



US00D846455S

(12) **United States Design Patent**
Wichern

(10) **Patent No.:** **US D846,455 S**

(45) **Date of Patent:** **** Apr. 23, 2019**

(54) **CONTOURED WASHER WITH SPRING
BIASED SPOKE FOR WHEEL SUSPENSION
SYSTEM**

(71) Applicant: **David L Wichern**, St. Louis, MO (US)

(72) Inventor: **David L Wichern**, St. Louis, MO (US)

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

(21) Appl. No.: **29/620,279**

(22) Filed: **Sep. 13, 2016**

(51) **LOC (11) Cl.** **12-16**

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

(58) **Field of Classification Search**
USPC D12/159-162; D8/395
CPC B60G 17/00; B60G 17/02; B60G 17/021;
F16B 39/24; F16B 39/26; F16B 5/0266;
F16B 37/0857; F16B 37/12
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

| | | | | | |
|-----------|-----|---------|-----------|-------|-------------------------|
| 2,238,095 | A * | 4/1941 | Almcrantz | ..... | B60D 1/34 280/446.1 |
| D151,604 | S * | 11/1948 | Denney | ..... | D12/162 |
| 3,160,406 | A * | 12/1964 | Dickinson | ..... | B60G 15/063 267/221 |
| 3,437,119 | A * | 4/1969 | Dey | ..... | F16B 41/002 411/107 |
| 3,487,744 | A * | 1/1970 | Montana | ..... | F16B 13/0808 411/346 |
| D221,060 | S * | 7/1971 | Townsend | ..... | D8/311 |
| 3,783,777 | A * | 1/1974 | Killen | ..... | B41F 15/0872 101/123 |
| D230,723 | S * | 3/1974 | Cowan | ..... | D12/159 |
| D262,959 | S * | 2/1982 | Cowan | ..... | D12/159 |
| D277,952 | S * | 3/1985 | Nakano | ..... | D12/159 |
| D279,163 | S * | 6/1985 | Lye | ..... | D8/25 |
| D279,370 | S * | 6/1985 | Ballew | ..... | D12/159 |

| | | | | | |
|-----------|------|---------|-----------|-------|------------------------|
| D281,772 | S * | 12/1985 | Heideman | ..... | D12/159 |
| D283,591 | S * | 4/1986 | Swanstrom | ..... | D8/382 |
| D391,844 | S * | 3/1998 | Ropponen | ..... | D8/382 |
| D392,179 | S * | 3/1998 | Ropponen | ..... | D8/387 |
| D398,269 | S * | 9/1998 | Sennuck | ..... | 297/209 |
| D434,707 | S * | 12/2000 | Bauer | ..... | D12/159 |
| D435,236 | S * | 12/2000 | Hanlon | ..... | D12/159 |
| 7,344,345 | B2 * | 3/2008 | Aukzemas | ..... | F16B 5/0241 411/183 |
| D624,398 | S * | 9/2010 | Ham | ..... | D8/499 |
| D656,392 | S * | 3/2012 | McKenna | ..... | D8/382 |

(Continued)

OTHER PUBLICATIONS

Wichern, Daniel, The Impact Control Wheel, posted at YouTube, posting date May 29, 2013. [online] [site visited Mar. 16, 2018]. Available from Internet. <URL: <https://www.youtube.com/watch?v=RT9T2vIUPmA>> (Year: 2013).*

(Continued)

Primary Examiner — Kevin K Rudzinski

Assistant Examiner — Kathleen L Jones

(74) *Attorney, Agent, or Firm* — Paul M. Denk

(57) **CLAIM**

The ornamental design for the contoured washer with spring biased spoke for wheel suspension system, as shown and described.

DESCRIPTION

FIG. 1 is an isometric view of a contoured washer with spring biased spoke for wheel suspension system of this invention;

FIG. 2 is a front view thereof;

FIG. 3 is a back view;

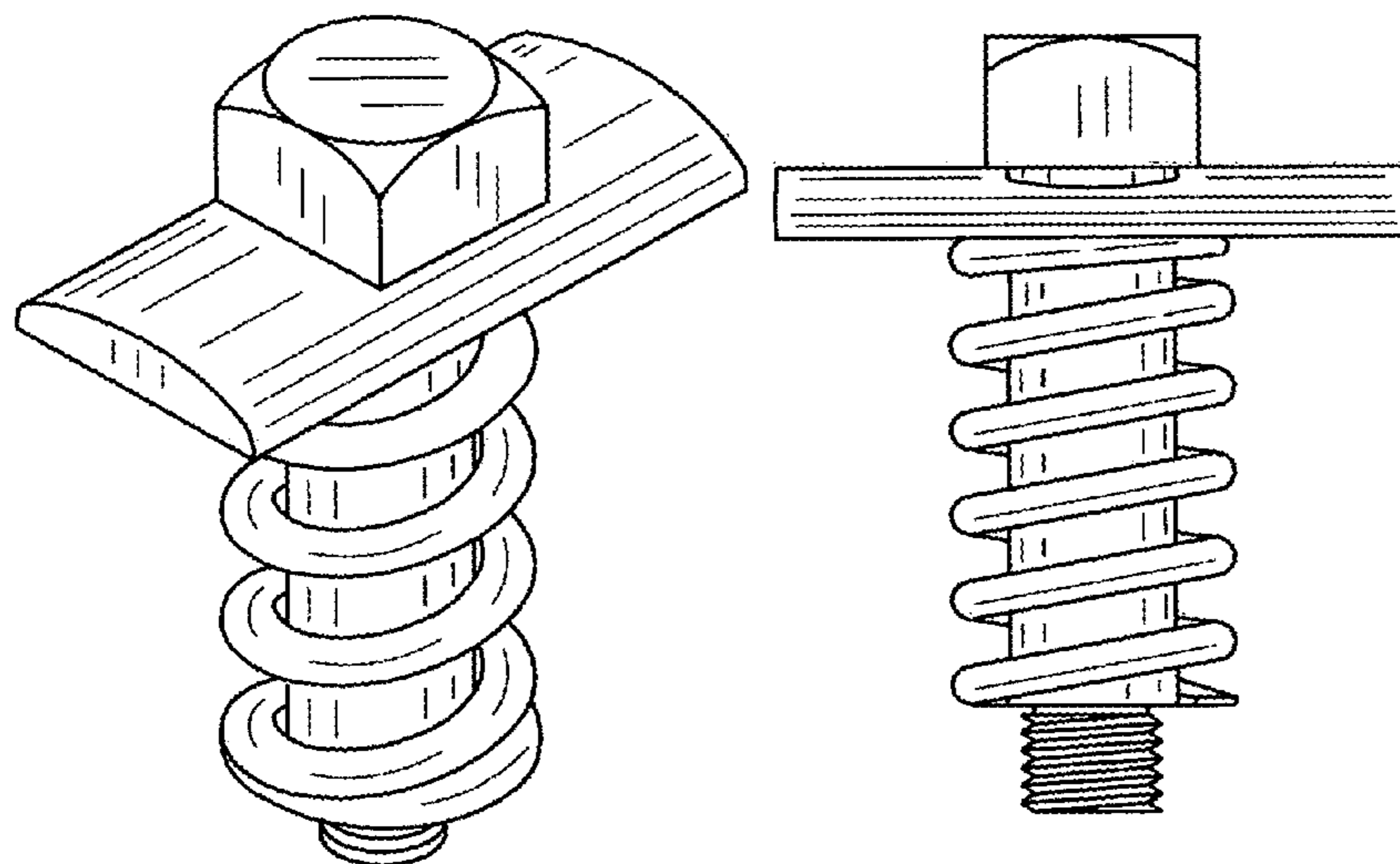
FIG. 4 is a right side view;

FIG. 5 is a left side view;

FIG. 6 is a top view; and,

FIG. 7 is a bottom view.

1 Claim, 2 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D709,802 S * 7/2014 Miyata D12/119
D729,052 S * 5/2015 Summers D8/387
10,094,413 B2 * 10/2018 Hess F16B 39/24
2003/0172838 A1 * 9/2003 Forbes B61D 3/18
105/355
2010/0295259 A1 * 11/2010 Ryshavy B60G 7/003
280/6.15
2014/0252741 A1 * 9/2014 Corby B60G 3/06
280/124.134
2017/0314592 A1 * 11/2017 Jodeleit F16B 5/0208

OTHER PUBLICATIONS

M6 Long Spring Zebedee, posted at City Electrical, posting Jun. 5, 2016. [online] [site visited Mar. 16, 2018]. <URL: <https://web.archive.org/web/20160605020904/http://www.cef.co.uk/catalogue/products/113318-m6-long-spring-channel-nuts-bzp-pack-of-100>> (Year: 2016).*

Adolphus, David Traver, Earlier and resilienter, posted at Hemmings Daily, posting date Oct. 19, 2010. [online] [site visited Mar. 16, 2018]. Available from Internet. <URL: <https://www.hemmings.com/blog/2010/10/19/earlier-and-resilienter/>> (Year: 2010).*

JP-D1194348, Spring washer and nut, posted at Orbit, publication date Jan. 13, 2004. [online] [site visited Mar. 16, 2018]. Available from Internet. (Year: 2004).*

Channel Cable Tray Spring Nut, posted at Alibaba, posting date not available. [online] [site visited Mar. 16, 2018]. Available from Internet. <URL: https://www.alibaba.com/product-detail/Channel-Cable-Tray-Spring-Nut-m5_536573943.html>.*

* cited by examiner

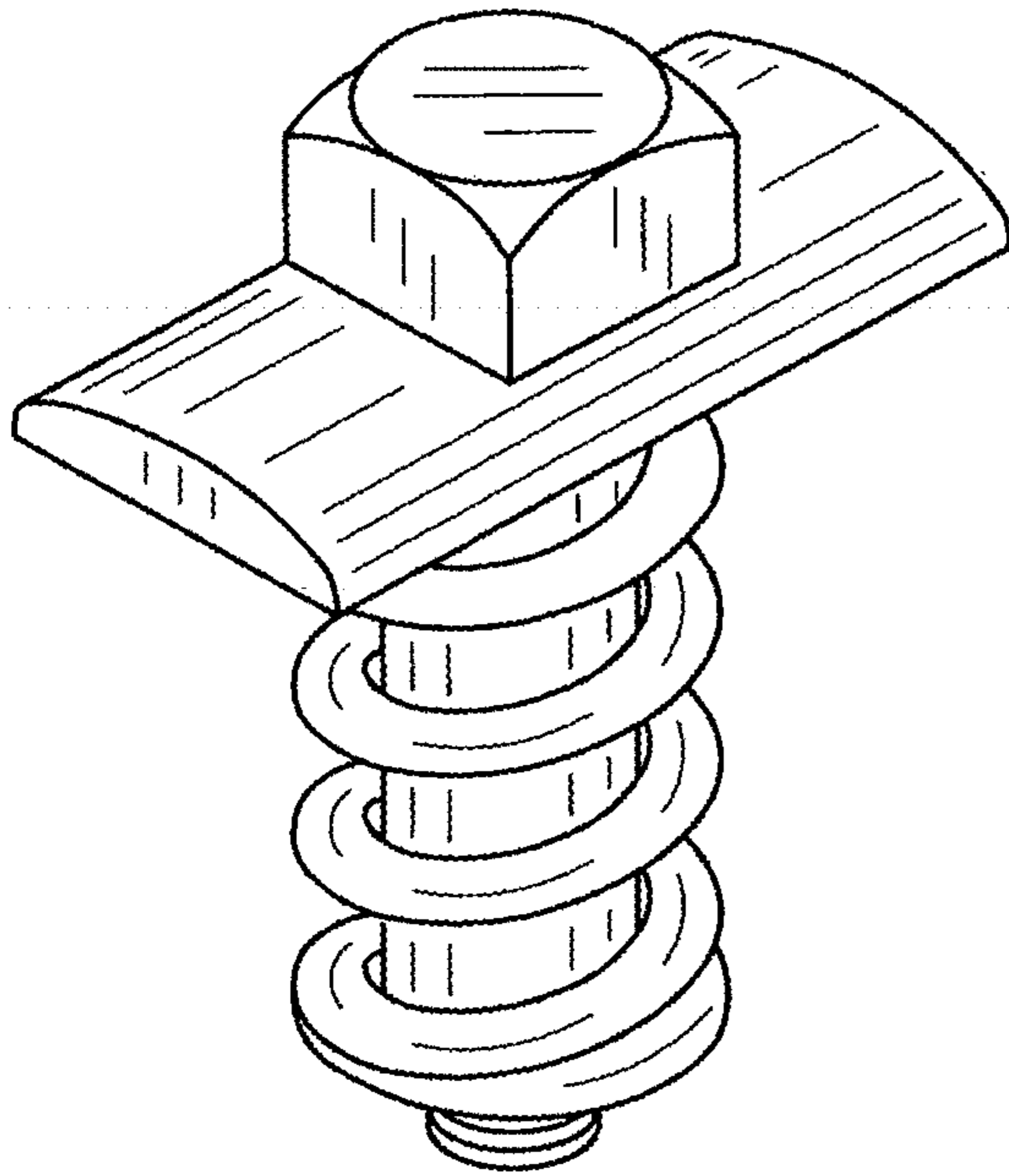


FIG. 1

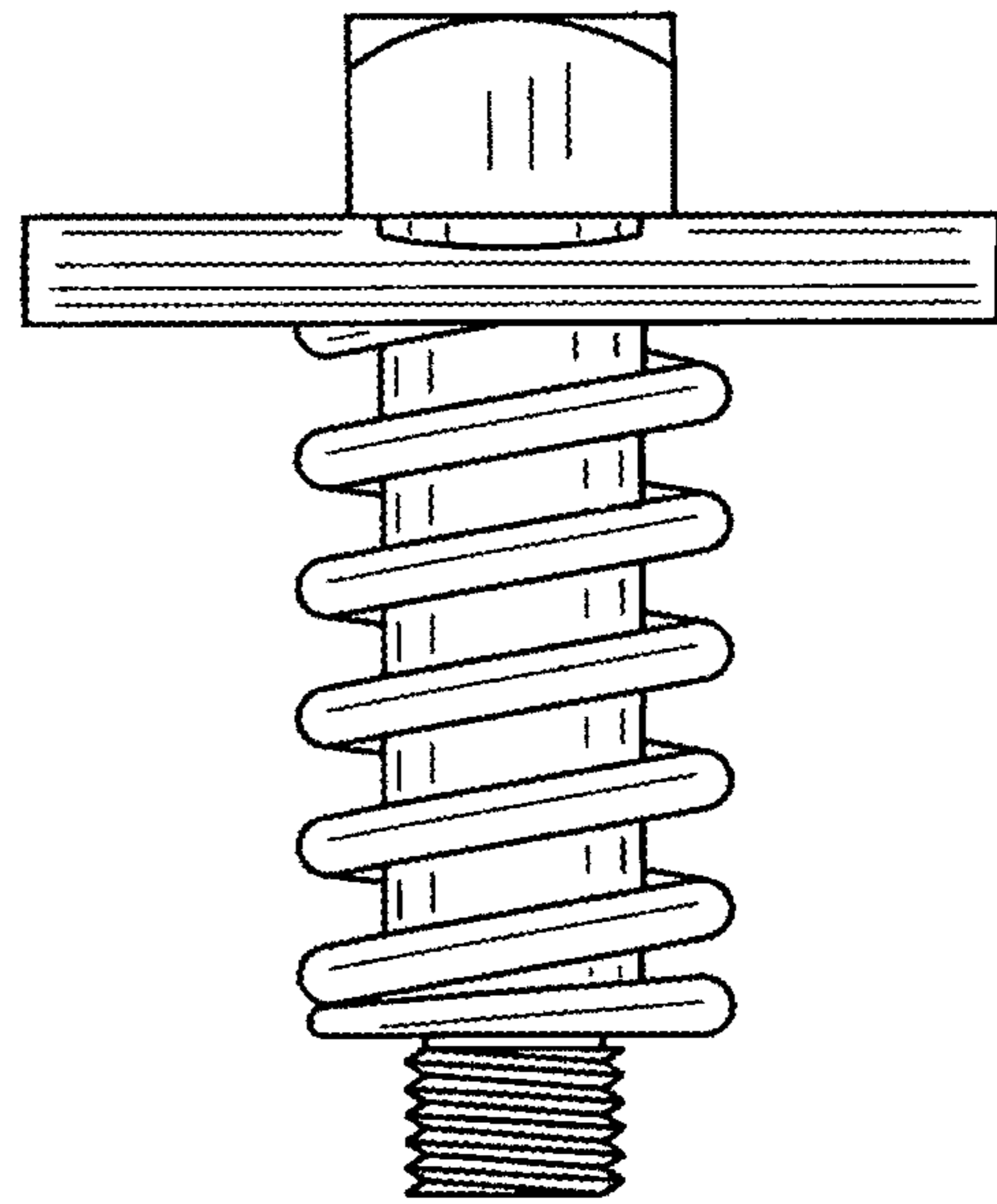


FIG. 2

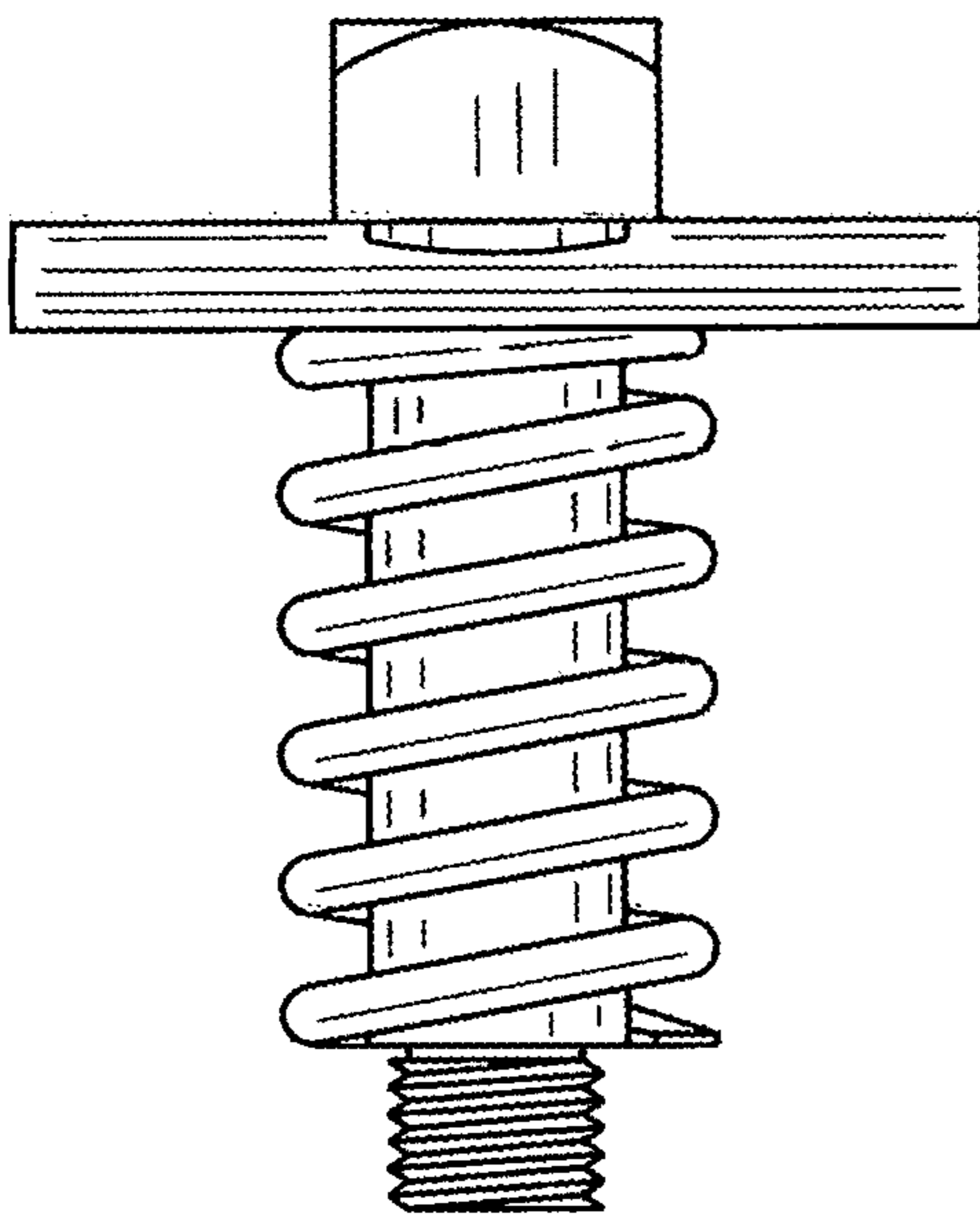


FIG. 3

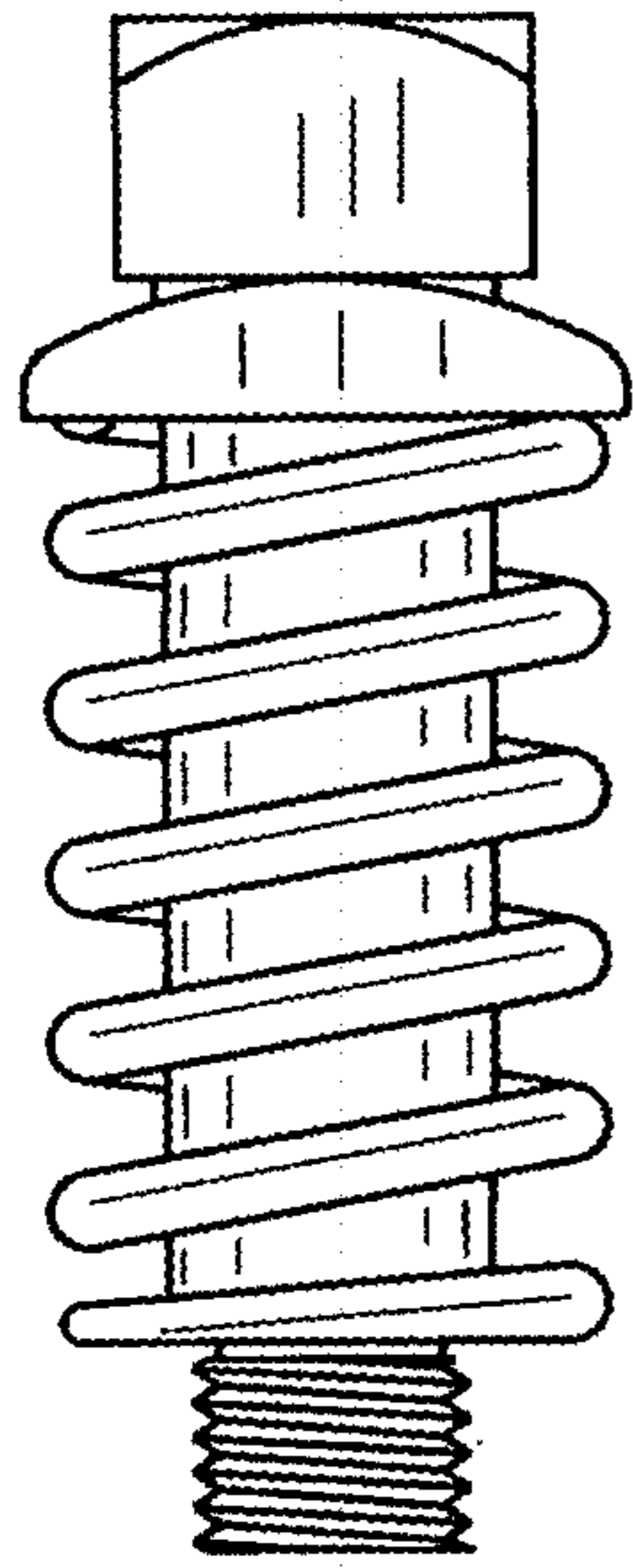


FIG. 4

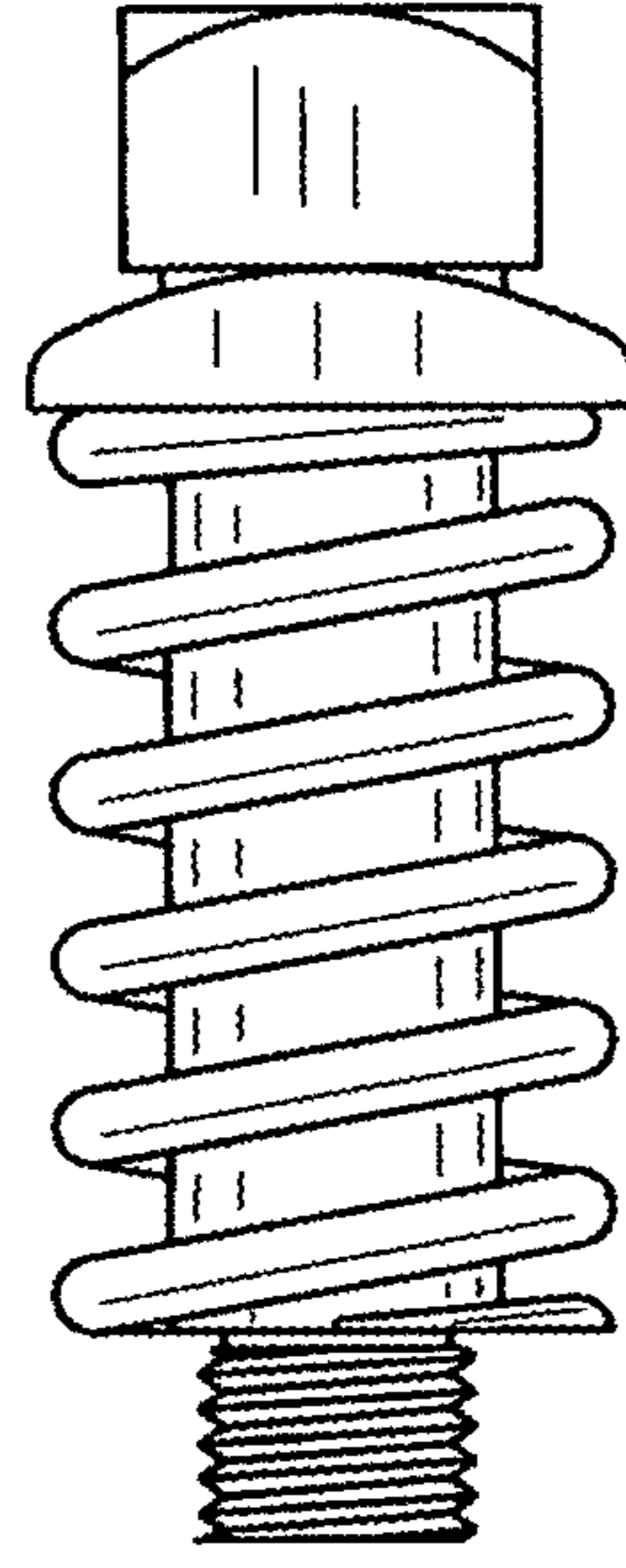


FIG. 5

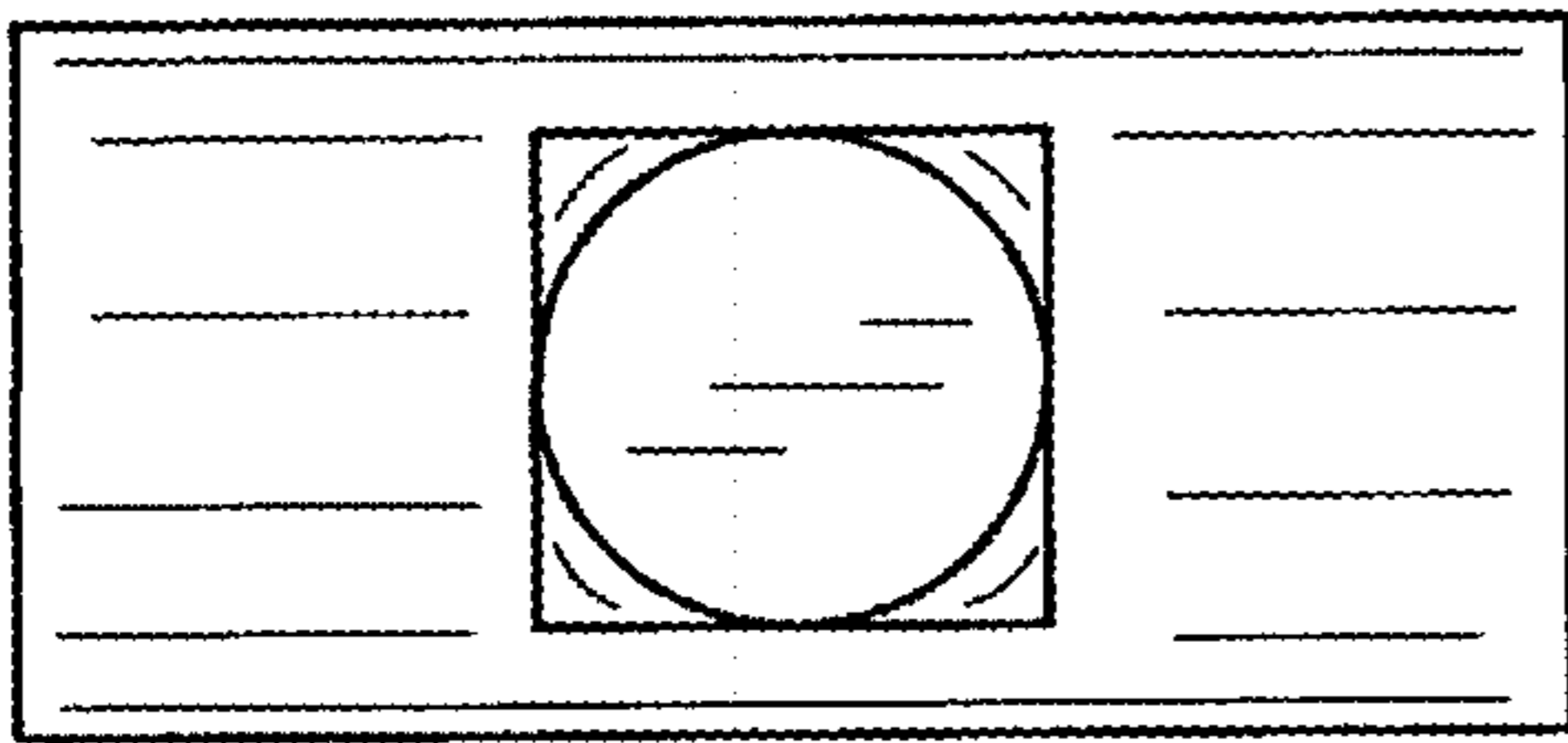


FIG. 6

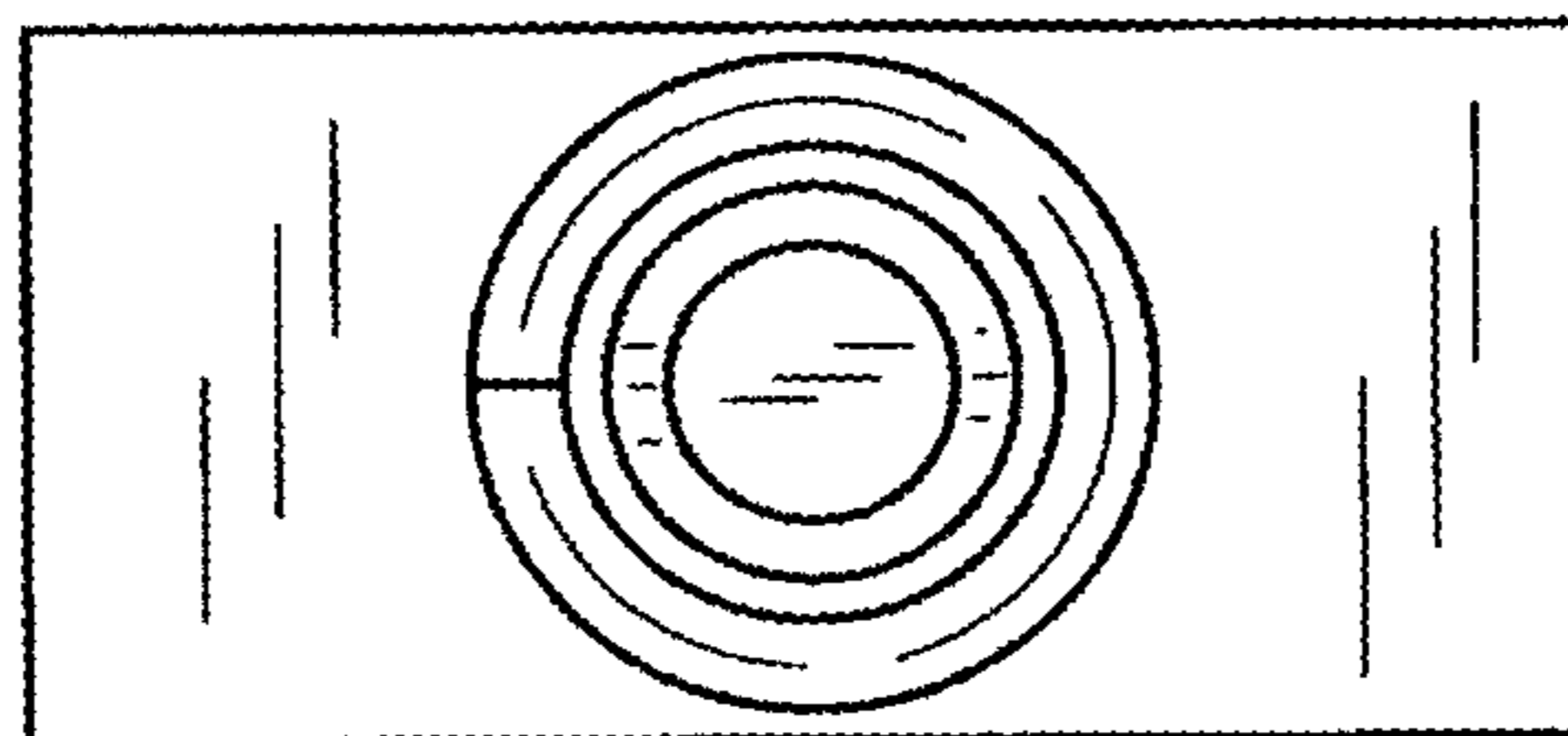


FIG. 7