



US00D866408S

(12) **United States Design Patent** (10) **Patent No.:** **US D866,408 S**
Hulstein et al. (45) **Date of Patent:** **** Nov. 12, 2019**

- (54) **SHOCK ABSORBER**
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- 3,225,420 A 12/1965 Sullivan, Jr.
3,499,201 A 3/1970 Roos
3,546,762 A 12/1970 Martin
3,586,396 A 6/1971 Barr
3,592,519 A 7/1971 Martin
3,623,781 A 11/1971 Roos
3,666,331 A 5/1972 Curtis et al.
3,709,573 A 1/1973 Orkin et al.
3,834,772 A 9/1974 Bowen
3,871,093 A 3/1975 Ladin
3,884,406 A 5/1975 Bowen

(Continued)

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

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(51) **LOC (12) Cl.** **12-16**

(52) **U.S. Cl.**
USPC **D12/159**

(58) **Field of Classification Search**
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CPC .. F16F 9/32; F16F 9/3242; F16F 9/061; F16F
2234/02

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- 1,675,728 A 7/1928 Pierce, Jr.
1,903,377 A 4/1933 Moorhouse
2,624,645 A 1/1953 Virtue
2,648,578 A 8/1953 Stearns et al.
2,672,952 A 3/1954 Smith
D175,538 S 9/1955 Dawson
2,758,365 A 8/1956 Ricefield
2,767,034 A 10/1956 McCloskey
D189,534 S 1/1961 Boldt
D191,191 S 8/1961 Kawolics
3,127,664 A 4/1964 Zurick
3,140,130 A 7/1964 Barr
3,179,477 A 4/1965 Carter

FOREIGN PATENT DOCUMENTS

- JP 3821463 B2 9/2006
WO 2016088536 A1 6/2016

(Continued)

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(57) **CLAIM**

The ornamental design for a shock absorber, as shown and described.

DESCRIPTION

FIG. 1 is a front isometric view of the shock absorber together with environmental structure that forms no part of the claimed design;

FIG. 2 is a front isometric view thereof without the environmental structure;

FIG. 3 is a front view thereof;

FIG. 4 is a rear view thereof;

FIG. 5 is right side view thereof;

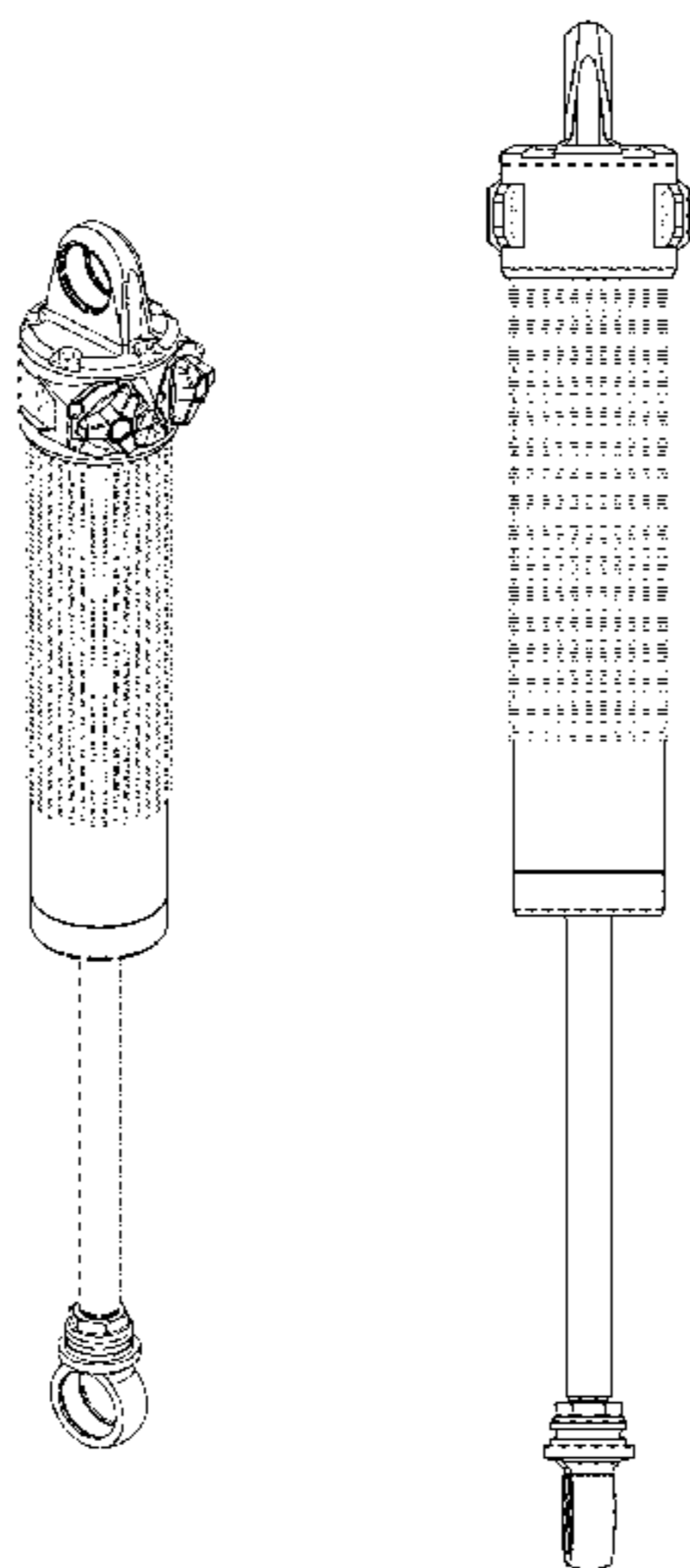
FIG. 6 is a left side view thereof;

FIG. 7 is a top view thereof; and,

FIG. 8 is a bottom view thereof.

The broken lines in the drawings represent portions of the shock absorber that form no part of the claimed design.

1 Claim, 5 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

3,909,084 A 9/1975 Snidar et al.
 3,988,818 A 11/1976 Allison
 3,999,872 A 12/1976 Allison
 4,028,784 A 6/1977 Allison
 4,057,355 A 11/1977 Allison
 4,059,361 A 11/1977 Allison
 4,240,682 A 12/1980 Benson
 4,298,102 A 11/1981 Nishikawa et al.
 4,412,372 A 11/1983 Olschewski et al.
 4,541,157 A 9/1985 Tsushima et al.
 4,643,595 A 2/1987 Weavers
 4,684,267 A 8/1987 Fetouh
 4,732,244 A 3/1988 Verkuynen
 4,821,386 A 4/1989 Simon et al.
 D302,672 S * 8/1989 Ueno D12/159
 4,860,419 A 8/1989 Hekman
 4,884,900 A 12/1989 Pirault et al.
 5,208,979 A 5/1993 Schmidt
 D346,780 S * 5/1994 Homme D12/159
 D346,781 S * 5/1994 Homme D12/159
 5,423,615 A 6/1995 Hara et al.
 5,460,355 A 10/1995 Danek
 5,536,089 A 7/1996 Weber et al.
 5,551,782 A 9/1996 Amhold et al.
 5,711,074 A 1/1998 Harimoto et al.
 5,733,049 A 3/1998 Shimmell
 5,735,048 A 4/1998 Peters
 5,775,817 A 7/1998 Gottemoller et al.
 6,105,740 A 8/2000 Marzocchi et al.
 6,146,471 A 11/2000 Hartl et al.
 6,217,222 B1 4/2001 Mattson et al.
 6,287,011 B1 9/2001 Hartl et al.
 6,609,299 B2 8/2003 Adachi
 6,659,241 B2 12/2003 Sendrea
 6,961,997 B2 11/2005 Kubota et al.
 D553,545 S * 10/2007 Nygren D12/159
 D563,287 S * 3/2008 Falter D12/159
 7,484,603 B2 2/2009 Fox
 7,743,896 B2 6/2010 Vanhees et al.
 7,766,138 B2 8/2010 Sintorn
 D628,679 S 12/2010 Holmgren
 7,946,163 B2 5/2011 Gartner
 D644,085 S 8/2011 Jungen
 8,251,590 B2 8/2012 Gibby et al.
 D670,307 S 11/2012 Shimosaki
 8,403,115 B2 3/2013 Gartner
 8,561,714 B2 10/2013 Storm et al.
 8,695,765 B2 4/2014 Danek et al.

8,721,184 B2 5/2014 Voisine et al.
 8,770,594 B2 7/2014 Tominaga et al.
 8,807,302 B2 8/2014 Nygren et al.
 8,819,939 B2 9/2014 Pohlman et al.
 8,838,335 B2 9/2014 Galasso et al.
 D720,198 S 12/2014 Sabbag et al.
 8,925,933 B2 1/2015 Haugen
 8,955,654 B2 2/2015 Nygren et al.
 9,010,504 B2 4/2015 Janes
 9,027,719 B2 5/2015 Ito
 9,038,791 B2 5/2015 Marking
 D734,219 S * 7/2015 Gustaffson D12/118
 9,091,319 B2 7/2015 Ishii et al.
 9,091,320 B1 7/2015 Smith et al.
 9,103,401 B2 8/2015 Fox
 D747,641 S 1/2016 Reynolds
 9,228,630 B2 1/2016 Coaplen
 9,303,712 B2 4/2016 Cox
 9,333,829 B2 5/2016 King et al.
 9,341,226 B2 5/2016 Marking
 D762,098 S 7/2016 Bertani
 9,447,835 B2 9/2016 Kim
 9,528,565 B2 12/2016 Marking
 9,695,900 B2 7/2017 Roessle et al.
 D796,293 S 9/2017 Alliss
 D811,281 S * 2/2018 Panichgasem D12/159
 D813,639 S 3/2018 Osanai
 2005/0145466 A1 7/2005 Wang
 2006/0104559 A1 5/2006 Wingett et al.
 2007/0269150 A1 11/2007 Guilford
 2009/0173033 A1 * 7/2009 Baxter, Jr. A63J 1/00
 52/646
 2009/0277166 A1 11/2009 Walz
 2012/0325046 A1 12/2012 Luchner et al.
 2013/0084035 A1 4/2013 Williams et al.
 2013/0228404 A1 9/2013 Marking
 2015/0290991 A1 10/2015 Cox
 2015/0375787 A1 12/2015 Adachi
 2016/0031285 A1 2/2016 Tucker et al.
 2016/0075204 A1 3/2016 Marking et al.
 2016/0319897 A1 11/2016 Mochizuki et al.
 2016/0363184 A1 12/2016 Noguchi et al.
 2017/0167562 A1 6/2017 King et al.
 2018/0119768 A1 5/2018 Cox
 2018/0202576 A1 7/2018 Mouton et al.

FOREIGN PATENT DOCUMENTS

WO 2016088629 A1 6/2016
 WO 2016151015 A1 9/2016

* cited by examiner

FIG. 1

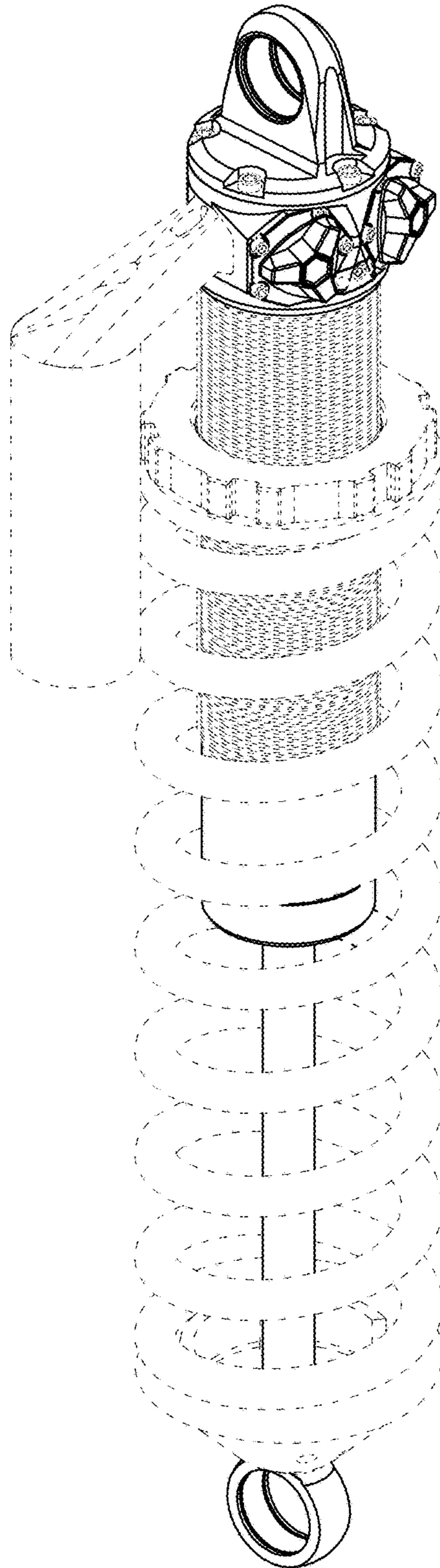


FIG. 2

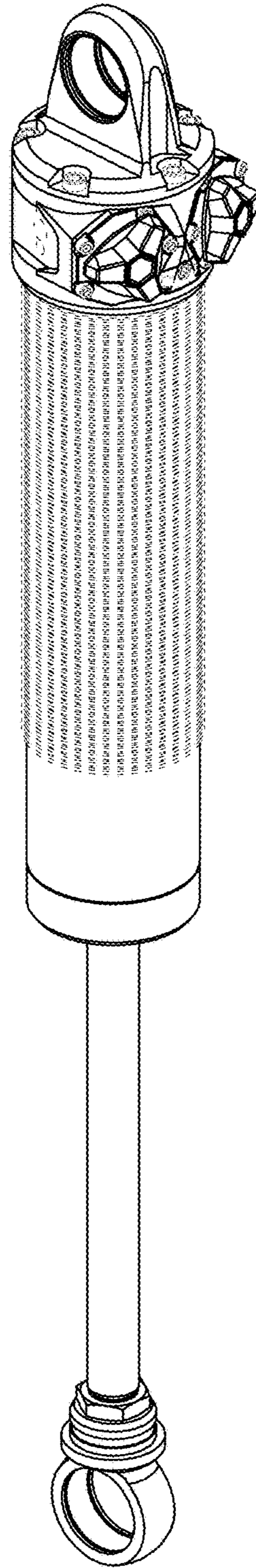


FIG. 3

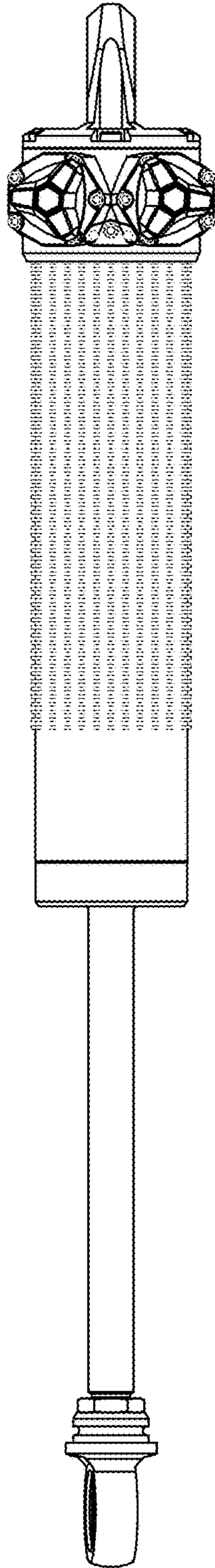


FIG. 4

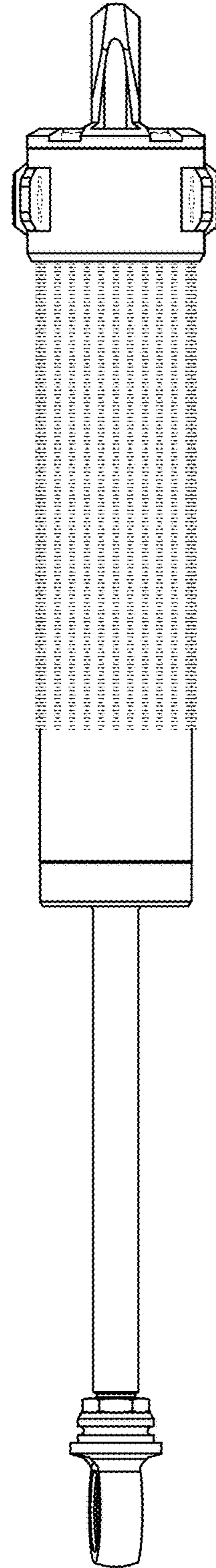


FIG. 5

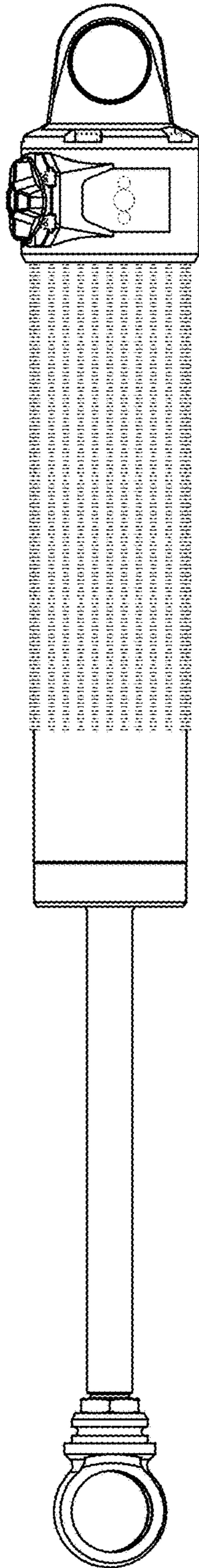


FIG. 6

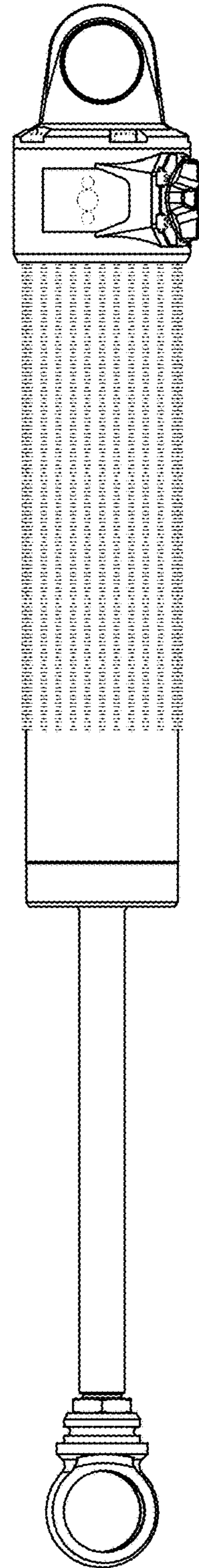


FIG. 7

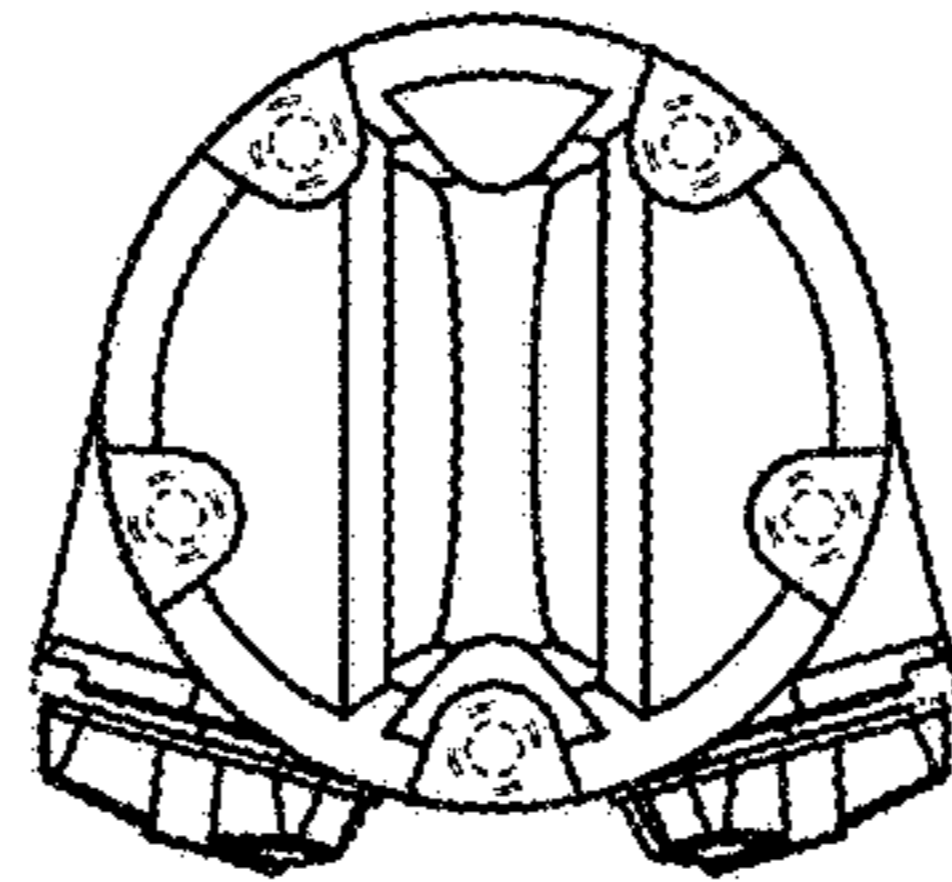


FIG. 8

