

Make Sure That Your Portable Equipment Is Properly Grounded!



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Most people have experienced the unpleasant sensation of electric shock produced by accidental contact with current-carrying parts of an electrical system. In most cases, these shocks do not harm, but they can be fatal under some conditions. Other injuries may result from unexpected shock when portable equipment or power tools are used.

The two most common electrical shock accidents occur when a person is in contact with a good ground and: (1) contacts an electrical conductor carrying electricity, or (2) contacts the metal case or frame of an appliance that is conducting electric current because of a "short." The latter accounts for most of the electrical accidents involving portable electrical equipment.

A portable electrical appliance encased in metal is dangerous if a failure should occur in the internal wiring insulation. A 115-volt shock might occur any time the appliance is handled while the user is grounded.

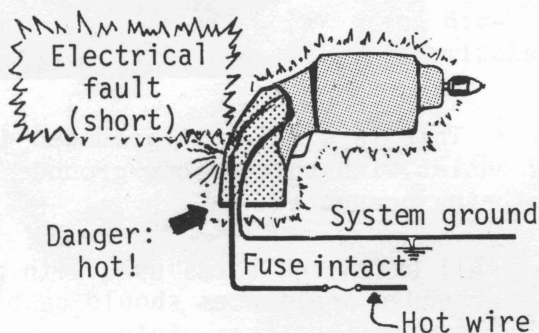


Fig. 1 Ungrounded equipment is charged with a dangerous voltage by internal electrical fault.

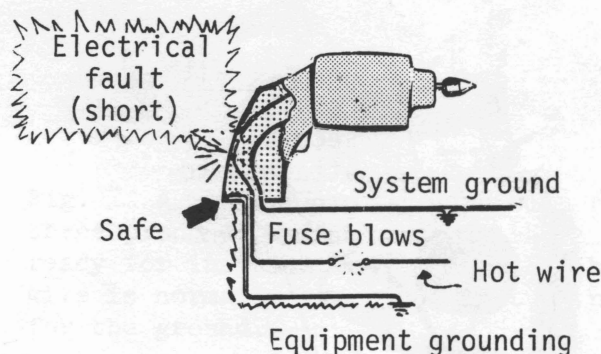


Fig. 2 Equipment housing stays at ground potential in spite of short circuit, if circuit has a grounding conductor.

USE GROUNDED OUTLETS AND PLUGS

It is important to provide a good ground connection at the outlet whenever portable equipment is used. The best arrangement is to use *grounded type duplex outlets*. These outlets are used with *grounded three-prong plugs* now supplied with new equipment. This type of plug should be installed on older equipment, tended to be used as a ground connection only. The ground connection or terminal on the outlet (usually identified by a green colored screw or lug) must be connected to a good ground. To provide proper installation of grounds, a qualified electrician should be consulted.

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A *grounding conductor* or *equipment ground* is a wire attached to the housing or other conductive parts of electrical equipment not normally energized to carry current from them to the ground. Thus, a person who touches the accidentally energized part will not receive a shock, because the grounding line furnishes a much lower resistance path to the ground. Also, the high current that passes through the wire conductor blows the fuse and stops the current. In normal operation, the grounding conductor does not carry current. The grounding conductor in a three-wire cable has a green jacket and is always terminated at the green colored hexhead screw on the cap or connector.

If the outlets cannot be changed, an adapter is available to convert the two-prong outlet to take a three-prong plug. These are satisfactory, providing the ground connection on the adapter is connected to a good ground. Figure 4 shows an adapter with the pigtail securely attached to a duplex outlet. The three-wire plug can be used with this adapter safely, *if the duplex outlet is properly grounded*. If in doubt, have a qualified electrician check it for you.

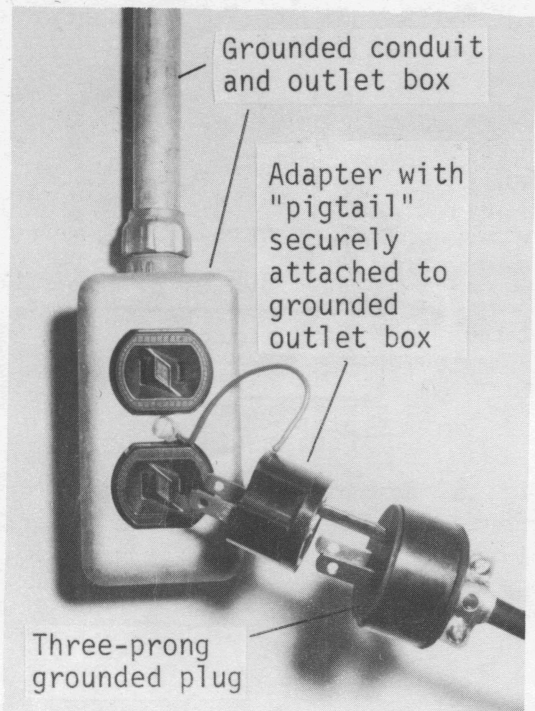


Fig. 4 The pigtail on this adapter is securely attached to a duplex outlet.

Caution: Be careful how you use the adapters. You may not retain the safety of the three-wire ground if you do not ground the adapter properly. Don't use equipment known to have caused shocks or which causes fuses to blow. Such equipment should be repaired or replaced before a serious accident occurs.

Fig. 5 This fan has a typical two-wire ungrounded cord. It can develop a dangerous "short" if the cord becomes frayed or damaged from abuse.

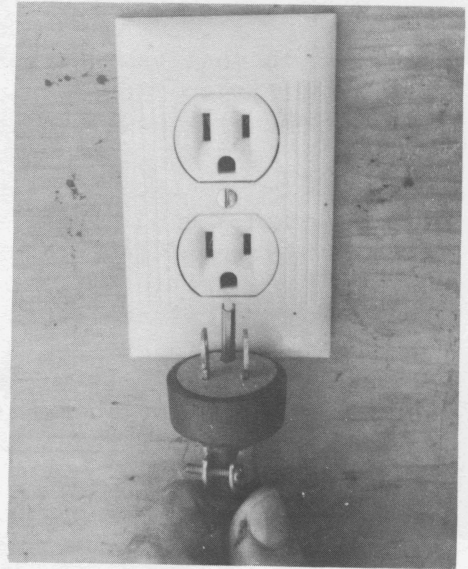
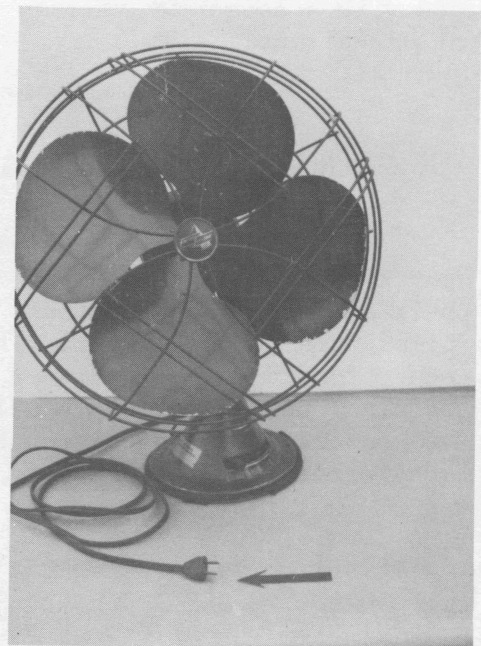


Fig. 3 This is a 115-volt grounded duplex outlet with three-prong grounded plug being connected.

Note: All extension cords used with properly grounded appliances should be of the three-wire type for safety.



MAKE YOUR FAN SAFER

General steps for replacing two-wire cords in fans are shown in Figures 5-9. They can be applied easily to all fans to replace two-wire cords with safer three-wire cords.

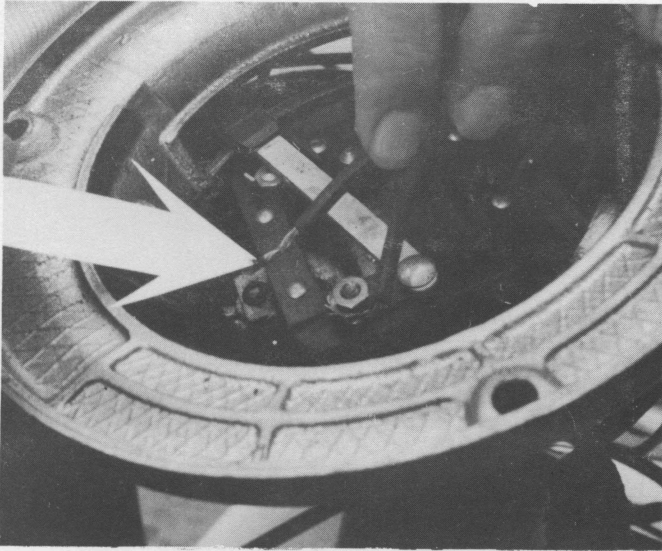


Fig. 6 Remove the base cover and disconnect the two wires from the terminals.

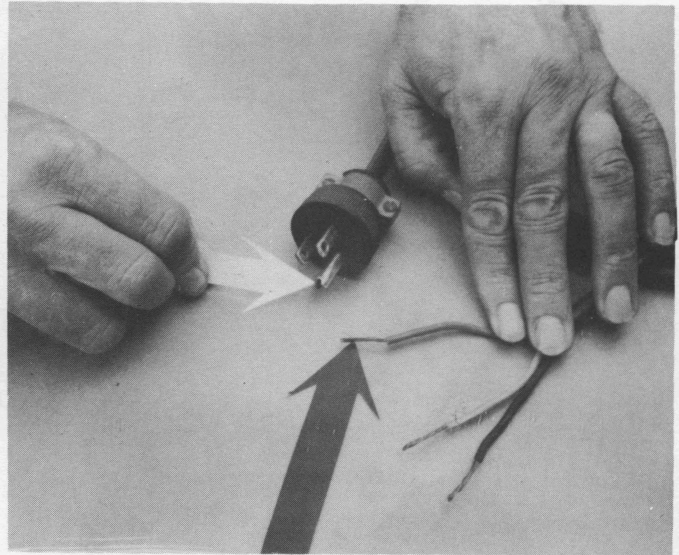


Fig. 7 A three-wire SJT cord with a three-prong grounding plug is shown ready for installation. Note the third wire is normally green and must be used for the ground.

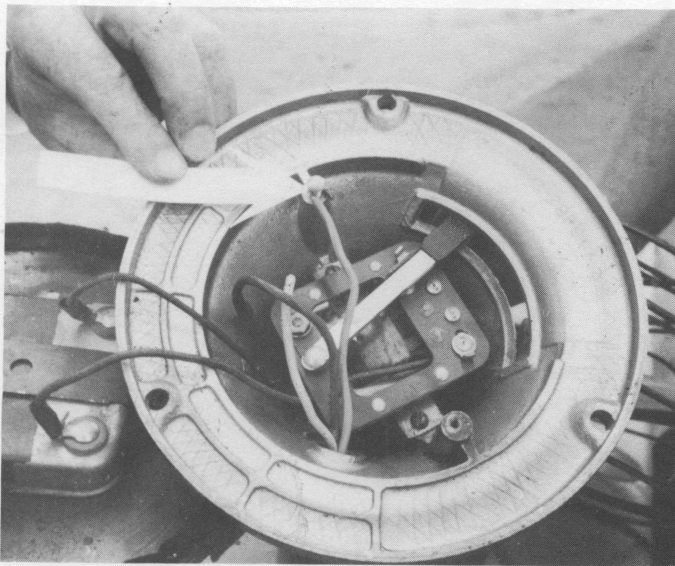
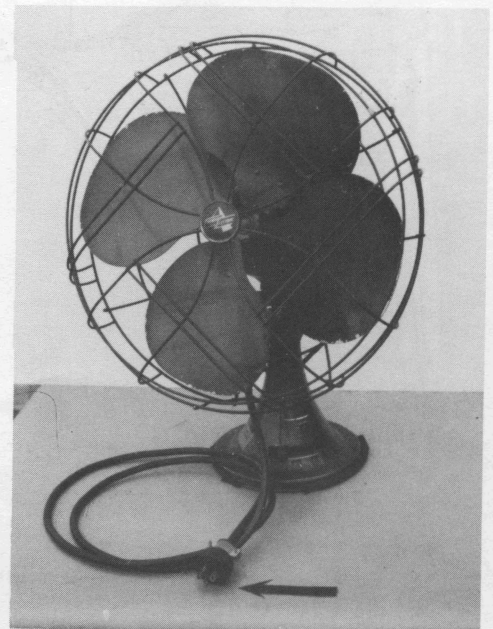


Fig. 8 Attaching the black and white wire to the proper terminals and the green wire securely to the base will provide a safer appliance.

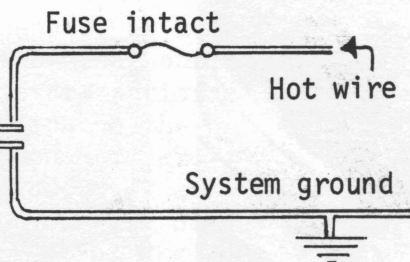
Fig. 9 This fan has the proper three-prong plug and a "grounded" cord attached. It will provide a safe appliance if used with a properly grounded receptacle.



REMEMBER -- Make your portable equipment safe with three-conductor SJT cord and three-prong plugs.



Equipment grounding

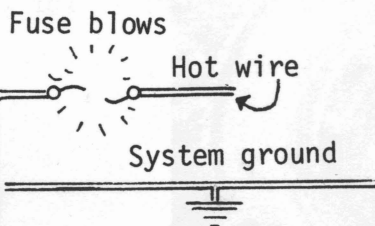


THIS SYSTEM IS DANGEROUS!

Don't you act as a grounding conductor. Make sure equipment is grounded through the cord!



Equipment grounding



THIS SYSTEM IS SAFE

Let the green grounding conductor take the charge, not you!