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(71) **Applicant** *(for all designated States except US)*: **BAKER HUGHES INCORPORATED** [US/US]; P.O. Box 4740, Houston, TX 77210-4740 (US).

(72) **Inventors; and**

(75) **Inventors/Applicants** *(for US only)*: **BEALL, Clifford, H.** [US/US]; 8002 South Peach Circle, Broken Arrow, OK 74011 (US). **MAY, Michael, J.** [US/US]; 12322 South 14th Street, Jenks, OK 74037 (US). **SLOAN, James, T.** [US/US]; 19512 E. 385h Street, Broken Arrow, OK 74014 (US). **HAYNES, Andrew** [US/US]; 1914 Corral Drive, Houston, TX 77090 (US). **ANDREWS, Thad, D.** [US/US]; 6984 South Oswego Avenue, Tulsa, OK 74136 (US).

(74) **Agent**: **DUPHORNE, Darin, H.**; Division Intellectual Property Counsel, Baker Oil Tools Division - Baker Hughes Incorporated, P.O. Box 4740, Houston, TX 77210-4740 (US).

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(54) **Title**: DOWNHOLE BARRIER VALVE

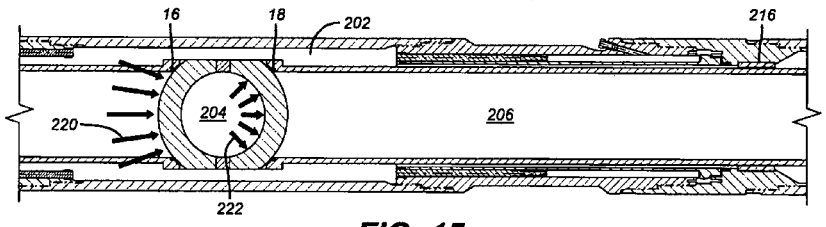


FIG. 15

(57) **Abstract**: A ball type downhole barrier valve capable of bidirectional sealing features a ball rotating on its axis to open or close with control line pressure to an actuating rod piston assembly. The ball is also shiftable to a locked open position. A cage surrounds the ball and retains opposed seats to it. The cage is made from one piece and tangential holes are drilled and tapped before the piece is longitudinally split with a wire EDM cutting technique. Fasteners to rejoin the cut halves properly space them to the original one piece internal dimension. Auxiliary tools allow determination of spacing of internal components so that a desired spring preload on the seats against the ball can be achieved. Seals on the sleeves that form ball seats help prevent leakage due to ball distortion at high differential pressures when the valve is closed.

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