The energy, in terms of mechanical momentum p,

$$W = \sum p^2/2m - \sum \underset{\sim}{j} \cdot \underset{\sim}{B} e/2mc + U,$$

and in terms of canonical momentum, $p_c = p + eA/c$,

$$W = \sum p_c^{\,2}/2m - \sum 2\, \underset{\sim}{j_c} \cdot \underset{\sim}{B} e/2mc + U + \ldots$$

yield, with $p = \frac{h}{2\pi i} \frac{\partial}{\partial q}$ and $p_c = (\frac{h}{2\pi i} \frac{\partial}{\partial q})_c$

$$\nabla^2 \psi + \frac{8\pi^2 m}{h^2} \left(E - U + m_1 \frac{h}{2\pi} \frac{eB}{2mc} \right) \psi = 0$$

and $$\nabla_c^2 \psi + \frac{8\pi^2 m}{h^2} \left(E - U + 2\, m_1 \frac{h}{2\pi} \frac{eB}{2mc} \right) \psi = 0$$

whence $j = m_1 h/2\pi$ and $\mu = m_1 eh/4\pi mc$