



US00D846006S

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

(10) **Patent No.:** **US D846,006 S**

(45) **Date of Patent:** **** Apr. 16, 2019**

(54) **COMBINED THREAD TENSION DEVICE AND THREAD BREAKAGE DETECTOR MOUNTED ON THREAD TENSION TABLE FOR EMBROIDERY SEWING MACHINE**

4,735,161 A * 4/1988 Brocklehurst D05B 51/00
112/273
4,803,941 A 2/1989 Schreiber et al.
D306,601 S 3/1990 Uchida
D307,024 S 4/1990 Itoh et al.
4,960,062 A * 10/1990 Hanyu D05B 47/04
112/255

(71) Applicant: **TOKAI KOGYO MISHIN KABUSHIKI KAISHA**, Kasugai-shi (JP)

D321,518 S 11/1991 Uchida
(Continued)

(72) Inventor: **Toshiyuki Kita**, Nishinomiya (JP)

OTHER PUBLICATIONS

(73) Assignee: **TOKAI KOGYO MISHIN KABUSHIKI KAISHA**, Kasugai-Shi (JP)

Copending U.S. Appl. No. 29/617,944, filed Sep. 18, 2017.
(Continued)

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

Primary Examiner — Mitchell I. Siegel
(74) *Attorney, Agent, or Firm* — Rossi, Kimms & McDowell LLP

(21) Appl. No.: **29/617,947**

(22) Filed: **Sep. 18, 2017**

(57) **CLAIM**

(30) **Foreign Application Priority Data**

Mar. 22, 2017 (JP) 2017-005768

I claim the ornamental design for a combined thread tension device and thread breakage detector mounted on thread tension table for embroidery sewing machine, as shown and described.

(51) **LOC (11) Cl.** **15-06**

(52) **U.S. Cl.**
USPC **D15/72**

DESCRIPTION

(58) **Field of Classification Search**
USPC D15/66–78
CPC D05B 1/00–25/00
See application file for complete search history.

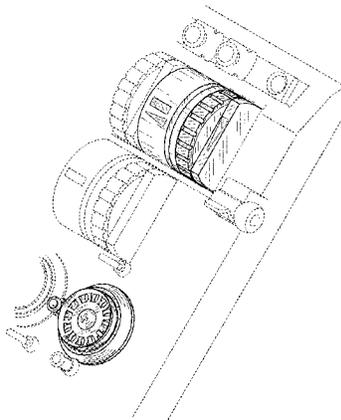
FIG. 1 is a perspective view of a combined thread tension device and thread breakage detector mounted on thread tension table for embroidery sewing machine;
FIG. 2 is a front elevational view thereof;
FIG. 3 is a top plan view thereof;
FIG. 4 is a right-side elevational view thereof;
FIG. 5 is an enlarged perspective view thereof;
FIG. 6 is an enlarged right-side elevational view thereof; and,
FIG. 7 is an enlarged front elevational view thereof.
The broken lines showing the unclaimed portions of the embroidery sewing machine are for illustrative purposes and form no part of the claimed design.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,940,685 A 6/1960 Glass
3,021,401 A * 2/1962 Young B65H 63/028
200/61.13
3,114,516 A 12/1963 Comerio
3,587,497 A * 6/1971 Beazley D05B 51/00
112/273
3,727,393 A * 4/1973 Mikulecky B65H 63/0321
200/61.18
4,407,461 A 10/1983 Tomisawa

1 Claim, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D321,694 S 11/1991 Uchida
 5,211,122 A * 5/1993 Lin D05B 47/02
 112/254
 D338,022 S 8/1993 Takada et al.
 5,347,942 A 9/1994 Thomas
 5,471,941 A 12/1995 Sakuma
 5,533,460 A * 7/1996 Tseng D05B 47/02
 112/254
 5,603,462 A 2/1997 Conrad et al.
 D392,294 S 3/1998 Kato et al.
 D450,721 S 11/2001 Kawaguchi
 6,325,006 B1 * 12/2001 Park D05B 87/02
 112/241
 D462,368 S 9/2002 Kuroki
 D465,793 S 11/2002 Takada et al.
 D474,785 S 5/2003 Carter et al.
 D478,337 S 8/2003 Kuroki
 D478,916 S 8/2003 Kuroki
 D482,702 S 11/2003 Kawaguchi
 6,732,668 B2 5/2004 Zesch et al.
 D491,201 S * 6/2004 Suwa D15/78
 D492,702 S * 7/2004 Suwa D15/66
 D521,534 S 5/2006 Kawaguchi
 7,055,443 B2 6/2006 Goto et al.
 D524,828 S 7/2006 Kuroki
 7,114,455 B2 10/2006 Prufer et al.
 7,204,137 B1 * 4/2007 Skalchunes D05B 69/36
 73/159
 7,219,611 B1 5/2007 Troncoso et al.

D553,650 S 10/2007 Muto
 D555,176 S 11/2007 Ogawa
 D570,882 S * 6/2008 Lee D15/66
 D601,594 S 10/2009 Gustafsson
 D632,706 S 2/2011 Hattori
 7,949,421 B2 * 5/2011 Hayakawa D05C 11/06
 112/102.5
 D648,358 S * 11/2011 Nonobe D15/72
 D648,757 S 11/2011 Muto
 D648,759 S 11/2011 Fujihara
 8,170,708 B2 5/2012 Goldman et al.
 D700,634 S 3/2014 Saitou et al.
 8,973,859 B2 3/2015 Troncoso et al.
 9,346,650 B2 5/2016 Niizeki
 10,000,871 B2 6/2018 Komada et al.
 2010/0236463 A1 * 9/2010 Fujihara D05B 19/14
 112/470.05

OTHER PUBLICATIONS

Copending U.S. Appl. No. 29/617,954, filed Sep. 18, 2017.
 Notice of Allowance issued in U.S. Appl. No. 29/617,954 dated
 Dec. 3, 2018.
 Quayle Action issued in U.S. Appl. No. 29/617,954 dated Aug. 29,
 2018.
 Office Action issued in U.S. Appl. No. 29/617,944 dated Aug. 29,
 2018.
 Notice of Allowance issued in U.S. Appl. No. 29/617,944 dated Jan.
 10, 2019.

* cited by examiner

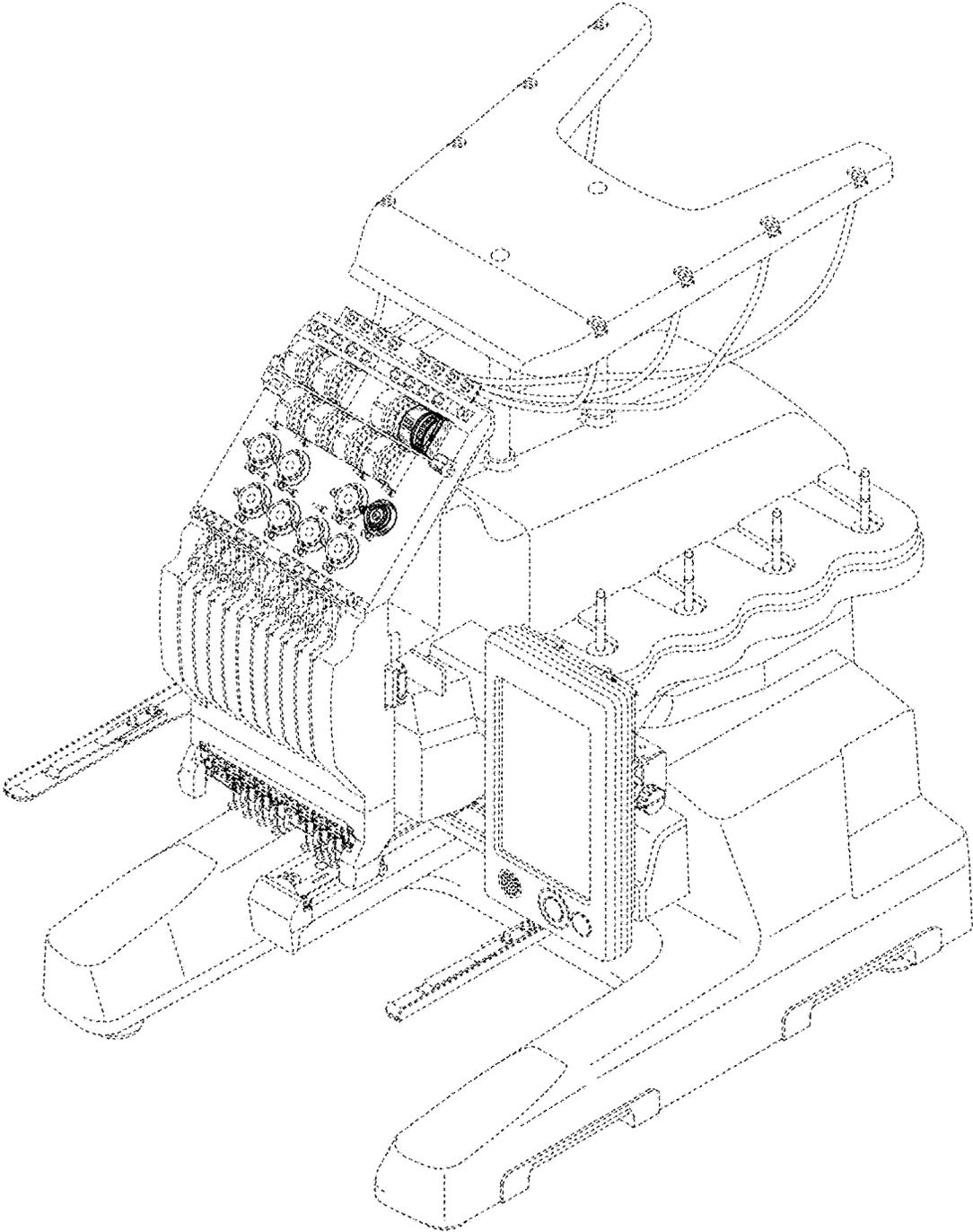


FIG. 1

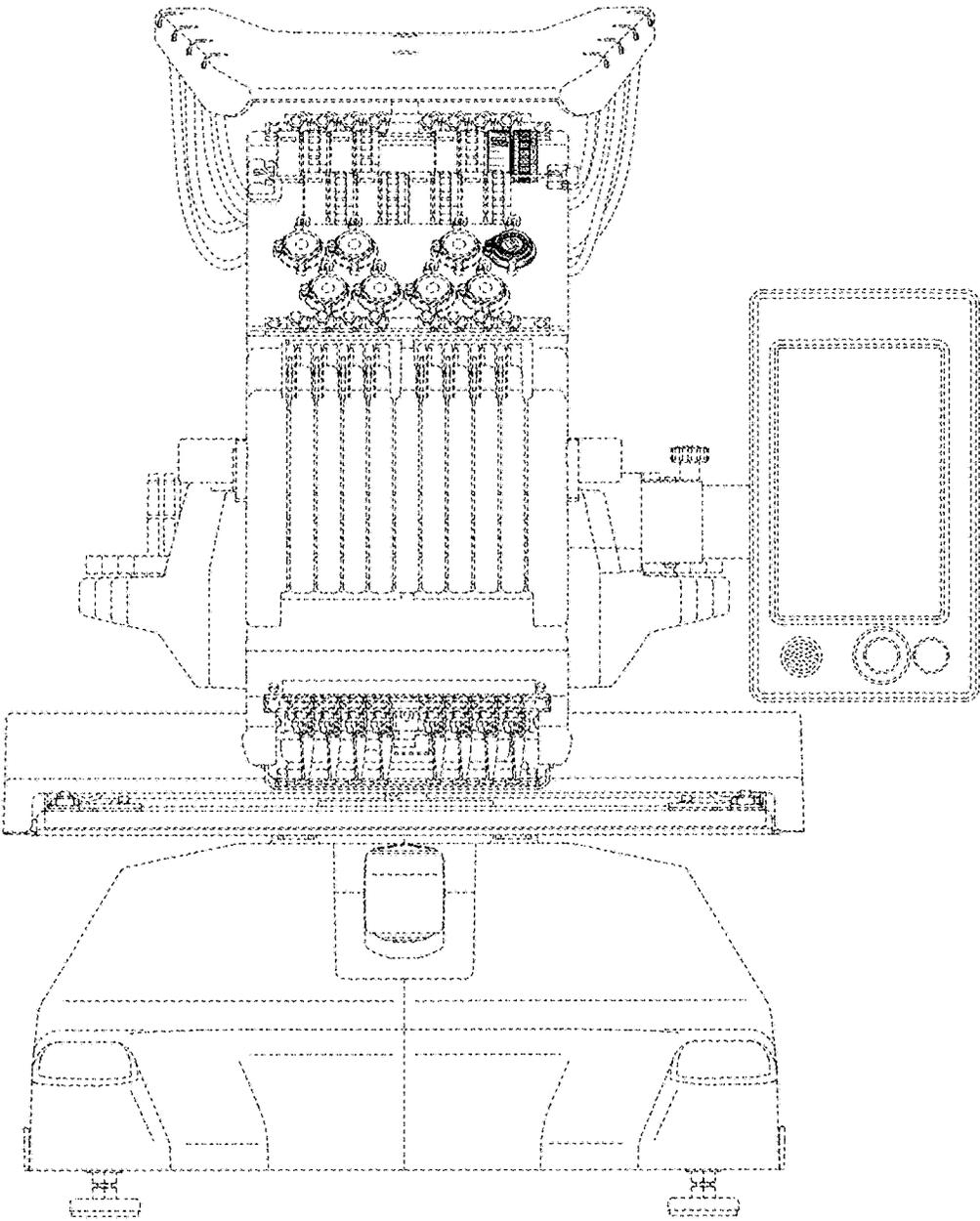


FIG. 2

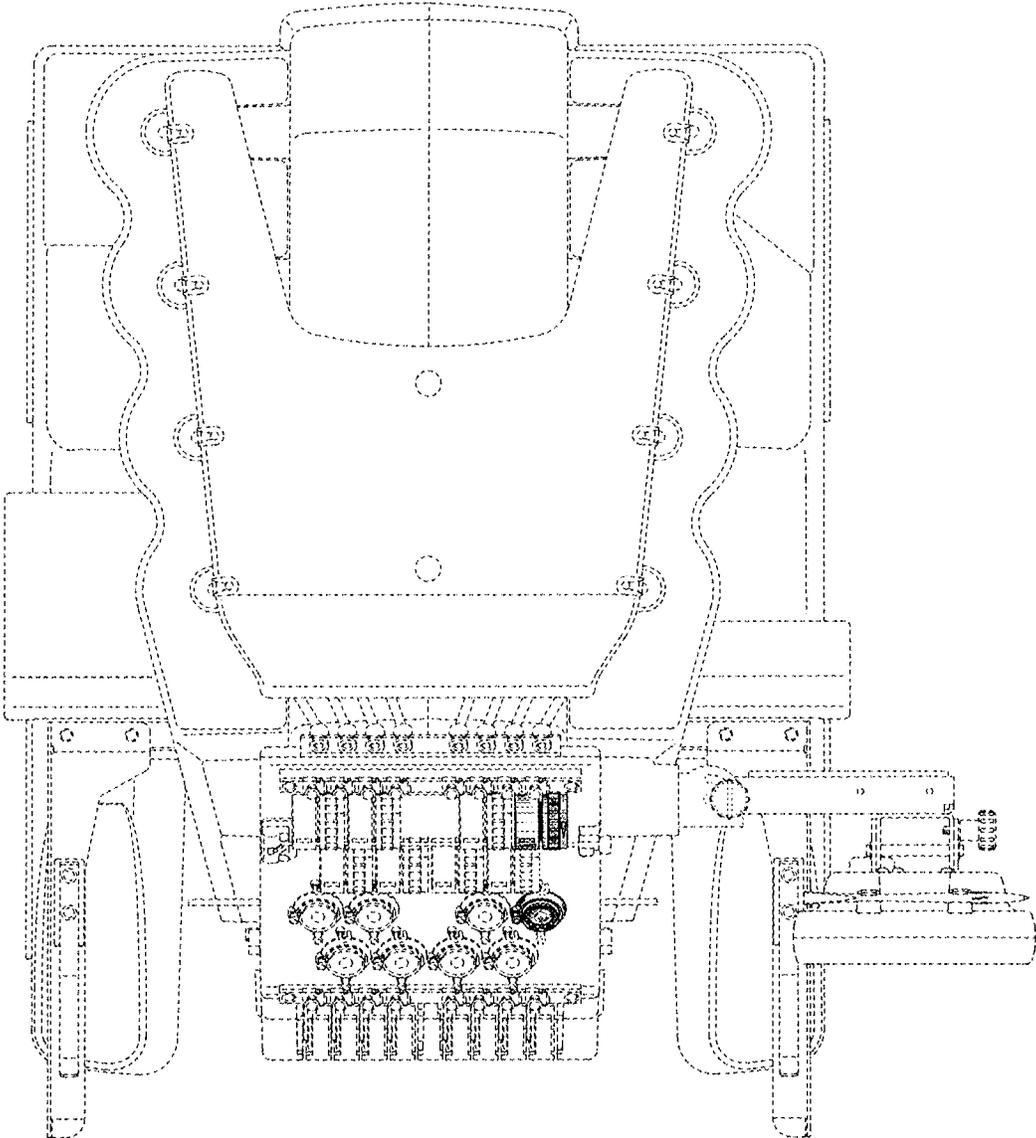


FIG. 3

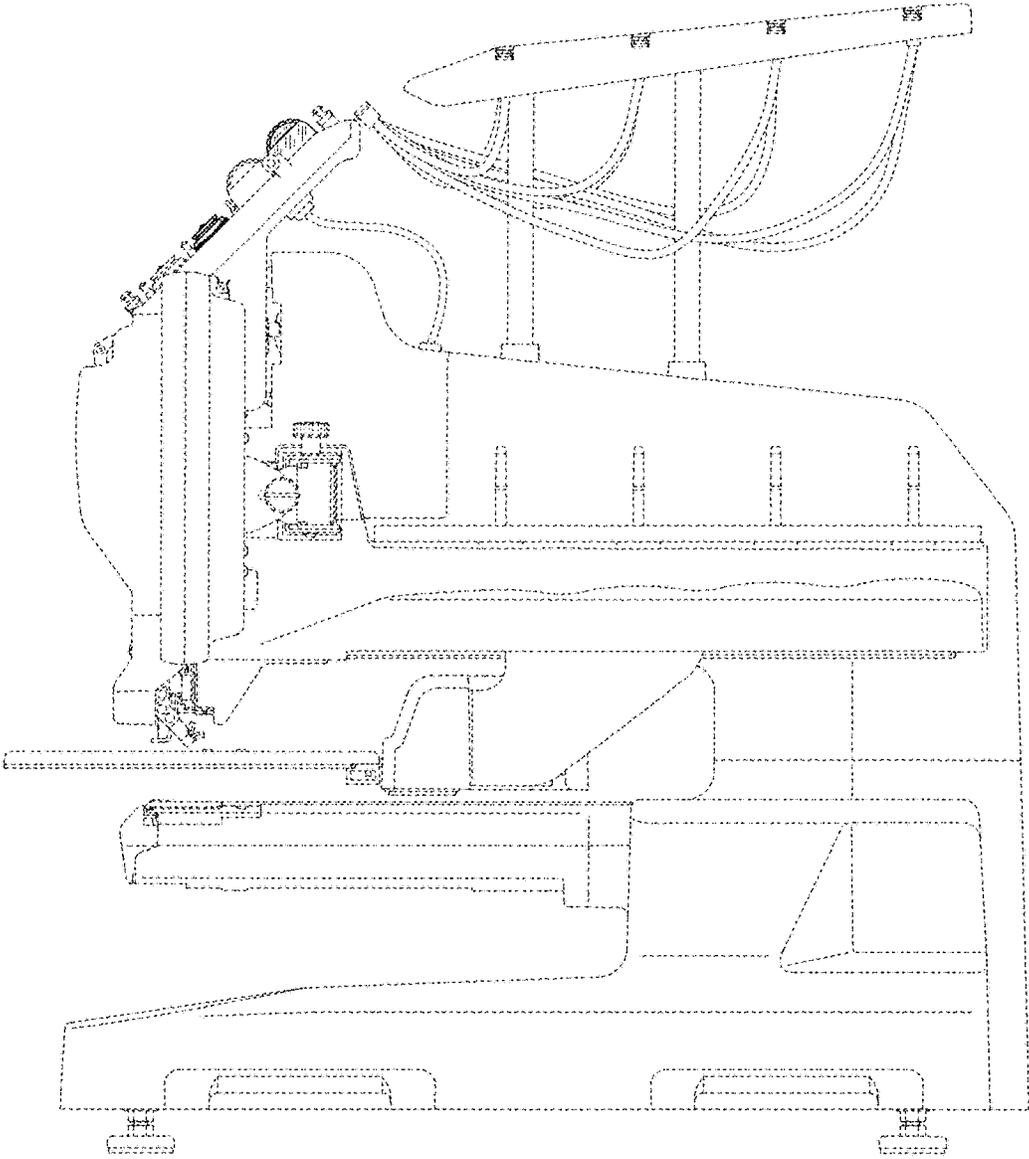


FIG. 4

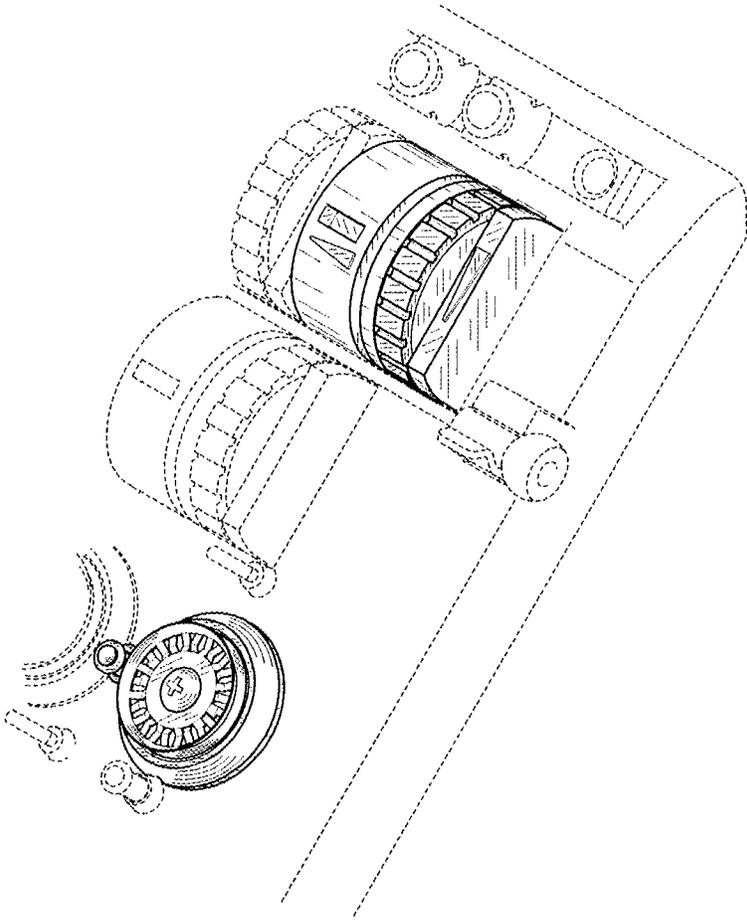


FIG. 5

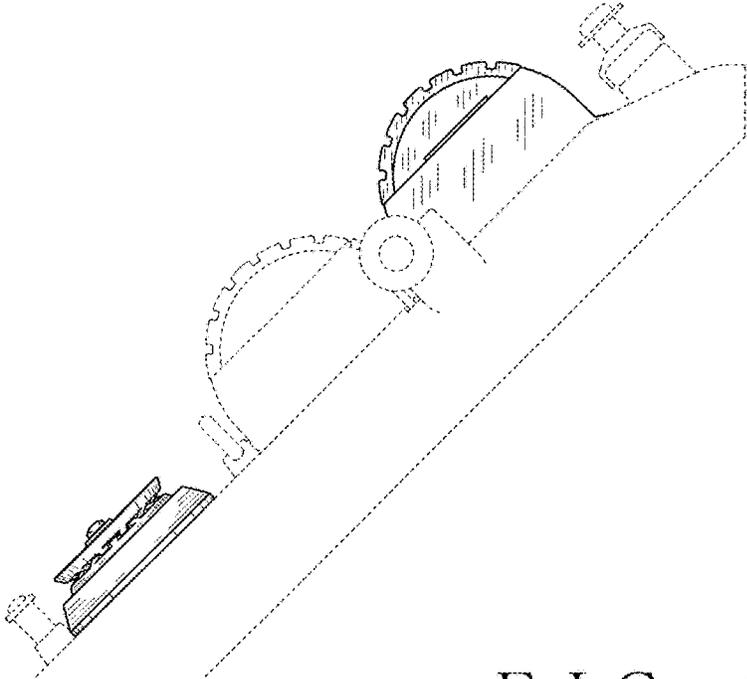


FIG. 6

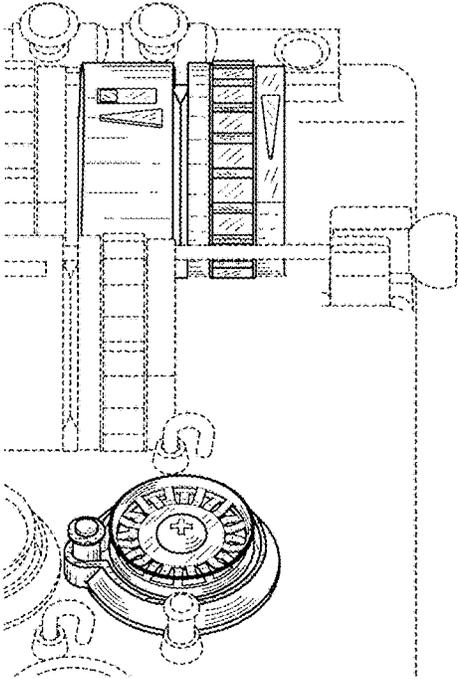


FIG. 7