Plugless Power for Electric Vehicles

How these two coils work?

Coil 1
N_1 turns

Coil 2
N_2 turns

i_1

$\vec{B}$

Φ_{B2}

i_1
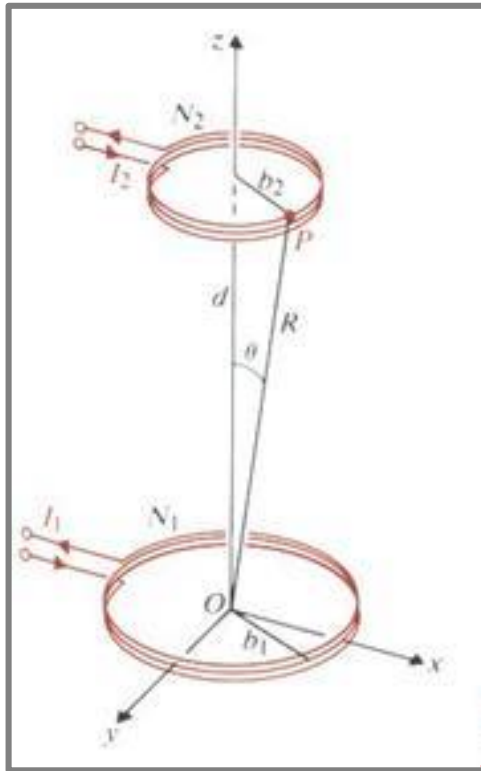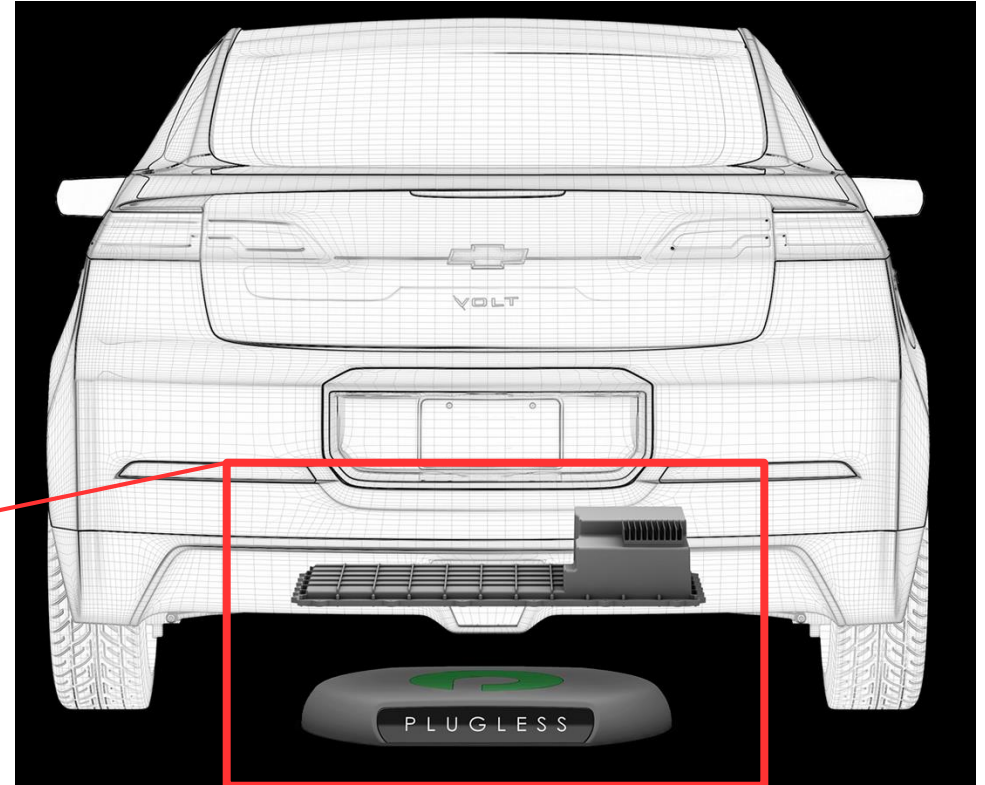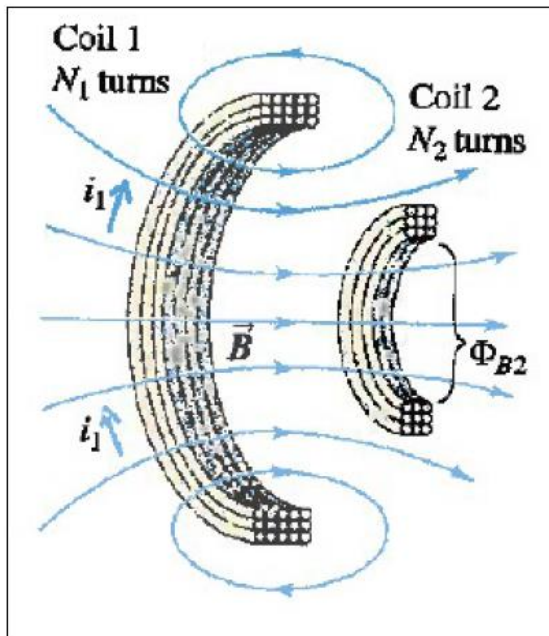
Mutual inductance

$$\epsilon_2 = -M \frac{d I_1}{dt}$$

If the input current is an AC current as:

$$I_1(t) = I_0 \sin(\omega t)$$

$$\epsilon_2(t) = -M \omega I_0 \cos(\omega t)$$

This is used to charge the battery in the EV

Other Possibilities

Electric toothbrush

Cell Phone

And.... you name it...