



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

(10) **Patent No.:** **US D621,037 S**
(45) **Date of Patent:** **** Aug. 3, 2010**

(54) **GROOVED PISTON**

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(**) Term: **14 Years**

(21) Appl. No.: **29/341,358**

(22) Filed: **Aug. 4, 2009**

(51) **LOC (9) Cl.** **24-02**

(52) **U.S. Cl.** **D24/130**

(58) **Field of Classification Search** D24/112,
D24/114, 127-130; 206/363-364, 367; 604/54,
604/110, 192, 263, 295
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- 3,998,224 A * 12/1976 Chiquiar-Arias 604/110
- 4,252,118 A * 2/1981 Richard et al. 604/110
- 4,660,569 A 4/1987 Etherington
- 4,826,483 A * 5/1989 Molnar, IV 604/110
- 5,021,047 A * 6/1991 Movern 604/110
- 5,042,695 A 8/1991 Battezzore
- 5,183,466 A * 2/1993 Movern 604/110
- 5,360,146 A 11/1994 Ikushima
- 5,453,093 A * 9/1995 Haining 604/110
- 5,738,655 A * 4/1998 Vallengunga et al. 604/110
- 5,865,803 A 2/1999 Major
- 6,503,084 B2 1/2003 Evers et al.
- 6,572,565 B2 * 6/2003 Daley et al. 600/573
- 6,632,198 B2 * 10/2003 Caizza 604/110
- 6,916,308 B2 7/2005 Dixon et al.
- 7,101,351 B2 * 9/2006 Crawford et al. 604/110

- 7,128,246 B2 10/2006 Raia et al.
- D581,528 S * 11/2008 Sudo D24/130
- D583,938 S * 12/2008 Sudo D24/130
- 7,503,905 B2 3/2009 Jessop et al.
- 7,547,297 B2 * 6/2009 Brinkhues 604/199
- 2002/0077598 A1 * 6/2002 Yap et al. 604/155
- 2003/0233075 A1 * 12/2003 Huegli 604/222
- 2005/0137533 A1 * 6/2005 Sudo et al. 604/218
- 2006/0178643 A1 * 8/2006 Sudo et al. 604/230
- 2007/0078406 A1 * 4/2007 Lee 604/198
- 2007/0078407 A1 * 4/2007 Huang 604/198
- 2007/0167910 A1 * 7/2007 Tennican et al. 604/110
- 2007/0250004 A1 * 10/2007 Tung 604/110
- 2008/0097387 A1 * 4/2008 Spector 604/512
- 2008/0154192 A1 * 6/2008 Schraga 604/110

FOREIGN PATENT DOCUMENTS

GB 1475430 6/1977

* cited by examiner

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(57) **CLAIM**

The ornamental design for a grooved piston, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a top perspective view showing the new design for a grooved piston;

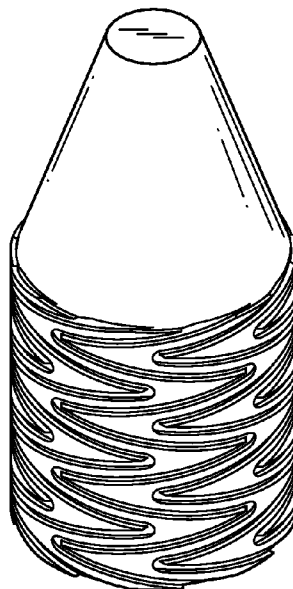
FIG. 2 is a side elevational view thereof;

FIG. 3 is a top plan view thereof; and,

FIG. 4 is a bottom plan view thereof.

The portions of the grooved piston shown in broken lines form no part of the claimed design.

1 Claim, 1 Drawing Sheet



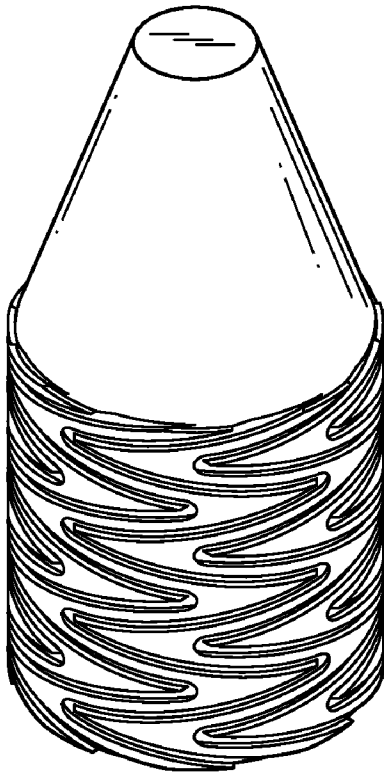


FIG. 1

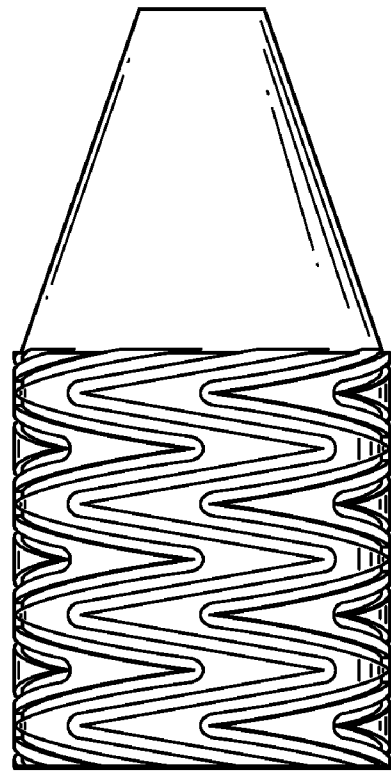


FIG. 2

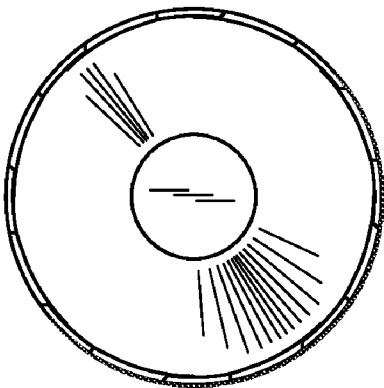


FIG. 3

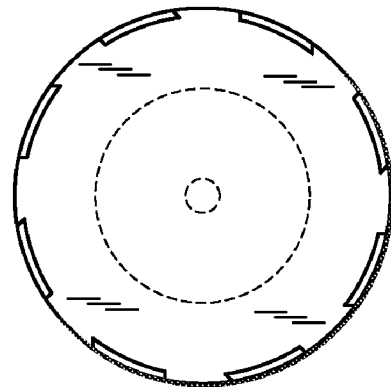


FIG. 4