

DR. JOSHUA C. HARRISON PUBLICATIONS IN THE DATA STORAGE DEVICE INDUSTRY:

U.S. PATENTS AS INVENTOR

- 1) **US Patent # 5,452,158**, J.C. Harrison and K.P. Hanrahan, "Magnetic Head Gimbal Having Two Degrees of Freedom with Localized Torsion and Bending for Respective Degrees of Freedom," 19 September 1995.
- 2) **US Patent #5,652,684**, J.C. Harrison and K.P. Hanrahan, "Magnetic Head Gimbal Suspension with Double Dimple," 29 July 1997.
- 3) **US Patent # 5,668,690**, J.C. Harrison, "Method and Apparatus for Lifetime Prediction of Gas Lubricated Interfaces in Data Storage Devices," 16 September 1995.
- 4) **US Patent #5,682,669**, J.C. Harrison and K.P. Hanrahan, "Method of Making a Magnetic Head Gimbal Suspension Assembly with Double Dimple," 04 November 1997.
- 5) **US Patent #6,304,420**, J.M. Murphy, J.C. Harrison, T. Prentice, "Preloaded Gimbal in a Head Suspension for Limiting Head/Disc Separation," 16 October 2001.
- 6) **US Patent #6,459,547**, J.W. Riddering, Z-E. Boutaghou, J. Gui, H. Tang, M.C. Rao, J.E. Angelo, J.C. Harrison, J.M. Murphy, "Slider with Pads and Textured Landing Zone For Disc Storage System," 01 October 2002.
- 7) **US Patent #6,487,043**, J.M. Murphy and J.C. Harrison, "Crossed texture head disc interface," 26 November 2002.
- 8) **US Patent #6,556,383**, J.M. Murphy and J.C. Harrison, "Disc Drive Anti-Shock Suspension Cushions," 29 April 2003.

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- 1) **British GB2369484**, J.W. Riddering, Z-E. Boutaghou, J. Gui, H. Tang, M.C. Rao, J.E. Angelo, J.C. Harrison, J.M. Murphy, "Slider For Disc Storage System," Published 10 September 2003.
- 2) **British GB2369484**, J.M. Murphy, J.C. Harrison, "Disc Drive Anti-Shock Suspension Cushions," Published 24 December 2002.
- 3) **German DE19983741**, J.M. Murphy, J.C. Harrison, "Stosssdaempfende Aufhaengungspolster Eines Plattenlaufwerks," Published 13 December 2001.
- 4) **World IP Org. WO0116943**, J.W. Riddering, Z-E. Boutaghou, J. Gui, H. Tang, M.C. Rao, J.E. Angelo, J.C. Harrison, J.M. Murphy, "Bras pour Unite de Disque," Published 07 September 2001.
- 5) **World IP Org. WO0030078**, J.M. Murphy, J.C. Harrison, "Coussinets de Suspension Anti-Choc pour Unite de Disques," Published 25 May 2000.

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- 2) J.C. Harrison, F.E. Talke, "Non-repeatable runout of cantilever and doubly supported 5 1/4 inch disk drive spindles." *Precision Engineering*, Vol.13, No.1, pp.33-40 (1991).
- 3) W. Imano, J.C. Harrison, "A comment on constrained layer damping structures with low viscoelastic modulus." *Journal of Sound and Vibration*, Vol.149, No.2, pp.354-359 (1991).
- 4) J.C. Harrison, C.W. Miller, F.E. Talke, "Disk surface acceleration effects due to air flow induced by rotation." *Adv. Info. Storage Syst.*, Vol.1, pp.155-169 (1991).
- 5) J. Harrison, F. Talke, "Combined tuned and constrained layer damping of a Type 13 magnetic recording suspension." *IEEE Trans. on Magnetics*, Vol. 29, No. 6, pp.4098-4100 (1993).
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- 8) J.C. Harrison, K.P. Hanrahan, "The Double Dimple Magnetic Recording Suspension and its Effect on Fly Height Variability", *Journal of Tribology*, Vol. 117, No. 2, pp. 267-271 (1995).
- 9) J.C. Harrison, K.P. Hanrahan, "Effect of Mandrel Skew Induced Roll Bias on Suspension Structural Resonance", *Adv. Info. Storage Syst.*, Vol. 6., pp. 29-40 (1995).
- 10) J.C. Harrison, F.E. Talke, "Design of Laminar Dampers for Advantageous Compromise Between Tuned and Constrained Layer Damping Behaviour", *Machine Vibration*, Vol. 4., pp. 51-59 (1995).
- 11) J.C. Harrison, F.E. Talke, "Combined tuned and constrained layer damping design," (*awarded best presentation*) *Proc. Int. Conf. Vibration & Noise*, Venice, Italy, pp. 577-590 (April 1995).
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- 19) J.C. Harrison, M.D. Mundt, "Flying height response to mechanical shock during operation of a magnetic hard disk drive", *Journal of Tribology (ASME)*, Vol. 122, No. 1, pp. 260-263 (2000).
- 20) J.C. Harrison, "Guns, Dogs, CMRR and Money," *35th Annual Research Review, UCSD Center for Memory and Recording Research* (14 March 2018).