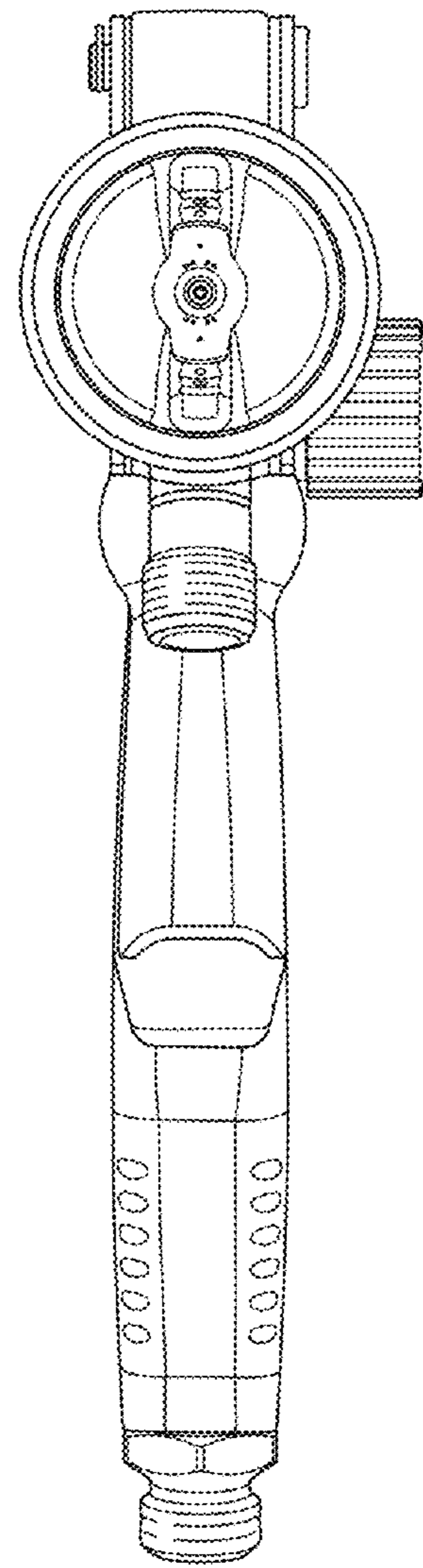


FIG. 20

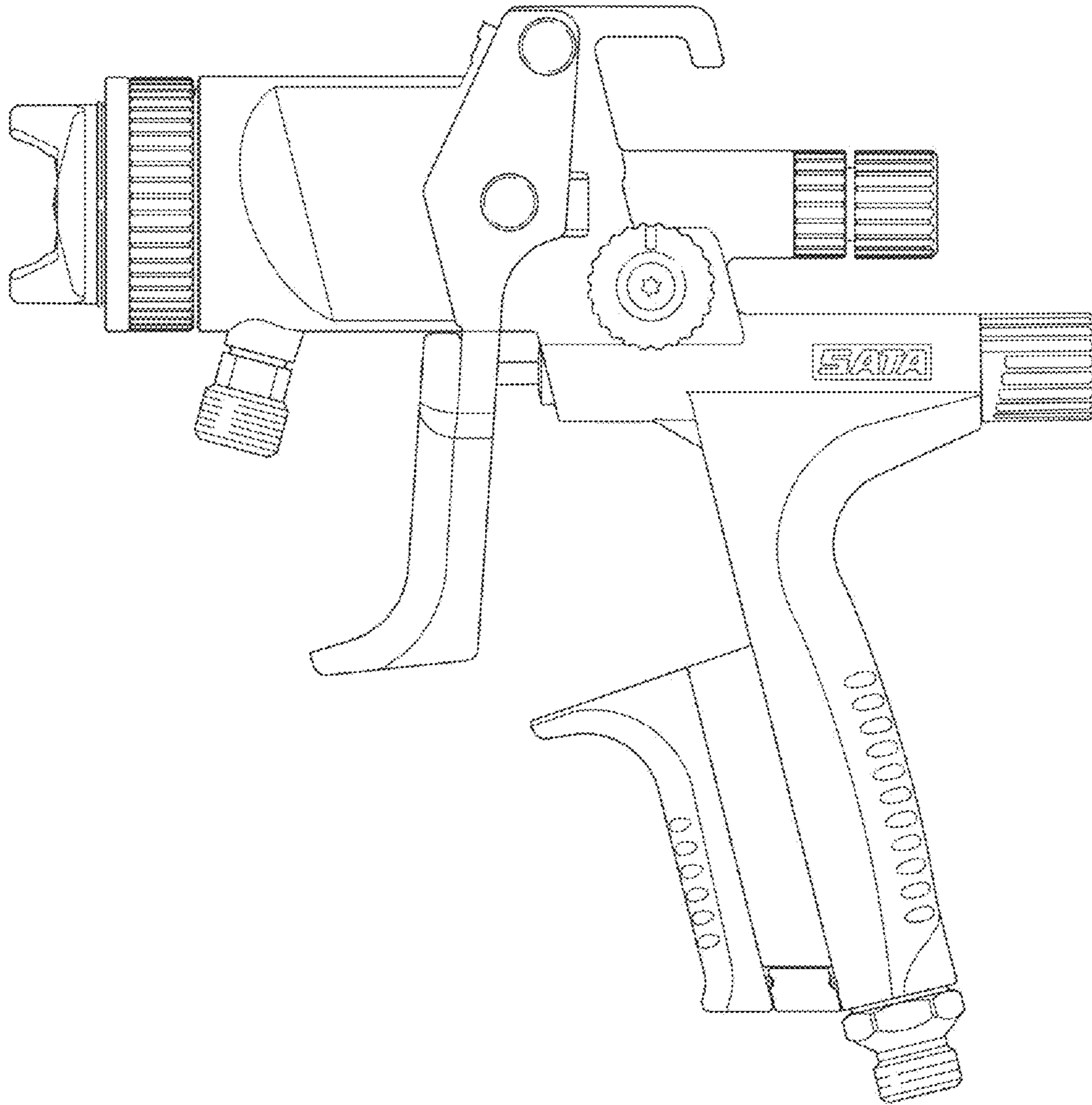


FIG. 21

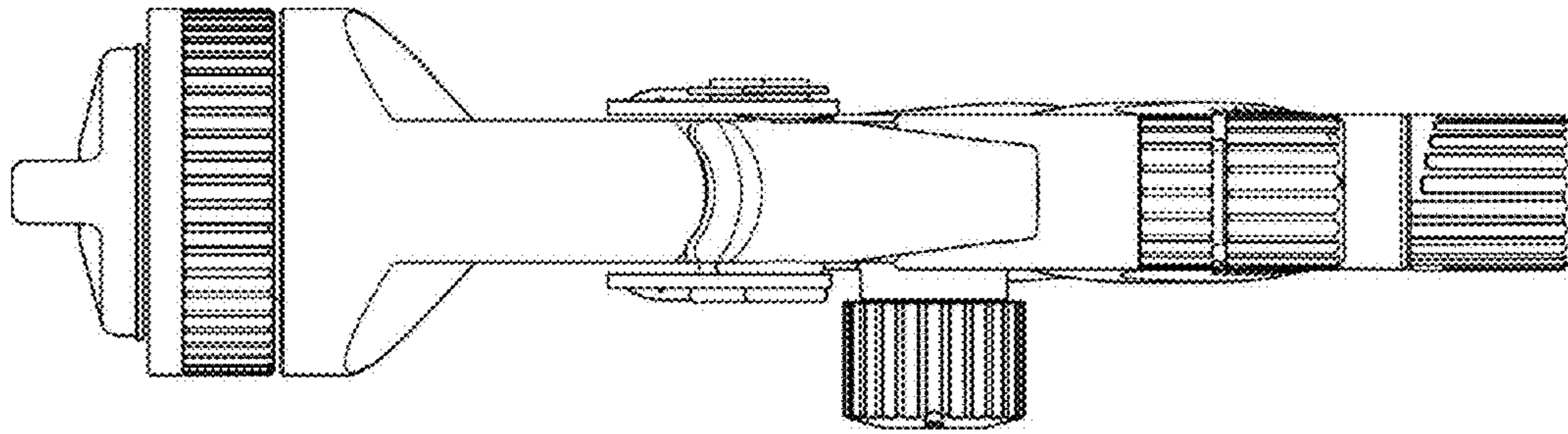


FIG. 22

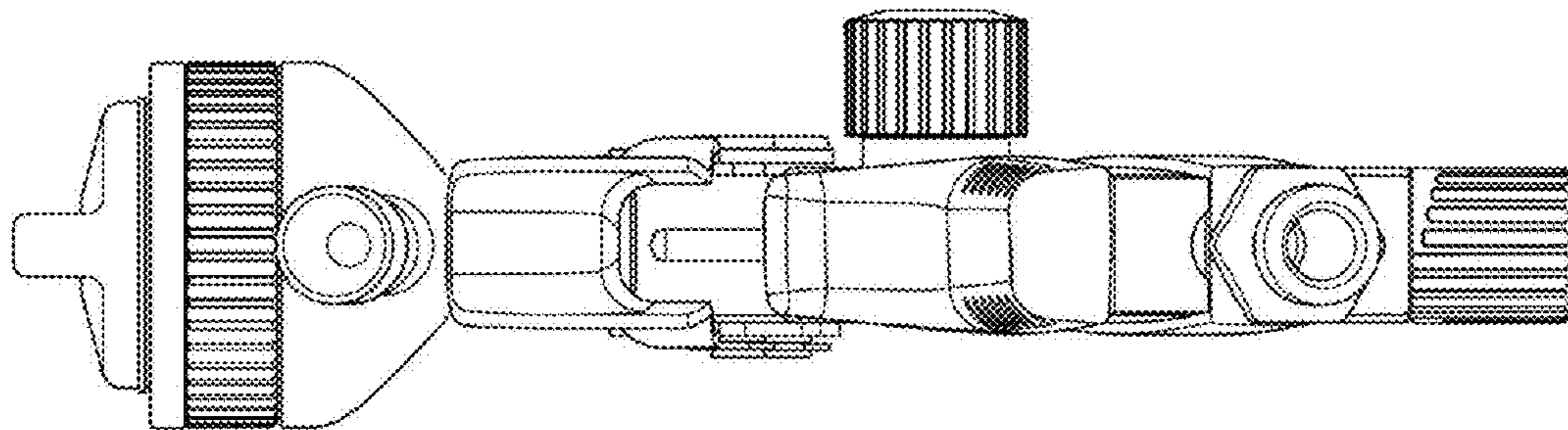


FIG. 23

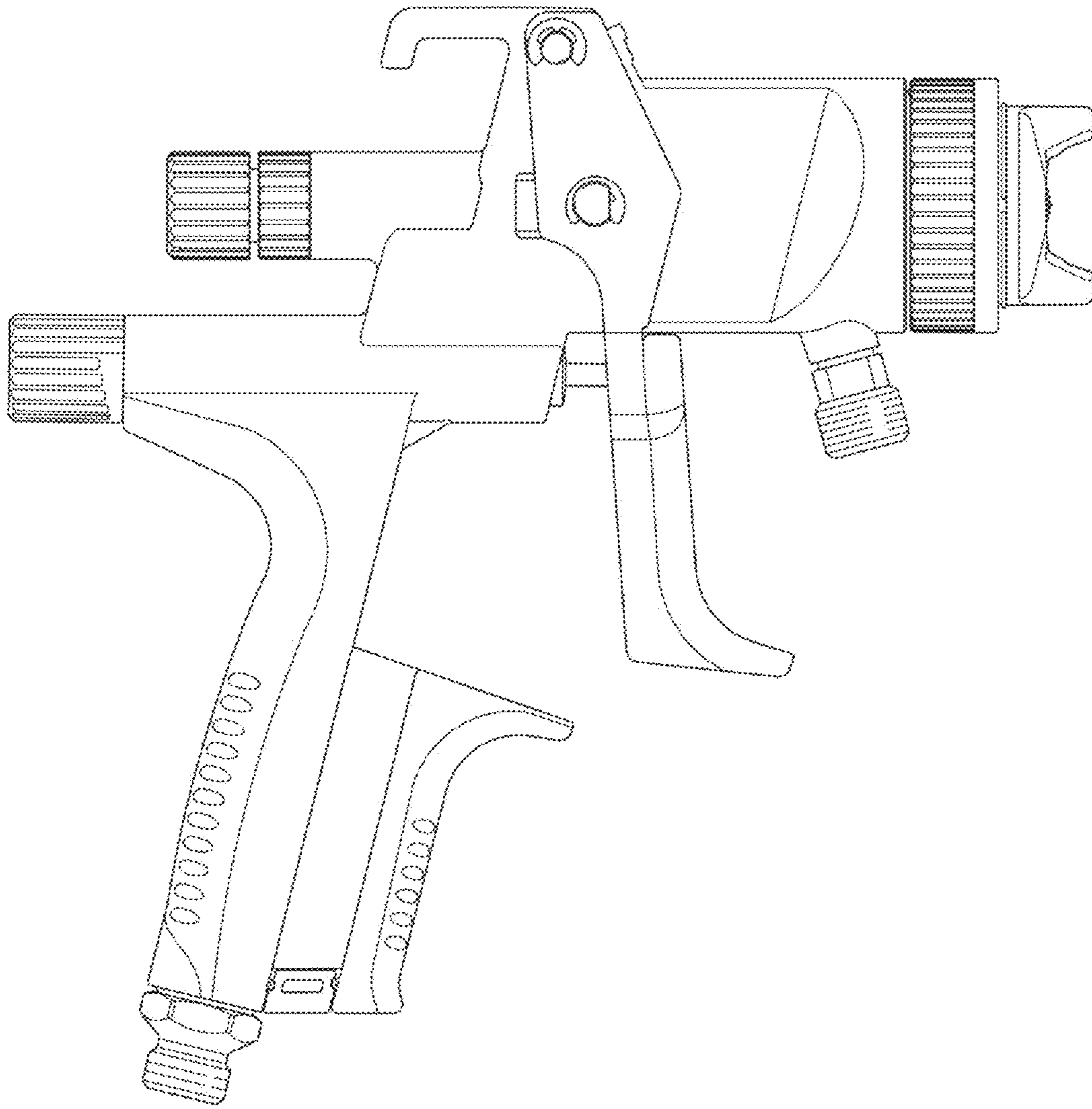


FIG. 24