

Title (en)
STEERING SYSTEM

Title (de)
LENKSYSTEM

Title (fr)
SYSTÈME DE DIRECTION

Publication
EP 4112441 A1 20230104 (EN)

Application
EP 21760129 A 20210204

Priority
• JP 2020032697 A 20200228
• JP 2021004064 W 20210204

Abstract (en)
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 25/24** (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)

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
EP 4112441 A1 20230104; **EP 4112441 A4 20240424**; CN 115087593 A 20220920; CN 115087593 B 20240209; JP 2021133843 A 20210913; JP 7409904 B2 20240109; KR 20220145362 A 20221028; WO 2021171947 A1 20210902

DOCDB simple family (application)
EP 21760129 A 20210204; CN 202180015970 A 20210204; JP 2020032697 A 20200228; JP 2021004064 W 20210204; KR 20227032560 A 20210204