



(43) International Publication Date
31 August 2017 (31.08.2017)

- (51) International Patent Classification:
B23C 1/20 (2006.01) *B23C 3/12* (2006.01)
- (21) International Application Number:
PCT/US2017/019448
- (22) International Filing Date:
24 February 2017 (24.02.2017)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
62/299,231 24 February 2016 (24.02.2016) US
- (71) Applicant: **HOLLAND, L.P.** [US/US]; 1000 Holland Dr.,
Crete, IL 60417 (US).
- (72) Inventors: **KOSKI, Kristopher**; 13163 W. Beaver Lake
Dr., Homer Glen, IL 60491 (US). **STECK, Kelly**; 8606
Goodman Drive NW, Gig Harbor, WA 98332 (US).
- (74) Agent: **SCHERRER, Stephen, T.**; Scherrer Patent &
Trademark Law, P.C., 17 E. Crystal Lake Ave., Crystal
Lake, IL 60014 (US).
- (81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM,

DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KH, KN,
KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA,
MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG,
NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS,
RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY,
TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN,
ZA, ZM, ZW.

- (84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ,
TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU,
TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE,
DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments (Rule 48.2(h))

- (88) Date of publication of the international search report:
5 October 2017

(54) Title: PORTABLE RAIL WELD MILLING MACHINE APPARATUS AND METHODS OF USING THE SAME

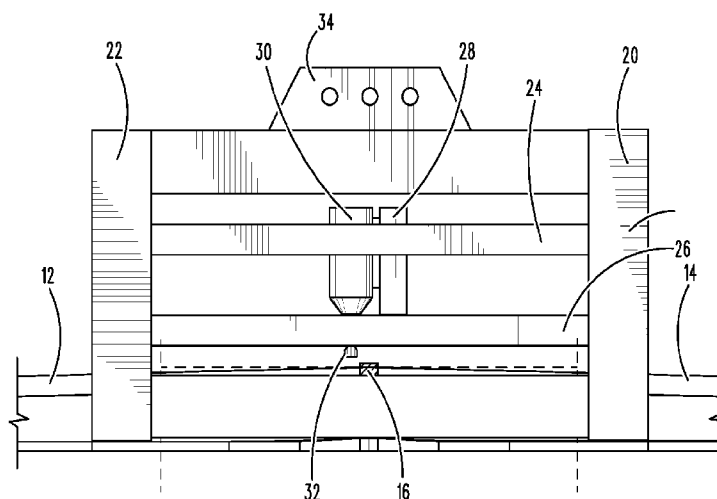


FIG. 2

(57) Abstract: A portable rail weld milling machine apparatus comprises a metal frame that incorporates a motor with a rotary carbide tool that is able to lock to a rail or rails for stability. The apparatus houses the required guides and motors to maneuver the tool on a plurality of axes with computer numerical control ("CNC"). The CNC programming is able to control the carbide tool such that the welded rail can be milled to proper profile on the entire running surface, including the top, the field side, and the gauge side of the ball of the rail.



A. CLASSIFICATION OF SUBJECT MATTER**B23C 1/20(2006.01)i, B23C 3/12(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B23C 1/20; B24B 27/00; E01B 31/17; B23Q 3/00; B23P 23/00; B23C 1/00; B23P 23/04; E01B 31/13; B23C 3/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & keywords: rail weld, milling, guide, motor, frame, axis, slide, and clamp

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002-0194722 A1 (GALLOWAY, CHRISTOPHER A.) 26 December 2002 See paragraphs [0021], [0075]-[0079], claims 1-4, 7, 25, and figures 10-16.	1-20
Y	US 6033166 A (HAMPEL, BARRY FRANCIS) 07 March 2000 See column 2, lines 48-58, column 3, line 40 - column 4, line 64, claim 1, and figures 2-7.	1-20
A	JP 05-051906 A (EAST JAPAN RAILWAY CO. et al.) 02 March 1993 See claims 1-4 and figure 1.	1-20
A	CN 103056666 A (LI et al.) 24 April 2013 See abstract and claims 1-6.	1-20
A	EP 1983100 B1 (PLASSER ITALIANA S.R.L.) 09 October 2013 See claims 1-5.	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

16 August 2017 (16.08.2017)

Date of mailing of the international search report

16 August 2017 (16.08.2017)

Name and mailing address of the ISA/KR

International Application Division

Korean Intellectual Property Office

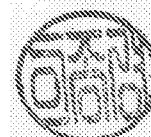
189 Cheongsa-ro, Seo-gu, Daejeon, 35208, Republic of Korea

Facsimile No. +82-42-481-8578

Authorized officer

LEE, Jong Kyung

Telephone No. +82-42-481-3360



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2017/019448

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