Although intensively used ever since introduced by Leibniz in 1676, differential equations still harbor a plethora of very useful and unanticipated regularities. Such regularities are not properties of isolated solutions but become evident when contemplating the systematic way that large families of solutions, periodic or not, organize themselves collectively in control parameter space (phase diagrams) of physical systems. Phase diagrams reflect the self-organization of stable oscillations that can be observed experimentally for a variety of popular oscillators across all disciplines of natural sciences. For simple flows, we present several graphical examples of spirals, contrasting the familiar continuous spirals and a new discontinuous spirals that we found. No recipe is known to anticipate spirals in differential equations. No mathematical framework exist yet to account for discontinuous spirals.