



US00D752964S

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

(10) **Patent No.:** **US D752,964 S**
(45) **Date of Patent:** **** Apr. 5, 2016**

- (54) **BALL SCREW**
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- (**) Term: **14 Years**
- (21) Appl. No.: **29/513,701**
- (22) Filed: **Jan. 5, 2015**
- (30) **Foreign Application Priority Data**

Jul. 10, 2014 (JP) 2014-015150

- (51) **LOC (10) CL.** **08-08**
- (52) **U.S. CL.**
USPC **D8/387**
- (58) **Field of Classification Search**
USPC D8/387, 388, 391, 398, 499
CPC F16H 25/2285; F16H 25/2223; F16H 25/2214; F16H 25/2247; F16H 2025/2271; Y10T 74/19772; Y10T 74/19744; Y10T 74/19749; Y10T 74/19753; Y10T 74/19758; Y10T 74/19763

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- 5,373,755 A * 12/1994 Rohlinger F16H 25/2214 74/424.86
- 6,561,053 B2 * 5/2003 Greubel F16H 25/2219 74/424.82
- 6,681,651 B2 * 1/2004 Fujita F16H 25/2214 74/424.82
- 7,523,681 B2 * 4/2009 Pan F16H 25/2214 74/424.81
- 7,523,682 B2 * 4/2009 Liao F16H 25/2214 74/424.83
- 7,845,251 B2 * 12/2010 Wu F16H 25/2219 74/424.82
- 7,921,743 B2 * 4/2011 Ohkubo F16H 25/2214 74/424.87
- 8,336,415 B2 * 12/2012 Miyahara F16H 25/2247 384/45
- 8,408,087 B2 * 4/2013 Michioka F16H 25/2214 74/424.87
- 9,062,748 B1 * 6/2015 Guglietti F16H 25/2214

- 2007/0295132 A1 * 12/2007 Lin F16H 25/2223 74/424.86
- 2008/0022797 A1 * 1/2008 Wu F16H 25/2219 74/424
- 2009/0107273 A1 * 4/2009 Chen F16H 25/2214 74/424.86
- 2010/0107794 A1 * 5/2010 Lin F16H 25/2214 74/424.83
- 2010/0132494 A1 * 6/2010 Sugita F16H 25/2223 74/424.87
- 2010/0170360 A1 * 7/2010 Chen F16H 25/2214 74/424.84
- 2010/0282011 A1 * 11/2010 Nishimura F16H 25/2247 74/424.82
- 2012/0137808 A1 * 6/2012 Chen F16H 25/2214 74/424.88
- 2013/0283953 A1 * 10/2013 Iwasaki F16H 25/2219 74/424.87
- 2014/0033847 A1 * 2/2014 Chiu F16H 57/0497 74/424.86
- 2015/0217800 A1 * 8/2015 Laszlo B62D 5/0424 474/113

FOREIGN PATENT DOCUMENTS

- WO WO 2010013706 A1 * 2/2010 F16H 25/2214
- WO WO 2014184154 A1 * 11/2014 F16H 25/2214

* cited by examiner

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(57) **CLAIM**

The ornamental design for a ball screw, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a ball screw.
FIG. 2 is a front elevation view thereof.
FIG. 3 is a rear elevation view thereof.
FIG. 4 is a top plan view thereof.
FIG. 5 is a bottom plan view thereof.
FIG. 6 is a left side elevation view thereof; and,
FIG. 7 is a right side elevation view thereof.
The broken lines shown in the drawings illustrate portions of the ball screw that form no part of the claimed design.

1 Claim, 7 Drawing Sheets

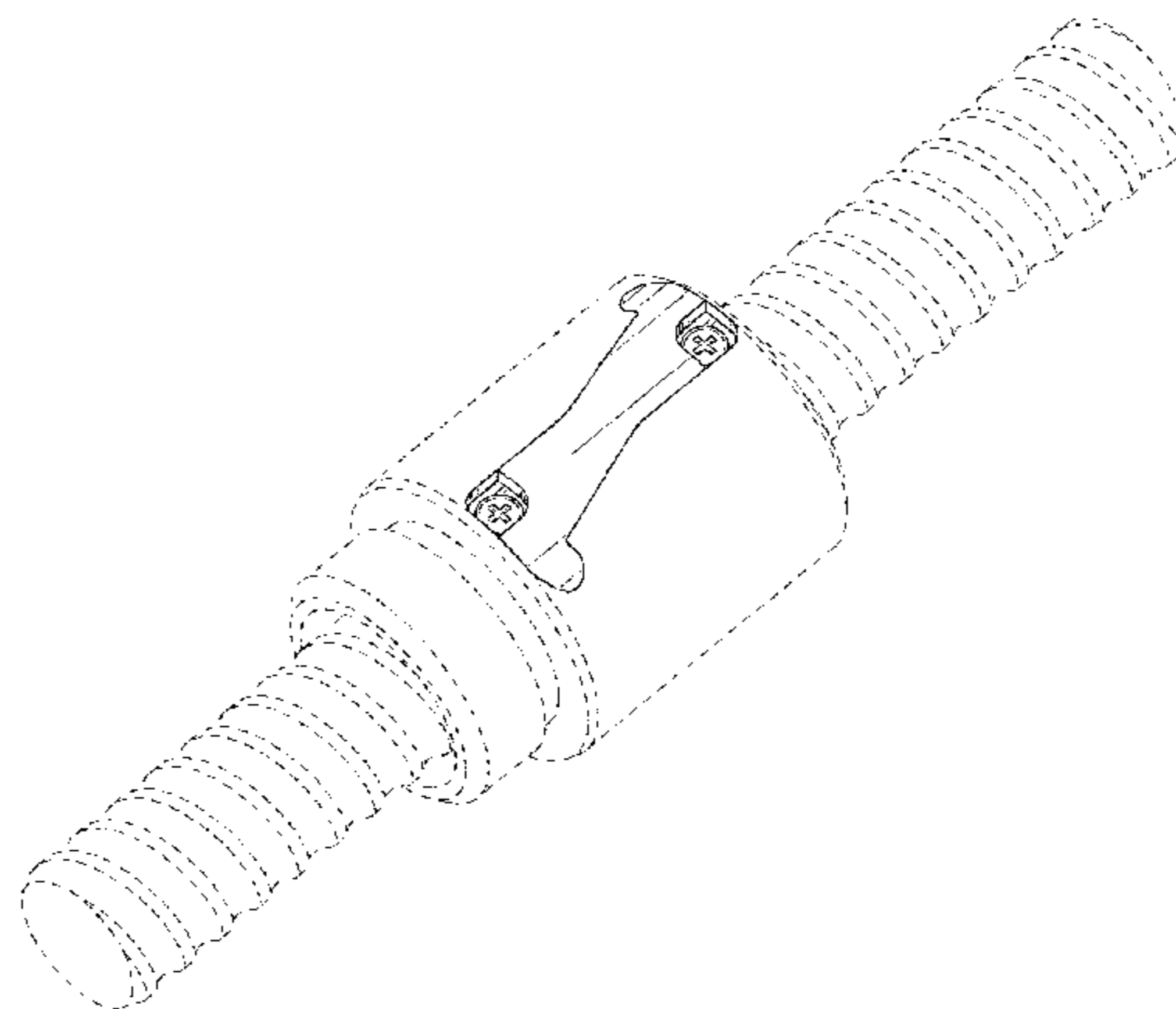


FIG. 1

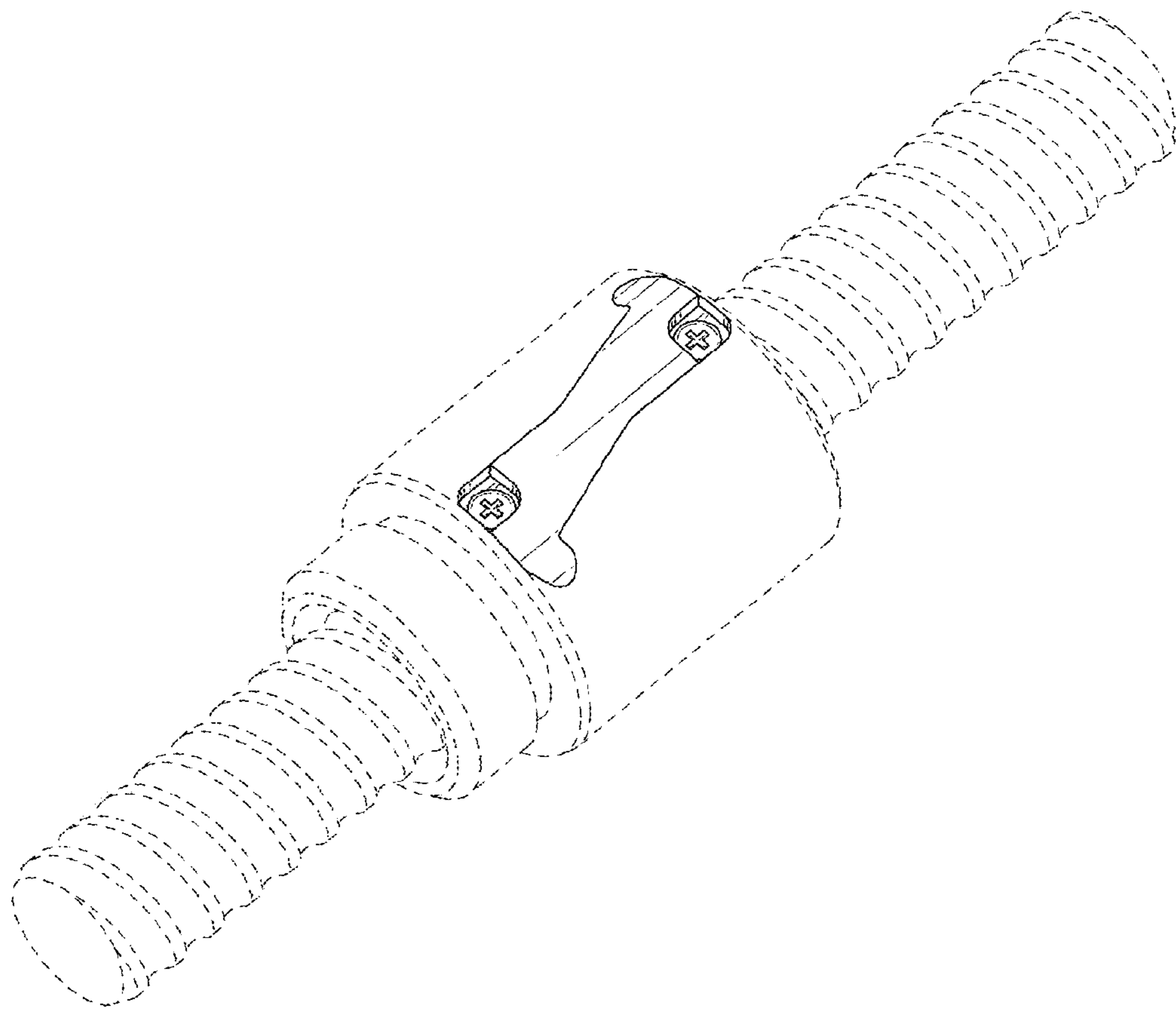


FIG. 2

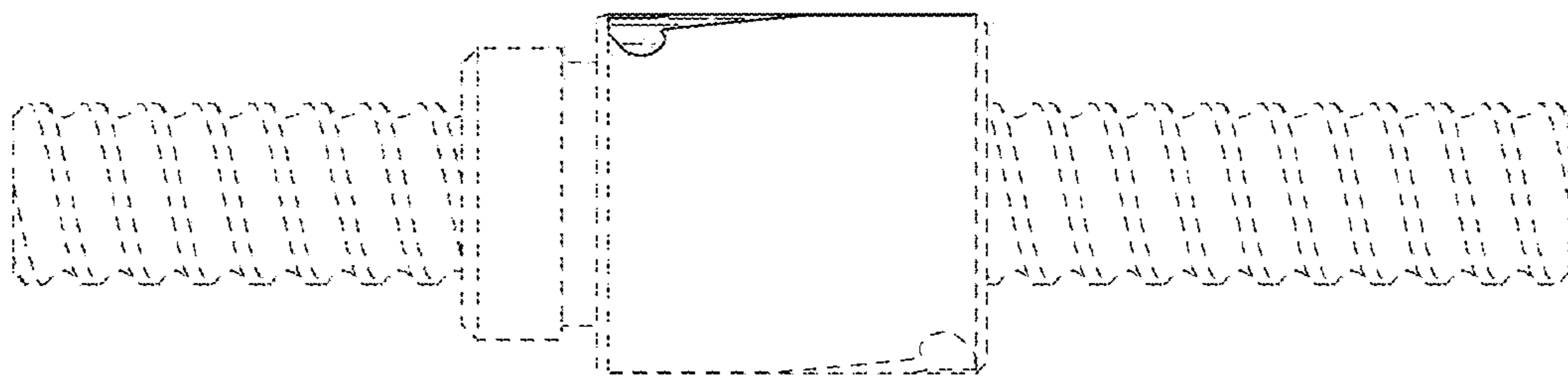


FIG. 3

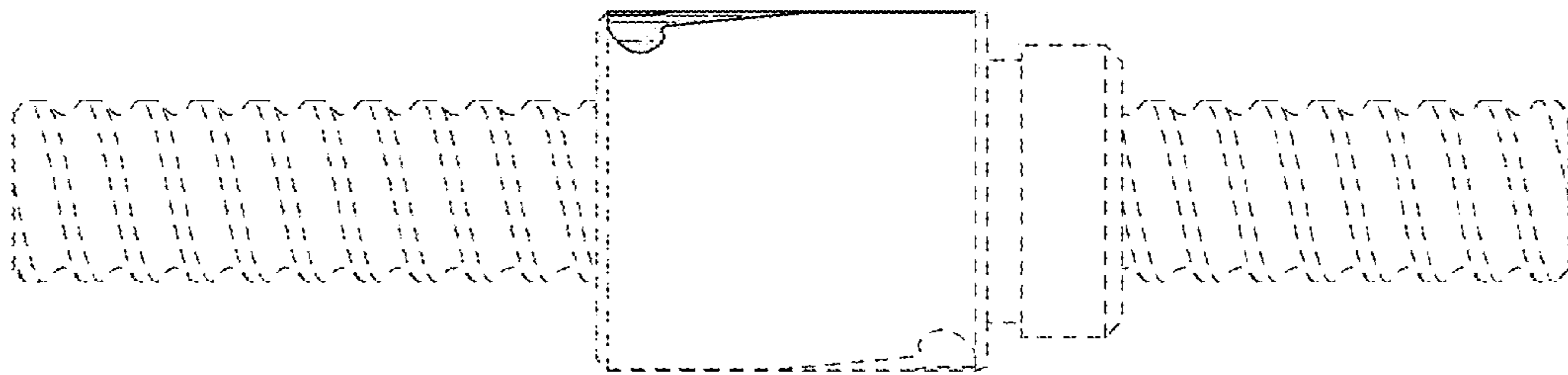


FIG. 4

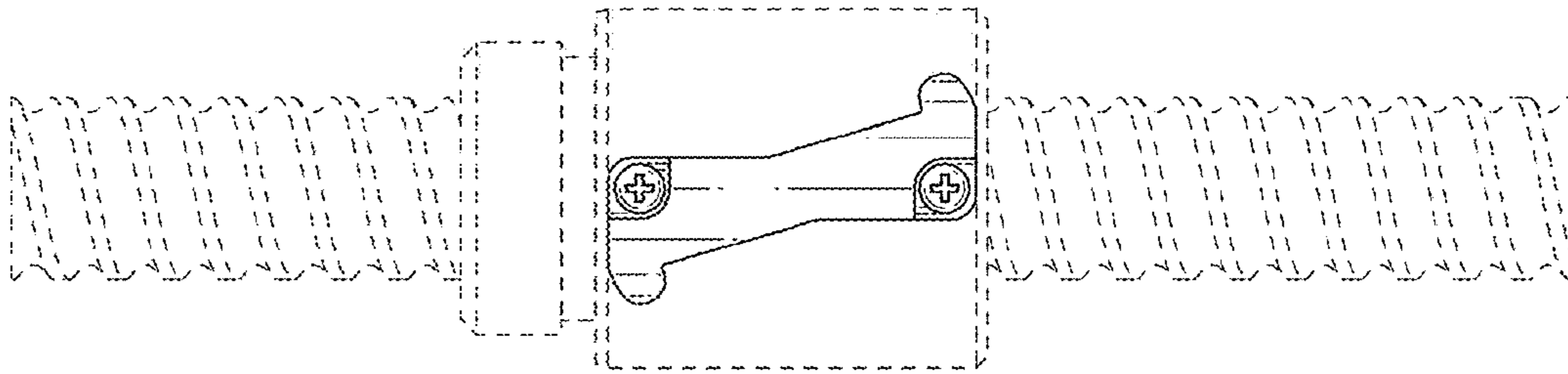


FIG. 5

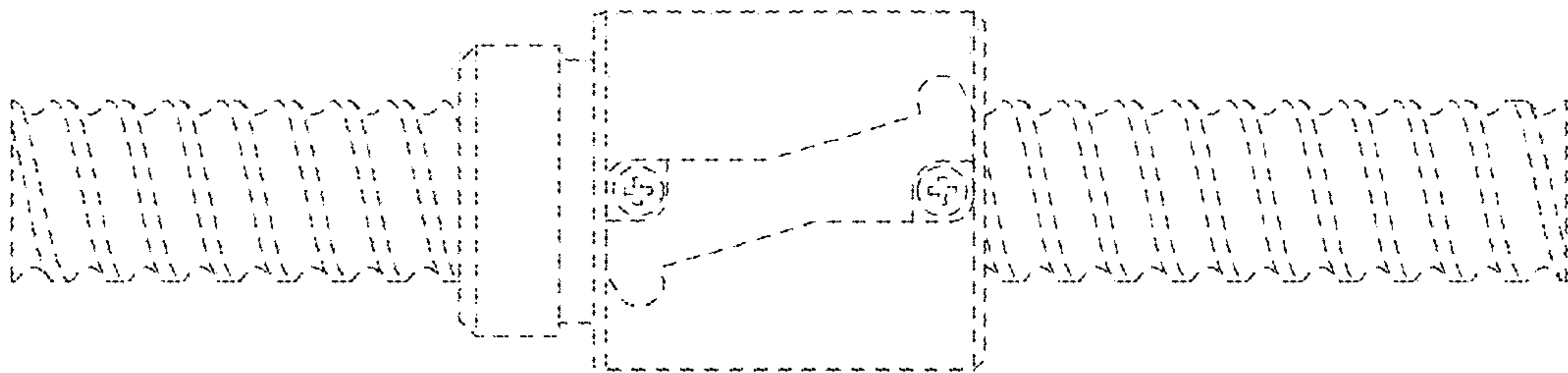


FIG. 6

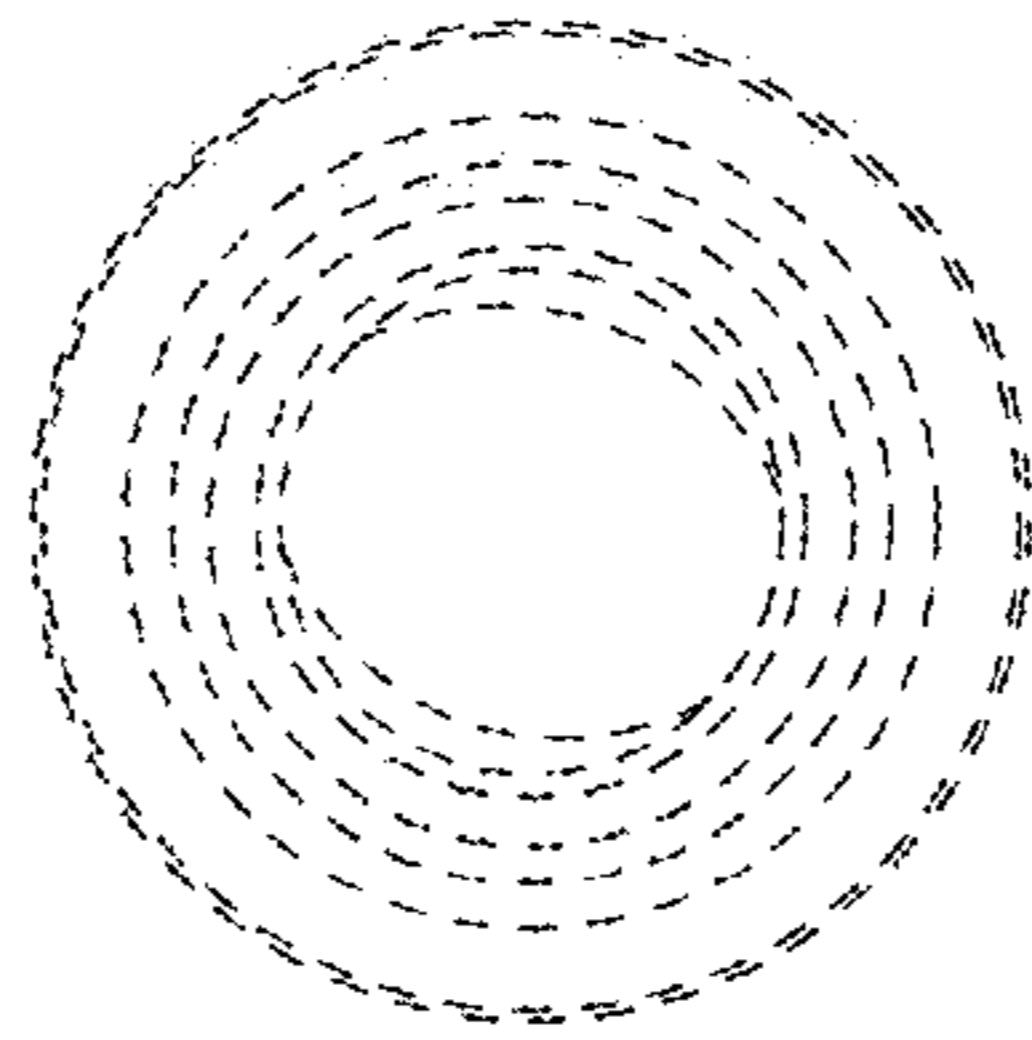


FIG. 7

