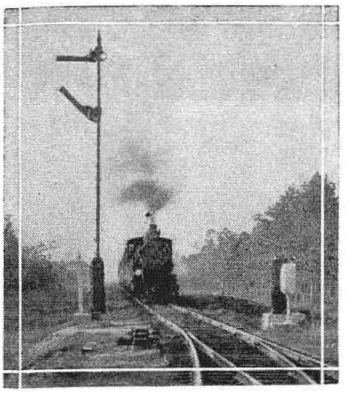
KINKS

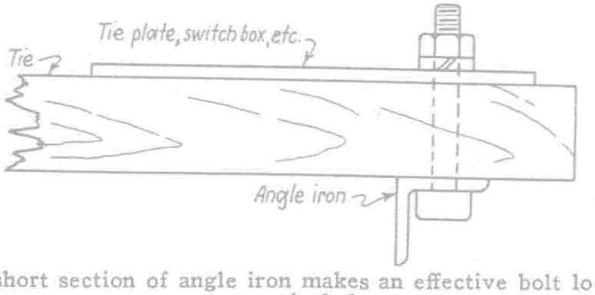


A Good Nut Lock

By E. Winans

Signal Engineer, Atchison, Topeka & Santa Fe, Los Angeles, Calif.

AFTER noting the kink of a special socket wrench for removing tie bolts as published in a recent issue of *Railway Signaling*, the thought occurred to me that such a socket wrench would not be needed



A short section of angle iron makes an effective bolt lock on a tie bolt

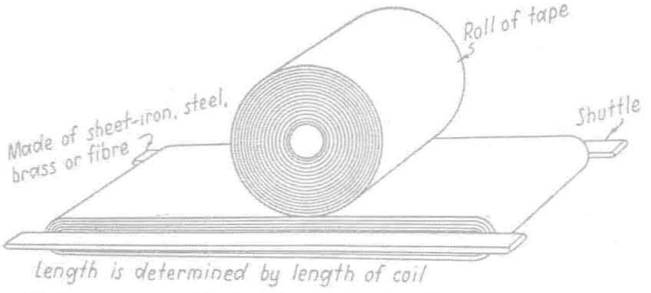
if a short piece of angle iron was applied as shown in the sketch. This section of angle iron will prevent the bolt head from turning, making it an easy matter to remove the tie bolt.

A Simple Taping Shuttle

By M. G. Hooper

Shop Repairman, Nashville, Chattanooga & St. Louis, Nashville, Tenn.

ONE of the frequent problems encountered in a signal shop is that of properly taping coils for signal apparatus. Field coils for switch and signal motors, form-wound transformer windings, pole-changer coils, form-wound coils for relays, indicators, etc., all require to be taped after winding. If the center core is too small for an ordinary roll of cotton tape to be inserted, it becomes a difficult task to tape these coils. If the friction tape is first wound on a shuttle of the type shown in the sketch, it is a relatively easy matter to pass the tape through the center of the coil. The shuttle must be of such size that it can be passed through the coil, when covered with the proper amount of friction tape. The shuttle illustrated has been found satisfactory and can be made from sheet iron, steel, brass or fibre, either $\frac{1}{16}$ or $\frac{1}{8}$ in. thick. The width of the shuttle will vary with the size of the tape, while the length of the coil and of the opening through the center of the coil will determine the length of the shuttle. With a little practice, coils may be hand-taped in this manner as neatly as on a machine in the factory.



This shuttle will facilitate the hand-taping of coils

A Terminal Board for Battery Wells

By J. W. Callender

Signalman, Cleveland, Cincinnati, Chicago & St. Louis, Galion, Ohio

WHERE only a few terminals are needed in a battery well or junction box, the wood panel for fastening the A.R.A. terminals can be secured to the concrete battery well or junction box by the scheme outlined herewith. When the forms for the battery well are in place two holes can be drilled in the inner form a sufficient distance apart to accommodate the terminal board to be used and bolts can be inserted in these holes with their heads projecting out in the space between the two forms so that they will be securely embedded in the concrete. An even more secure fastening can be secured if small flat strips are used as reinforcing members under the bolt heads. When the forms are removed the wood terminal strips can be fastened to the well or junction box by drilling two holes for the fastening bolts. A washer and nut on each bolt then holds the terminal board secure.

Eliminating Danger of False-Clear Semaphores

By Wilhelm E. Sanner

Electrical Foreman, Reading Company, Reading, Pa.

AS there are numerous power-operated semaphore signals in service on the railroads throughout the country, it is my thought that the accompanying sketch, with a short explanation as to its purpose may assist in relieving what is sometimes a very trying situation. I refer to cases on two railroads where power-operated

semaphore signals were reported as giving a false-clear indication and where upon investigation it was determined that this condition was due to a ground

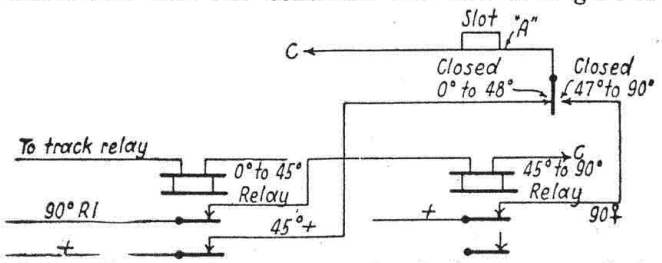


Fig. 1—How ground on slot coil winding may result in false-clear signal

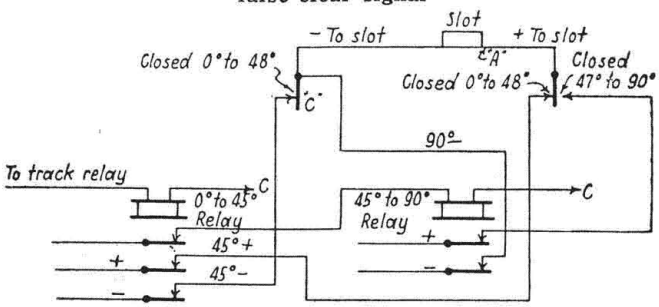


Fig. 2.—Circuit rearrangement made to eliminate chances of a false-clear semaphore signal

on the slot coil winding on the side marked *A* in Fig. 1.

New slot coils were then installed and the signals again functioned properly. Methods to prevent a recurrence of this feature were then devised and the signals were wired as in Fig. 2, using an additional contact on the signal controller marked *C* and taking the negative side as well as the positive side of the circuit over contacts on each relay.

The slot coil was then grounded at *A* (Fig. 2) and the signal tested to determine if this change in wiring proved efficient in case a slot coil again became grounded accidentally. The test was fully satisfactory.

Lamp Data Sheet Reduces Errors

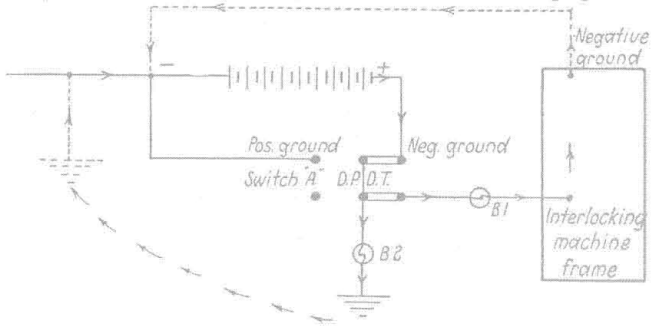
By G. R. Pflasterer
Foreman, Signal Shop, Nashville, Chattanooga & St. Louis, Nashville, Tenn.

THE standard lamp data sheet used on the Nashville, Chattanooga & St. Louis is useful to the signal, purchasing and accounting departments of the road and also to the lamp manufacturers. The various items numbered in the left-hand column save time and space and also eliminate errors in correspondence, on material reports, requisitions and purchase orders. By thus consolidating the 13 types of lamps used on the N. C. & St. L. and classifying them according to voltage, current consumption, candle power rating, type of bulb, type of filament, style of base, etc., much confusion has been avoided in all of the departments interested in electric lamps used by the signal department.

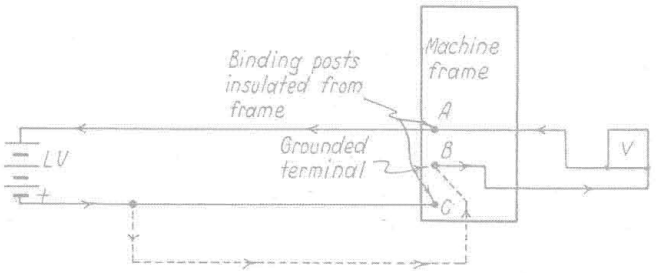
Ground Detector Schemes

By J. C. Seaman
Signal Inspector, New York Central, Cleveland, Ohio

THE accompanying sketch shows a ground detector which will locate grounds either on the interlocking machine or outside of the tower. A double-pole, double-throw knife switch and two lamps, *B1* and *B2*, comprise the electrical equipment



Convenient method of using a voltmeter to locate grounds on a low voltage plant



This ground detector will locate grounds either on the interlocking machine or outside the tower

of this ground detector. With the knife switch thrown to the right as shown, lamp *B1* lighting up indicates a negative ground on the interlocking machine frame, while lamp *B2* lighting up also indicates a negative ground, but on the interlocking plant outside of the tower. In the sketch both lamps would be burning

Item	Watts	Volts	Amperes	C.P.	Bulbs	Filament	Base	L.C.L.	Other Reference	Used for	Standard Package
1		3.5	.300		S-14 Clear	Concentrated Mazda C-2	Medium Screw	2-9/32"	Type "B" Railway Signal Westinghouse	Semaphore Lamps	120
2		6.8		2	Clear	Mazda	DC Bayonet Minature		Mazda Lamp #64	Bryant Zinc Wig-Wags	
3	28	6		18	G-18-1/2 Clear	Concentrated Mazda	SC Bayonet Candelabra		US&S Co.Pce. 80837 Dwg.B-12409, Sheet 2	US&S Co.AC Color-Light Signals	
4	18	8	2.25	18	PS-16 Clear	Mazda C-2 Single Pre-focused	2-Pin Rebased	2-7/32"	US&S Co.Pce.144541 Dwg.B-12409, Sheet 21	US&S Co.Color-Light (DC) Signals, Style P-2	
5	2-1/2	10			S-14 Clear	Mazda S-1 double loop	Medium Screw	2-1/2"	Type "B" Railway Signal Westinghouse	Marker Lamps, Wig-Wags and Semaphore Lamps.	120
6	10	8		1000 hr. life	S-11	Single C-2 Mazda C	SC Bayonet Candelabra	1-1/4" plus or minus 1/32" selected	US&S Co.Pce.142967 Dwg.B-12409, Sheet 18	Hall Type Take Siding Signal	100
7	10	8		1000 hr. life	PS-16 Clear	Single C-2 Mazda C	2-Pin Rebased Pre-focused	2-7/32"	US&S Co.Pce.144539 Dwg.B-12409, Sheet 21	US&S Co.DC Color-Light Signals, Style P-2	
8	10	10	1.0		S-11 Clear	Single C-2 Mazda C	SC Bayonet Candelabra	1-1/4" plus or minus 1/32"	Mazda Railway Signal Lamp	Southern Signal Co.'s Highway Crossing Signals	100
9	2-1/2	12			S-14 Clear	Mazda S-1 Double Loop	Medium Screw	2-7/16"	Type "B" Railway Signal Westinghouse	Semaphore Lamps Nashville Terminals	120
10	1-1/4	12		0.6	G-10 Clear	G-2 Mazda B	Candelabra Screw	1-5/16"	US&S Co.Pce. 78403 Dwg. "B" 12409, Sheet 8	Track Diagram F-485	100
11	25	60		20	G-18-1/2 Clear	S-1 Mazda B	Medium Screw	2-3/16"	US&S Co.Pce 68468 Dwg. B-12409, Sheet #6	US&S Co.AC Color-Light Signals Style M	120
12	36	130			A-19 Clear	Mazda B Semi-Concentrated	Medium Screw	2-3/16"	Westinghouse Street Ry. Headlight	CRS&S Co.AC Color-Light Signals, Semaphore Lamps & Flashing Lights	120
13	10	125		2	S-14 Clear	Carbon	Medium Screw	2-7/16"		Semaphore Lamps Switch Lamps and Train Order Signal Lamps	250

Electric lamps used by signal department of N. C. & St. L.