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(54) Title: CONTRAWOUND HELICAL ANTENNA**(57) Abstract**

A contrawound helical antenna (100, 130) produces a uniformly directed circulation of magnetic current (M) with a plurality of magnetic dipole elements (32, 34, 35). In one embodiment, the magnetic dipole elements (32, 34) have the same curvature, and the magnetic currents (M) on respective magnetic dipole elements (32, 34) are each directed in the same direction, relative to the central signal coupler (18) of the magnetic dipole antenna (100). In another embodiment, the magnetic dipole elements (32, 35) have the opposite curvature, and the magnetic currents (M) on respective magnetic dipole elements (32, 35) are each directed in opposite directions, relative to the central signal coupler (18) of the magnetic dipole antenna (130).

