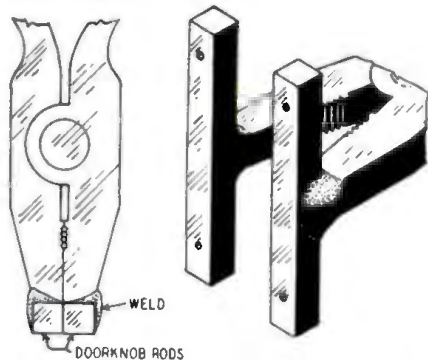


**HANDY BENDING TOOL**

Experimenters and constructors will find this tool useful for bending light sheet metal for mounting brackets, shields, and panels used in radio and electronic devices.



Take two pieces of doorknob rods and weld them to the jaws of a pair of lineman's pliers as shown in the drawing.

BILLY R. POGUE,  
The Dulles, Ore.

**CRO AS STROBOSCOPE**

A cathode-ray oscilloscope can be used as a stroboscope to "stop" motion. The only requirement is that it must have a short-persistence screen.

Disconnect the saw-tooth generator from the deflection circuits and connect it to the Z-axis input (the electrode which controls the intensity of the pattern). With the sweep generator operating at a low frequency, adjust the brightness control so that the spot appears on the screen only at the peak of the saw-tooth wave. Then apply external signals to the deflection plates to get as large a light pattern as possible. The frequency of the external signals should be high compared to that of the sweep generator.

CHARLES ERWIN COHN,  
Chicago, Ill.

**TV PREAMP ON HIGH BAND**

The cascode preamplifier for channels 2-6 described by I. Queen on page 60 of the October, 1948, RADIO-ELECTRONICS can be used on channels above the FM band. L2, the 6AK5 grid coil, is a National AR-5, which has a center tap (not used in the original diagram). If a switch is connected between the center tap and ground, half of the coil can be shorted out and the circuit will tune to the higher-frequency television channels. Be sure to use short switch leads.

AUGUSTINE MAYER,  
Tiffin, Ohio

**CAUSE OF SHORTED FILTERS**

Be sure to check the contacts on the speaker plug and socket before replacing shorted filter capacitors in a receiver or amplifier with electrodynamic speakers. When the contacts open, a voltage surge—produced by the collapsing field about the speaker field—may be high enough to break down the filter capacitor.

JAMES R. LIMBECK,  
Glendale, Calif.

**NOW BETTER, BRIGHTER PICTURES**

**insuline**  
new "BI-CON"  
**TELEVISION ANTENNA**

Single Type and Stacked Array for fringe areas

An engineering triumph by Insuline . . . proved outstanding by actual test. Pre-assembled sections for quick installation.

- ✓ Peak ALL-Channel reception.
- ✓ Suitable for ANY make TV receiver.
- ✓ Exclusive — separate High Frequency and Low Frequency dipole-reflector elements.
- ✓ Popularly priced.

Write for complete TELEVISION catalog of TV antennas and accessories.

Heavy duty, specially designed, all aluminum castings for low-resistance electrical contact and rigid dipole clamping.

**Super Wasp**  
NEW! IMPROVED! SENSATIONAL!

The INDOOR ANTENNA with AMAZING RECEPTION QUALITIES on ALL CHANNELS competitively priced

**insuline** CORPORATION OF AMERICA  
INSULINE BUILDING • 36-02 35th AVENUE • LONG ISLAND CITY, N. Y.  
West Coast Branch and Warehouse: 1335 South Flower Street, Los Angeles, Calif.  
QUALITY PRODUCTS SINCE 1921

**HOW TO GET THE MOST**  
from only  
**BASIC TEST EQUIPMENT**

Servicing by Signal Substitution

The Simple, Modern, Dynamic Speed approach to receiver alignment and adjustment problems, FM-AM-TV.

- Nothing complex to learn
- No extra equipment to purchase
- Universal — non-obsolete
- Employs only Basic Test Equipment

**S-S-S** tells HOW — in simple, direct language.

New 9th edition now off the press. 100 pages of valuable information.

Available from all leading radio parts and equipment distributors or directly from factory at only 40¢ per copy.

PRECISION APPARATUS COMPANY, Inc. • 92-27 Horace Harding Blvd., Elmhurst 4, N. Y.

**WHERE RADIOMEN MEET, EAT and SLEEP**

Visit the FAMOUS FIESTA LOUNGE Renowned for Fine Food

**HOTEL STRAND**

Atlantic City's Hotel of Distinction

The Ideal Hotel for Rest and Relaxation • Beautiful Rooms • Salt Water Baths • Glass enclosed Sun Porches • Open Sun Decks atop • Delightful Cuisine • Garage on premises. • Moderate Rate Schedule.

OPEN ALL YEAR Exclusive Pennsylvania Ave. and Boardwalk