

US00D492895S1

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

(10) **Patent No.: US D492,895 S**
(45) **Date of Patent: ** Jul. 13, 2004**

- (54) **CAPTIVE SCREW**
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- (73) Assignee: **Southco, Inc.**, Concordville, PA (US)
- (**) Term: **14 Years**
- (21) Appl. No.: **29/189,634**
- (22) Filed: **Sep. 9, 2003**

Related U.S. Application Data

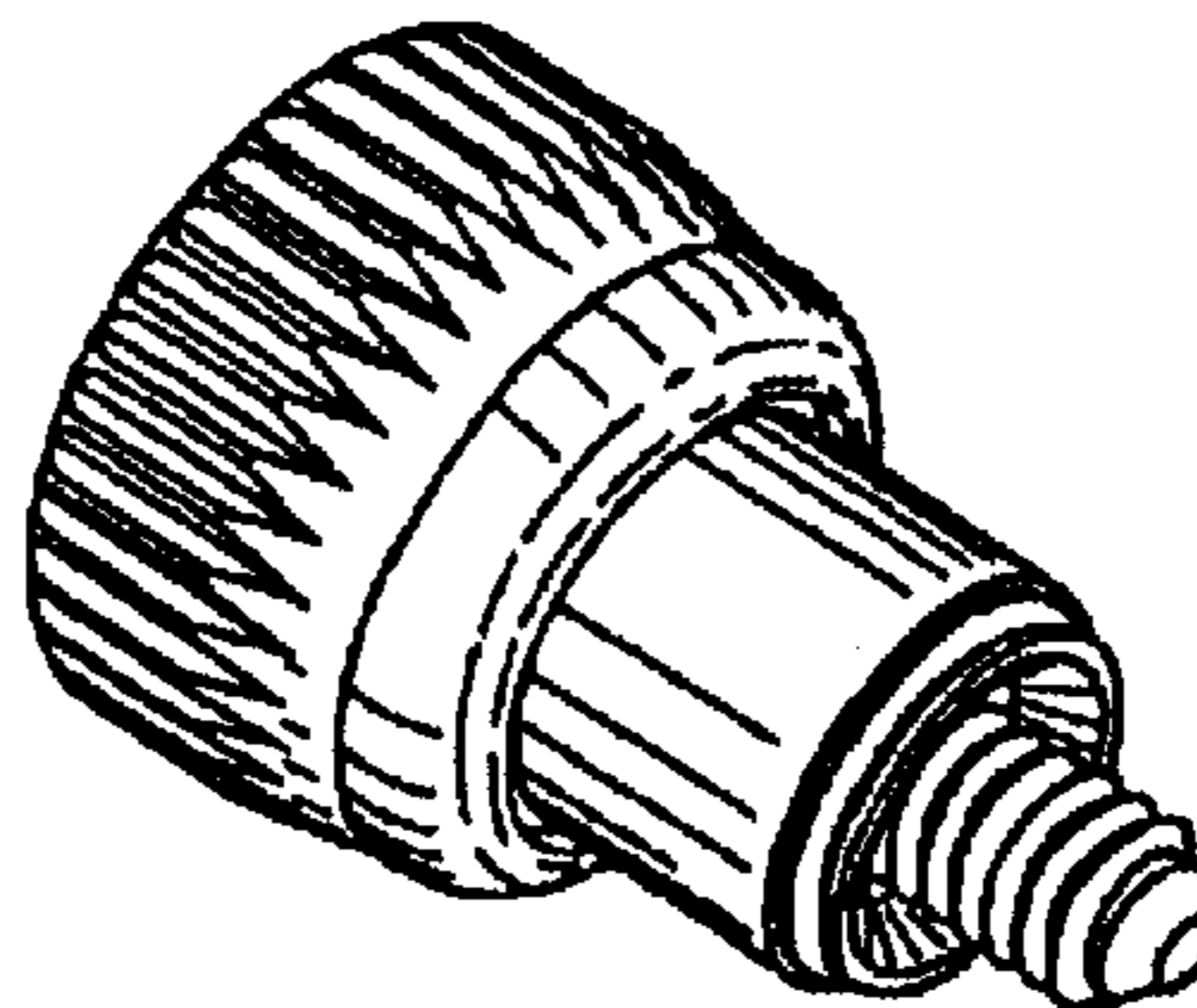
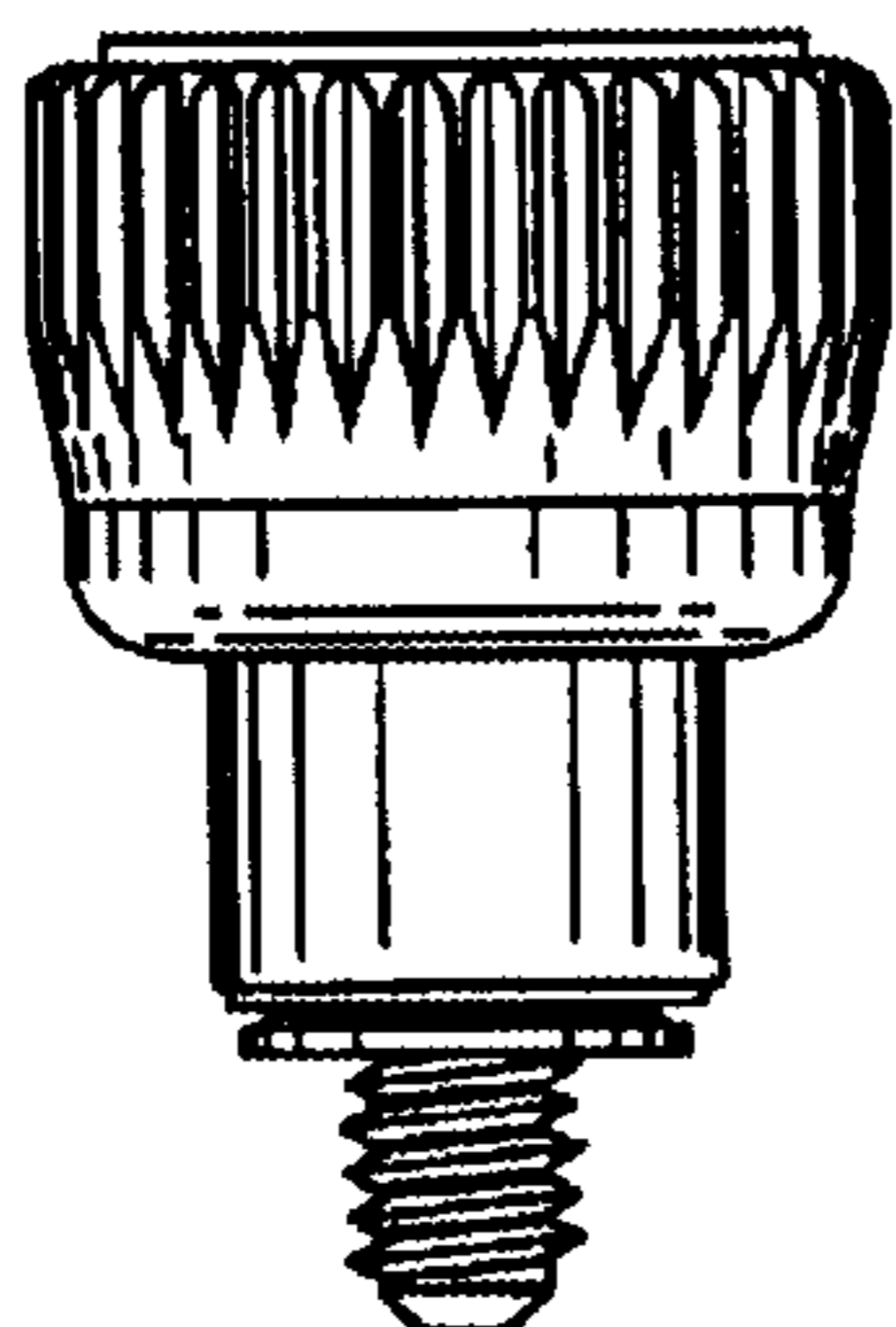
- (60) Division of application No. 29/170,528, filed on Nov. 7, 2002, now Pat. No. Des. 484,031, which is a division of application No. 29/120,902, filed on Mar. 28, 2000, now Pat. No. Des. 472,797, which is a continuation-in-part of application No. 29/107,132, filed on Jun. 28, 1999, now abandoned, which is a continuation-in-part of application No. 29/089,913, filed on Jun. 25, 1998, now abandoned.
- (51) **LOC (7) Cl.** **08-08**
- (52) **U.S. Cl.** **D8/387**
- (58) **Field of Search** D8/387, 310, 312,
D8/347, 382, 394, 397; 411/107, 108, 349,
350, 352, 353, 5, 103, 222, 366, 367, 500;
248/501; 16/110.1, 412, 413, 414, 417,
422, 430

(56) **References Cited**

U.S. PATENT DOCUMENTS

748,078 A	*	12/1903	Kalsling	292/251
1,166,345 A	*	12/1915	Gates	200/338
1,188,420 A	*	6/1916	Eadie	411/117
1,664,820 A	*	4/1928	Leopold	292/251
2,006,359 A	*	7/1935	Lackner	411/145
2,151,255 A	*	3/1939	Witchger	411/427
2,331,322 A	*	10/1943	Heinick	411/103
D140,862 S	*	4/1945	Conlan	D13/161
D140,863 S	*	4/1945	Conlan	D13/178

2,464,133 A	*	3/1949	Herbert	411/432
2,470,927 A	*	5/1949	Hale, Jr.	411/353
2,503,189 A	*	4/1950	Biba, Jr.	464/38
2,553,236 A	*	5/1951	Bratfisch	411/34
2,831,520 A	*	4/1958	Clarke	411/349
2,900,697 A	*	8/1959	Freeman	411/349
2,967,557 A	*	1/1961	Tait et al.	411/349
2,987,811 A	*	6/1961	Acres	29/437
3,033,260 A	*	5/1962	Herbert	411/103
3,052,942 A	*	9/1962	Mulvaney	292/256.71
3,059,736 A	*	10/1962	Boyd	403/7
3,126,935 A	*	3/1964	Tuozzo	411/352
3,137,336 A	*	6/1964	Wing	411/135
3,180,389 A	*	4/1965	Charles	411/350
3,195,600 A	*	7/1965	Middleton, Jr.	411/352
3,204,680 A	*	9/1965	Barry	411/349
3,209,807 A	*	10/1965	Ryner	411/361
3,244,212 A	*	4/1966	Barry	411/361
3,245,450 A	*	4/1966	Sauter	411/349
3,250,559 A	*	5/1966	Sommerfeld	292/251
3,263,728 A	*	8/1966	Lynch	411/349
3,279,302 A	*	10/1966	Modrey	411/350
3,343,581 A	*	9/1967	Martin et al.	411/349
3,346,032 A	*	10/1967	Bulent	411/349
3,385,341 A	*	5/1968	Garstkiewicz	411/134
3,437,119 A	*	4/1969	Dey	411/349
3,465,803 A	*	9/1969	Swanstrom et al.	411/349
3,502,130 A	*	3/1970	Gulistan	411/361
3,564,563 A	*	2/1971	Trotter et al.	411/552
3,718,950 A	*	3/1973	Engstrom	411/347
3,912,411 A	*	10/1975	Moffat	403/259
3,958,308 A	*	5/1976	Gooding	411/554
4,007,516 A	*	2/1977	Coules	411/349
4,047,266 A	*	9/1977	Bisbing	411/349
4,387,497 A	*	6/1983	Gulistan	29/511
4,398,322 A	*	8/1983	Ewen	24/595.1
4,472,098 A	*	9/1984	Kiefer	411/369
4,492,500 A	*	1/1985	Ewing	411/5
D283,591 S	*	4/1986	Swanstrom	D8/387
4,594,040 A	*	6/1986	Molina	411/353
4,602,903 A	*	7/1986	Wilburn	411/222
4,692,075 A	*	9/1987	Metz	411/7
4,915,557 A	*	4/1990	Stafford	411/107
4,952,107 A	*	8/1990	Dupree	411/103
5,042,880 A	*	8/1991	Garuti et al.	301/35.624
5,056,974 A	*	10/1991	Dolin	411/102
D324,479 S	*	3/1992	Tinz	D8/310
5,094,579 A	*	3/1992	Johnson	411/107
5,120,168 A	*	6/1992	Padula	411/5



5,209,018	A	*	5/1993	Heinrich	.....	49/449
5,336,028	A	*	8/1994	Yamamoto	.....	411/107
5,338,139	A	*	8/1994	Swanstrom	.....	411/353
5,382,124	A	*	1/1995	Frattarola	.....	411/352
D357,176	S	*	4/1995	Ernest et al.	.....	D8/387
5,429,467	A	*	7/1995	Gugle et al.	.....	411/182
5,537,262	A	*	7/1996	Aoki et al.	.....	359/822
5,544,992	A	*	8/1996	Ciobanu et al.	.....	411/353
5,611,654	A	*	3/1997	Frattarola et al.	.....	411/432
5,642,972	A	*	7/1997	Ellis et al.	.....	411/353
5,667,346	A	*	9/1997	Sharp	.....	411/10
D388,316	S	*	12/1997	McDonough et al.	.....	D8/387
5,741,101	A	*	4/1998	Gulistan	.....	411/107
D400,430	S	*	11/1998	McDonough et al.	.....	D8/387
D402,522	S	*	12/1998	Gillman	.....	D8/82
5,851,095	A	*	12/1998	Ellis et al.	.....	411/353
5,865,582	A	*	2/1999	Ellis et al.	.....	411/353
D411,952	S	*	7/1999	Alderisio, Jr.	.....	D8/387
D417,827	S	*	12/1999	Gillman	.....	D8/14
6,033,168	A	*	3/2000	Creely, III et al.	.....	411/107

FOREIGN PATENT DOCUMENTS

CA	558456	*	6/1958
CA	766082	*	8/1967
FR	3245450	*	11/1962
FR	2268977	*	4/1975
FR	2578009	*	2/1986
FR	2636384	*	9/1988
GB	626013	*	9/1940
GB	825877	*	12/1959
GB	1579730	*	11/1980

OTHER PUBLICATIONS

- Southco Latches and Access Hardware handbook 45NA; pp. B19–B22 and C1–C44.*
- Southco Latches and Access Handbook n–47NA; pp. C1–C3.*
- Penn Engineering & Manufacturing Corp., Snap–Top Stand–offs, Pem Bulletin SSA–988, (Danboro, PA).*
- Penn Engineering & Manufacturing Corp., Fasteners for Use In or With PC Boards, Pem Bulletin K–488, (Danboro, PA).*
- Penn Engineering & Manufacturing Corp., “Type PF–11 Self–Clinching Panel Fastener Assembly”, Pem Bulletin PF11–297, (Danboro, PA).*
- Penn Engineering & Manufacturing Corp., Fastener Guide–Pem’s 1996 Catalog, (Danboro, PA).*
- Camloc Fasteners, 1993 Catalog, pp. C8–C12 (Hasbrouck Heights, NJ).*
- Huck International, Inc., “Captive Fasteners and Rivetless Nut Plates”, Huck 1996 Catalog (California, 90712).*
- Huck International Inc., Deutschert, Press–In Captive screw, Floating, Retractable, 1 pg., Lakewood, CA 1994.*
- Matdan American Corp., Brochure, (Cincinnati, Ohio).*
- Kanebridge Corp., 1994 Catalog, pp. I, II, 211–214, 245–246 (New Jersey).*

* cited by examiner

Primary Examiner—Clare E. Heflin
(74) Attorney, Agent, or Firm—Paul & Paul

(57) CLAIM

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

DESCRIPTION

- FIG. 1 is a side elevation of a captive screw showing our new design, all remaining sides being identical;
- FIG. 2 is a perspective view thereof;
- FIG. 3 is a bottom plan view thereof;
- FIG. 4 is a top plan view thereof showing a six lobed driver recess;
- FIG. 5 is an alternate top plan view thereof showing a combined six lobed/slotted driver recess;
- FIG. 6 is an alternate top plan view thereof showing a slotted driver recess;
- FIG. 7 is an alternate top plan view thereof showing a Phillips driver recess;
- FIG. 8 is an alternate top plan view thereof showing a combined slotted/Phillips driver recess;
- FIG. 9 is a side elevation of a captive screw showing a second embodiment of our new design, all remaining sides being identical;
- FIG. 10 is a perspective view thereof;
- FIG. 11 is a bottom plan view thereof;
- FIG. 12 is a top plan view thereof showing a six lobed driver recess;
- FIG. 13 is an alternate top plan view thereof showing a combined six lobed/slotted driver recess;
- FIG. 14 is an alternate top plan view thereof showing a slotted driver recess;
- FIG. 15 is an alternate top plan view thereof showing a Phillips driver recess;
- FIG. 16 is an alternate top plan view thereof showing a combined slotted/Phillips driver recess;
- FIG. 17 is a side elevation of a captive screw showing a third embodiment of our new design, all remaining sides being identical;
- FIG. 18 is a perspective view thereof;
- FIG. 19 is a bottom plan view thereof;
- FIG. 20 is a top plan view thereof showing a six lobed driver recess;
- FIG. 21 is an alternate top plan view thereof showing a combined six lobed/slotted driver recess;
- FIG. 22 is an alternate top plan view thereof showing a slotted driver recess;
- FIG. 23 is an alternate top plan view thereof showing a Phillips driver recess;
- FIG. 24 is an alternate top plan view thereof showing a combined slotted/Phillips driver recess;
- FIG. 25 is a side elevation of a captive screw showing a fourth embodiment of our new design, all remaining sides being identical;
- FIG. 26 is a perspective view thereof;
- FIG. 27 is a bottom plan view thereof;
- FIG. 28 is a top plan view thereof showing a combined six lobed/slotted driver recess;
- FIG. 29 is an alternate top plan view thereof showing a combined six lobed/slotted driver recess;

FIG. **30** is an alternate top plan view thereof showing a slotted driver recess;

FIG. **31** is an alternate top plan view thereof showing a Phillips driver recess; and,

FIG. **32** is an alternate top plan view thereof showing a combined slotted/Phillips driver recess.

It is understood that for each alternate top plan view in each embodiment in the drawings, the bottom plan, perspective, and side elevations are identical to those shown.

1 Claim, 4 Drawing Sheets

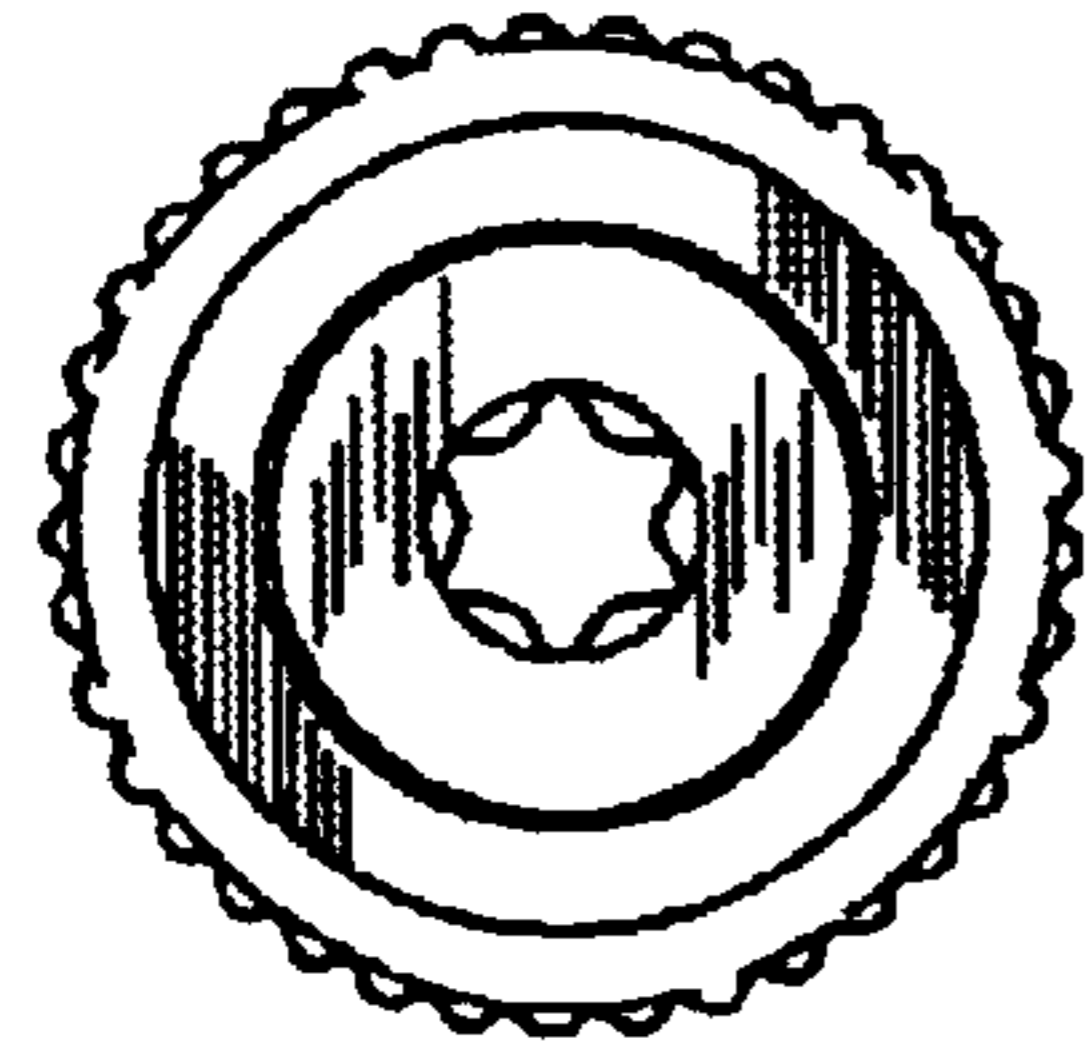


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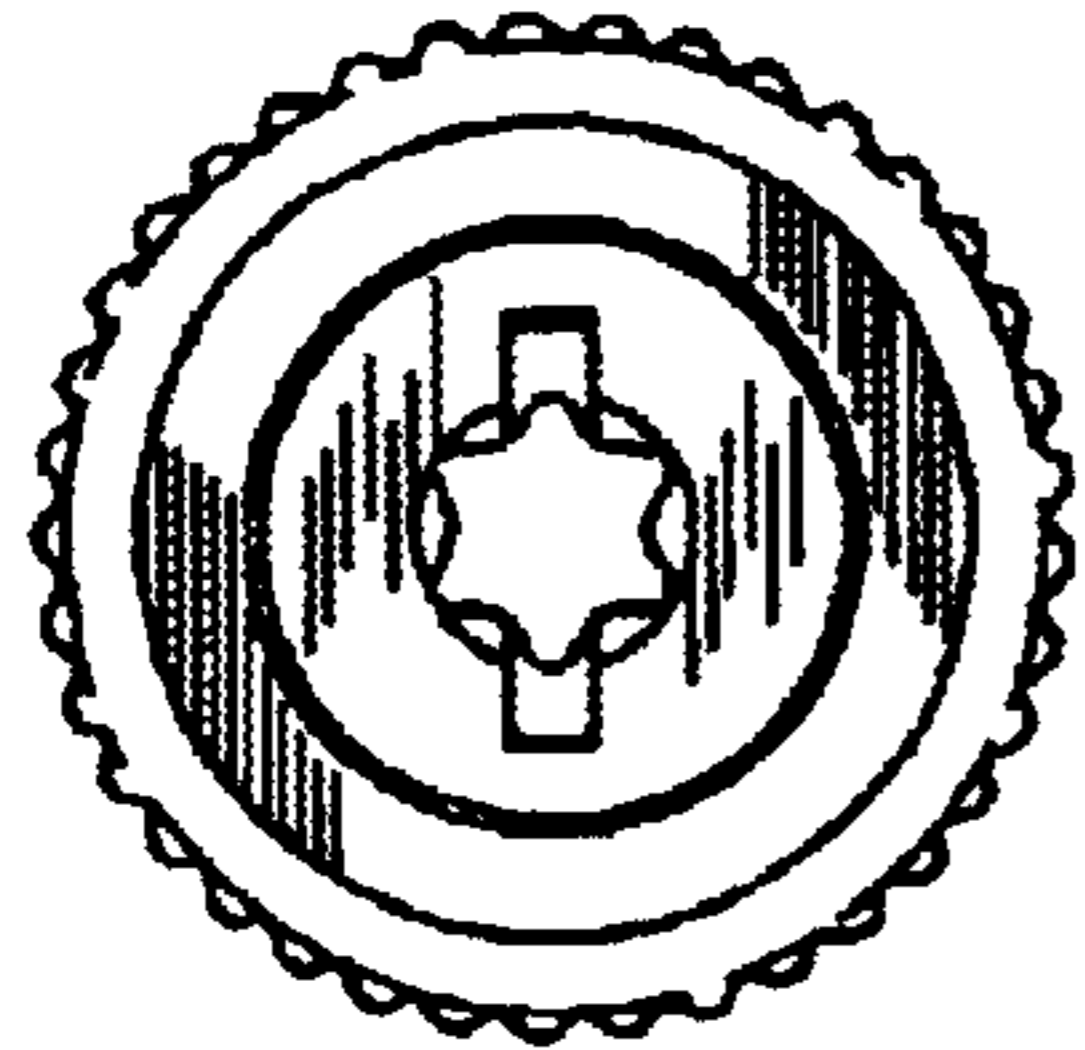


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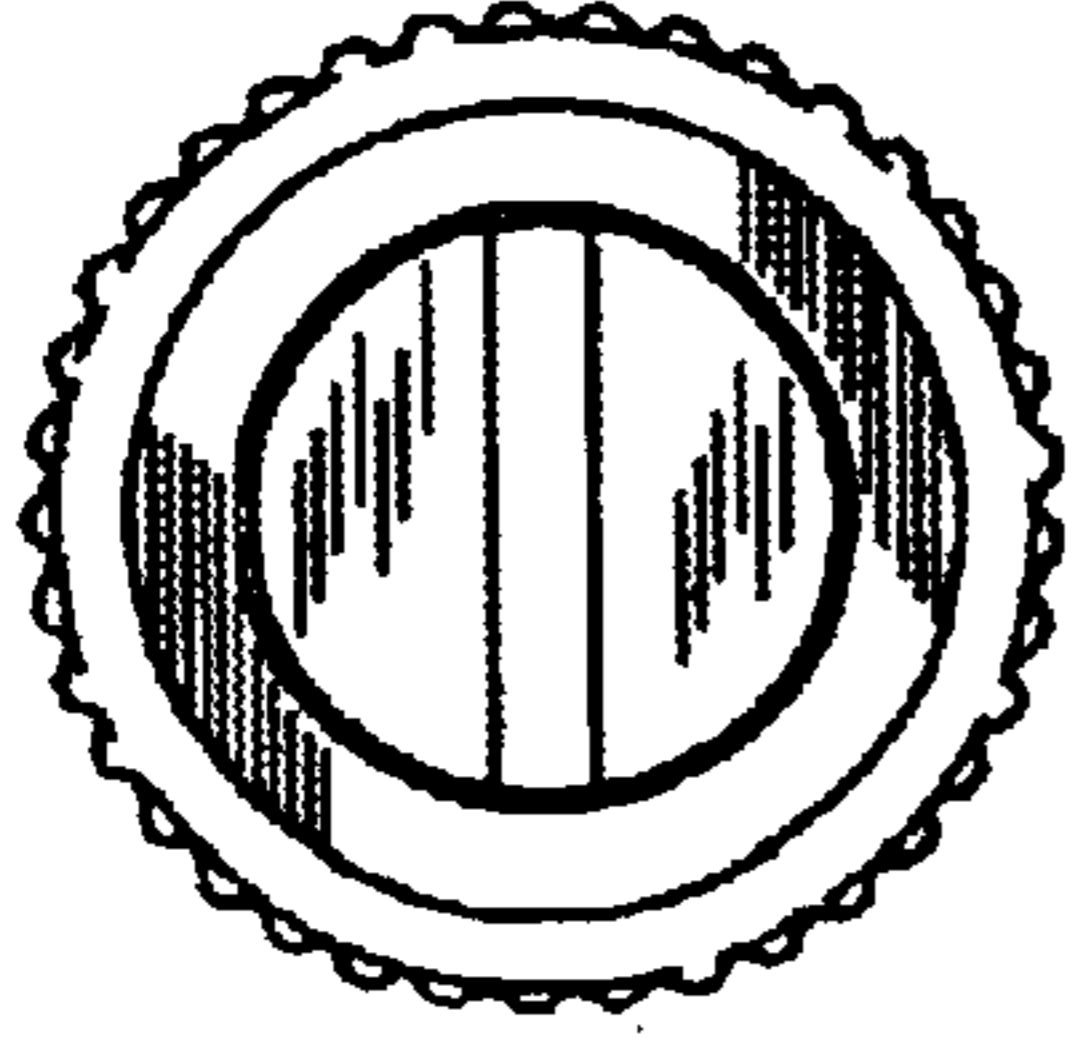


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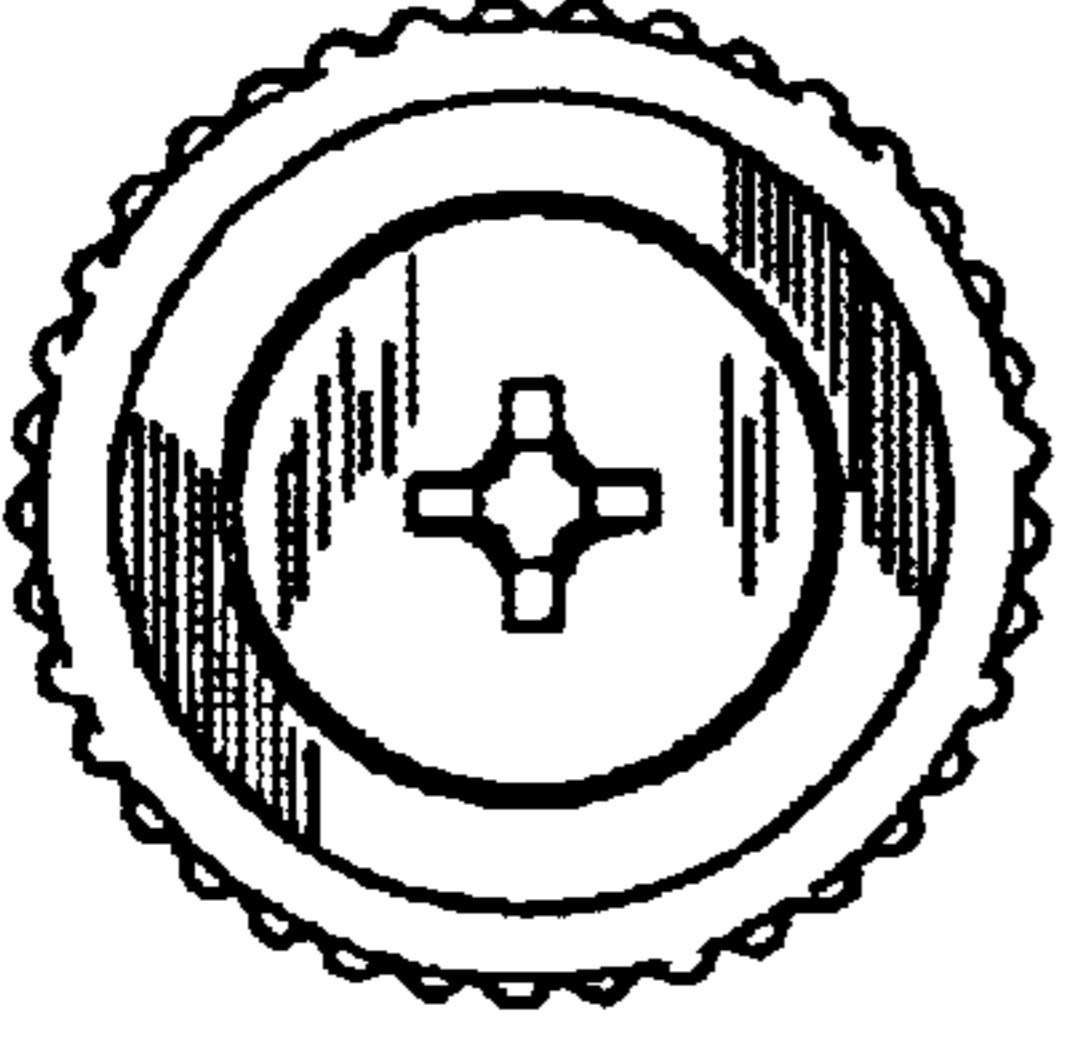


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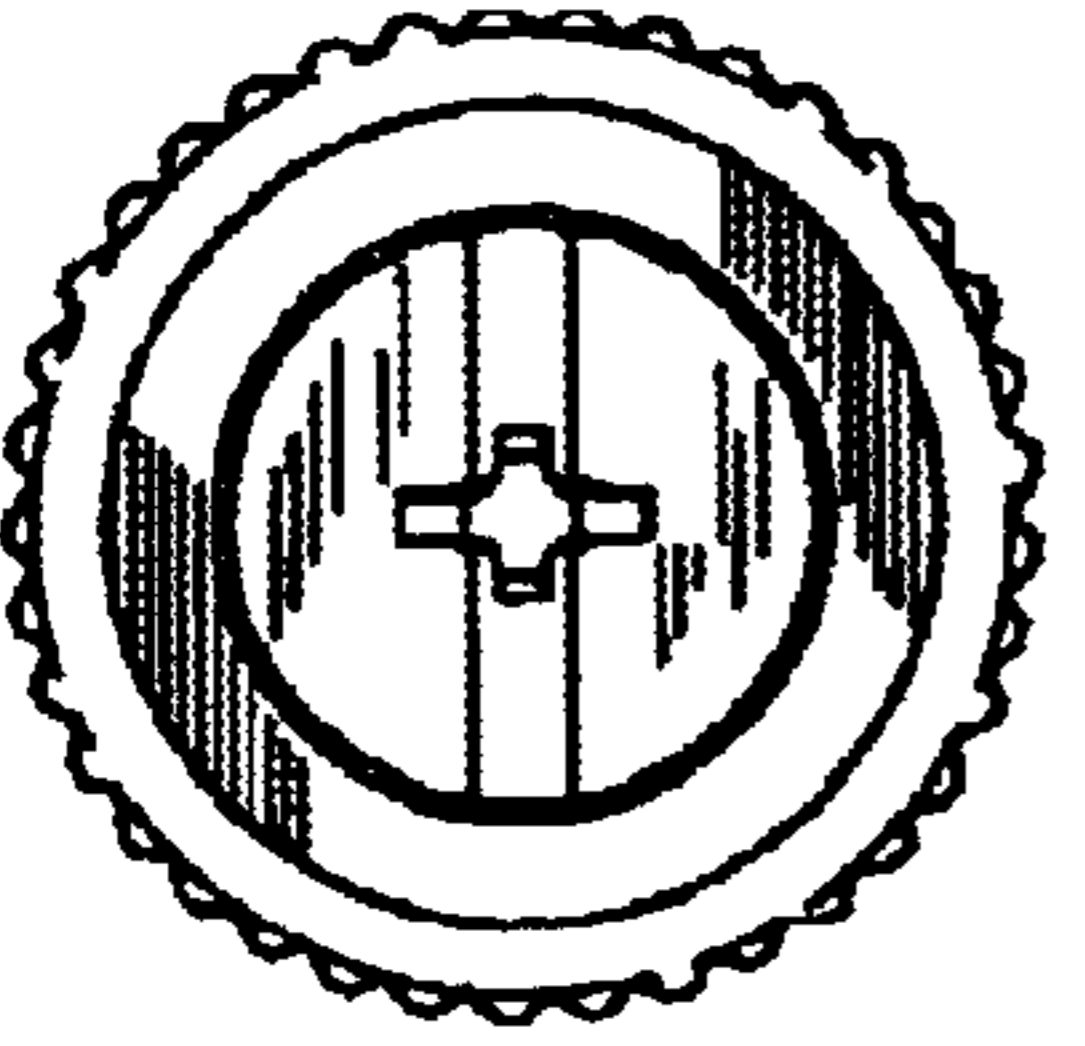


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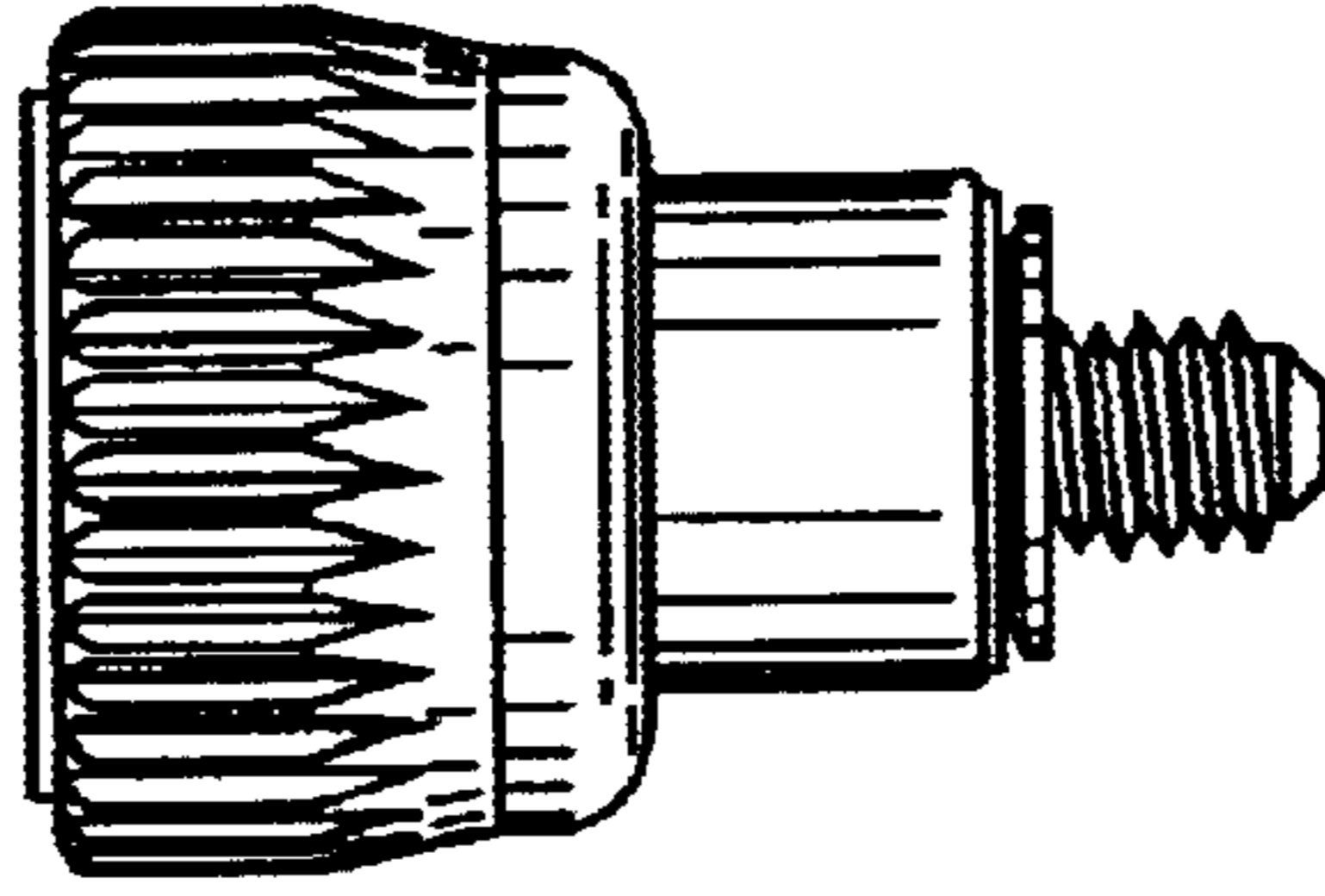


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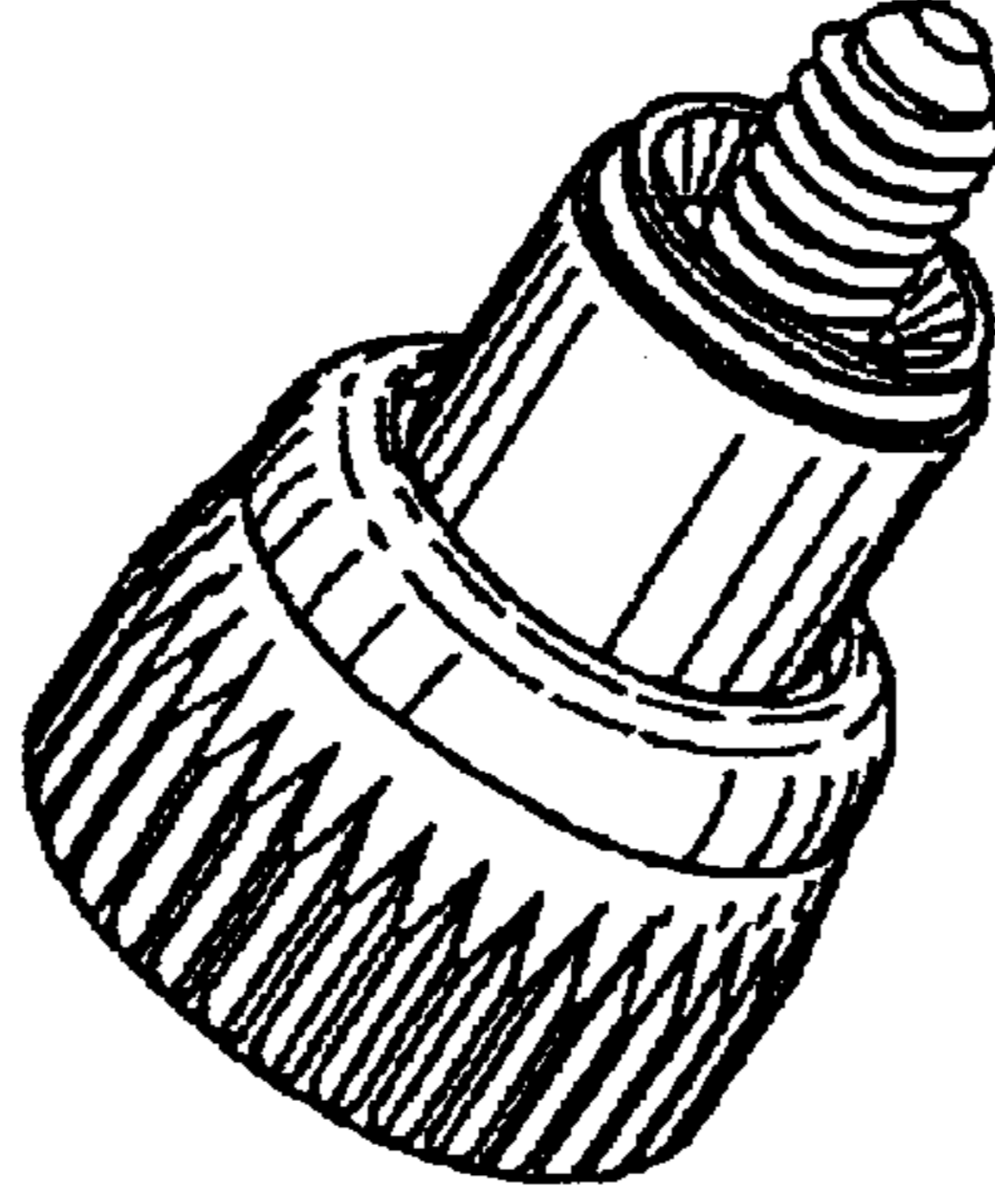


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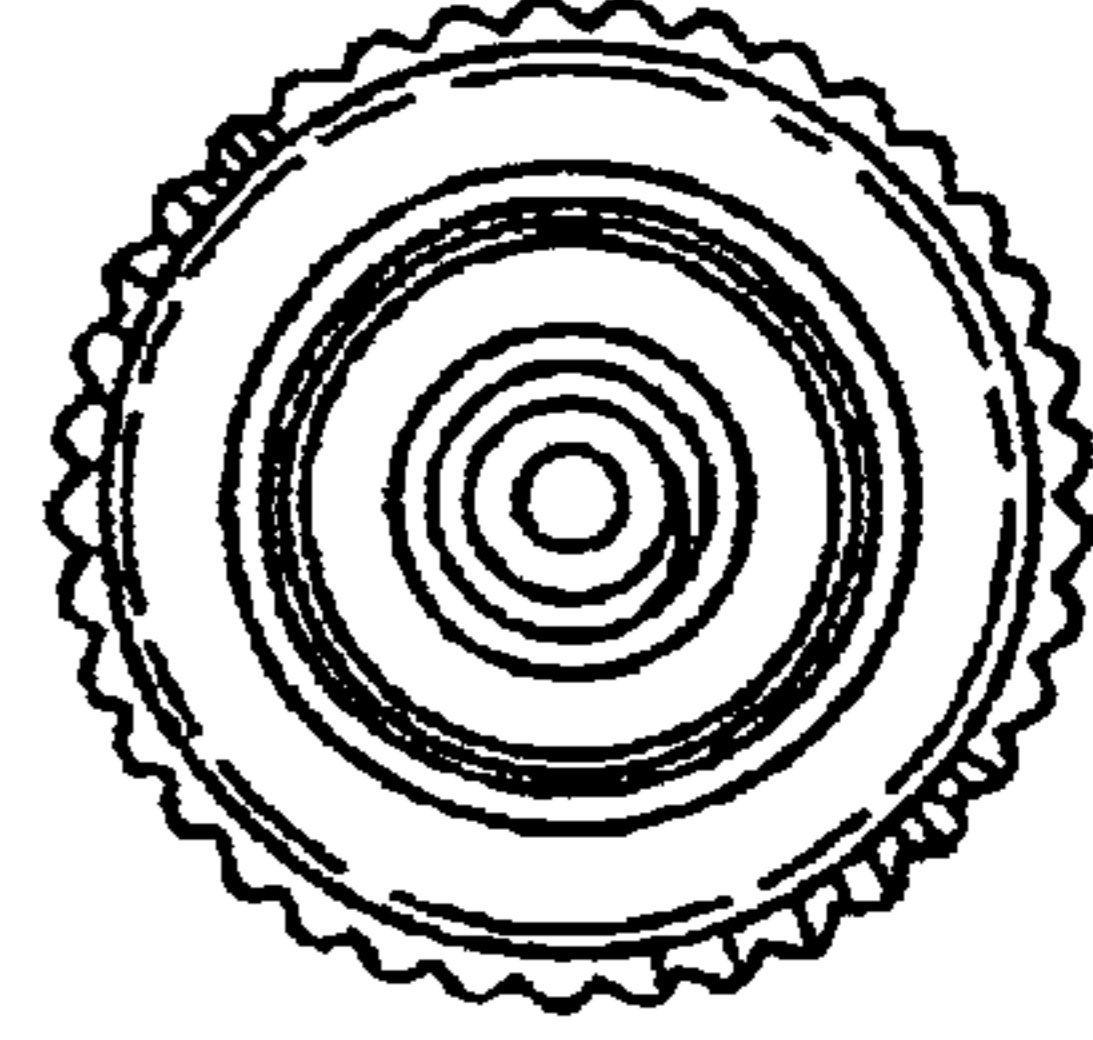


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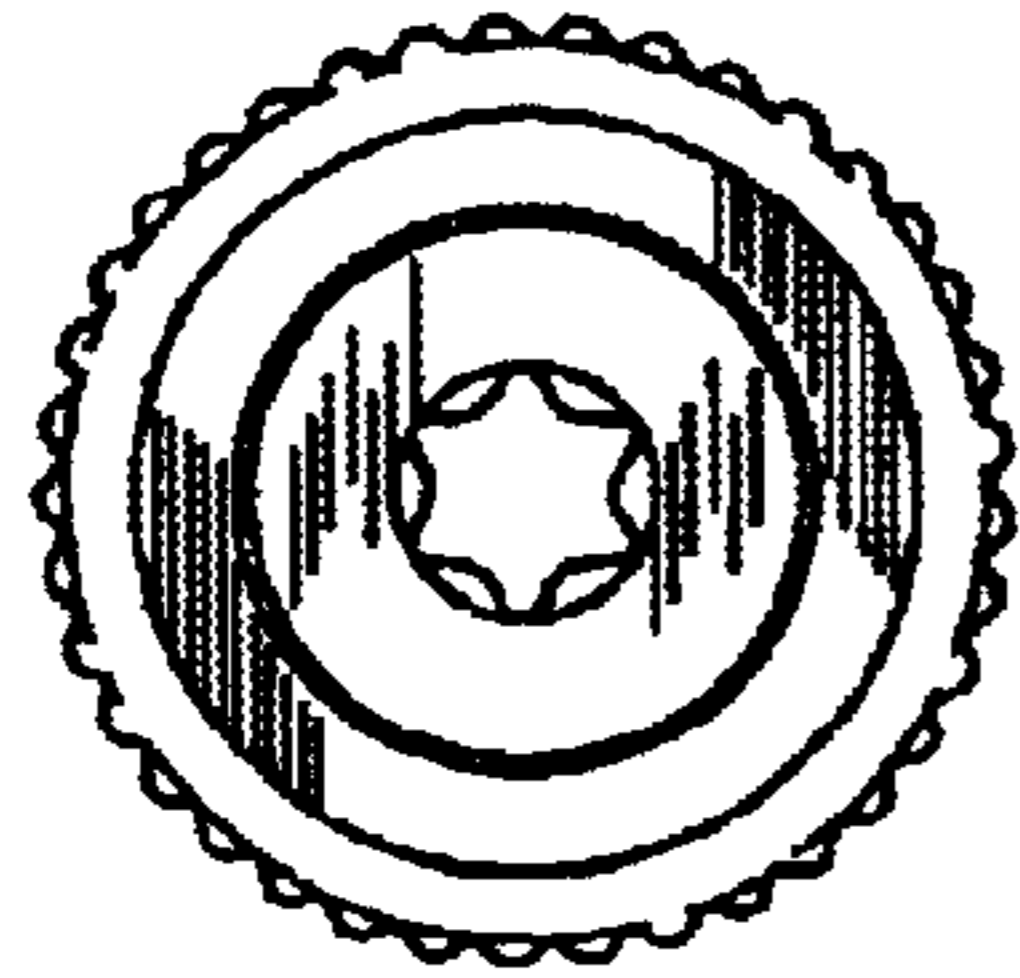


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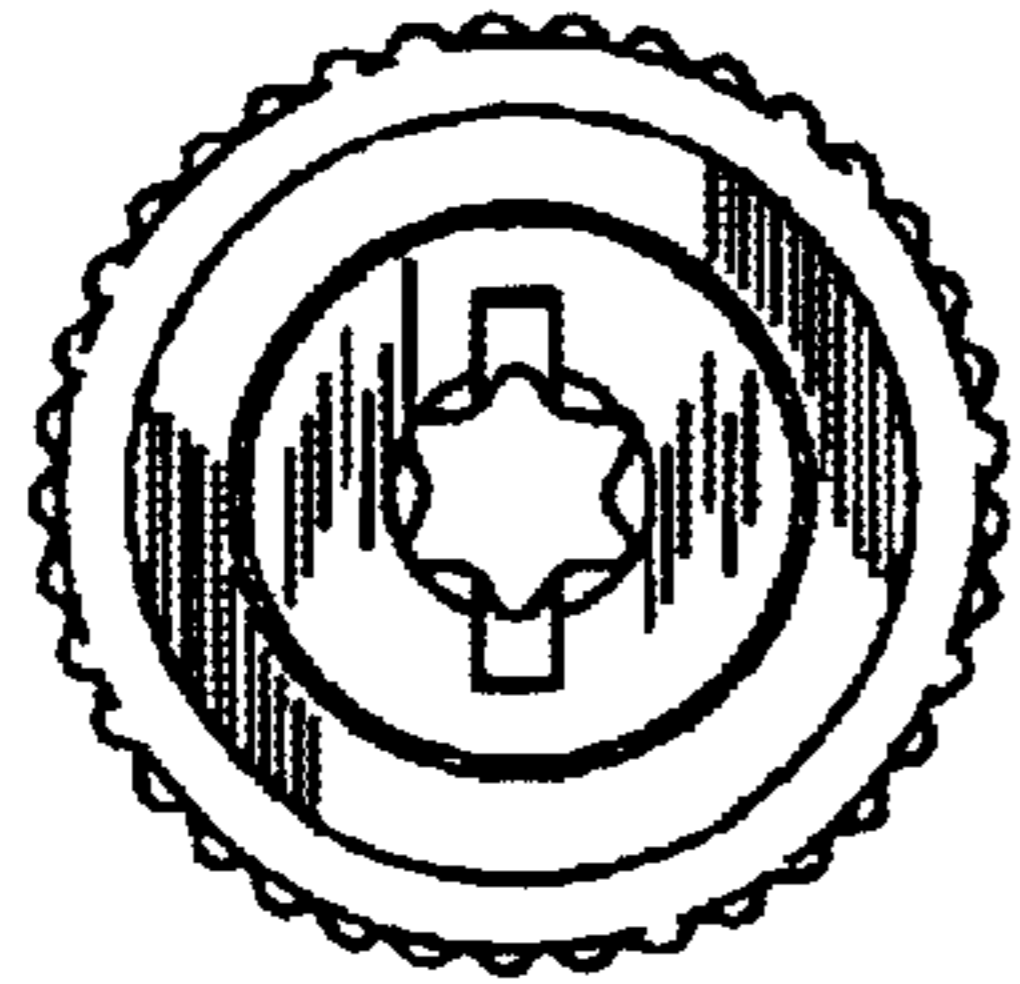


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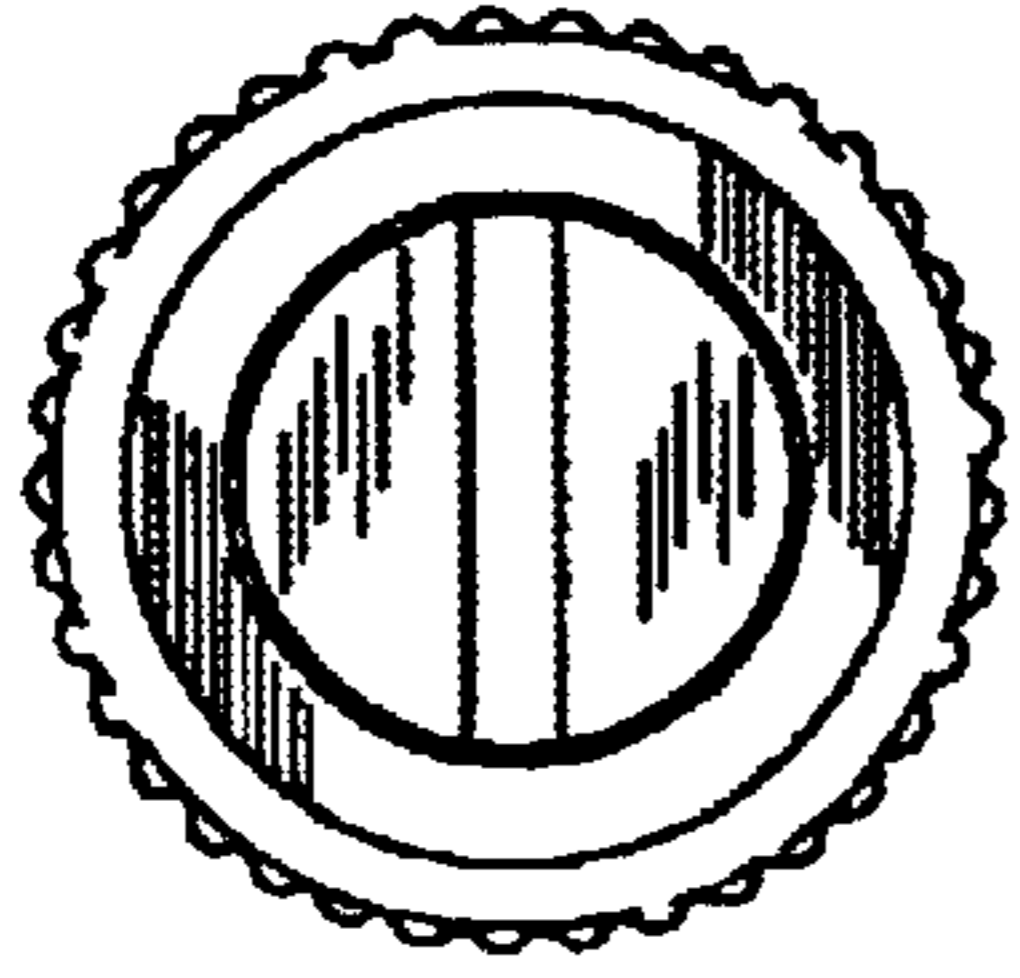


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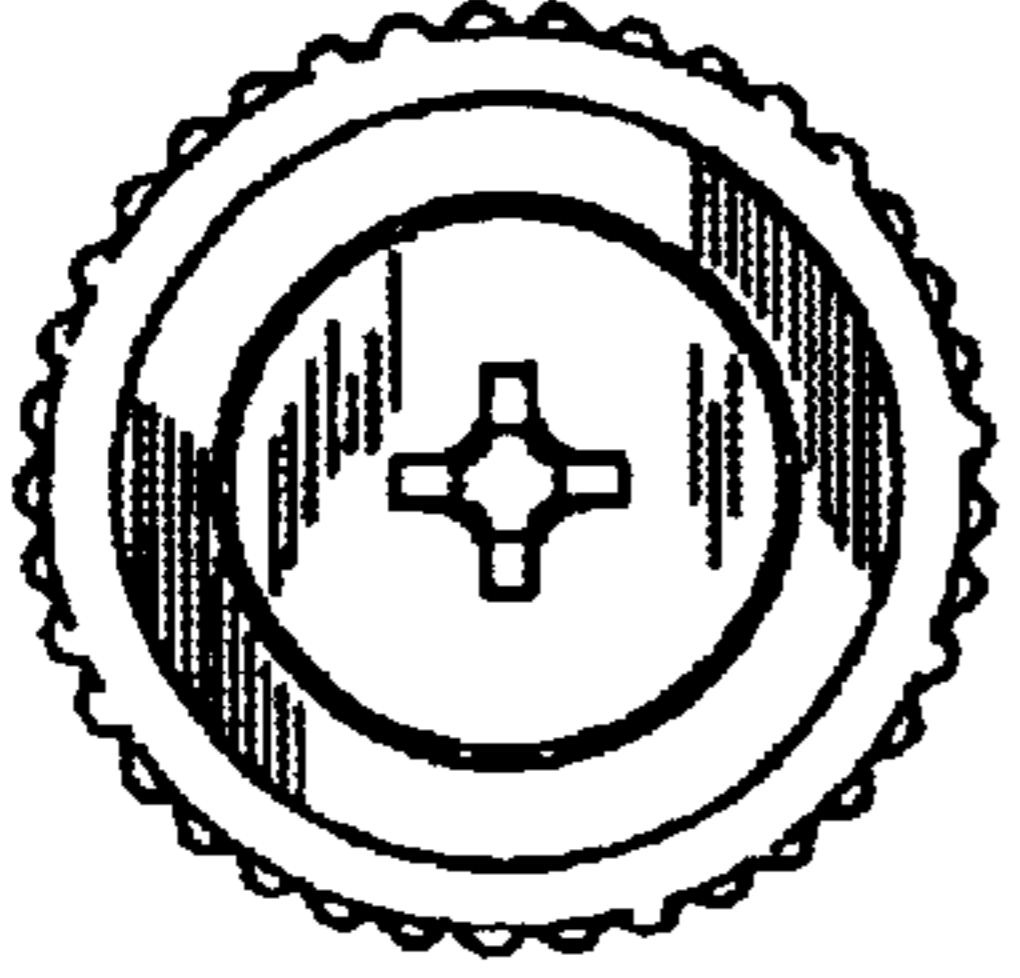


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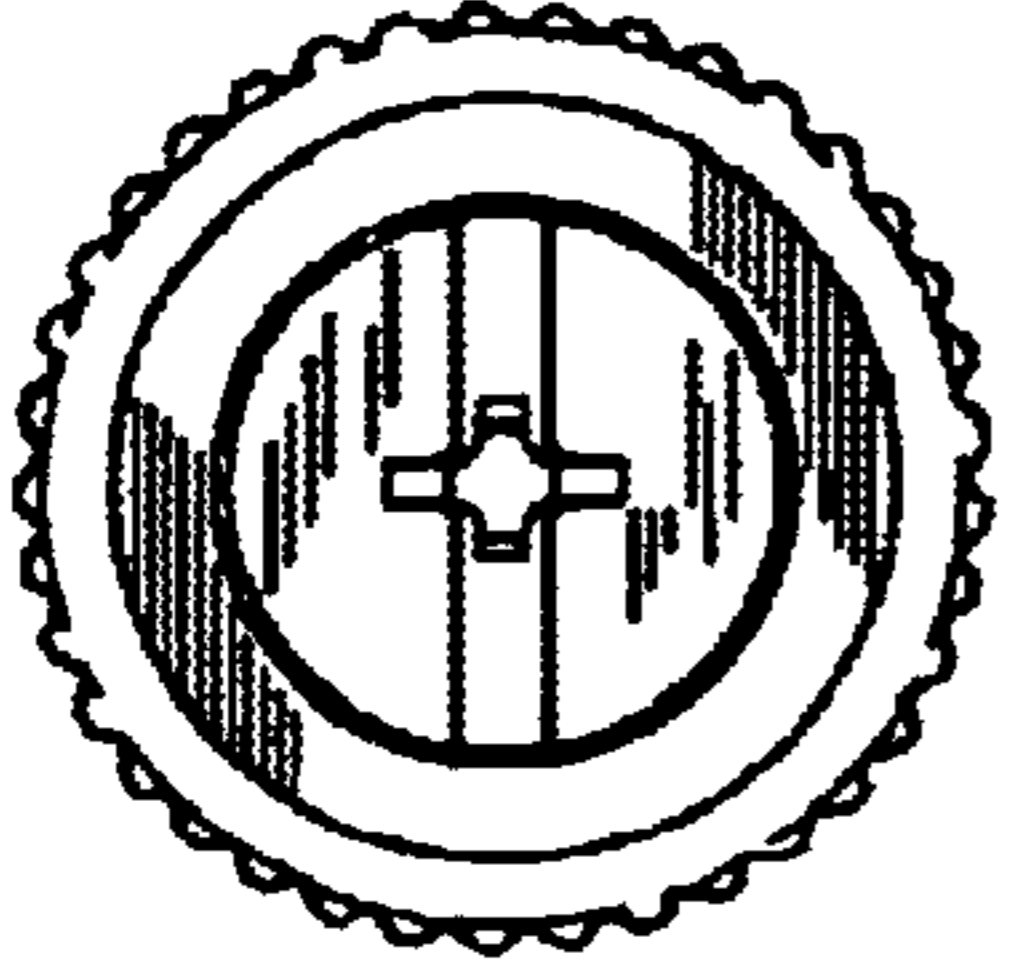


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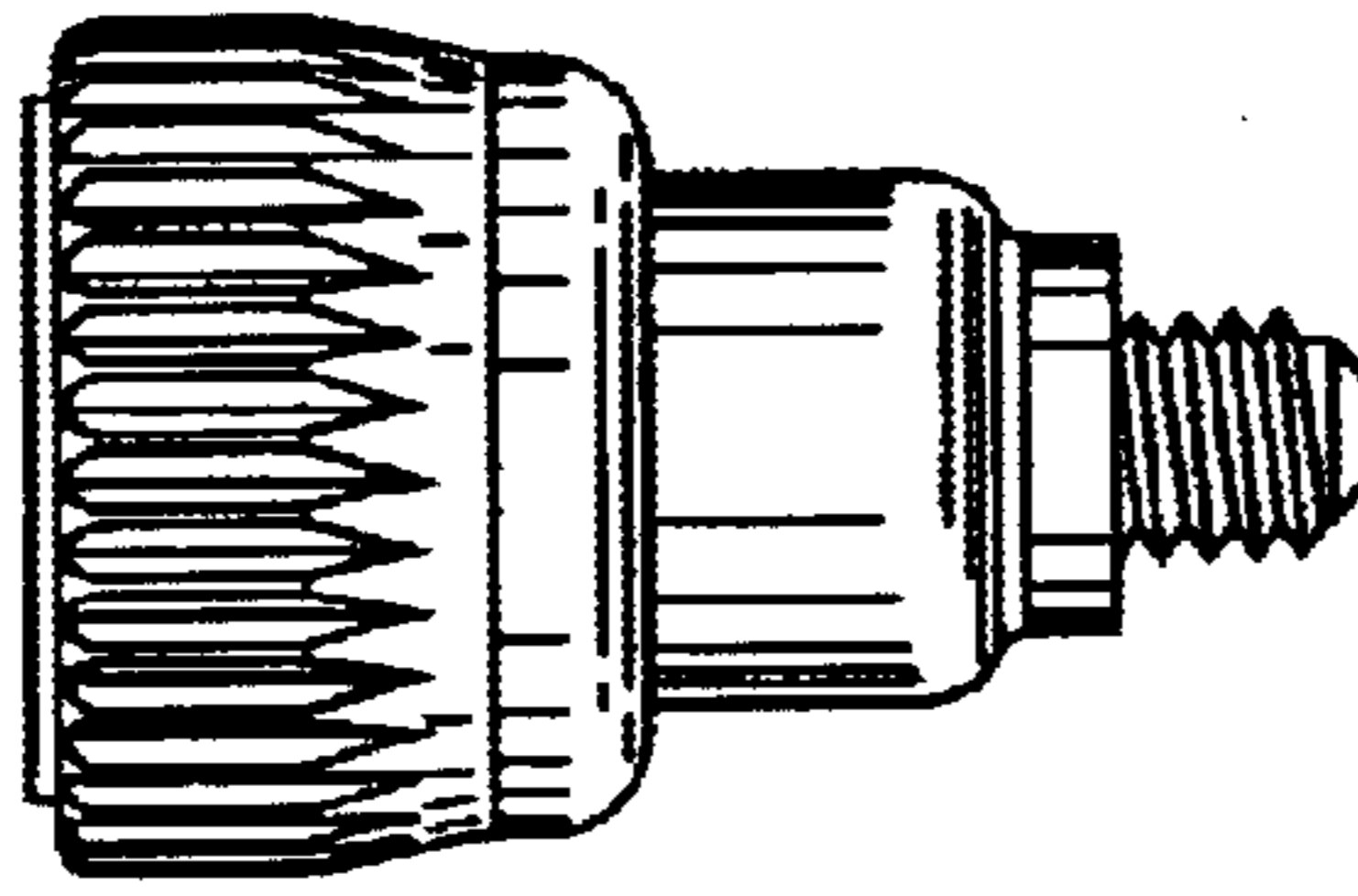


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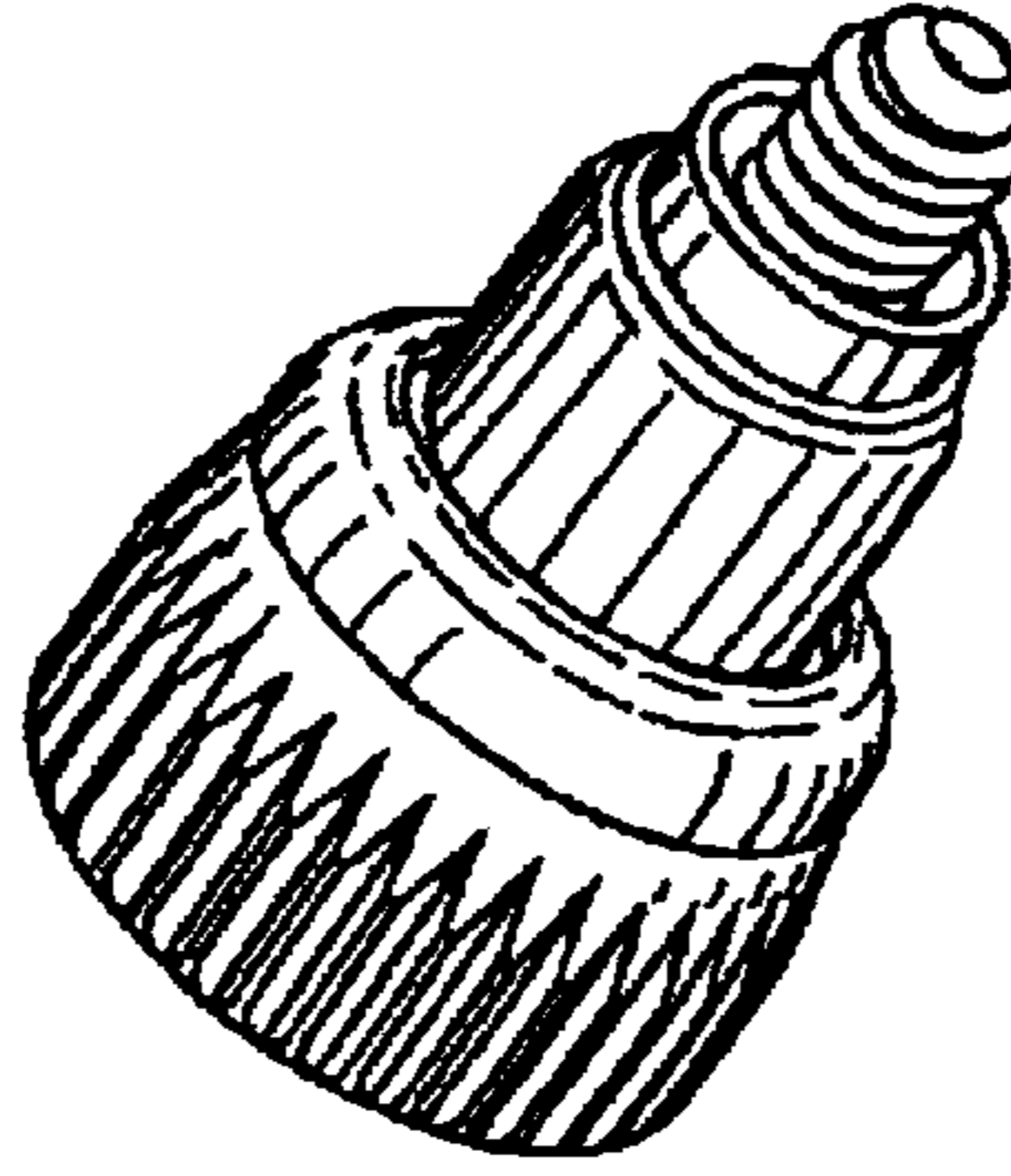


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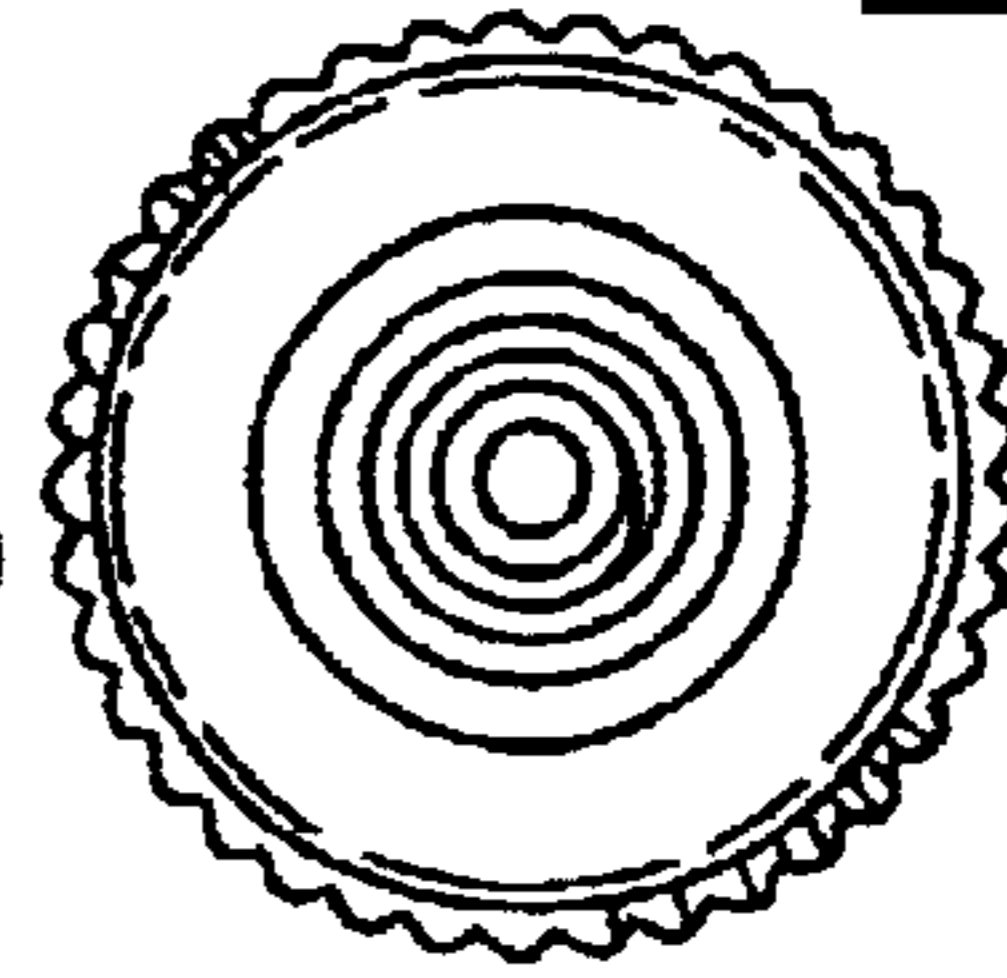


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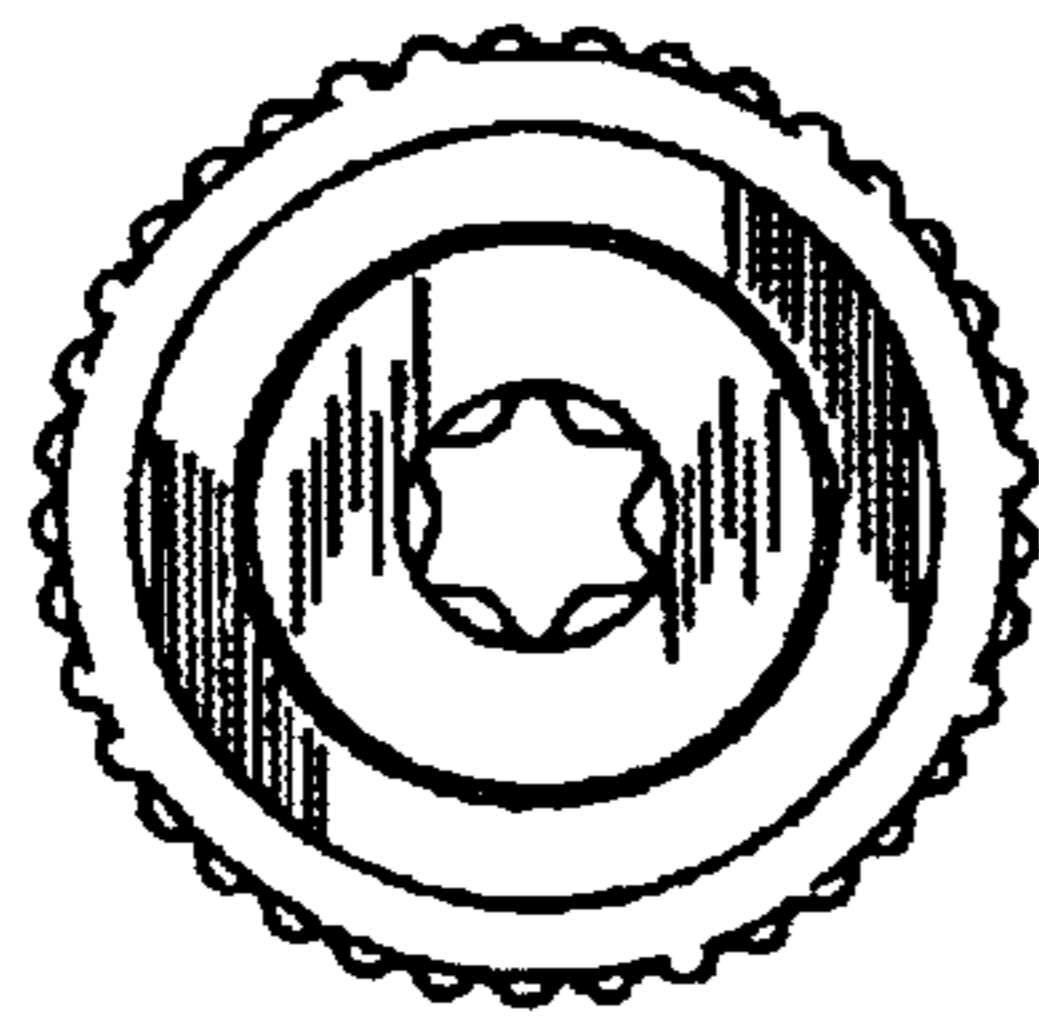


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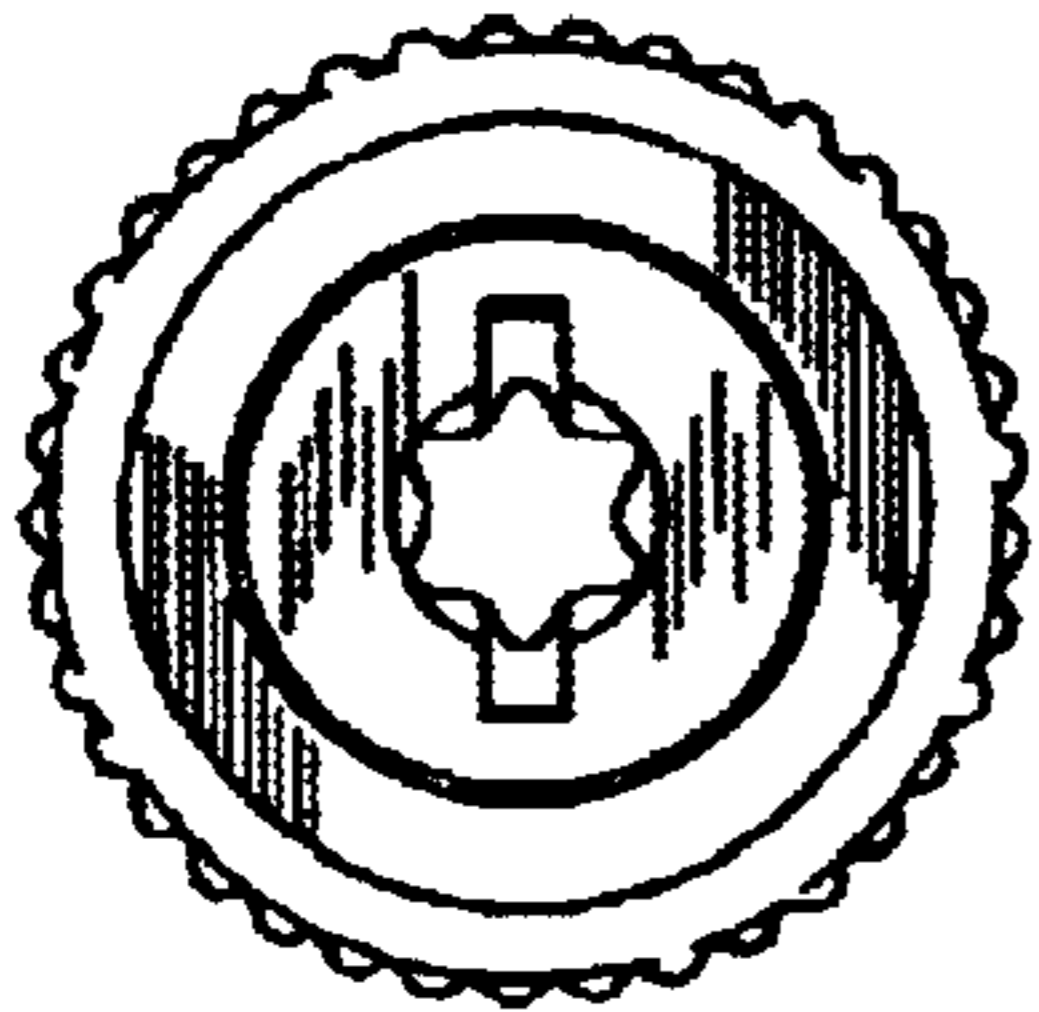


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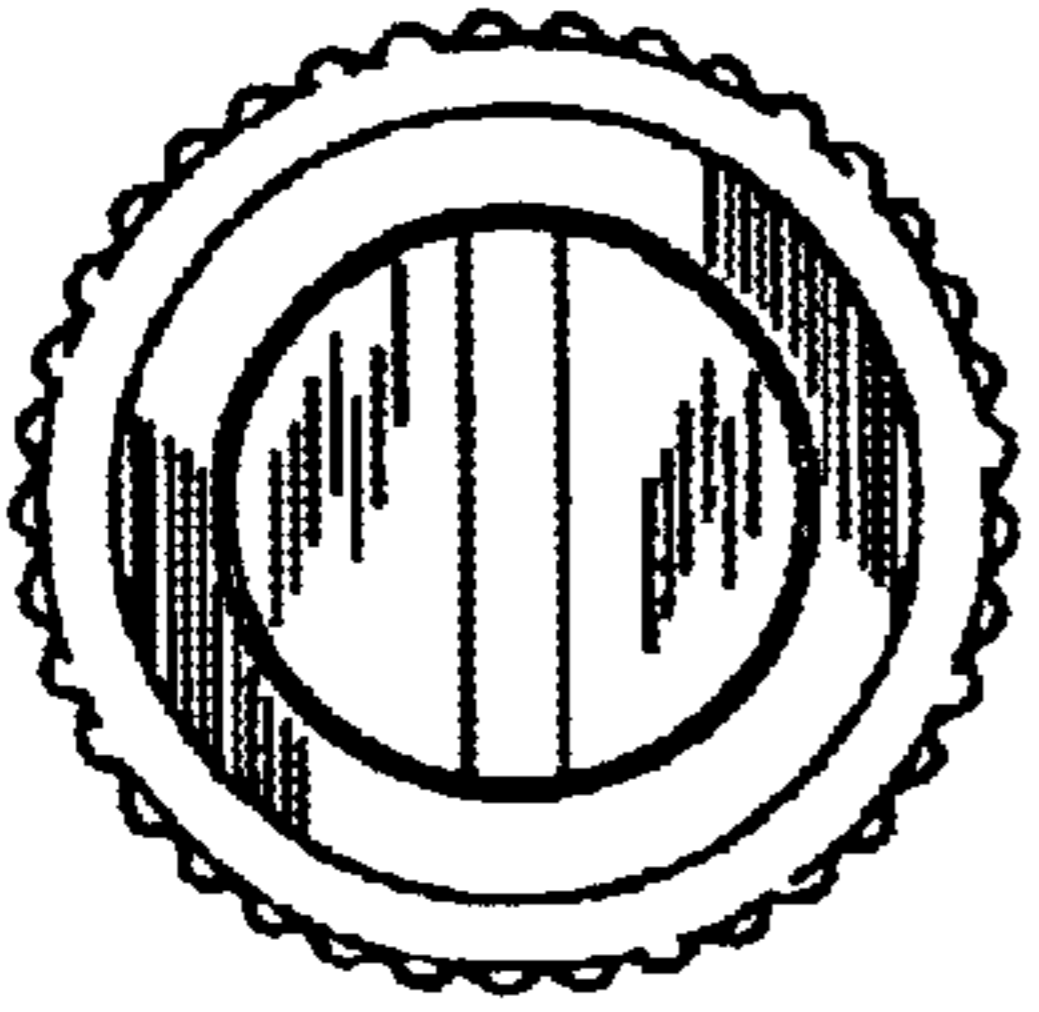


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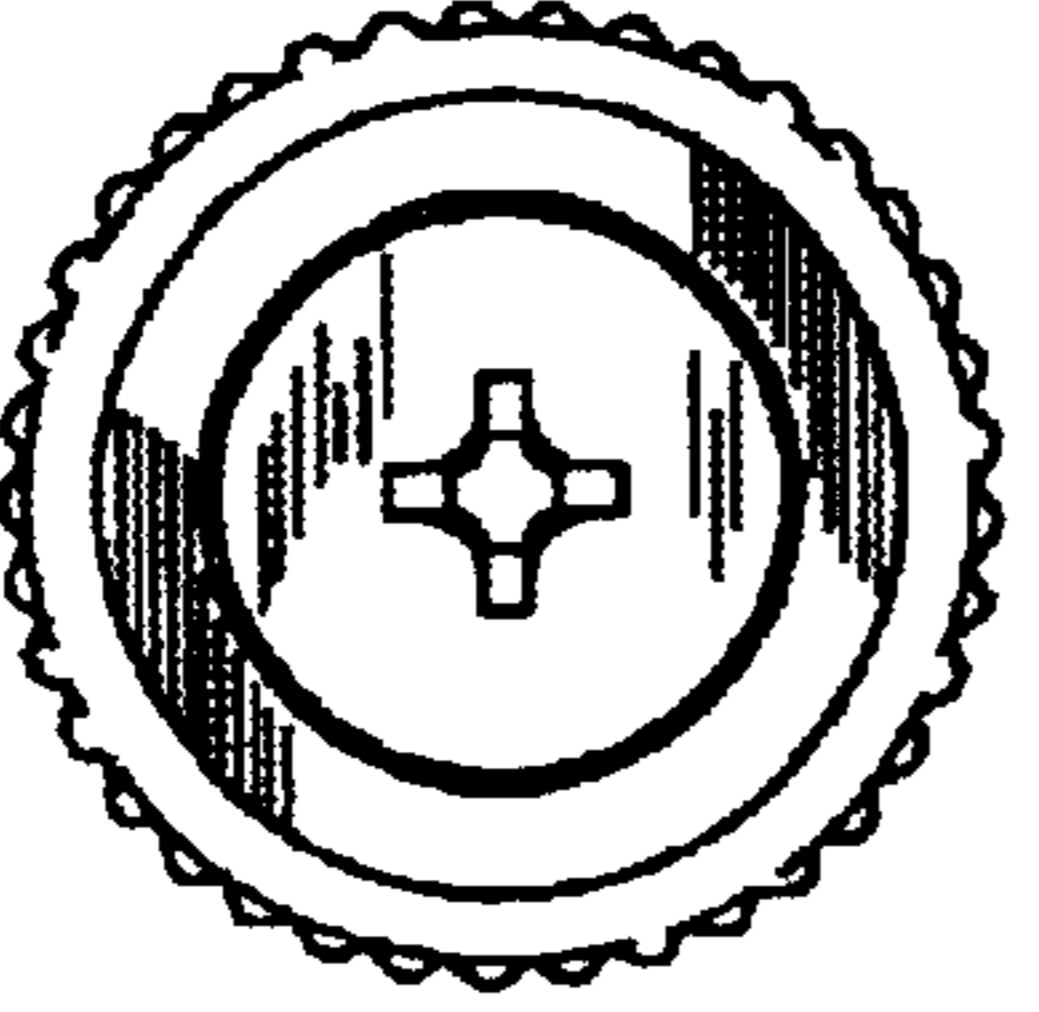


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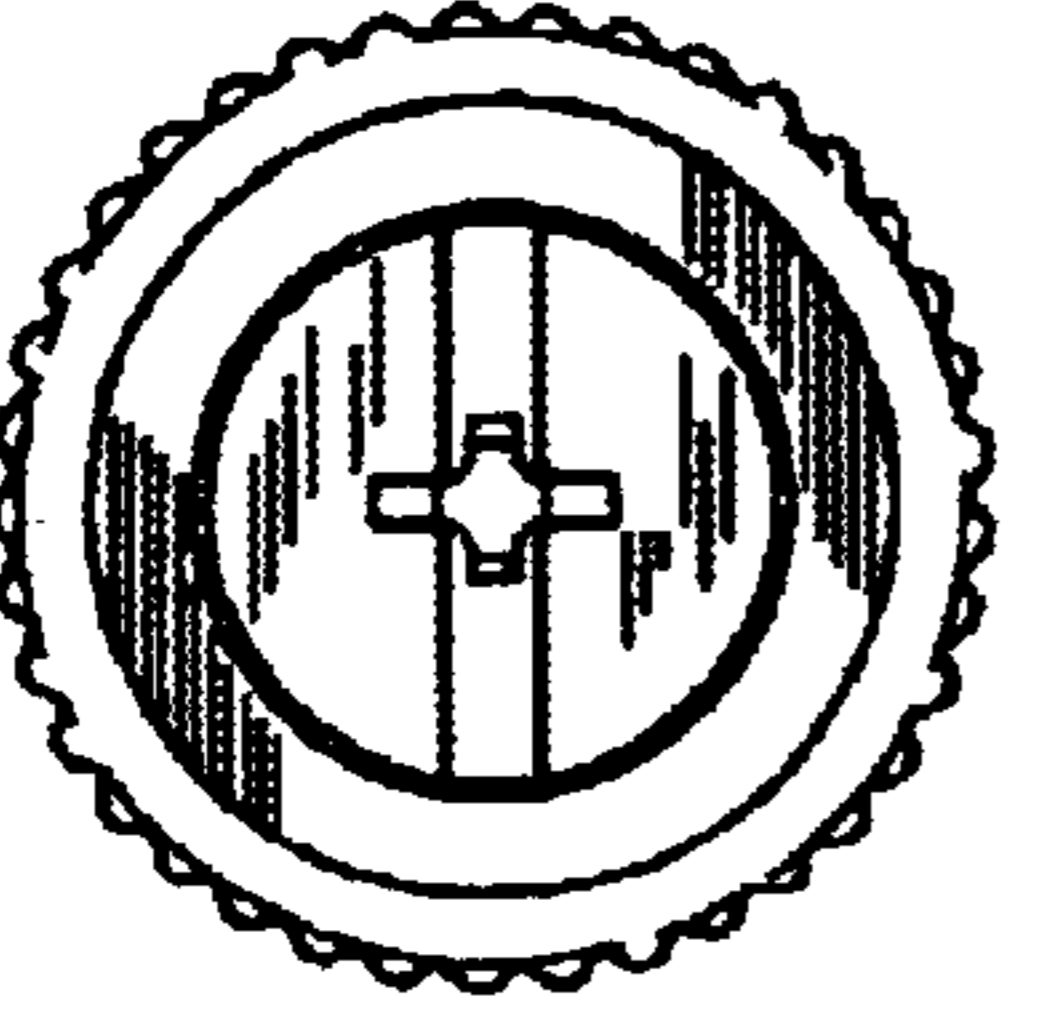


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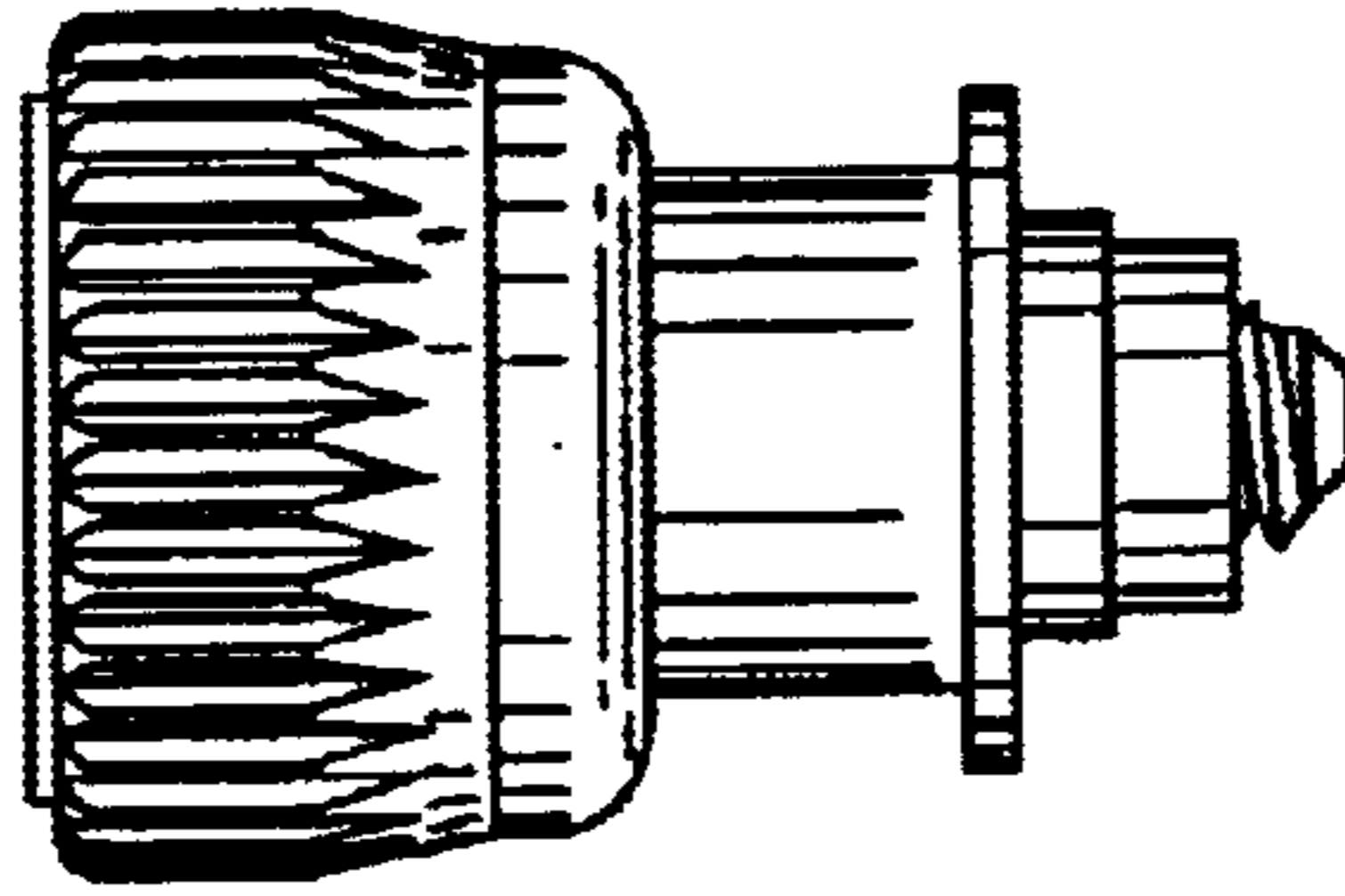


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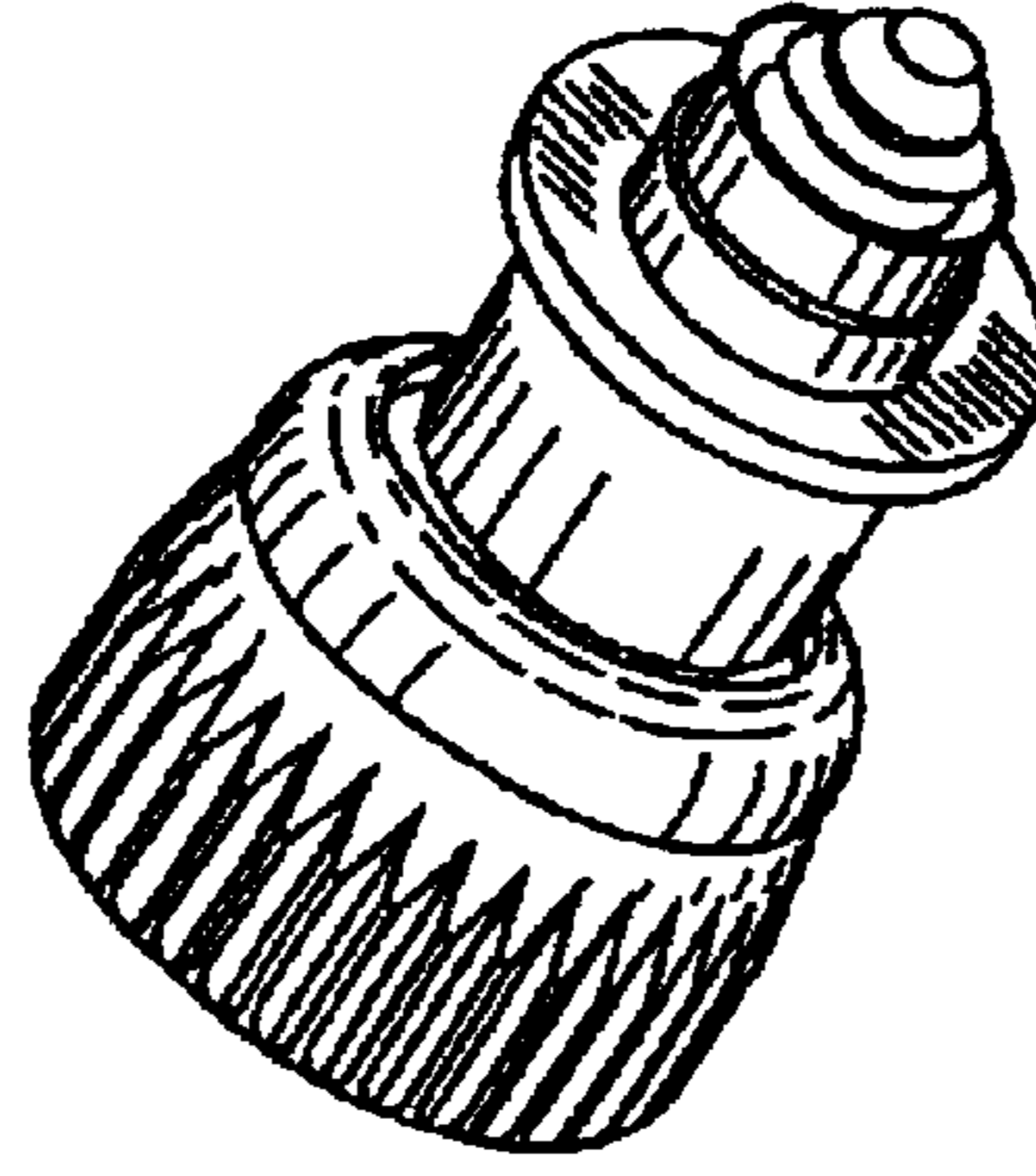


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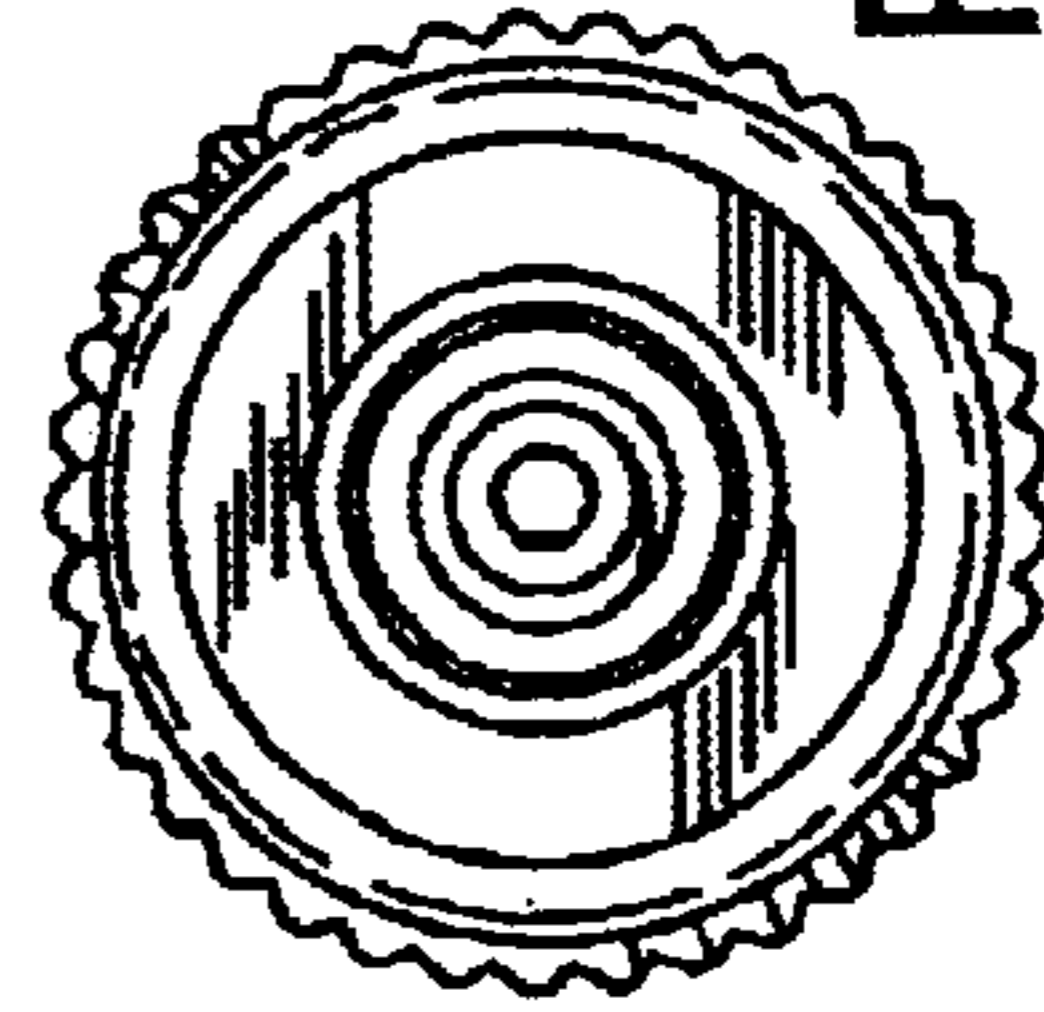


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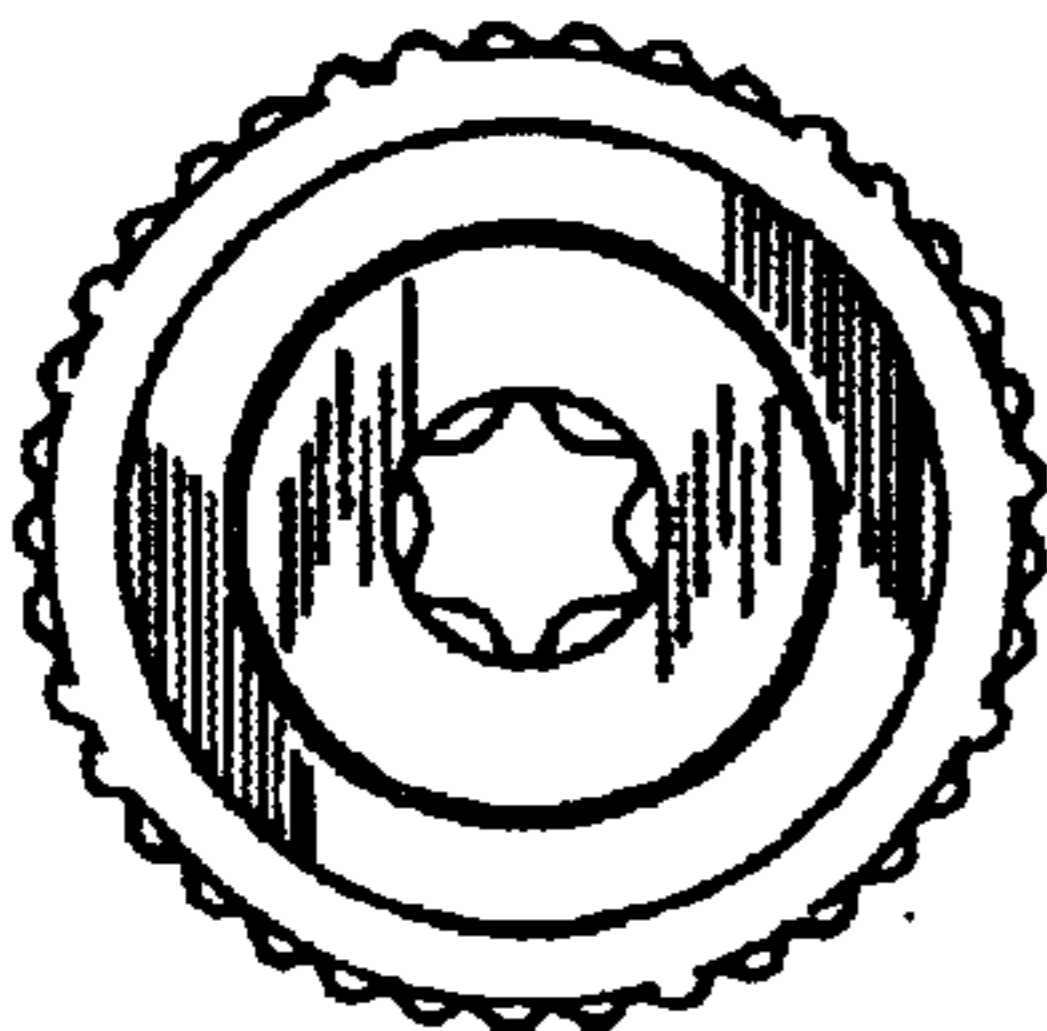


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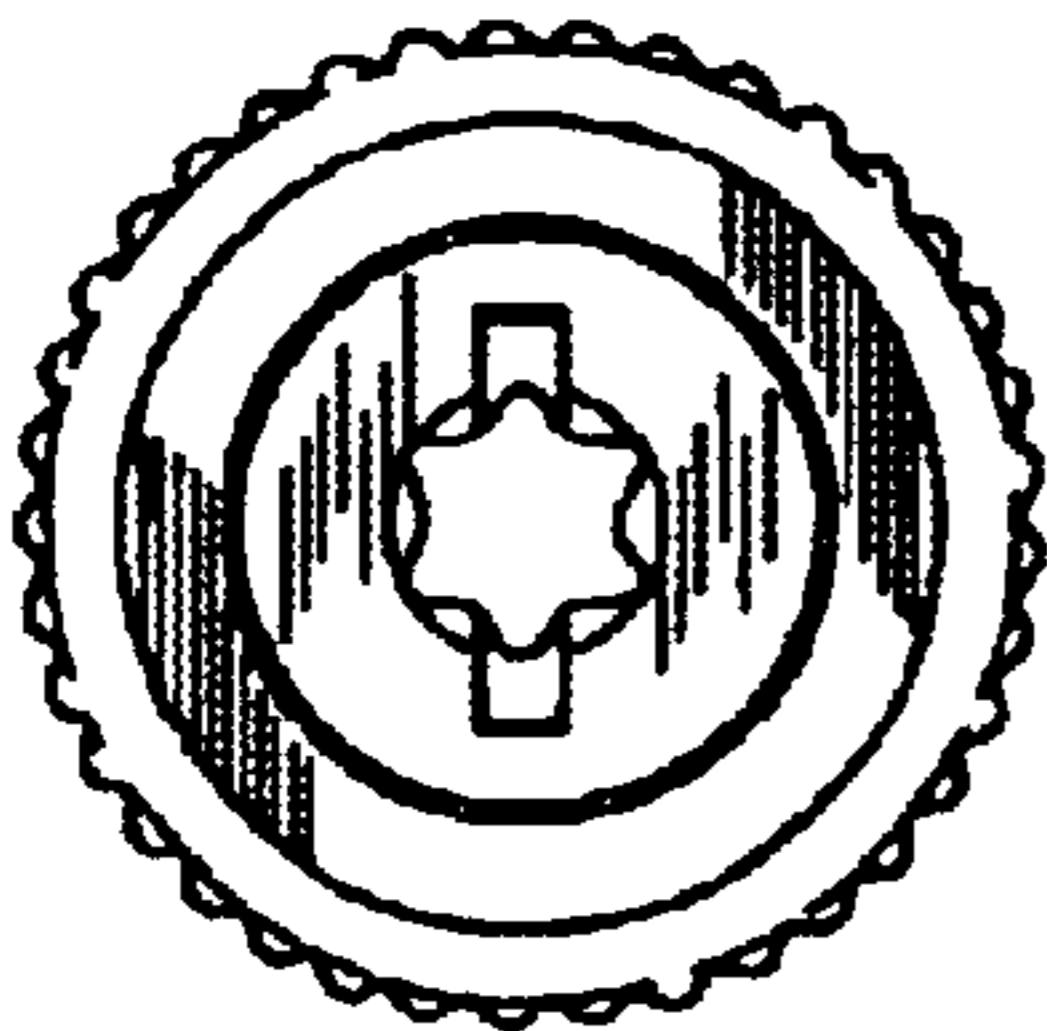


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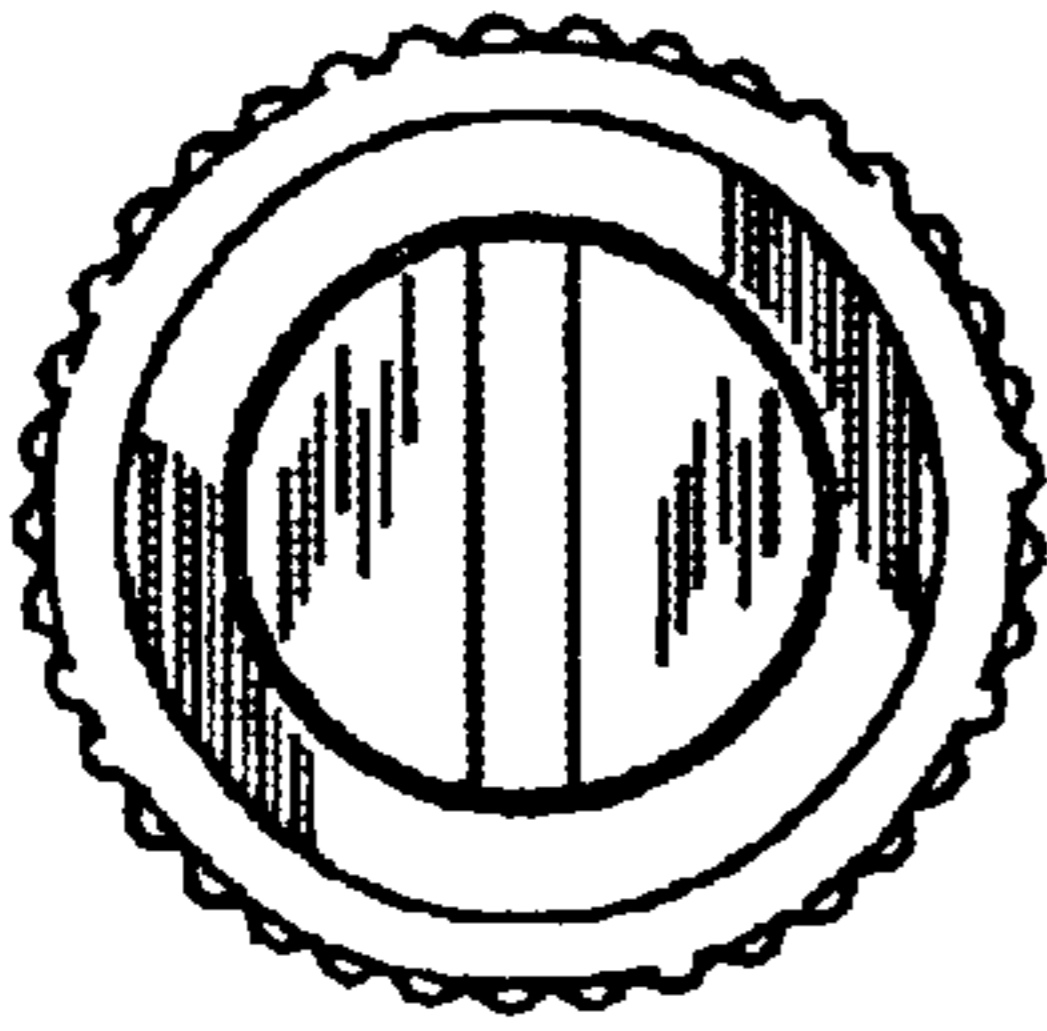


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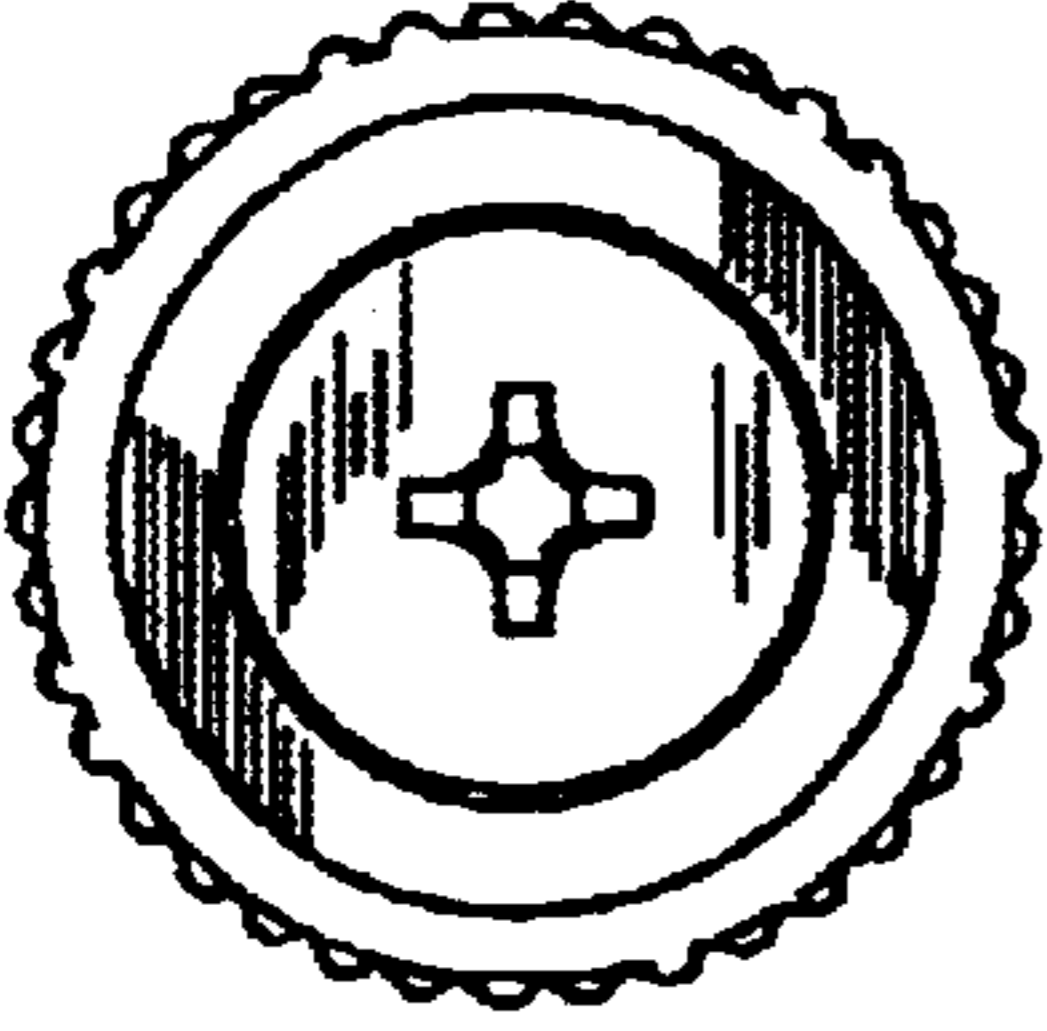


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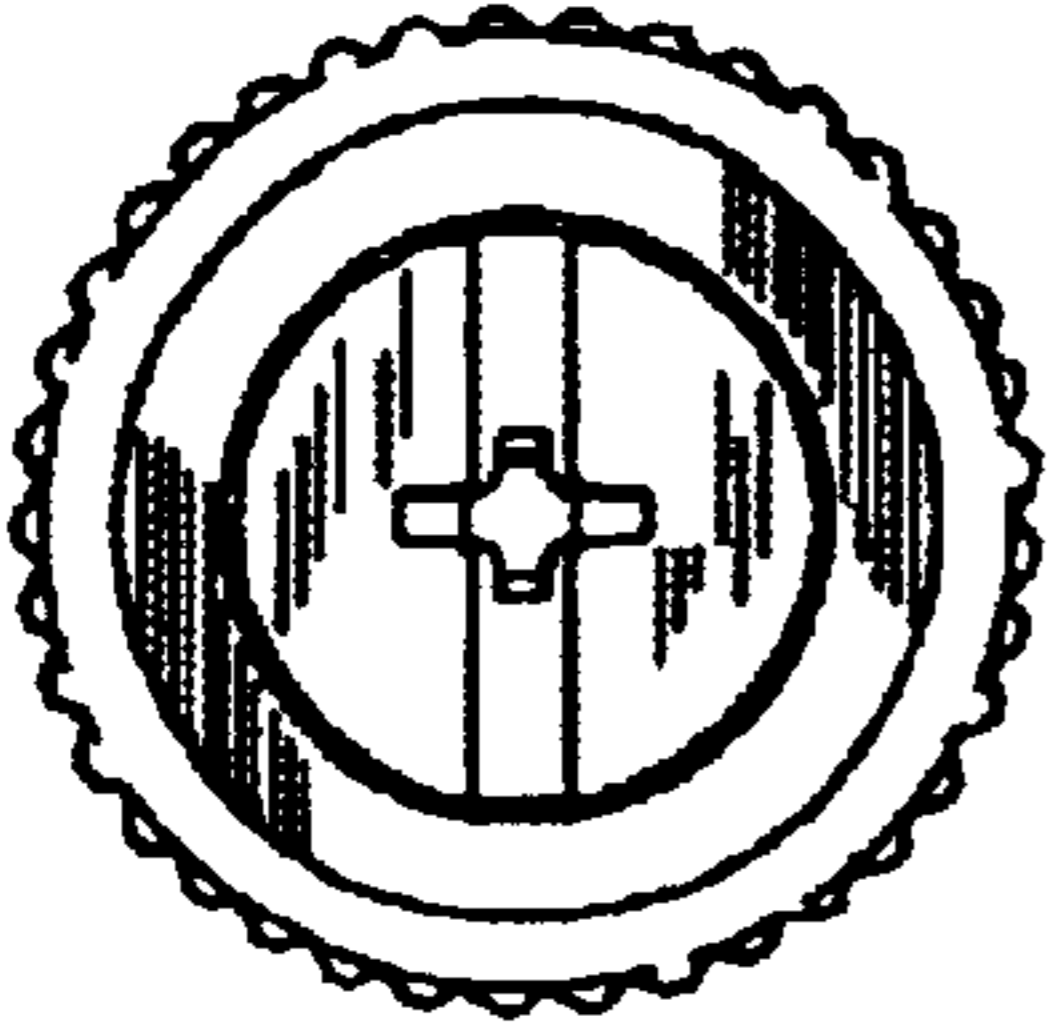


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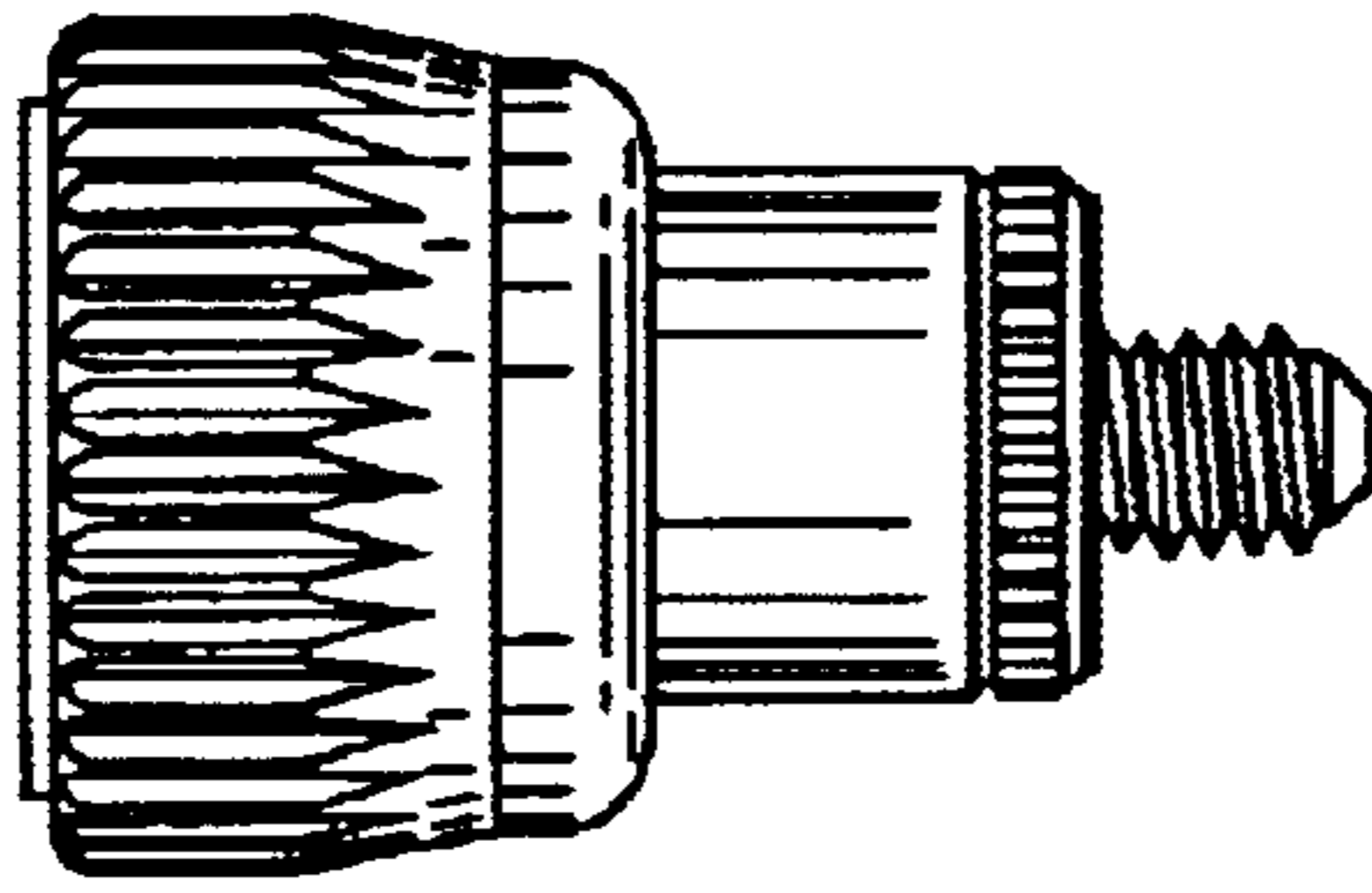


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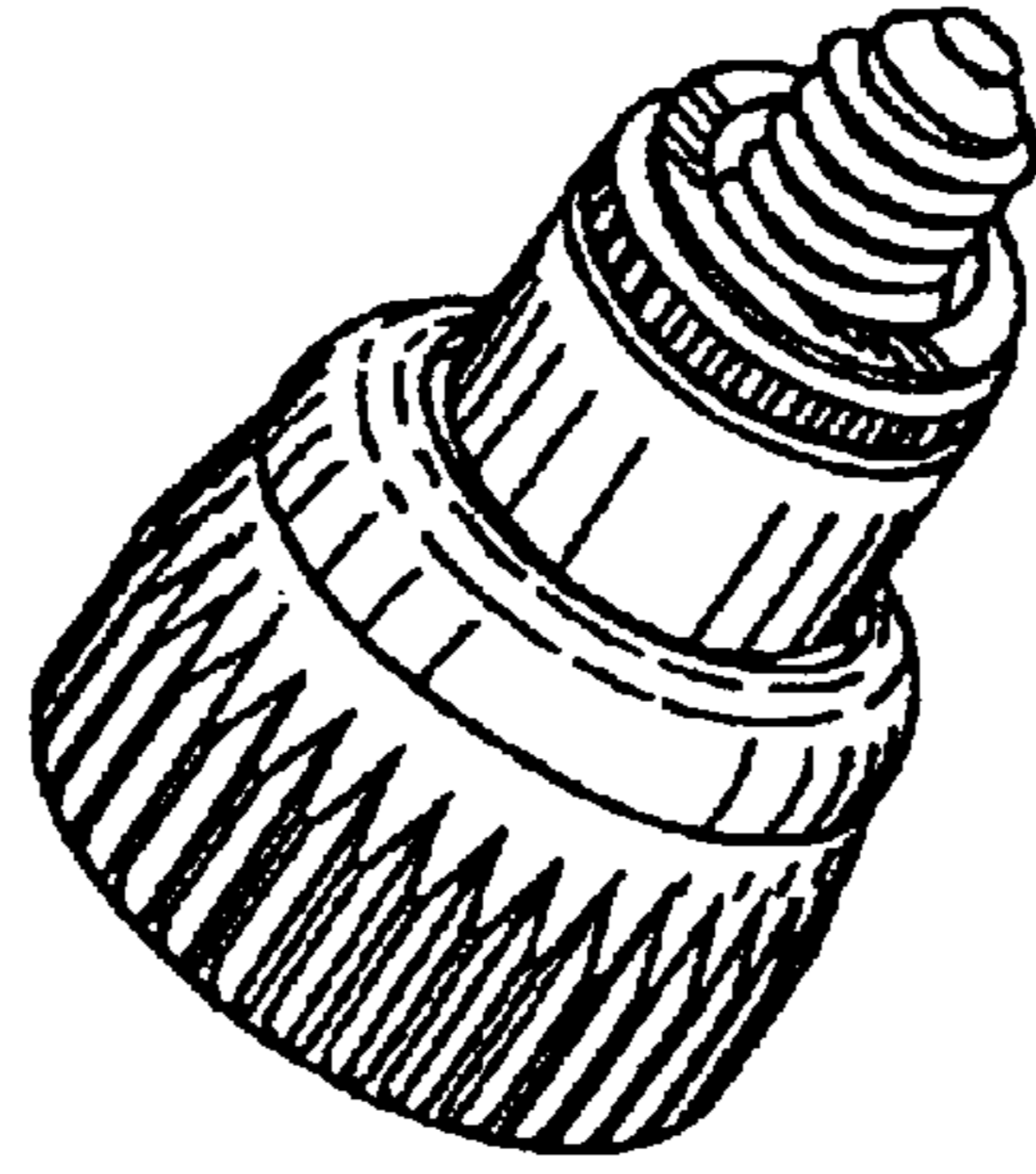


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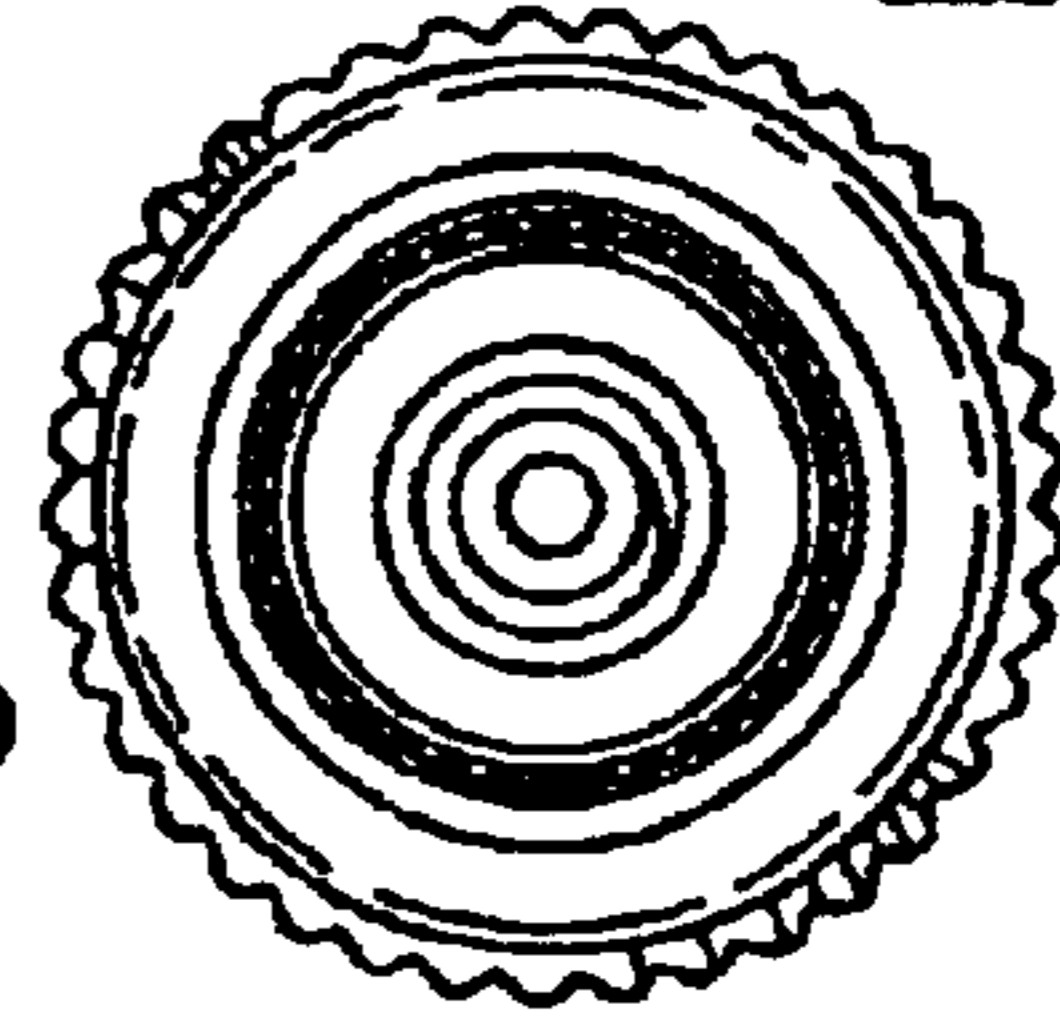


Figure 27

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : Des. 492,895 S
DATED : July 13, 2004
INVENTOR(S) : Thomas J. Ellis et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page,

DESCRIPTION,

Fig. 28, "combined six lobed/slotted driver recess" should read -- Fig. 28 is a top plan view thereof showing a six lobed driver recess; --

Signed and Sealed this

Thirtieth Day of November, 2004

A handwritten signature in black ink on a dotted background. The signature reads "Jon W. Dudas" in a cursive style.

JON W. DUDAS

Director of the United States Patent and Trademark Office