



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : F16J 15/34		(11) International Publication Number: WO 99/20924
A1		(43) International Publication Date: 29 April 1999 (29.04.99)
(21) International Application Number: PCT/US98/20985 (22) International Filing Date: 6 October 1998 (06.10.98) (30) Priority Data: 08/954,320 17 October 1997 (17.10.97) US (71) Applicant: CATERPILLAR INC. [US/US]; 100 N.E. Adams Street, Peoria, IL 61629-6490 (US). (72) Inventors: HOEFFT, Thomas, M.; 384 Trimont Trl, Franklin, NC 28734-2593 (US). BEDFORD, Billy, R.; 828 S.W. Forrest Trail, Peoria, IL 61615 (US). HASSELBUSCH, Michael, D.; 407 W. Lakemper Court, Metamora, IL 61548 (US). (74) Agents: CHEEK, John, J. et al.; 100 N.E. Adams Street, Peoria, IL 61629-6490 (US).		(81) Designated States: JP, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published With international search report.

(54) Title: FACE SEAL ASSEMBLY WITH STATIC SEAL RING

(57) Abstract

A metal-to-metal face seal assembly (30) comprises a static seal ring (32) secured to a rotating element (12), such as a track roller of a tracked machine. The static seal ring (32) has a seal face (40), and a dynamic seal ring (34) has a seal face (42) in sealing engagement with the seal face (40) of the static ring (32). The dynamic seal ring (34) has a ramp (46) thereon extending at 8 degrees relative to horizontal in a direction away from the seal face (42) thereof. The seal assembly (30) further includes a seal housing (18), which may be the end collar (18) of the track roller (12), having an annular ramp (48) formed thereon confronting the ramp (46) of the dynamic seal ring (34), which seal housing ramp (46) extends at 10 degrees relative to horizontal. The ramps (46, 48) converge in a direction away from a seal plane defined by the mutually-engaging faces (40, 42) of the seal rings (32, 34). A load ring (44) disposed between the ramps (46, 48) is pre-compressed to its maximum strain level to provide the desired face loads on the seal faces (40, 42).

