

Title (en)
CONDUCTION PRE-HEATING OF SHEET FOR HOT FORMING

Title (de)
KONDUKTIONSVORERHITZUNG VON BLECH ZUR WARMFORMUNG

Title (fr)
PRÉCHAUFFAGE PAR CONDUCTION DE FEUILLE POUR FORMAGE À CHAUD

Publication
EP 3790687 A4 20220126 (EN)

Application
EP 19799148 A 20190510

Priority

- US 201862670103 P 20180511
- CA 2019050627 W 20190510

Abstract (en)
[origin: WO2019213774A1] A system for producing components by hot forming includes a pre-heat station, a furnace, and a press. The pre-heat station is configured to receive a blank; and to pre-heat at least a portion of the blank to a pre-heat temperature by thermal conduction. The furnace is constructed and arranged to receive the pre-heated blank from the pre-heat station and to heat the entire blank to a deformation temperature. The deformation temperature is higher than the pre-heat temperature. The press is constructed and arranged to receive the heated blank from the furnace and to form the heated blank into the shape of the component.

IPC 8 full level
B21J 1/06 (2006.01); **B21D 22/20** (2006.01); **B21D 37/16** (2006.01); **B21D 53/88** (2006.01); **B21J 17/00** (2006.01); **B21J 17/02** (2006.01); **C21D 1/34** (2006.01); **C21D 9/00** (2006.01); **C21D 1/673** (2006.01)

CPC (source: CN EP US)
B21D 22/208 (2013.01 - EP US); **B21D 37/16** (2013.01 - EP US); **B21D 53/88** (2013.01 - EP US); **B21J 1/06** (2013.01 - CN EP); **B21J 5/02** (2013.01 - CN); **B21J 17/00** (2013.01 - CN EP); **B21J 17/02** (2013.01 - EP); **C21D 1/34** (2013.01 - EP); **C21D 1/673** (2013.01 - US); **C21D 9/0068** (2013.01 - EP); **C21D 1/673** (2013.01 - EP); **C21D 2211/001** (2013.01 - US); **C21D 2211/008** (2013.01 - US); **C21D 2221/00** (2013.01 - EP)

Citation (search report)

- [X] US 2014124104 A1 20140508 - TRIPPE CARSTEN [DE], et al
- [I] CA 2928046 A1 20150507 - MAGNA INT INC [CA]
- [A] US 2017183757 A1 20170629 - KIM SUNG UNG [KR], et al
- See also references of WO 2019213774A1

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

DOCDB simple family (publication)
WO 2019213774 A1 20191114; CA 3096907 A1 20191114; CN 112118922 A 20201222; CN 112118922 B 20240202; CN 117943496 A 20240430; EP 3790687 A1 20210317; EP 3790687 A4 20220126; MX 2020011426 A 20201124; US 2021237138 A1 20210805

DOCDB simple family (application)
CA 2019050627 W 20190510; CA 3096907 A 20190510; CN 201980031281 A 20190510; CN 202410058324 A 20190510; EP 19799148 A 20190510; MX 2020011426 A 20190510; US 201917054320 A 20190510