

Title (en)
STEERING SYSTEM

Title (de)
LENKSYSTEM

Title (fr)
SYSTÈME DE DIRECTION

Publication
EP 4112441 A4 20240424 (EN)

Application
EP 21760129 A 20210204

Priority
• JP 2020032697 A 20200228
• JP 2021004064 W 20210204

Abstract (en)
[origin: EP4112441A1] A steering system (1) installed in a ship includes: a hydraulic actuator (2) that turns a rudder plate (11) via a rudder stock (12) that penetrates a ship bottom; and a pump (41) that delivers hydraulic oil. A first actuating chamber (22) and a second actuating chamber (23) of the hydraulic actuator are connected to a switching valve (3) by a pair of supply/discharge lines (44, 45). The switching valve (3) is connected to the pump (41) by a pump line (42). The switching valve (3) includes a spool (31). The spool (31) is shifted by a shifting mechanism (5). The shifting mechanism (5) is configured such that a shifting speed of the spool (31) is electrically changeable.

IPC 8 full level
B63H 25/08 (2006.01); **B63H 25/12** (2006.01); **B63H 25/24** (2006.01); **B63H 25/30** (2006.01)

CPC (source: EP KR)
B63H 25/12 (2013.01 - EP); **B63H 25/30** (2013.01 - EP KR); **F15B 11/036** (2013.01 - KR); **F15B 13/0402** (2013.01 - KR); **F15B 2013/0409** (2013.01 - KR); **F15B 2211/20576** (2013.01 - KR)

Citation (search report)
• [XAY] JP H0976997 A 19970325 - MITSUBISHI HEAVY IND LTD
• [XAY] CN 203372387 U 20140101 - YANG GENGXIN, et al
• [YA] JP 6224937 B2 20171101
• [YA] JP 2016132416 A 20160725 - JAPAN HAMUWAAJI KK
• [A] US 7699674 B1 20100420 - WALD BENJAMIN C [US], et al
• See also references of WO 2021171947A1

Designated contracting state (EPC)
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DOCDB simple family (publication)
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