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

(10) **Patent No.:** **US D726,224 S**
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- (54) **PLUNGER PUMP THRU ROD**
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- 2,682,433 A 6/1954 Maier
- 2,755,739 A 7/1956 Euwe
- 2,766,701 A 10/1956 Giraudeau
- 2,991,003 A 7/1961 Peterson
- 3,049,082 A 8/1962 Barry
- 3,137,179 A 6/1964 Moorehead
- 3,163,474 A 12/1964 Wilson
- 3,168,665 A 2/1965 Holper
- 3,179,451 A 4/1965 Blank

(Continued)

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- (21) Appl. No.: **29/455,618**
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- BR 8700642 A 8/1988
- CA 2486126 A1 10/2005

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Related U.S. Application Data

- (63) Continuation-in-part of application No. 13/843,525, filed on Mar. 15, 2013, now Pat. No. 8,707,853.
 - (51) **LOC (10) Cl.** **11-01**
 - (52) **U.S. Cl.**
USPC **D15/7**
 - (58) **Field of Classification Search**
USPC D15/7-9; D23/231, 232; 417/410.1,
417/359, 415-416, 234, 321, 265, 405;
92/140
- See application file for complete search history.

FOREIGN PATENT DOCUMENTS

OTHER PUBLICATIONS

Chinese Office Action mailed Oct. 29, 2013, re Appl. No. 201080008236.X (22 pages).

(Continued)

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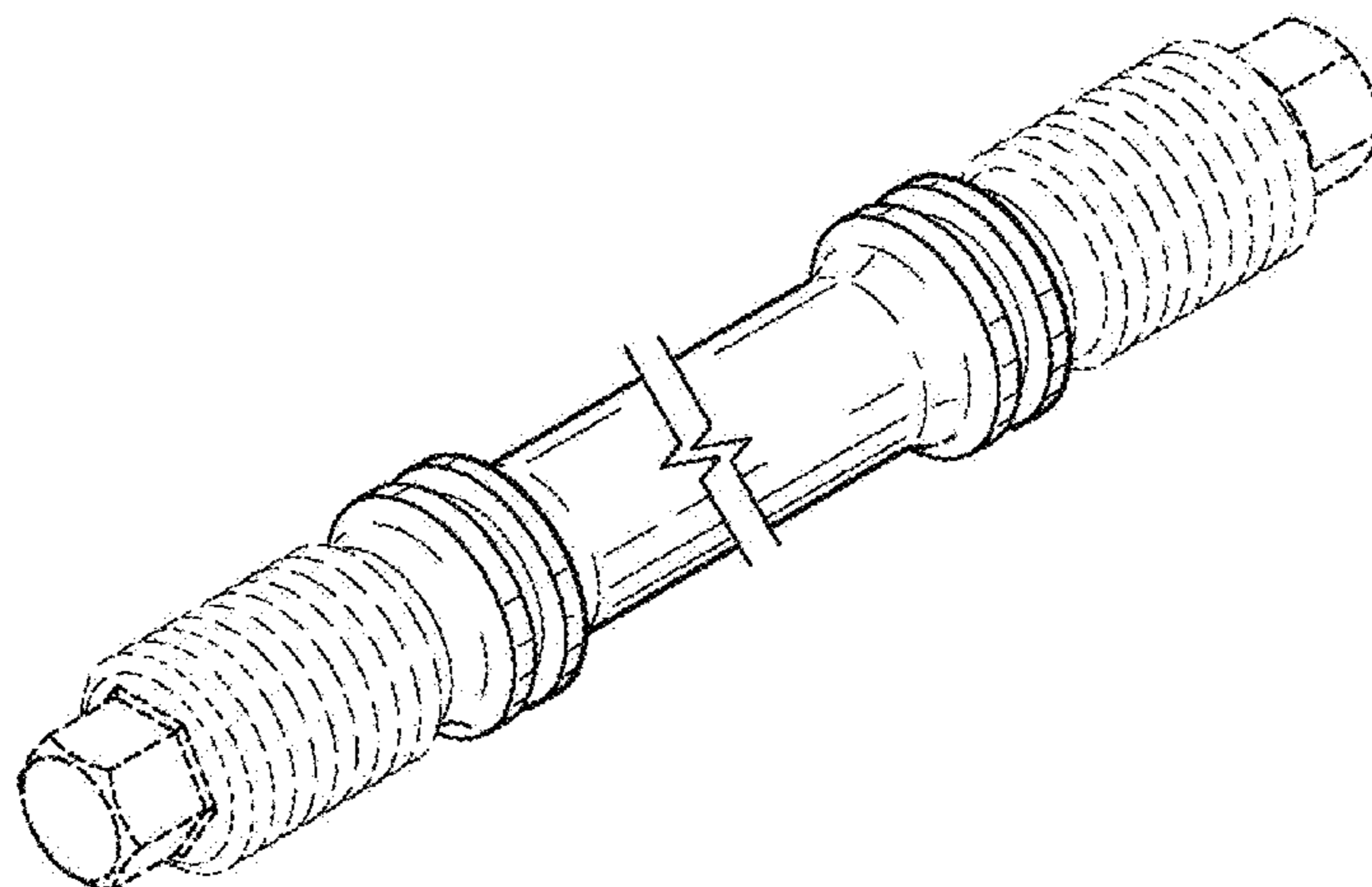
(57) **CLAIM**
The ornamental design for a plunger pump thru rod, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of a plunger pump thru rod showing our new design; FIG. 2 is a front elevational view, the rear elevational view being a mirror image; and, FIG. 3 is a right side view, the left side view being a mirror image thereof. The broken lines in FIGS. 1 through 3 are for illustrative purposes only and form no part of the claimed design.

- (56) **References Cited**
- U.S. PATENT DOCUMENTS**
- 364,627 A 6/1887 Arnold
- 879,560 A 2/1908 Lepley
- 1,418,202 A 5/1922 Parsons
- 1,707,228 A 4/1929 Knapp
- 1,867,585 A 7/1932 Moore
- 1,890,428 A 12/1932 Ferris
- 2,420,779 A 5/1947 Holmes
- 2,428,602 A 10/1947 Yingling
- 2,665,555 A 1/1954 Martinsson

1 Claim, 1 Drawing Sheet



(56)

References Cited

U.S. PATENT DOCUMENTS

3,356,036 A 12/1967 Repp
 3,757,149 A 9/1973 Holper
 4,013,057 A 3/1977 Guenther
 4,140,442 A 2/1979 Mulvey
 4,191,238 A 3/1980 Pichl
 4,210,399 A 7/1980 Jain
 4,211,190 A 7/1980 Indech
 4,246,908 A 1/1981 Inagaki et al.
 4,269,569 A 5/1981 Hoover
 4,381,179 A 4/1983 Pareja
 4,494,415 A 1/1985 Elliston
 4,512,694 A 4/1985 Foran et al.
 4,606,709 A 8/1986 Chisolm
 4,667,627 A 5/1987 Matsui et al.
 4,705,459 A 11/1987 Buisine et al.
 4,762,051 A 8/1988 Besic et al.
 4,771,801 A 9/1988 Crump et al.
 4,803,964 A 2/1989 Kurek et al.
 4,809,646 A 3/1989 Paul et al.
 4,824,342 A 4/1989 Buck
 4,842,039 A 6/1989 Kelm
 4,876,947 A 10/1989 Rhodes
 4,887,518 A 12/1989 Hayakawa
 4,939,984 A 7/1990 Fletcher-Jones
 4,950,145 A 8/1990 Zanetos et al.
 4,966,109 A 10/1990 Pusic et al.
 5,031,512 A 7/1991 Graziani
 5,060,603 A 10/1991 Williams
 5,063,775 A 11/1991 Walker, Sr. et al.
 5,076,220 A 12/1991 Evans et al.
 5,078,580 A 1/1992 Miller et al.
 5,115,725 A 5/1992 Horiuchi
 5,135,031 A 8/1992 Burgess et al.
 5,156,534 A 10/1992 Burgy et al.
 5,216,943 A 6/1993 Adler et al.
 5,246,355 A 9/1993 Matzner et al.
 5,247,873 A 9/1993 Owens et al.
 5,313,061 A 5/1994 Drew et al.
 5,337,612 A 8/1994 Evans
 5,370,093 A 12/1994 Hayes
 5,425,306 A 6/1995 Binford
 5,560,332 A 10/1996 Chang
 5,594,665 A 1/1997 Walter et al.
 5,658,250 A 8/1997 Blomquist et al.
 5,671,655 A 9/1997 Vollrath
 5,673,666 A 10/1997 Beardmore et al.
 5,772,403 A 6/1998 Allison et al.
 5,839,888 A 11/1998 Harrison
 5,846,056 A 12/1998 Dhindsa et al.
 5,855,397 A 1/1999 Black et al.
 5,984,645 A 11/1999 Cummings
 6,260,004 B1 7/2001 Hays et al.
 6,330,525 B1 12/2001 Hays et al.
 6,557,457 B1 5/2003 Hart et al.
 6,663,349 B1 12/2003 Discenzo et al.
 6,697,741 B2 2/2004 Yu et al.
 6,718,955 B1 4/2004 Knight
 6,859,740 B2 2/2005 Stephenson et al.
 6,873,267 B1 3/2005 Tubel et al.
 6,882,960 B2 4/2005 Miller
 7,111,604 B1 9/2006 Hellenbroich et al.
 7,219,594 B2 5/2007 Kugelev et al.
 7,272,533 B2 9/2007 Schlosser
 7,364,412 B2 4/2008 Kugelev et al.
 7,374,005 B2 5/2008 Gray, Jr.
 7,404,704 B2 7/2008 Kugelev et al.
 7,588,384 B2 9/2009 Yokohara
 7,610,847 B2 11/2009 McKelroy
 7,621,179 B2 11/2009 Ens et al.
 7,623,986 B2 11/2009 Miller
 7,866,153 B2 1/2011 Sollie et al.
 D658,684 S * 5/2012 Roman D15/9
 8,376,723 B2 2/2013 Kugelev et al.

D678,628 S * 3/2013 Krueger D30/127
 D678,911 S * 3/2013 Prevost D15/7
 D682,317 S * 5/2013 Carruth et al. D15/7
 D685,393 S * 7/2013 Prevost D15/7
 D693,200 S * 11/2013 Saunders D8/71
 D698,502 S * 1/2014 Krueger D30/127
 D700,622 S * 3/2014 Carruth et al. D15/7
 D704,385 S * 5/2014 Hoofman D30/121
 D708,401 S * 7/2014 Krueger D30/127
 D713,101 S * 9/2014 Bruno et al. D30/127
 8,833,301 B2 * 9/2014 Donegan et al. 119/57.8
 8,833,302 B2 * 9/2014 Donegan et al. 119/57.8
 8,857,374 B1 * 10/2014 Donegan et al. 119/57.8
 2002/0020460 A1 2/2002 Viken
 2002/0189587 A1 12/2002 Hirano
 2003/0024386 A1 2/2003 Burke
 2003/0079604 A1 5/2003 Seo
 2003/0118104 A1 6/2003 Zaccarin
 2004/0213677 A1 10/2004 Matzner et al.
 2004/0219040 A1 11/2004 Kugelev et al.
 2004/0244577 A1 12/2004 Haughom
 2006/0029502 A1 2/2006 Kugelev et al.
 2007/0041847 A1 2/2007 Inoue et al.
 2007/0099746 A1 5/2007 Hahlbeck
 2008/0006148 A1 1/2008 McKelroy
 2008/0213115 A1 9/2008 Hilger et al.
 2008/0271562 A1 11/2008 Yasuhara et al.
 2010/0129245 A1 5/2010 Patel et al.
 2010/0158726 A1 6/2010 Donald et al.
 2010/0160710 A1 6/2010 Strickland
 2010/0172778 A1 7/2010 Kugelev et al.
 2010/0242720 A1 9/2010 Matzner et al.
 2010/0260631 A1 10/2010 Kugelev et al.
 2010/0322802 A1 12/2010 Kugelev
 2012/0167759 A1 7/2012 Chinthan et al.
 2013/0233165 A1 9/2013 Matzner et al.

FOREIGN PATENT DOCUMENTS

CA 2686204 A1 5/2010
 CA 2749110 A1 7/2010
 CN 2612816 Y 4/2004
 CN 1908435 A 2/2007
 CN 2926584 Y 7/2007
 CN 101782067 A 7/2010
 CN 102439314 A 5/2012
 CN 103403351 A 11/2013
 DE 1191069 B 4/1965
 DE 3234504 A1 4/1983
 DE 3441508 A1 5/1986
 DE 3802714 A1 8/1988
 DE 4416120 A1 11/1995
 DE 19653164 A1 6/1998
 DE 20120609 U1 3/2002
 DE 10129046 A1 1/2003
 EP 0300905 A1 1/1989
 EP 0449278 A1 10/1991
 FR 2618509 A1 1/1989
 GB 2342421 A 4/2000
 GB 2419671 A 5/2006
 JP 60175753 A 9/1985
 JP 10288086 A 10/1998
 JP 2920004 B2 7/1999
 JP 11200947 A 7/1999
 JP 3974386 B2 9/2007
 JP 2008-539364 A 11/2008
 KR 10-1999-0060438 7/1999
 KR 10-1999-0079544 11/1999
 KR 100275877 12/2000
 KR 10-0287572 1/2001
 KR 10-2001-0065249 7/2001
 KR 10-0302886 7/2001
 KR 10-2001-0108223 11/2001
 RU 2037700 C1 6/1995
 WO WO-2008/137515 A1 11/2008
 WO WO-2010/080961 A2 7/2010
 WO WO-2010/080963 A2 7/2010

(56)

References Cited

FOREIGN PATENT DOCUMENTS

WO WO-2011/005571 A2 1/2011
 WO WO-2012/092452 A2 7/2012

OTHER PUBLICATIONS

Office Action mailed Jan. 2, 2014, re U.S. Appl. No. 13/866,121 (27 pages).
 Office Action mailed May 23, 2013, re U.S. Appl. No. 12/683,900 (20 pages).
 Office Action mailed Oct. 7, 2013, re U.S. Appl. No. 13/843,525 (25 pages).
 International Search Report and Written Opinion mailed Sep. 5, 2013 in corresponding Application No. PCT/US2013/040106.
 Office Action mailed Jul. 16, 2007 re U.S. Appl. No. 10/831,467.
 Final OA mailed May 7, 2008 re U.S. Appl. No. 10/831,467.
 Examiner Interview Summary Jul. 17, 2008 re U.S. Appl. No. 10/831,467.
 Office Action mailed Nov. 14, 2008 re U.S. Appl. No. 10/831,467.
 Final OA mailed Jun. 24, 2009 re U.S. Appl. No. 10/831,467.
 Examiner's Answer to Appeal Brief mailed Jan. 29, 2010 re U.S. Appl. No. 10/831,467.
 Decision on Appeal mailed Feb. 20, 2013 re U.S. Appl. No. 10/831,467.
 Notice of Allowance mailed Dec. 10, 2012 re U.S. Appl. No. 12/683,804.
 Final OA mailed Jul. 16, 2012 re U.S. Appl. No. 12/683,804.
 Office Action mailed Jan. 27, 2012 re U.S. Appl. No. 12/683,804.
 Office Action mailed Oct. 11, 2011 re U.S. Appl. No. 12/277,849.
 Notice of Allowance mailed Dec. 23, 2011 re U.S. Appl. No. 12/277,849.
 Supplemental NOA mailed Mar. 21, 2012 re U.S. Appl. No. 12/277,849.

Office Action mailed May 29, 2007 re U.S. Appl. No. 10/833,921.
 Final OA mailed Sep. 18, 2007 re U.S. Appl. No. 10/833,921.
 Examiner Interview Summary Apr. 10, 2008 re U.S. Appl. No. 10/833,921.
 Office Action mailed Jul. 28, 2008 re U.S. Appl. No. 10/833,921.
 Final OA mailed Jan. 21, 2009 re U.S. Appl. No. 10/833,921.
 Advisory Action mailed Apr. 7, 2009 re U.S. Appl. No. 10/833,921.
 Office Action mailed Jan. 18, 2013 re U.S. Appl. No. 12/748,127.
 Office Action mailed Mar. 9, 2012 re U.S. Appl. No. 12/821,663.
 Office Action mailed Apr. 19, 2012 re U.S. Appl. No. 12/821,663.
 Intl Search Report and Written Opinion re PCT/US2011/067770.
 Intl Search Report re PCT/US2010/020447.
 Written Opinion re PCT/US2010/020447.
 PCT—IPRP re PCT/US2010/020447.
 Intl Search Report re PCT/US2010/020445.
 Written Opinion re PCT/US2010/020445.
 PCT—IPRP re PCT/US2010/020445.
 Intl Search Report and Written Opinion re PCT/US2010/039651.
 PCT—IPRP re PCT/US2010/039651.
 Canadian Office Action May 17, 2011 re 2,486,126.
 Gardner Denver Well Servicing Pump Model C-2500Q Power End Parts List, Feb. 2009.
 SPM QEM2500 GL Well Service Plunger Pump, Generic Operation Instruction and Service Manual, May 8, 2010.
 MSI/Dixie Iron Works, Ltd., Technical Manual for 600 HP Triplex MSI TI-600 Pump, Rev. P, 102 pages, date unknown.
 MSI/Dixie Iron Works, Ltd., Technical Manual for MSI Hybrid Well Service Pump Triplex and Quintuplex Models, Rev. D, 91 pages, date unknown.
 International Search Report and Written Opinion (PCT/US2011/067770), dated Aug. 28, 2012.
 Chinese OA dated Mar. 15, 2013 re app No. 200910226583.9.

* cited by examiner

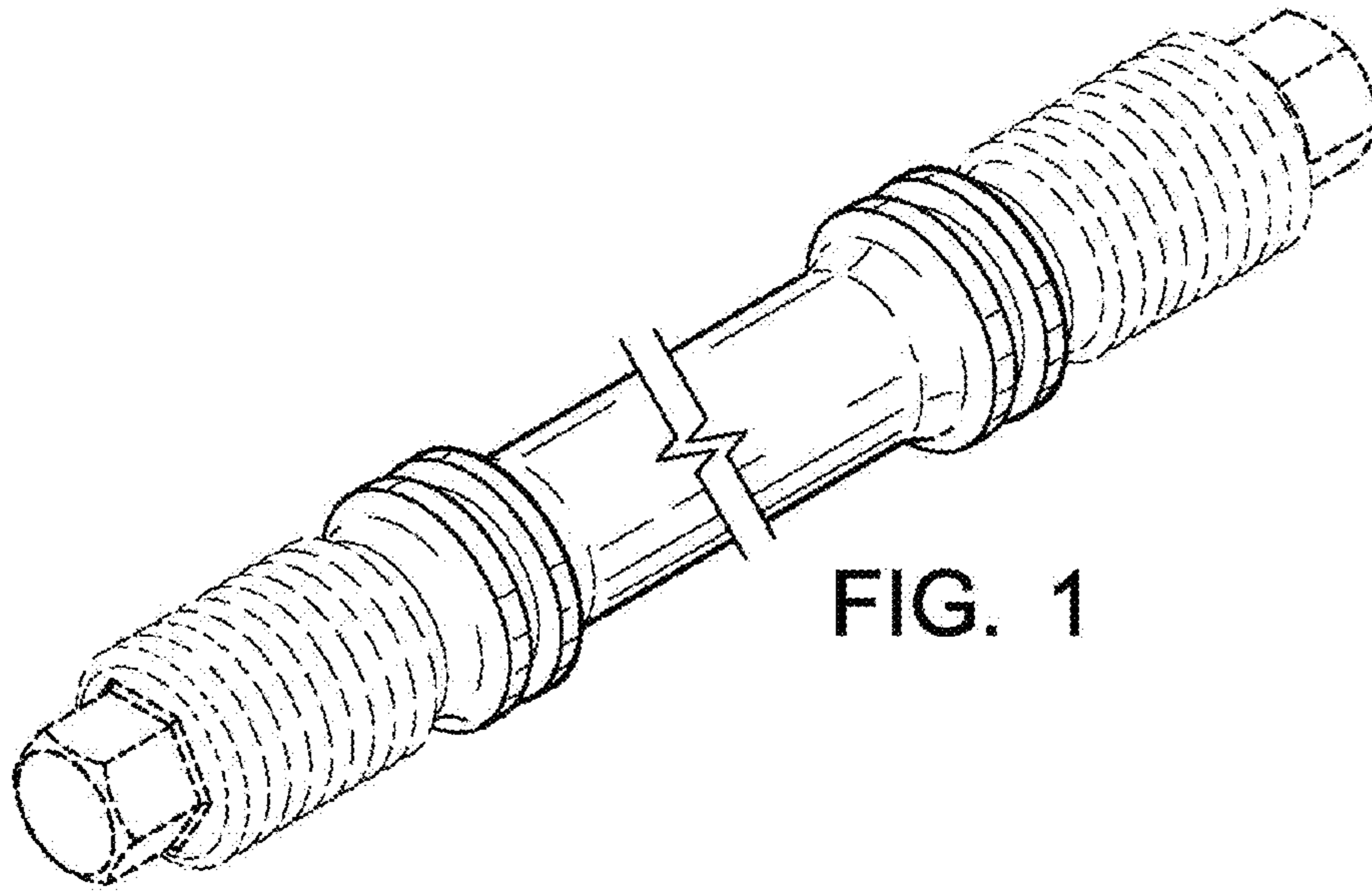


FIG. 1

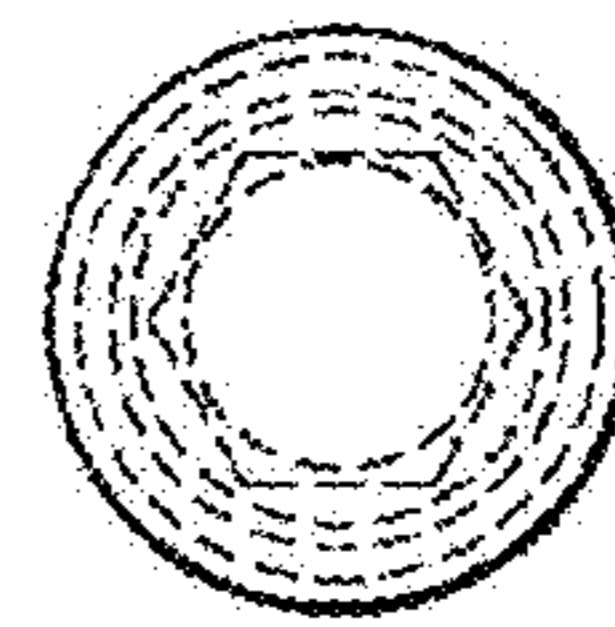


FIG. 2

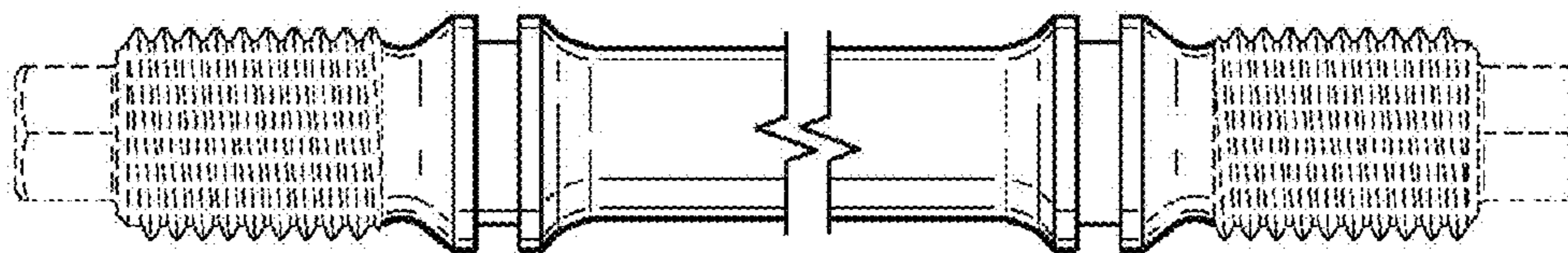


FIG. 3