

Title (en)

Isolation of gas in hydraulic spark gap shock wave generator.

Title (de)

Gaselimination in einer flüssigkeitsgefüllten Funkenstrecke eines Stosswellengenerators.

Title (fr)

Isolation d'un gaz dans l'éclateur hydraulique d'un générateur d'ondes de choc.

Publication

**EP 0326620 A1 19890809 (EN)**

Application

**EP 87119265 A 19871228**

Priority

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Abstract (en)

Apparatus for generating shock waves for destruction of kidney stones comprises an upwardly opening ellipsoidal reflector (12). A resilient diaphragm (14) closes the otherwise open end of the reflector (12), and the reflector (12) is filled with water or other suitable liquid. A spark gap (32, 32a) is provided in the reflector (12) at the first focus point thereof, and the reflector (12) is positioned relative to a human body such that the diaphragm (14) presses against the body and the second focus point of the ellipsoid lies precisely on a kidney stone to be destroyed. Electronic apparatus is provided for causing a repeating spark across the gap to generate a series of shock waves which are focused by the ellipsoidal reflector (12) to concentrate on a kidney stone. Gas is released by the sparks, and either a small tube (18) surrounds the spark gap, or a diaphragm (56) immediately overlies the spark gap (32, 32a) to isolate water adjacent the spark gap (32, 32a) from most of the water in the reflector (12). The isolated water is constantly recirculated to flush away gas.

IPC 1-7

**A61B 17/22; G10K 11/28**

IPC 8 full level

**G10K 11/02** (2006.01); **G10K 11/28** (2006.01); **G10K 15/06** (2006.01)

CPC (source: EP)

**G10K 11/02** (2013.01); **G10K 11/28** (2013.01); **G10K 15/06** (2013.01)

Citation (search report)

- [A] EP 0131654 A1 19850123 - OPTISCHE IND DE OUDE DELFT NV [NL]
- [A] EP 0206331 A2 19861230 - YACHIYODA SANGYO CO LTD [JP], et al
- [A] EP 0090138 A2 19831005 - DORNIER SYSTEM GMBH [DE]
- [A] EP 0196353 A2 19861008 - DORNIER SYSTEM GMBH [DE]

Cited by

DE102006022417A1; EP0590177A1; JPH06114068A; EP2964326A4; EP3626307A1; US11865371B2; US11229575B2; US11813477B2; US10835767B2; US10857393B2; US11794040B2; US11857212B2; TWI741235B; TWI801977B

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