

Title (en)

Annular foreign object search and retrieval apparatus.

Title (de)

Ringförmige Auffindungs- und Wiedererlangungsvorrichtung für Fremdkörper.

Title (fr)

Dispositif annulaire de recherche et de récupération d'objets étrangers.

Publication

**EP 0512774 A1 19921111 (EN)**

Application

**EP 92303994 A 19920501**

Priority

US 69530891 A 19910503

Abstract (en)

An apparatus (10) is for foreign object search and retrieval in annular space (12) around a tube bundle (14) of a nuclear power steam generator (16). A lance drive (18) through which a stiff, nonbuckling lance (20) extends has a nose piece (22) extending into handhole (24) of the steam generator (16). The lance drive (18) is mounted in front of the handhole (24) by a support rail (26) to which the lance drive (18) is mounted. A lance guide (28) is connected between rear (30) of the lance drive (18) and a lance takeup drum (32). The lance drive (18) has external nosepiece (22) serving as a guide for the stiff, nonbuckling lance (20) as it exits from the lance drive (18). The nosepiece (22) has a series of roller bearings (36) through which the stiff, nonbuckling lance (20) passes to curve it into the annular space (12). The stiff, nonbuckling lance (20) consists of a plurality of substantially vertically extending, one piece hosebar supports (38) strung on supporting cables (40) in a manner similar to beads on a string. Each of the hosebar supports (38) has a convex front surface (42) and a concave rear surface (44). The convex front surface (42) fits into the concave rear surface (44) of the next adjacent hosebar support (38). With the surfaces (42) and (44) engaging in this manner, the stiff, nonbuckling lance (20) has a substantially increased vertical stiffness, so that it can extend for substantial distances from the nosepiece (22) into the annular space (12) without lateral support. <IMAGE>

IPC 1-7

**B25J 18/06; F22B 37/00**

IPC 8 full level

**B25J 18/06** (2006.01); **F22B 37/00** (2006.01); **G21C 17/003** (2006.01)

CPC (source: EP)

**F22B 37/002** (2013.01)

Citation (search report)

- [APD] WO 8807156 A2 19880922 - ELECTRIC POWER RES INST [US]
- [APD] WO 9009850 A1 19900907 - ELECTRIC POWER RES INST [US]
- [A] US 4393728 A 19830719 - LARSON OVE [SE], et al
- [A] US 4575185 A 19860311 - WENTZELL TIMOTHY H [US], et al

Cited by

FR2829043A1; FR3093296A1; EP3260250A1; CN107520839A

Designated contracting state (EPC)

AT BE CH DE DK ES FR GB GR IT LI LU MC NL PT SE

DOCDB simple family (publication)

**EP 0512774 A1 19921111**; AU 1133792 A 19921105; CA 2062208 A1 19921104; JP H05157879 A 19930625

DOCDB simple family (application)

**EP 92303994 A 19920501**; AU 1133792 A 19920302; CA 2062208 A 19920303; JP 11373192 A 19920506