ELECTRONIC KNIGHTHOOD

A guardian for your junkbox, from your junkbox!

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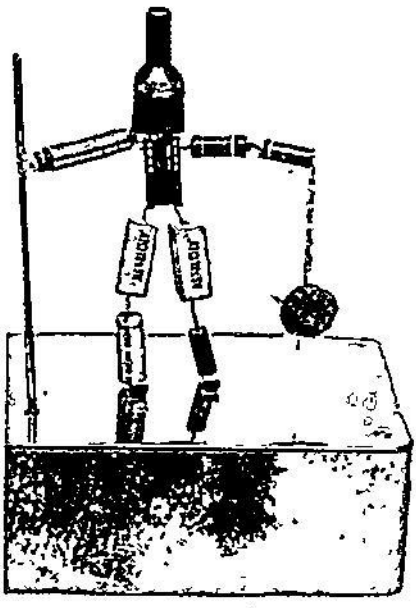

IF KING ARTHUR HAD HAD THIS ELECtronic knight to guard the kingdom, we'd still be living in Camelot, for the knight's alternately blinking red eyes would strike fear into the hearts of any invader.

Body parts

The electronic knight's body consists of the components that make up a simple 555 free-running multivibrator that drives the LED's used for the eyes (Fig. 1), with a few "extras" added for show. The torso is a 14- or 16-pin wire-wrap DIP socket that also holds the 555. The 8-pin 555 uses only half the socket; the remaining socket pins are used to support the other components.

The arm holding the staff is an old plate choke; the staff is a length of coathanger that also serves as the battery's ground connection through the choke to IC1 pin 1. The other arm is two series-connected 1-watt resistors. (The resistors' wattage ratings are selected so the components are in proportion to the rest of the body.) The resistor closest to the torso is R3, with it's connection looped behind the resistor so that it can't be seen. The resistor connected to the chain is a dummy.

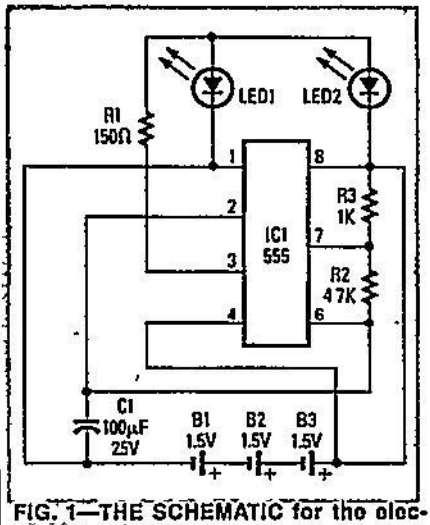

FIG. 1—THE SCHEMATIC for the electronic knight.

PARTS LIST

R1—150 ohms, ¼ watt, 10%
R2—4700 ohms, ¼ watt, 10%
R3—1000 ohms, 1 watt, 10%
C1—100-µF, 25 volts, electrolytic
IC1—555 timer
LED1, LED1—Miniature red LED
B1-B3—1.5 volt D-battery
Miscellaneous: IC socket, parts used for body, battery holder, stand, wire, solder, etc.

The knight's thigh's are 0.47-ohm, 5-watt wirewound resistors (effectively a short-circuit). One leg is electrolytic capacitor C1, the other leg is a 0.2-ohm, 1-watt resistor (also effectively a short-circuit) that provides B1's positive connection to the circuit. The feet are flat-sided transistors that are simply soldered in the proper location.

The knight's helmet is a black alligator-clip insulator that has been punched out for the miniature red LED's (LED1 and LED2) used for the eyes. The mace is a small ball of conductive foam with small pieces of wire stuck into it. The chain is made from small loops of No. 22 solid wire.

The electronic knight is mounted on a small plastic box containing a three D-cell battery holder. No power switch is provided because the current drain is so low that a set of batteries can blink continuously for several months before they run down. R-E