

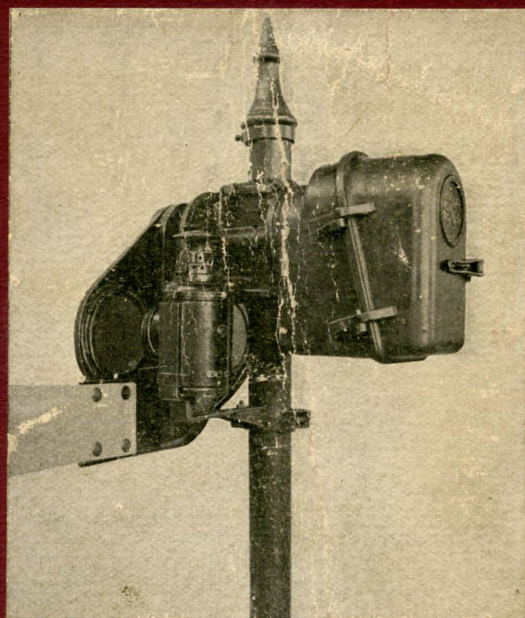
GENERAL RAILWAY SIGNAL COMPANY.

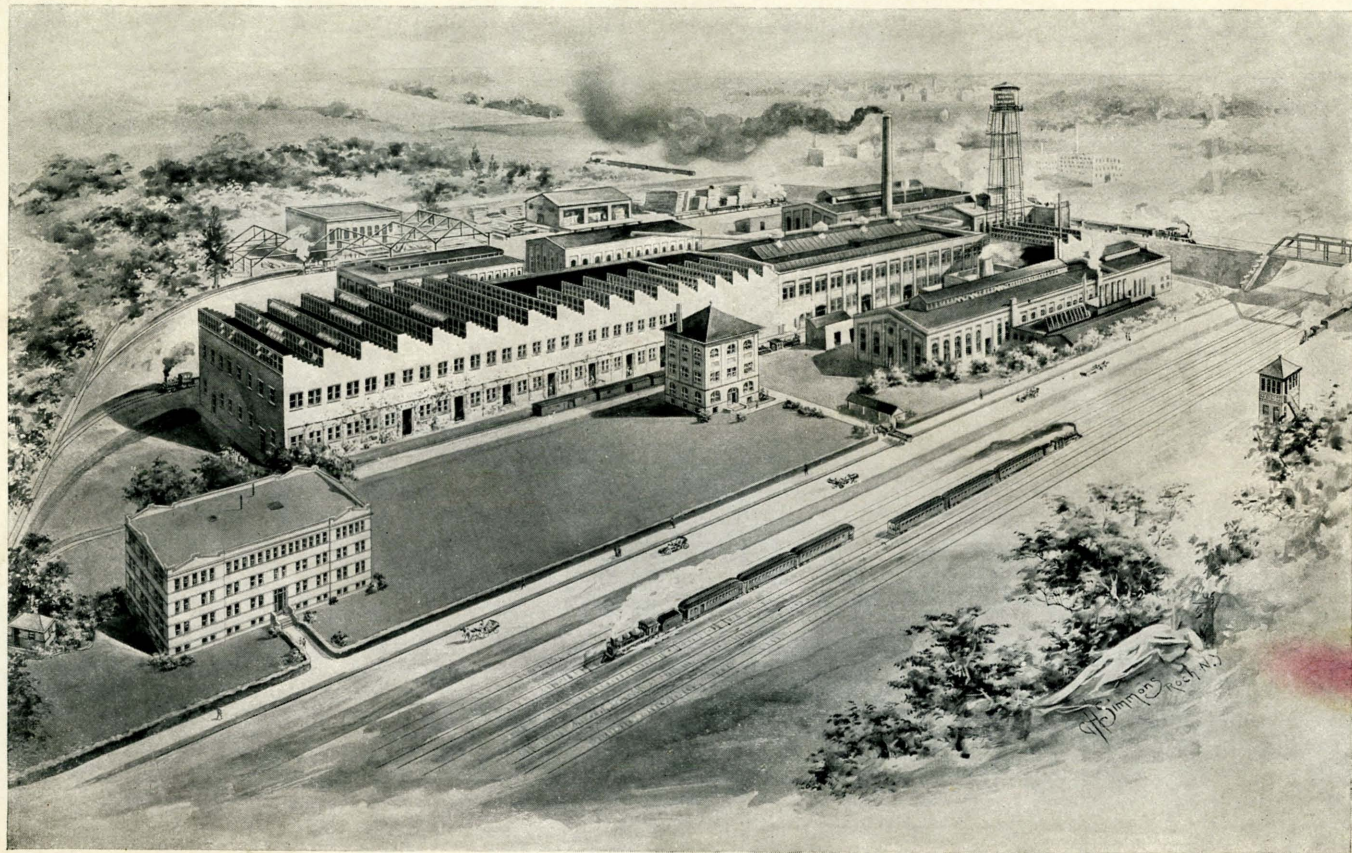
1910

BULLETIN No. 115

SUPPLEMENTING CATALOGUE, SECTIONS 1, 2 AND 5

MODEL 2A SIGNAL





MAIN OFFICE AND FACTORY OF THE GENERAL RAILWAY SIGNAL CO., AT ROCHESTER, N. Y.

GENERAL RAILWAY SIGNAL COMPANY.

ROCHESTER, N.Y.



BLOCK SIGNALS

AUTOMATIC
SEMI-AUTOMATIC
CONTROLLED MANUAL
FOR
STEAM AND ELECTRIC ROADS

INTERLOCKING

ELECTRIC
PNEUMATIC
ELECTRO-PNEUMATIC
MECHANICAL
OR COMBINATIONS OF ABOVE
TO MEET ALL CONDITIONS

TUNNEL SIGNALS

THE MOST EFFICIENT AND COMPACT MADE

CROSSING GATES

MECHANICAL AND ELECTRICAL

SELECTIVE CALLING

APPARATUS FOR TELEPHONE TRAIN
DISPATCHING

**PLANS, ESTIMATES, PROPOSALS AND
DESCRIPTIONS UPON REQUEST**

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GENERAL RAILWAY SIGNAL COMPANY.

THE GENERAL RAILWAY SIGNAL COMPANY takes pleasure in describing herein their MODEL 2, FORM A, SIGNAL MECHANISM.

It is universal in its adaptability to all the known signaling requirements of to-day. That is to say one mechanism

Will Operate

A HIGH SIGNAL
A DWARF SIGNAL OR
A SUSPENDED SIGNAL

It May be Located on

ANY POLE
ANYWHERE ON A POLE
ANY NUMBER ON A POLE

It May be Operated

AUTOMATICALLY
SEMI-AUTOMATICALLY OR
BY A LEVER ONLY

Will Operate (With a Minimum Change of Parts) on

10 TO 650 VOLTS DIRECT CURRENT
55 TO 220 VOLTS ALTERNATING CURRENT 25 OR 60 CYCLES

The Return Indication May be

DYNAMIC
OR
BATTERY

The Signal Aspect May be

2 OR 3 POSITIONS
UPPER OR LOWER QUADRANT
RIGHT OR LEFT HAND
60—75—90—(OR ANY OTHER) DEGREE

And It Has

NO SLOT
NO DASH-POT

which is to say that it can be used anywhere that a power operated signal is required.

It has great advantages where it is desired to carry block signaling through existing interlocking plants in that it is entirely self-contained and may be applied to any existing pole by clamping the mechanism in the desired location. Its universality will be appreciated by any road that may desire to equip all power operated signals (high—dwarf—suspended automatic—or semi-automatic) with the same mechanism.

The mechanism is bolted to a bearing which may be clamped to any suitable support (new or existing signal masts, trolley poles, etc.) in any desired location (as to spacing of arms or angle with track) by means of two U bolts; or it may be bolted to the mast base castings shown in Figs. 10, 12, and 13, using the adapter crank Fig. 14, or (the preferred method for base of mast mechanisms) it may be clamped near the bottom as shown in Fig. 9.

The clamp bearing (see Figs. 1 and 11), which may be used for attaching fixed or mechanically operated arms that are intended for power operation at a future date, carries the semaphore shaft and stop plate, both of which are variable to suit the particular style of spectacle used. The shaft bearing is packed with oil soaked felt thereby insuring ample and constant lubrication.

The signal arm is locked in the normal position by the bolt **A**, which is arranged so that a preliminary movement of the mechanism end of the clutch (provided with slanting edged groove) will lift the bolt out of the notch (square edged) in the blade end of the clutch.

The use of the mechanism is not limited to signaling proper—as its small size (12" wide, 18½" high, 15½" deep) and efficiency will permit its successful and economical application to many other uses, such as, crossing gates, highway crossing signals, etc.

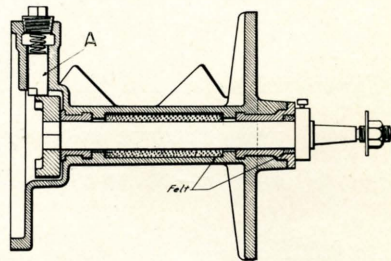


FIG. 1. Cross Section of Clamp Bearing.

GENERAL RAILWAY SIGNAL COMPANY.

Especial attention is called to the extreme simplicity of this mechanism, there being but three main parts thereto, namely, the train of gears, the circuit breaker and the motor.

The parts are extraordinarily strong and the efficiency is unequalled.

GENERAL RAILWAY SIGNAL COMPANY.

Rochester, N. Y.

January, 1910.

PRICE LIST.

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DESCRIPTION

Mechanism

The mechanism is of extraordinarily rugged construction and is connected to the semaphore shaft by means of the coupling illustrated in Fig. 2.

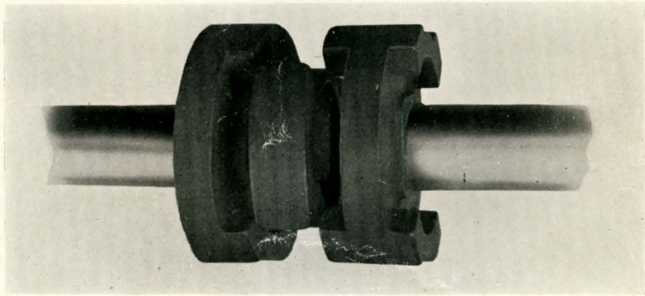


Fig. 2. Coupling.

The motor is connected to the coupling through a train of low reduction gears having heavy teeth and large clearances, and all parts are securely held in position by cap screws, keys, or cotter pins, thereby securing continuity of correct alignment and adjustment, and making it the easiest and quietest running mechanism now on the market; all of which qualities add in a most marked degree to both the efficiency and life of the signal.

The simplicity is self evident upon examination of Fig. 3, showing the parts and the successive steps of assembly.

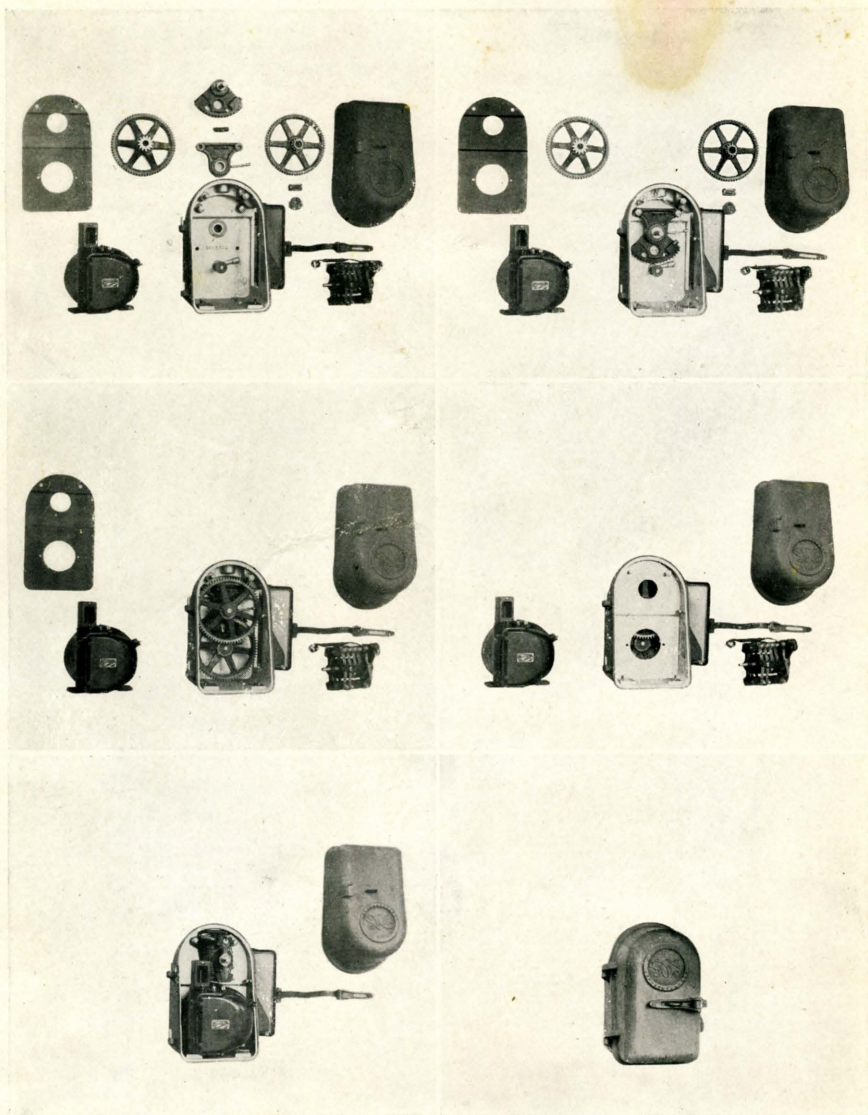


Fig. 3.
Details and Assembly.

Gearing

As previously stated, the gears have unusually heavy teeth and large clearances, as shown, in Fig. 4 which is drawn to full size. The ratio of reduction is such that the signal clears to 90 degrees in 30 revolutions of the motor armature.

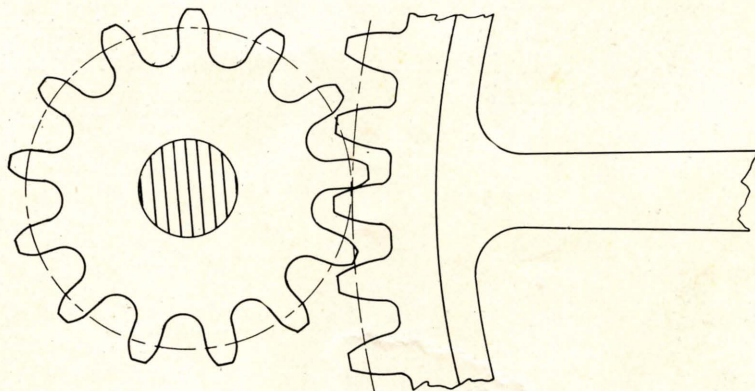


Fig. 4.

Clearance of Gears—full size.

The low gear reduction permits the driving of the gears and motor in the reverse direction when the signal returns to normal, without danger of sticking; only five (5) foot pounds at the semaphore shaft being required for this purpose.

**Automatic
Operation
No Slot**

The signal has no slot, notwithstanding which it may be operated either automatically or semi-automatically.

To permit this, the low voltage, D. C. and all A. C. motors are built with a retaining mechanism, and the 110-650 volt D. C. motors are equipped with special fields.

Retaining Mechanism

The retaining mechanism reduces the power consumption to a minimum, as explained below, and is entirely independent of the torque of the blade-grip.

The motor will start the blade in any portion of its stroke; that is to say, it is not necessary for the blade to return to the stop or 45 degree positions before again clearing, when, for any reason, the circuit is momentarily interrupted. This eliminates the necessity of introducing slow acting relays or similar devices where it is desired to use this signal with polarized circuits.

The retaining mechanism (Fig. 5) is composed of :

A rotating member **A** on the armature shaft.

A fixed member **B** on the motor frame.

An oscillating member **C** (working between **A** and **B**) and a contact **D**, both of which are operated by a solenoid **E**.

All of which are an integral part of, and enclosed in, the motor case.

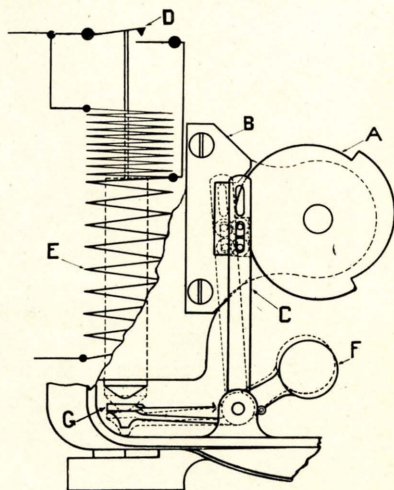


Fig. 5. Retaining Mechanism.

It will be noted that with this construction, the large amount of electro-magnetic energy required in slot mechanisms, which must not only be capable of holding the signal clear but of starting and clearing it as well, is reduced to the amount required to lift the solenoid core from the arm **G** of the member **C**.

Pages

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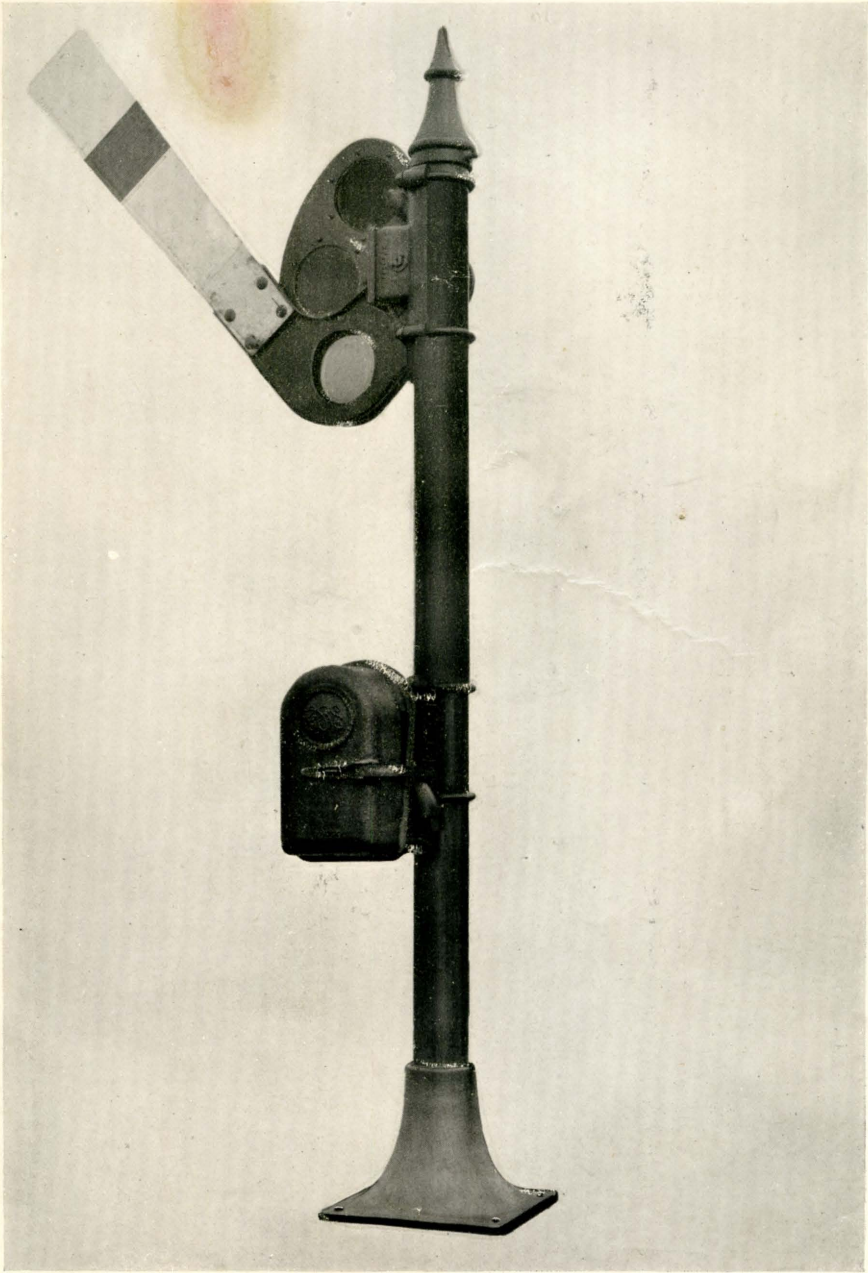


Fig. 9.
Signal Clamped at base of pole.



Fig. 10
Battery case and base for 2 arm pole.
(base of pole mechanism)

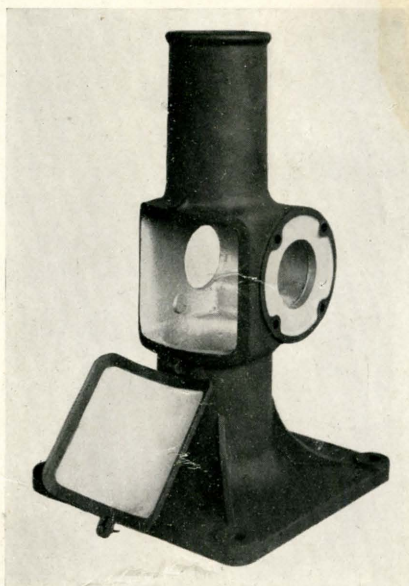


Fig. 12.
Mechanism base for ground pole.

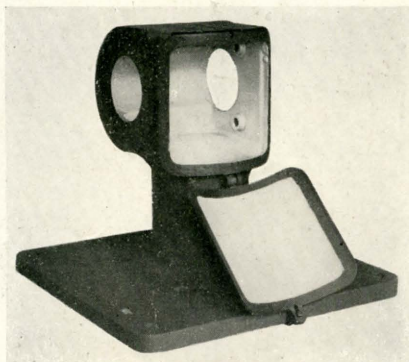


Fig. 13.
Mechanism base for suspended pole.



Fig. 14.
Crank complete—for use with mechanism bases.

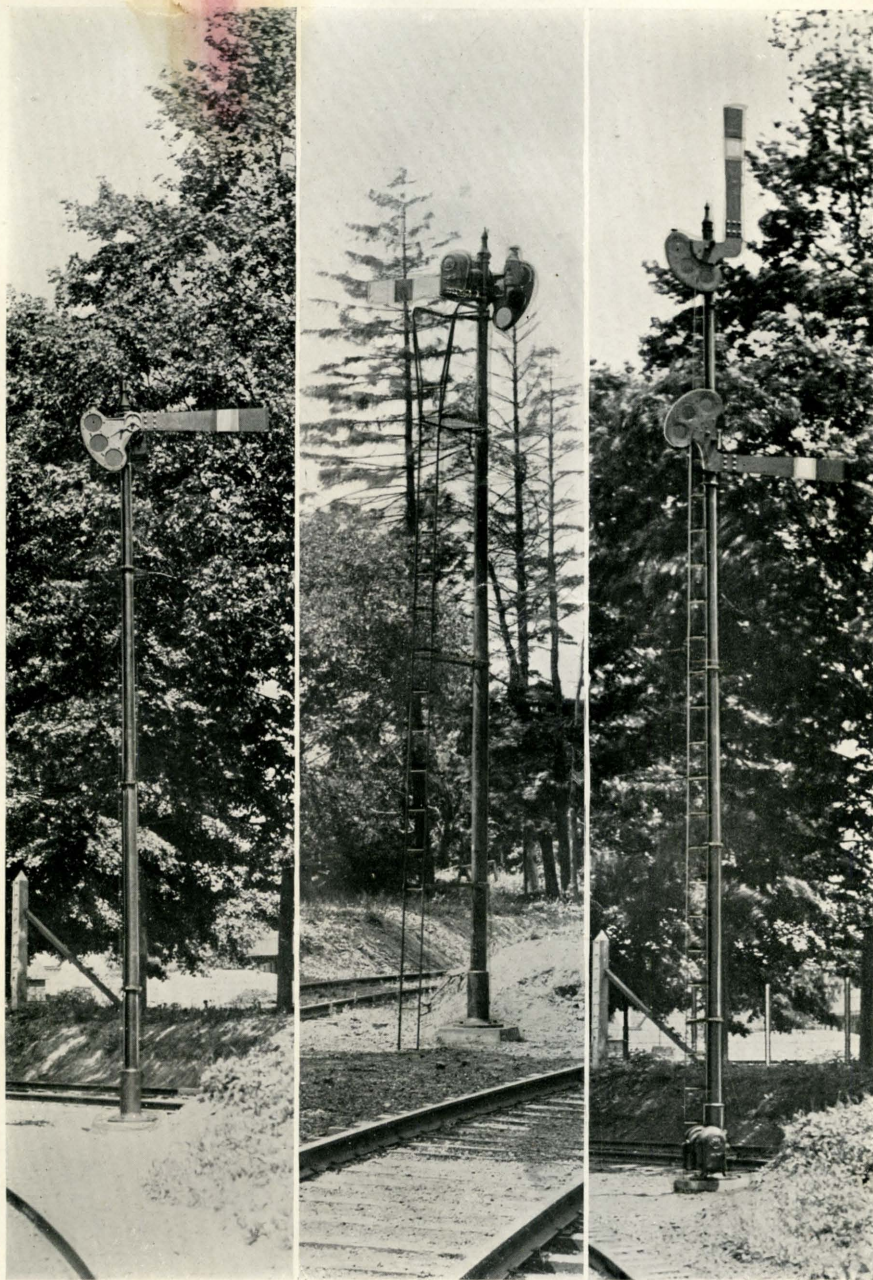


Fig. 15.
Ground Poles.

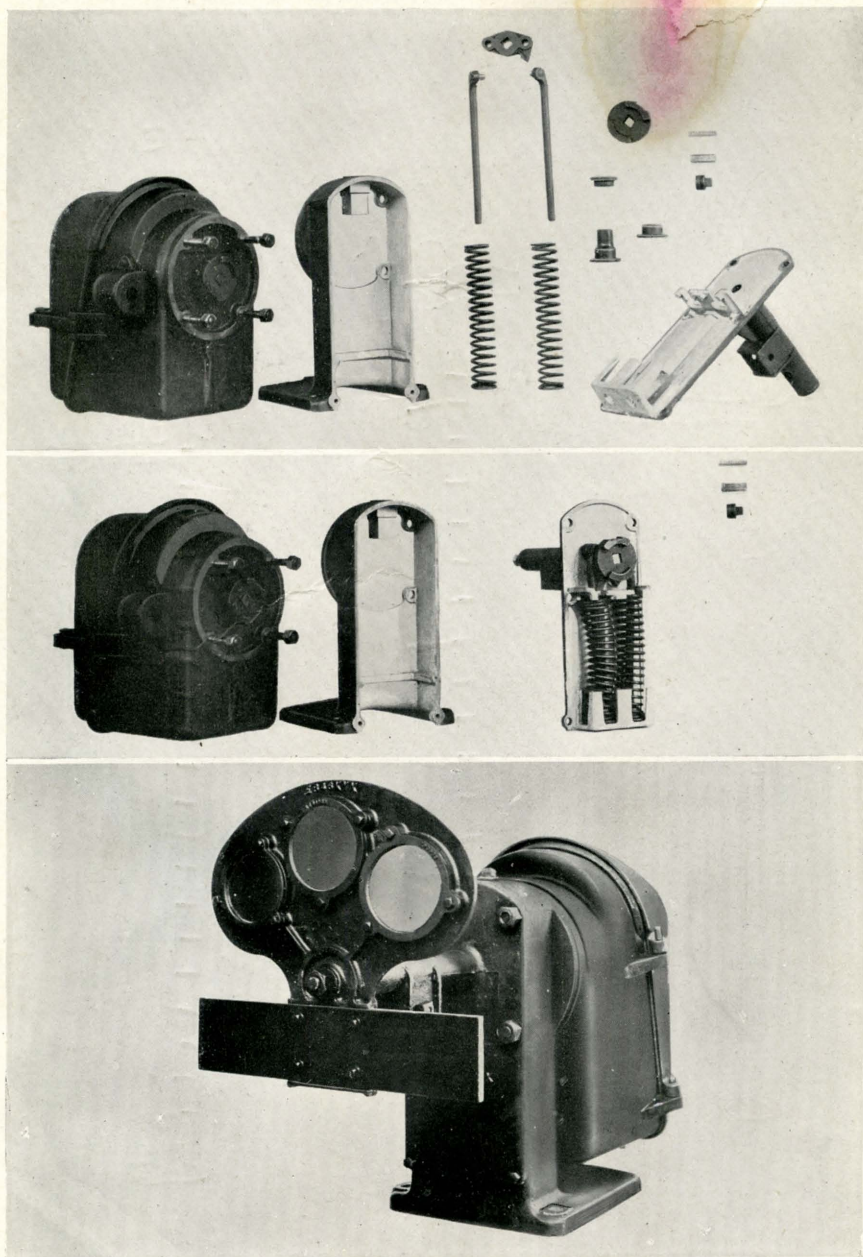


Fig. 16.
Dwarf Signal

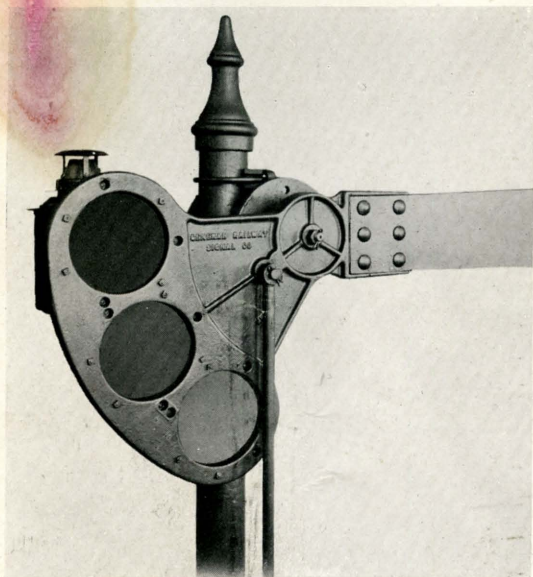


Fig. 17.
Clamp bearing with mechanically operated arm.

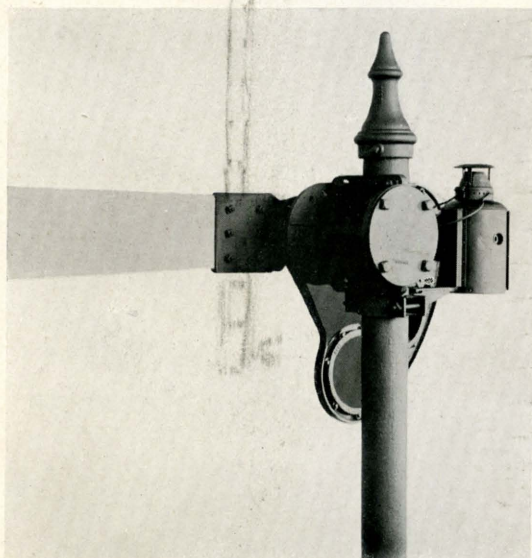


Fig. 18.
Clamp bearing with fixed arm.

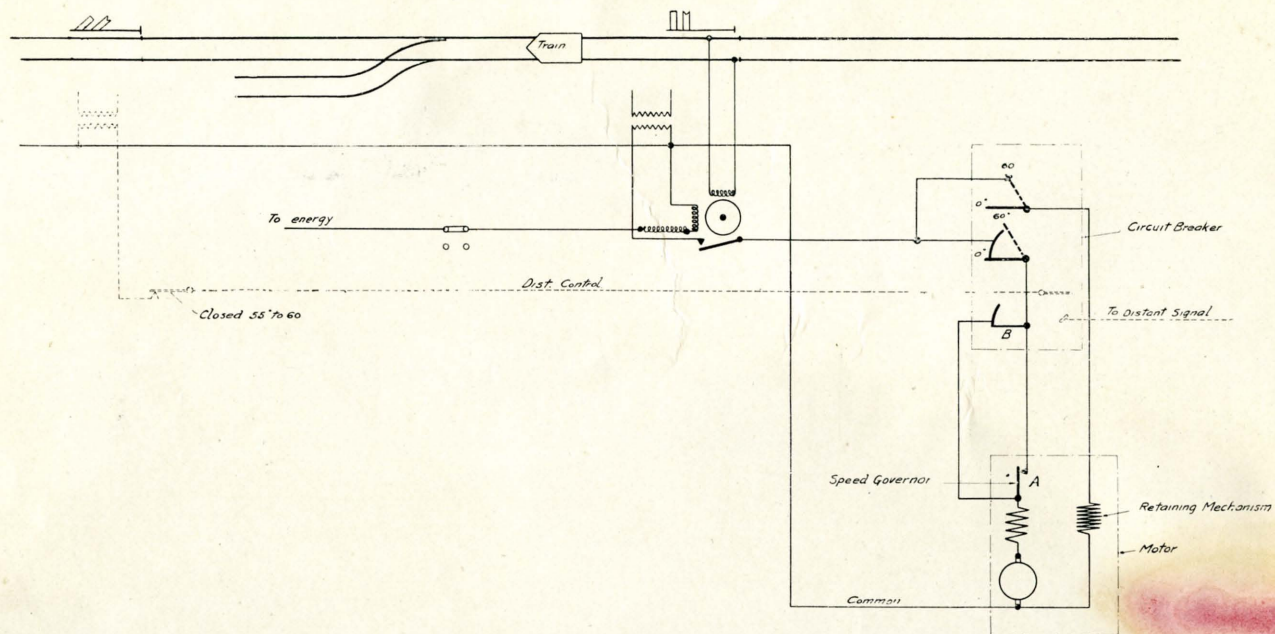
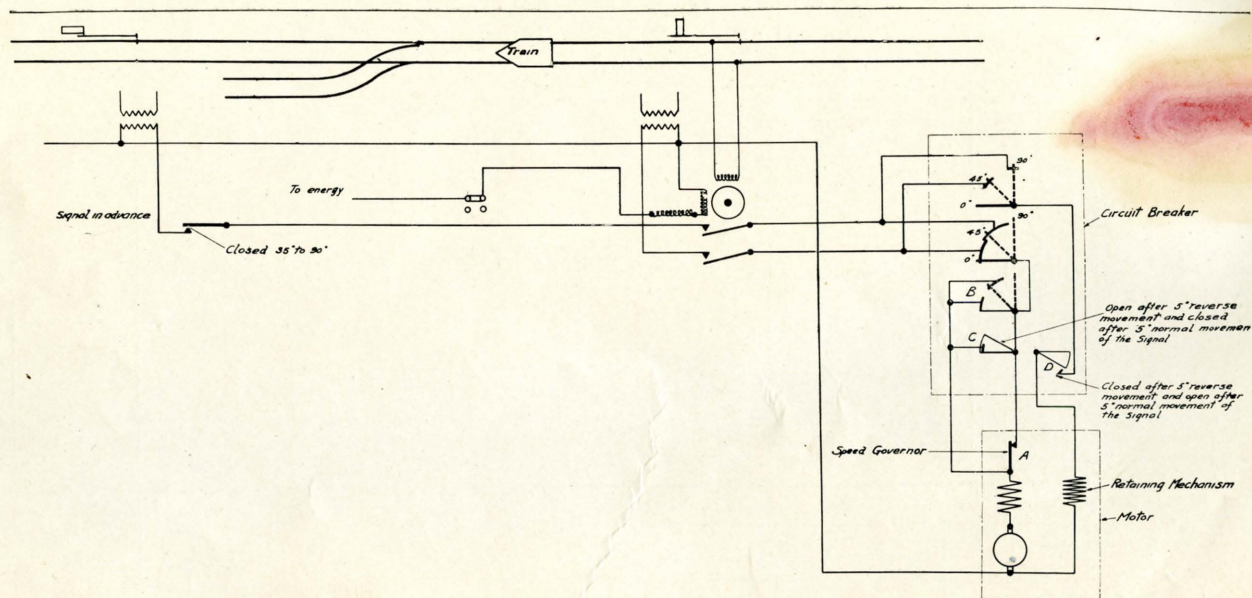


FIG. 19
MODEL 2-A SIGNAL CIRCUIT
Two Position Automatic Block Signal
Alternating Current Operation



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FIG. 20
MODEL 2-A SIGNAL CIRCUIT
Three Position Automatic Block Signal
Alternating Current Operation

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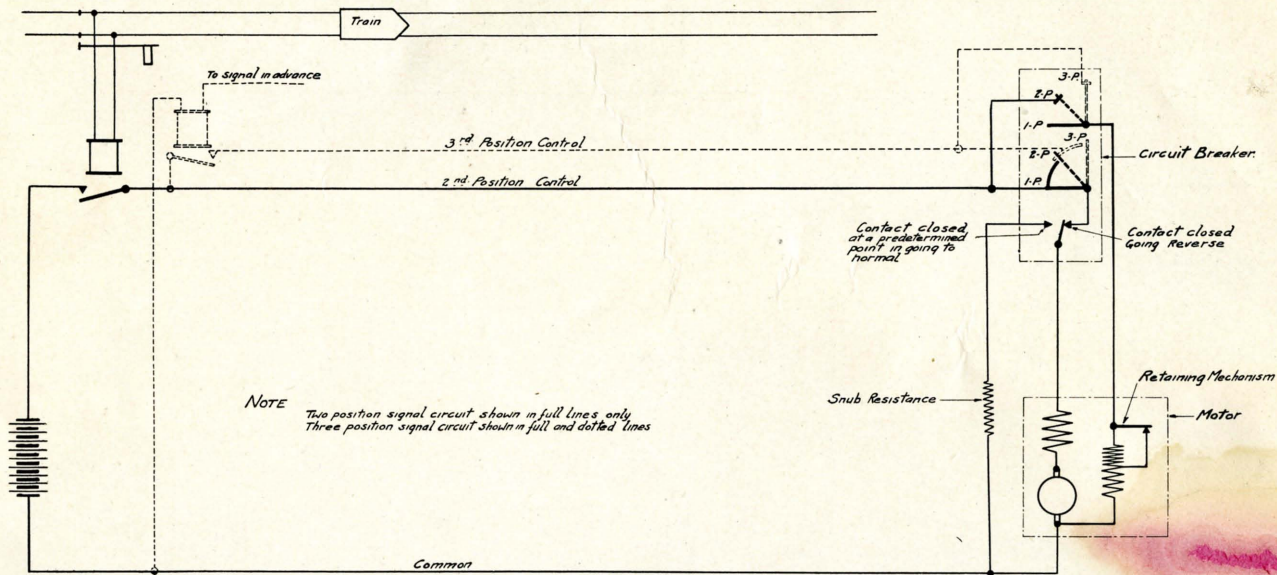
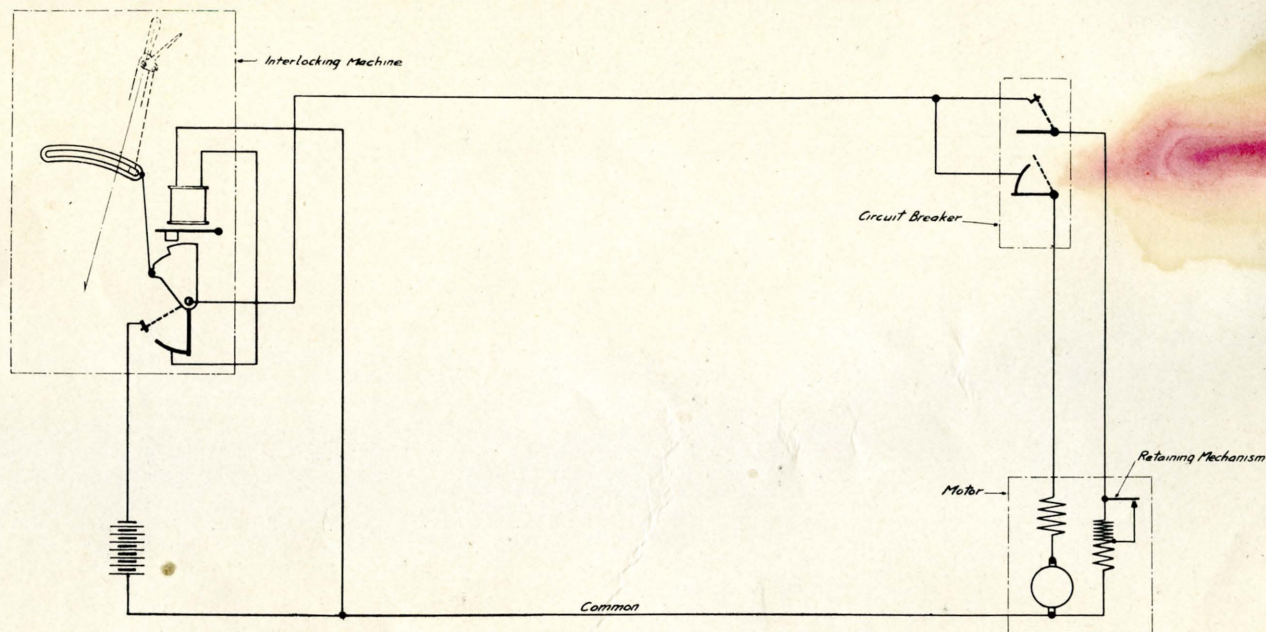


FIG. 21
MODEL 2-A SIGNAL CIRCUIT
10-Volt 2 and 3 Position Signal



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FIG. 22
 MODEL 2-A SIGNAL CIRCUIT
 Power Operated Distant Signal for Mechanical
 Interlocking, with Dynamic Lock Release.

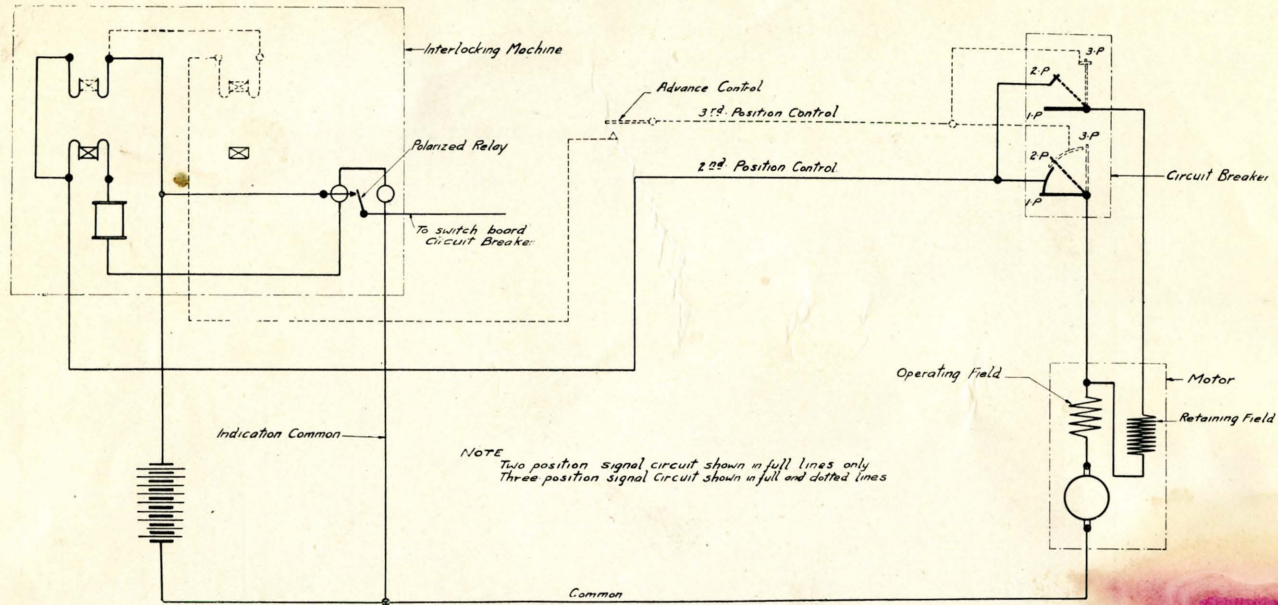


FIG. 23
 MODEL 2-A SIGNAL CIRCUIT
 110-Volt. 2 and 3 Position Non Slotted Signal

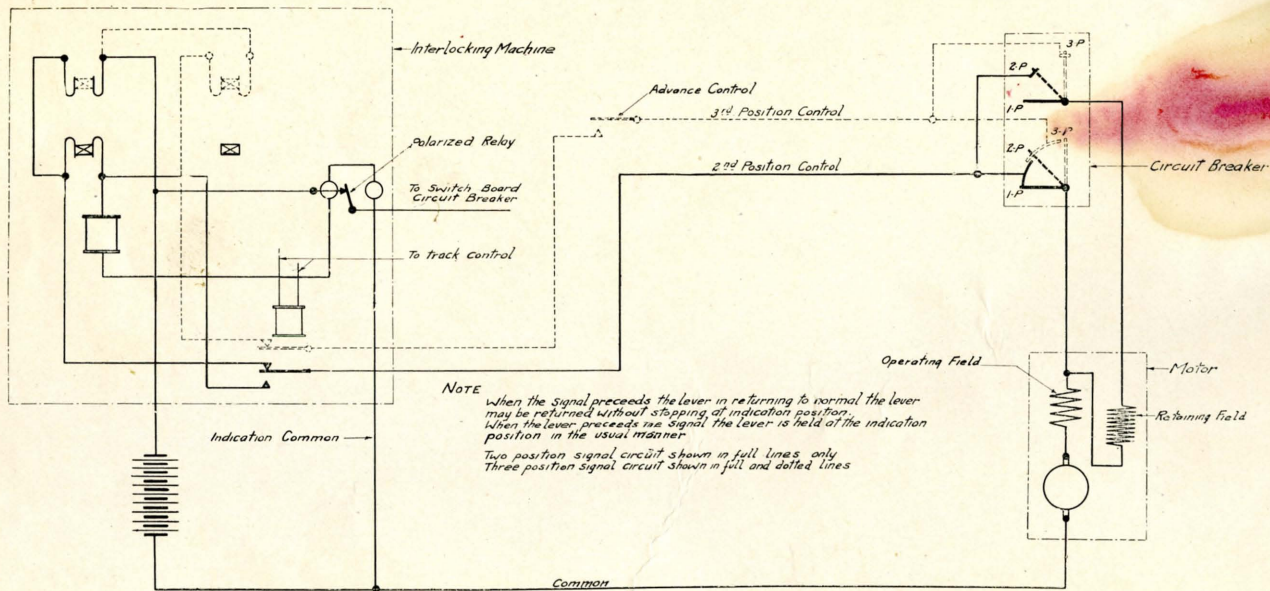


FIG. 24

MODEL 2-A SIGNAL CIRCUIT

110-Volt. 2 and 3 Position Slotted Signal.

