

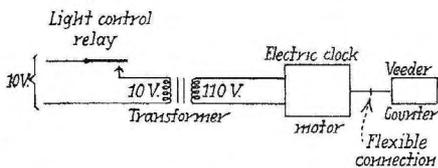
KINKS

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Recording Burning Time of Electric Lights

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A SIMPLE device for recording the burning time of electric lights may be constructed in the following manner: Connect the low side of a bell-ringing transformer to a 10-volt source of power, through a back contact on the relay controlling the lamp to be tested, and connect the 110-volt side to



Schematic diagram of recording arrangement

the self-starting motor forming an integral part of the works of an electric clock. Connect a Veeder counter to the minute hand shaft of the clock. The counter will then register, according to its ratio, the number of hours the lamp is lighted.

Controlling a Motor Car

S. E. ESCHBACH

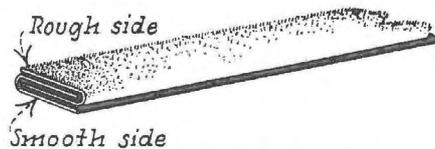
THE following is a kink which has proved quite useful: Take a piece of fibre the same size as the key for a "41" motor car; cut a groove in the top to make room for a four-conductor cable (a telephone transmitter cable will do). Drill four small holes through the fibre and after soldering the ends of the cable to pieces of copper wire, push the pieces of copper through the holes and rivet in place, being sure to leave enough copper on the bottom side to make contact with the springs in the switch. Push the cable down in the groove and fill in with wax. Solder the other ends of the cable to another switch of the same kind as is on the motor car. Then by taking the regular key out

of the switch on the motor car and putting the piece of fibre in its place and the regular key in the switch on the end of the cable, you can put your hand under your coat and keep warmer and at the same time have complete control of the car. This is also useful in starting a car in a dangerous place where getting on the car is a problem.

Sandpaper for Relay Contacts

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BY THE following method, ordinary 4-0 sandpaper can be made to give excellent results when used to dress down the carbon contacts of most relays. Take a clean sheet of 4-0 sandpaper that has not been bent or ruffled, and, with the aid of a straight edge, cut it into strips one inch wide. Again using the straight edge; make a crease lengthwise down the center of the smooth side of these strips with the back of a knife blade or other blunt instrument. This crease makes it possible to fold the strips smoothly and evenly, so that they become $\frac{1}{2}$ in. wide, and with either the rough or smooth side exposed, as desired. Now take one strip that has been folded rough side out and one strip that has been folded smooth side out and slide them together as in the accompanying



Sandpaper strips folded for surfacing contacts

sketch. This will give you a rigid, uniform strip, smooth on one side and rough on the other.

This strip can be inserted between the carbon contacts and the fingers of the relay, rough side to the carbon, and, by either energizing the relay or operating the armature manually, the desired cutting pressure can be ob-

tained and all four contacts can be surfaced and trued up simultaneously and with a very high degree of accuracy. Since the smooth side of the strip is being pressed against the silver contacts of the fingers, these are polished by the same operation. The bending and interlacing of these strips makes them quite rigid and they can readily be alternately pushed and pulled through the contacts from one side of the relay, it only being necessary to prevent them from slipping sideways.

Where the carbon contact surfaces are badly pitted, it will, of course, be necessary to reset the blocks, after they have been roughly surfaced, after which they can be uniformly finished. The use of this method makes it unnecessary to distort any of the relay fingers, and, in many cases, it is not even necessary to shift the carbon contacts from their original position. It also produces a truer and more uniform contact than can be obtained with a file.

Mixing Motor Car Fuel

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MAINTAINERS who have to mix gas-engine motor oil with the gasoline for use in their motor car have found that engine oil pours very slowly in cold weather. They can contend with this property of the oil and save time during the cold winter months by prethinning a large batch of this oil with gasoline during their spare time on rainy or stormy days in the following manner:

The first thing to do is to get a dozen or so of quart fruit jars or bottles with water-tight covers or stoppers. Pour one pint of gas-engine oil into a quart measuring can and add to this $\frac{3}{4}$ pint of gasoline and stir the mixture thoroughly. Pour the mixture into a quart jar or bottle and screw the cover on tight. During cold weather, when you want to prepare five gallons of motor car fuel, the prethinned oil in one of the quart jars can be poured quickly into the proper amount of gasoline.