

## Chapter Eight

motor—is simply a battery-powered motor that rotates the crankshaft fast enough to get the engine started. The basic operating principle is magnetism.

An electric current-carrying conductor, such as a wire, tends to move when placed in a magnetic field. In Figure 8-15, the current is moving away from the reader. This is indicated by an X, which represents the tail of an arrow pointing in the direction of travel. Whenever there is moving electric current, there also is a magnetic field surrounding it. Using accepted electrical theory, it can be determined that in this case the magnetic field around the conductor is moving counterclockwise.

The direction of the magnetic lines around the main field—the north and south poles of the magnet surrounding the wire—move from north to south (top to bottom). The magnetic lines of the two fields on the right side are in opposition and effectively cancel each other. On the left side, the two fields travel in the same direction; the effect



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**Fig. 8-15.** *Interaction of magnetic forces.*