CLAIMS

That which is claimed is:

~~1.~~

1. A downhole tool having an indexing apparatus for use in a wellbore comprising:

an outer tubing comprising:

an outer surface, ~~and~~

an inner surface, wherein the inner surface defines an inner region of the outer tubing~~; and~~,

a fixed point on the outer surface of the outer tubing; and

a sliding sleeve positioned within the inner region of the outer tubing, the sliding sleeve being slideable relative to the outer tubing, the sliding sleeve comprising:

a first magnet, ~~and~~

a second magnet, wherein the first magnet and second magnet are positioned in an opposing orientation relative to one another,

~~wherein the downhole tool comprises an indexing apparatus for actuating the downhole tool from a surface of the wellbore by applying a pre-determined number of hydraulic pressure signals to the downhole tool.~~

~~2. The downhole tool of claim 1, wherein the outer tubing further comprises a fixed point on the outer surface of the outer tubing.~~

~~3. The downhole tool of claim 2, wherein the sliding sleeve comprises~~

a reference point that corresponds to a mid-point between the first magnet and the second magnet, ~~and~~

wherein a distance between the reference point on the sliding sleeve and the fixed point on the outer tubing corresponds to an indexing position of the indexing apparatus of the downhole tool.

2. ~~4.~~ The downhole tool of ~~-~~ claim 1, further comprising a ~~fastening feature~~fastener for securing the first magnet and ~~-~~the second magnet in position relative to one another.

3. ~~5.~~ The downhole tool of ~~-~~ claim 1, wherein the sliding sleeve further comprises a first spacer positioned between the first magnet and the second magnet.

4. ~~6.~~ The downhole tool of ~~-~~ claim ~~5~~3, wherein the sliding sleeve further comprises a second spacer positioned at an opposite end of the first magnet from the first spacer.

5. ~~7.~~ The downhole tool of ~~-~~ claim 1, wherein the first magnet is positioned axially relative to the second magnet along a length of the downhole tool.

6. ~~8.~~ The downhole tool of ~~-~~ claim 1, wherein a north pole of the first magnet is positioned adjacent a north pole of the second magnet.

7. ~~9.~~ The downhole tool of ~~-~~ claim 1, the sliding sleeve further comprising a third magnet and a fourth magnet, wherein the third magnet and the fourth magnet are positioned in an opposing orientation relative to one another.

8. ~~10.~~ The downhole tool of ~~-~~ claim ~~2~~1, wherein the fixed point on the outer surface of the outer tubing comprises a mid-point between two opposing magnetic fields.

9. ~~11.~~ The downhole tool of claim 1, wherein the fixed point at least partially encircles a circumference of the outer tubing.

10. The downhole tool of claim 1, the sliding sleeve further comprising a third magnet and a fourth magnet.

11. A downhole tool having an indexing apparatus for use in a wellbore comprising:

an outer tubing comprising:

an outer surface, ~~and~~

an inner surface, wherein the inner surface defines an inner region of the outer tubing,

a fixed point on the outer surface of the outer tubing; and

a sliding sleeve positioned within the inner region of the outer tubing and slideable relative to the outer tubing, the sliding sleeve comprising:

a magnet comprising a magnetic field that extends in a radial direction,

~~wherein the downhole tool comprises an indexing apparatus for actuating the downhole tool from the surface by applying a pre-determined number of hydraulic pressure signals to the downhole tool.~~

~~12. The downhole tool of claim 11, wherein the outer tubing further comprises a fixed point on the outer surface of the outer tubing.~~

~~13. The downhole tool of claim 12, wherein the sliding sleeve comprises~~

a reference point that corresponds to a mid-point of the magnet and wherein a distance between the reference point on the sliding sleeve and the fixed point on the outer tubing corresponds to an indexing position of the indexing apparatus of the downhole tool.

12. ~~14.~~ The downhole tool of ~~-~~ claim ~~13~~11, wherein the distance between the reference point on the sliding sleeve and the fixed point on the outer tubing corresponds to a rotational distance between the reference point on the sliding sleeve and the fixed point on the outer tubing.

13. ~~15.~~ The downhole tool of claim 11, further comprising a fastener for securing the magnet in position.

14. The downhole tool of claim 11, wherein the fixed point at least partially encircles a circumference of the outer tubing.

15. A method for determining an indexing position of a downhole tool positioned at a surface of a well site:

determining a magnetic field along a length of an outer tubing of the downhole tool;

identifying a reference point on a sliding sleeve corresponding to a mid-point between two opposing magnetic fields, wherein the sliding sleeve is positioned within an inner region of the outer tubing; and

determining a distance between the reference point on the sliding sleeve and a fixed point on the outer tubing of the downhole tool, wherein the distance between the reference point and the fixed point corresponds to an indexing position of the downhole tool.

16. ~~16.~~ The method of ~~-~~ claim 15, wherein the step of determining a magnetic field along a length of an outer tubing of the downhole tool further comprises passing a magnetometer along an outer surface of the outer tubing.

17. ~~17.~~ The method of ~~-~~ claim 15, wherein the step of determining a magnetic field along a length of an outer tubing of the downhole tool further comprises passing a magnetometer within the inner region of the outer tubing.

18. ~~18.~~ The method of ~~claim~~ claim 15, wherein the step of identifying a reference point on a sliding sleeve corresponding to a mid-point between two opposing magnetic fields further comprises identifying a mid-point between two magnets positioned in an opposing orientation relative to one another.

19. ~~19.~~ The method of ~~claim~~ claim 15, wherein the step of identifying a reference point on a sliding sleeve corresponding to a mid-point between two opposing magnetic fields further comprises identifying a mid-point of a magnet having a radially oriented magnetic field ~~orientated in a radial direction~~.

20. ~~20.~~ The method of ~~claim~~ claim 15, wherein the step of determining a distance between the reference point on the sliding sleeve and a fixed point on the outer tubing of the downhole tool, further comprises determining a distance between the reference point and the fixed point along a longitudinal axis of the downhole tool.