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(19) **United States**(12) **Patent Application Publication**  
**Shinton**(10) **Pub. No.: US 2023/0232523 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **WAVEGUIDE FOR A PARTICLE  
ACCELERATOR****Publication Classification**(51) **Int. Cl.****H05H 7/16** (2006.01)**H01P 3/127** (2006.01)(52) **U.S. Cl.**CPC ..... **H05H 7/16** (2013.01); **H01P 3/127**  
(2013.01); **H05H 2277/11** (2013.01)(71) Applicant: **Elekta Limited**, Crawley (GB)(72) Inventor: **Ian Shinton**, CRAWLEY (GB)(21) Appl. No.: **17/997,714**(22) PCT Filed: **Apr. 30, 2021**(86) PCT No.: **PCT/EP2021/061492**

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**ABSTRACT**

Disclosed herein is a waveguide cell having a helical cavity. The waveguide cell has a central axis and a cavity having a transverse cross section whose rotational position about the central axis varies along the central axis. There is also disclosed a method a determining the shape of a waveguide cell.

