

US 20050039998A1

(19) United States (12) Patent Application Publication (10) Pub. No.: US 2005/0039998 A1

Feb. 24, 2005 (43) **Pub. Date:**

Zuehl et al.

- (54) BRIDGING CLUTCH FOR A CLUTCH **APPARATUS WHICH HAS A** HYDRODYNAMIC CIRCUIT IN A CLUTCH HOUSING
- (75) Inventors: Carsten Zuehl, Troy, MI (US); Jason Kehrer, Troy, MI (US); Claus Umnus, Troy, MI (US)

Correspondence Address: **COHEN, PONTANI, LIEBERMAN & PAVANE 551 FIFTH AVENUE SUITE 1210** NEW YORK, NY 10176 (US)

- Assignee: ZF Friedrichshafen AG (73)
- 10/919,073 (21)Appl. No.:
- (22) Filed: Aug. 16, 2004

(30)**Foreign Application Priority Data**

Aug. 20, 2003 (DE)..... 103 38 157.0

Publication Classification

- (51) Int. Cl.⁷ F16H 45/02

ABSTRACT (57)

A bridging clutch for a clutch apparatus which has a hydrodynamic circuit in a clutch housing. The bridging clutch may have a piston which is arranged on a hub and which is connected to a piston mount, which is mounted on the clutch housing, such that it can be moved axially via axial force stores. The piston mount has cutouts between radial extensions in the circumferential direction for projections which are provided on the piston and which pass through the piston mount. Axial force stores engage behind the piston mount on its side facing away from the piston and are attached to the piston at one connecting end and have lever ends which act on contact surfaces of the piston mount with predetermined prestressing in the direction of the piston.

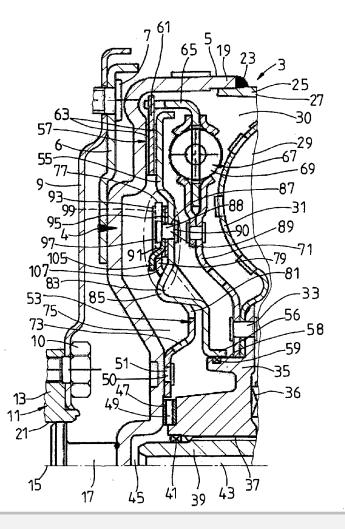
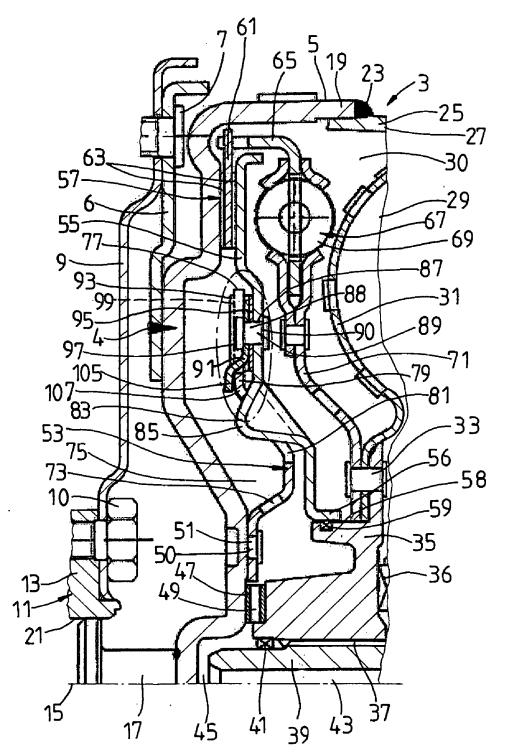
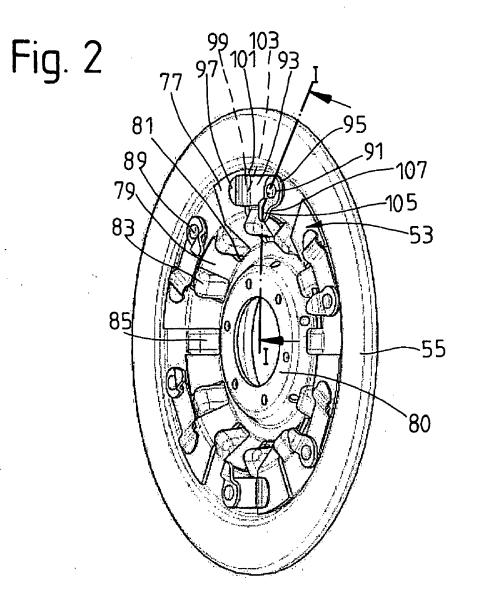
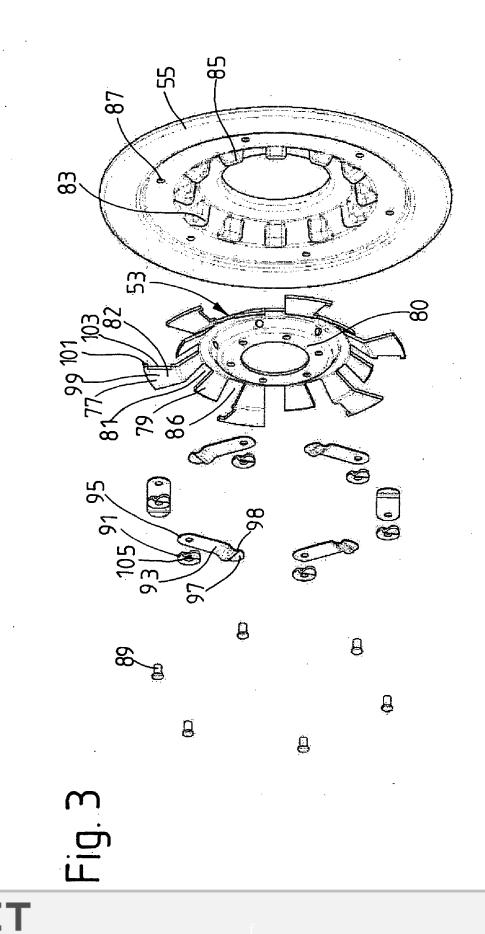


Fig. 1





CKF') Α R M Find authenticated court documents without watermarks at docketalarm.com.

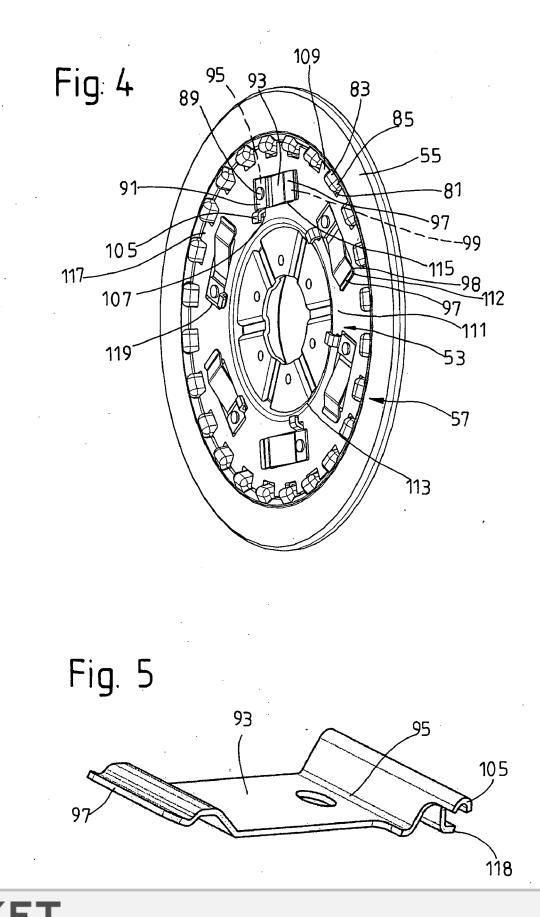


Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

)

R

Α



Find authenticated court documents without watermarks at docketalarm.com.

R

М

Α

DOCKET A L A R M



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.