

trical device develop an unintended electrical potential. By touching such a device, you will establish an unintended path for electric current between the ungrounded conductor and ground. In this ground fault condition, electrocution is very likely to occur, unless your body resistance is high. Regardless of your resistance, no great harm will be done if the circuit is protected by a *ground fault interrupter* or *ground fault circuit interrupter* (Figure 2-17).

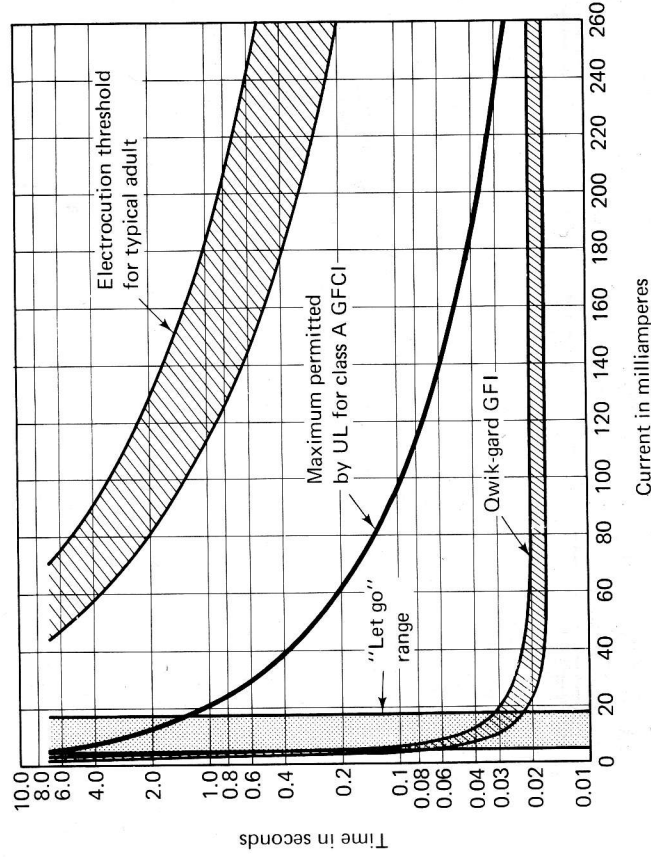


Figure 2-17. Action of ground fault interrupter. (Courtesy of Square D Company.)

The ground fault interrupter (hereafter called *GFI*) is a supersensitive, rapid-action power switch that does nothing until it detects the ominous fact that current is leaking to ground; whereupon, in a few milliseconds, it turns off the whole circuit (see Figures 2-18 and 2-19). With a GFI in the circuit, you may receive an uncomfortable shock from a ground fault, but the shock will not kill you, simply because you are not in the circuit long enough.

For the twenty years that GFIs have been in use in other countries, the National Safety Council reports that there has not been a single recorded electrocution from ground fault in any occupancy employing this type of protection. In 1971 A. W. Smoot of the Underwriters' Laboratories estimated that 81% of the electrocutions in the preceding forty-five months might not have happened if the circuits involved had been protected by GFIs.