

Title (en)  
Retractable thruster for vessels

Title (de)  
Abschwenkbares Strahlruder für Schiffe

Title (fr)  
Propulseur rétractable pour vaisseaux

Publication  
**EP 1876094 A3 20080319 (EN)**

Application  
**EP 07109804 A 20070607**

Priority  
• EP 06116730 A 20060706  
• EP 07109804 A 20070607

Abstract (en)  
[origin: EP1876094A2] A thruster device provides thrust for moving a vessel. A thruster unit (1) has a propeller (8) for generating the thrust and a compact power system (9,10) for providing power to rotate the propeller. A compact retractor assembly moves the thruster unit between a recessed position and an operational position. The thruster unit (1) has a piston element (3), and the retractor assembly comprises a housing (2) having an inner space (21) for receiving the piston element. The inner space receives a pressure fluid (24) for applying a hydraulic pressure on the piston element for the moving of the thruster unit. The propeller has an outer ring (80). The outer ring has a sequence of magnets (9) cooperating with coils (10). A coil current provided by a power control unit generates a magnetic force on the sequence of magnets to rotate the propeller.

IPC 8 full level  
**B63H 25/42** (2006.01); **B63H 21/17** (2006.01); **B63H 23/24** (2006.01)

CPC (source: EP)  
**B63H 1/16** (2013.01); **B63H 25/42** (2013.01); **B63H 2023/005** (2013.01); **B63H 2025/425** (2013.01)

Citation (search report)  
• [X] US 5833502 A 19981110 - ANDERSON CARL J [US]  
• [X] FR 2560147 A1 19850830 - CITROEN MESSIAN DURAND ENGREN [FR]  
• [X] US 3483843 A 19691216 - HAWTHORNE JAMES M  
• [X] GB 2370922 A 20020710 - BROWN ANDREW DAVID [GB]  
• [X] DE 3312063 A1 19841004 - LICENTIA GMBH [DE]  
• [X] DE 3141339 A1 19830505 - LICENTIA GMBH [DE]

Cited by  
CN103192970A; DK178129B1; EP2591993A1; CN103085959A; CN116279967A; US8894453B2; US8956195B2; WO2015172788A1; WO2014052531A1; EP2548797A1; EP2757037A1; WO2022050850A2; US9260173B2; EP3717346B1

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