

# DELCO

## CIRCUIT and WIRING

### DIAGRAMS



Automobile Systems  
to the close of the 1915 season

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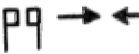







THIS book contains practically all of the wiring and circuit diagrams that have appeared in connection with the Delco instructions on the different systems under which they are listed. It includes a few extra diagrams which have not appeared in former instruction matter, but which have been found to aid in better understanding the different systems.

It will be noticed in a few instances that one circuit or wiring diagram is given for two models, one a four-cylinder and the other a six-cylinder car. In this event the only difference in the entire system lies in the distributor mechanism and in the number of turns in the generator armature winding to compensate for the different speeds at which they are driven.

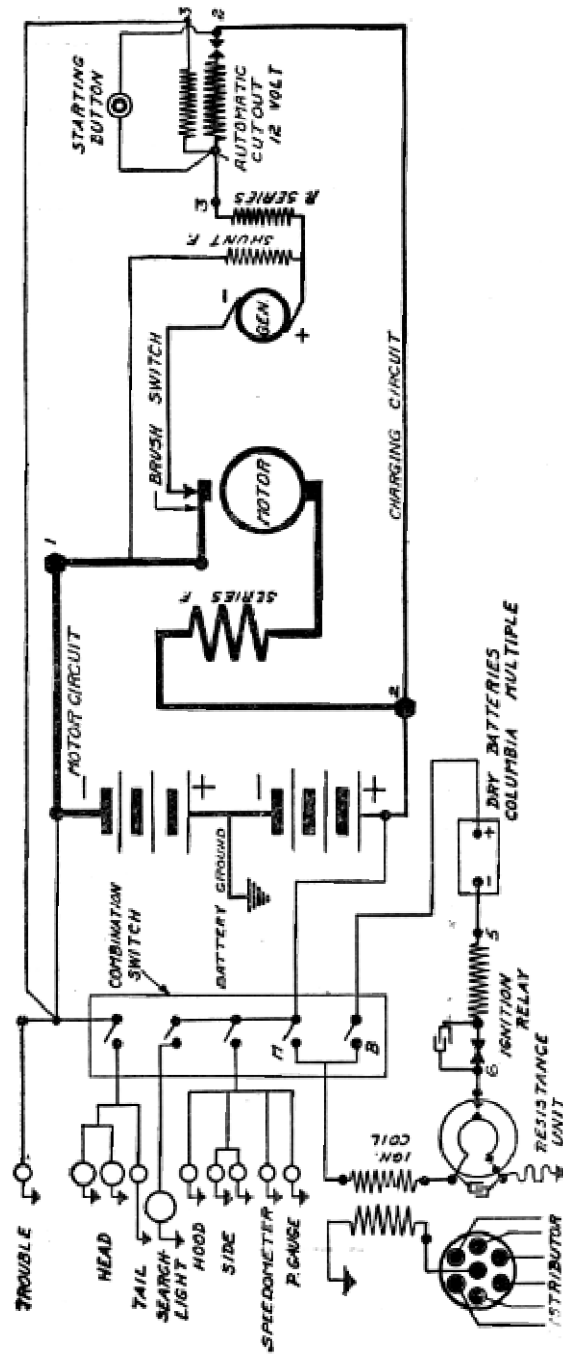
Although these armatures are alike mechanically, they will not work satisfactorily when assembled in the wrong frame due to this difference in winding. A motor generator of the proper number must always be used.

Where two motor generator numbers appear for the same Model, it indicates that the motor generator was changed during the production season.

The numbers of the generators, switches and coils accompanying each diagram is the Delco number of the standard equipment and these can be safely used in any correspondence in regard to these systems. The storage battery numbers are THE EXIDE STORAGE BATTERY COMPANY'S symbols which denote the style and type of battery. The following page of symbols is included to assist in understanding a number of the more frequent symbols used in the circuit diagrams.

	Positive.
	Negative.
	Battery, either storage or dry cells.
	Generator, Commutator and Brushes.
	The proper method of showing a coil which surrounds an iron core, but very seldom used on Delco Drawings.
	The method used in showing a coil where there is no chance of confusion—Used in field coils, ignition coils, etc.
	The method used to show resistance such as a resistance unit and charging resistances.
	Contact points such as in switches, distributors, etc.
	Ground connection where the wire is connected to the chassis, engine, or generator.
	Method used to show lighting switches.
	Motor Commutator and brushes with brush lifting switch.
	Primary and secondary windings of an ignition coil.
	Condenser.
	Crossed wires not connected.
	Connection in the wiring.

**AHREN-FOX FIRE ENGINE COMPANY**  
**DELCO SYSTEM No. 51**

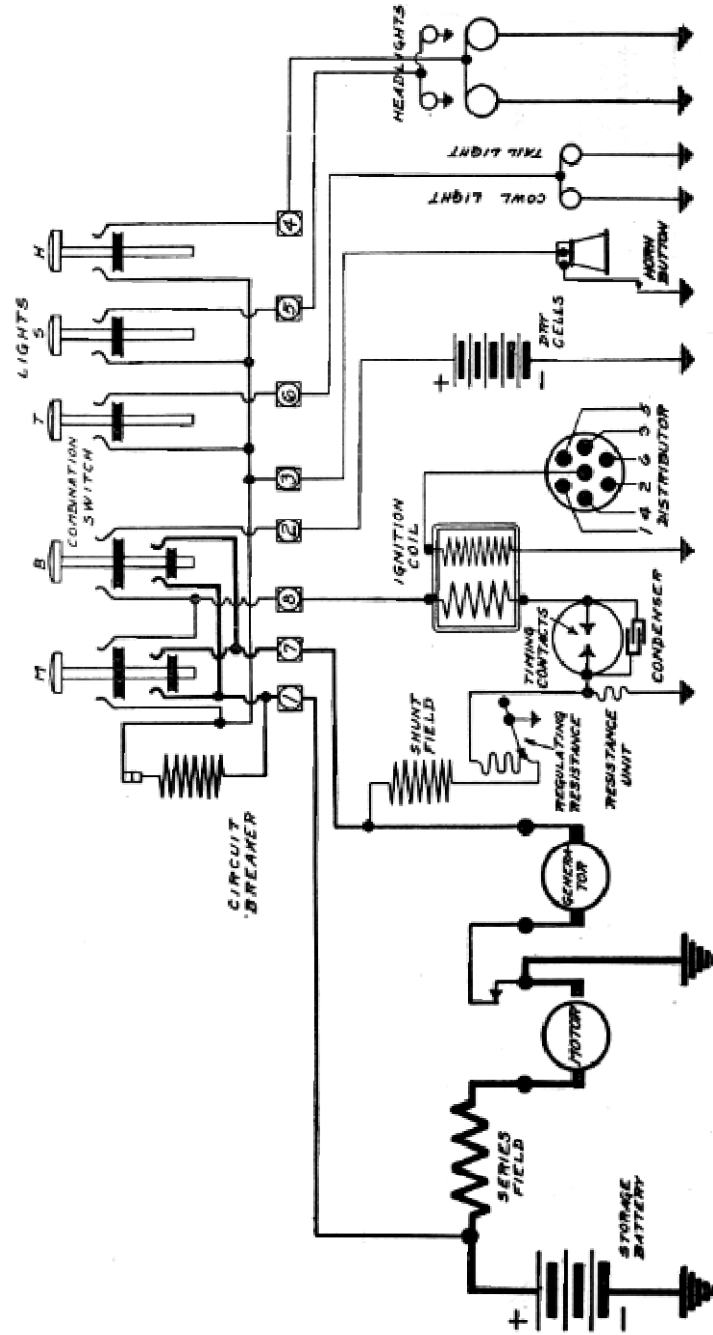


Motor Generator No. 43  
 Battery—Type 6-AV-9

Combination Switch No. 1049  
 Ignition Coil No. 2110

A number of these systems were installed without the Delco Ignition, a dual magneto system being used instead. This does not change the rest of the wiring.

# AUBURN 1915 MODEL 6-40



Motor Generator No. 58  
Battery—Type 3-X-155-1

Combination Switch No. 1050  
Ignition Coil No. 2111



THIS DOTTED LINE IS USED FOR WIRE CONNECTED TO GROUND WITHOUT WIRE

DAY CELLS  
12 VOLT

LIGHTING SWITCH

#14 RED WIRE

#10 GREEN TRACER WIRE  
#10 RED WIRE  
#14 BLACK WIRE  
#12 BLACK WIRE

HORN  
SIDE LIGHT  
HEAD LIGHT

IGNITION RELAY  
IGNITION SWITCH  
SPARK PLUGS  
MOTOR GENERATOR  
RESISTANCE UNIT

#16 RED TRACER WIRE  
#14 GREEN WIRE  
#14 RED WIRE  
#16 RED TRACER WIRE  
#14 GREEN WIRE  
#16 RED TRACER WIRE

6 VOLT STORAGE BATTERY

FRAME OF CAR

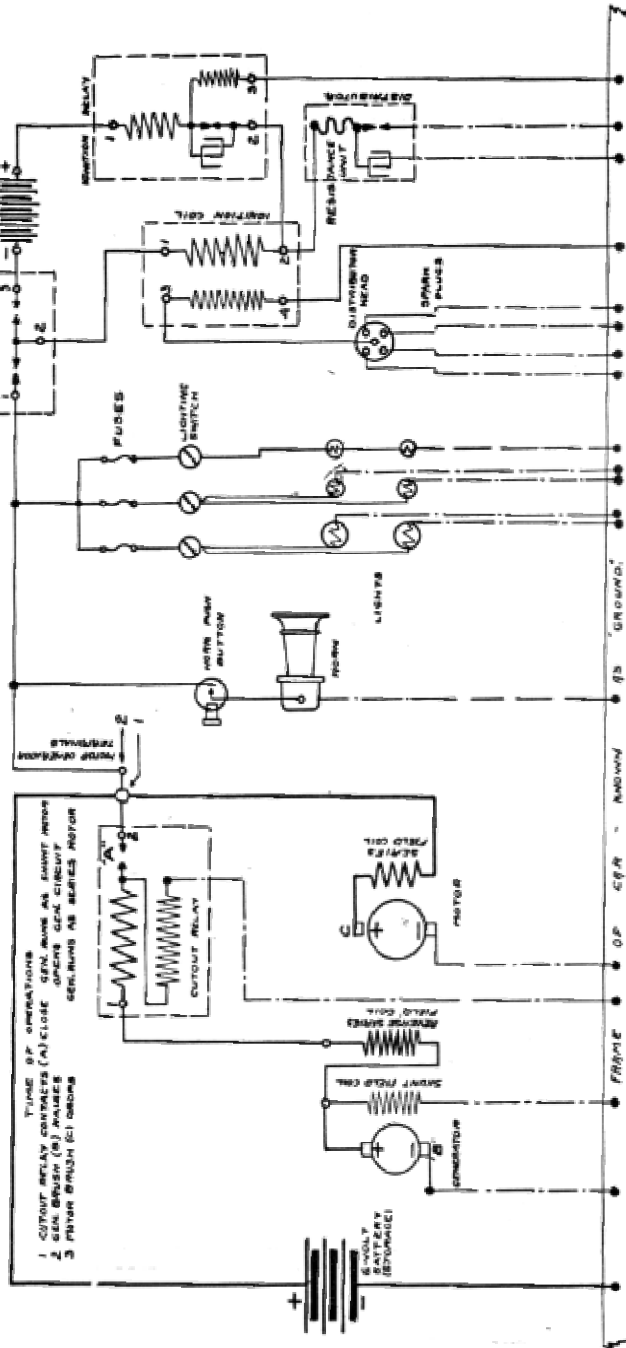
TAIL LIGHT

Ignition Switch No. 1034  
Ignition Coil No. 2107



# BUICK 1914 MODELS B-36-37

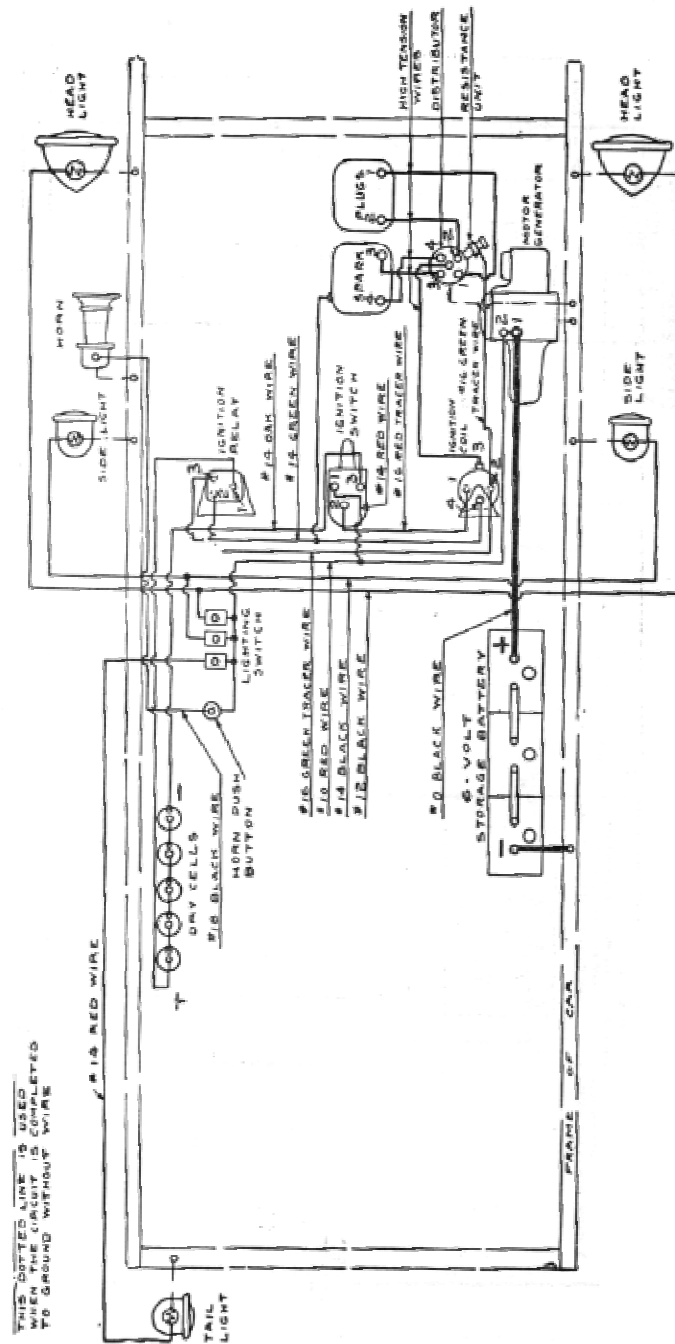
THIS SWITCH LINE IS USED WHEN THE CIRCUIT IS COMPLETED TO GROUND WITHOUT NOTE.



Motor Generators No. 33-42  
Battery—Type 3-X-15-2-C

Ignition Switch No. 1034  
Ignition Coil No. 2107

# BUICK 1914 MODELS B-36-37



Motor Generators Nos. 33-42  
Battery—Type 3-X-15-2-C

Ignition Switch No. 1034  
Ignition Coil No. 2107

6-VOLT BATTERY

MOTOR

GENERATOR

VOLTAGE REGULATOR

SUPPORT RELAY

DISTRIBUTOR

STARTER COIL

STARTING LIGHTING AND HORN SWITCH

HORN

HORN PUSH BUTTON

MOTOR SWITCH

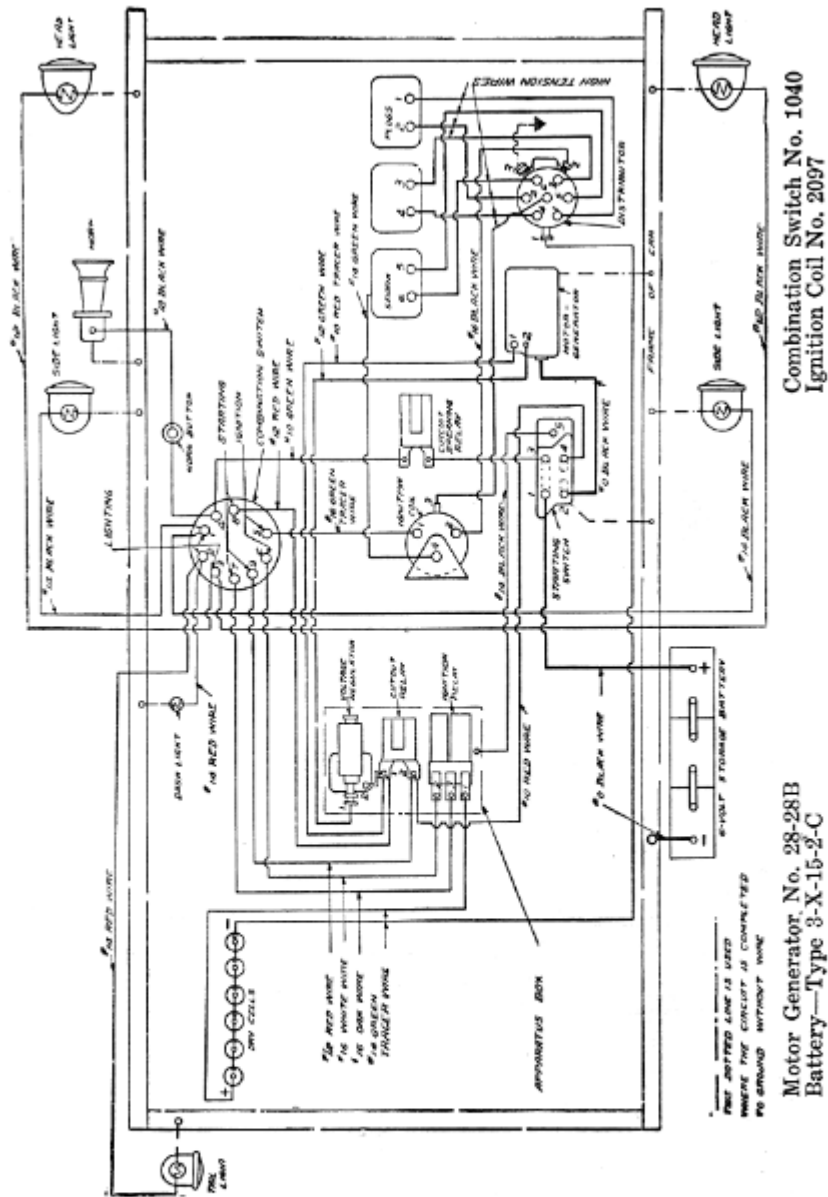
6-VOLT BATTERY

GROUND LINE

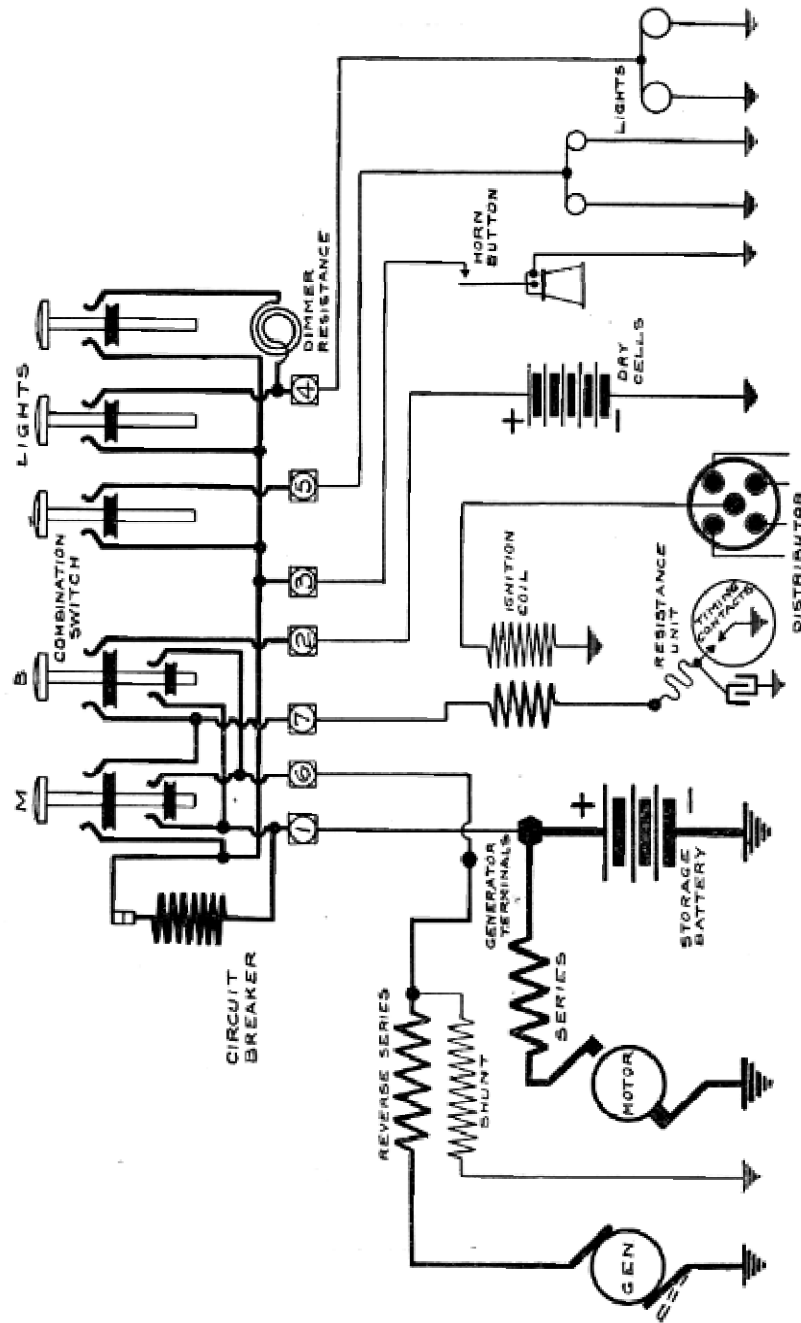
Combination Switch No. 1040  
Ignition Coil No. 2097

11

# BUICK 1914 MODELS B-54-55



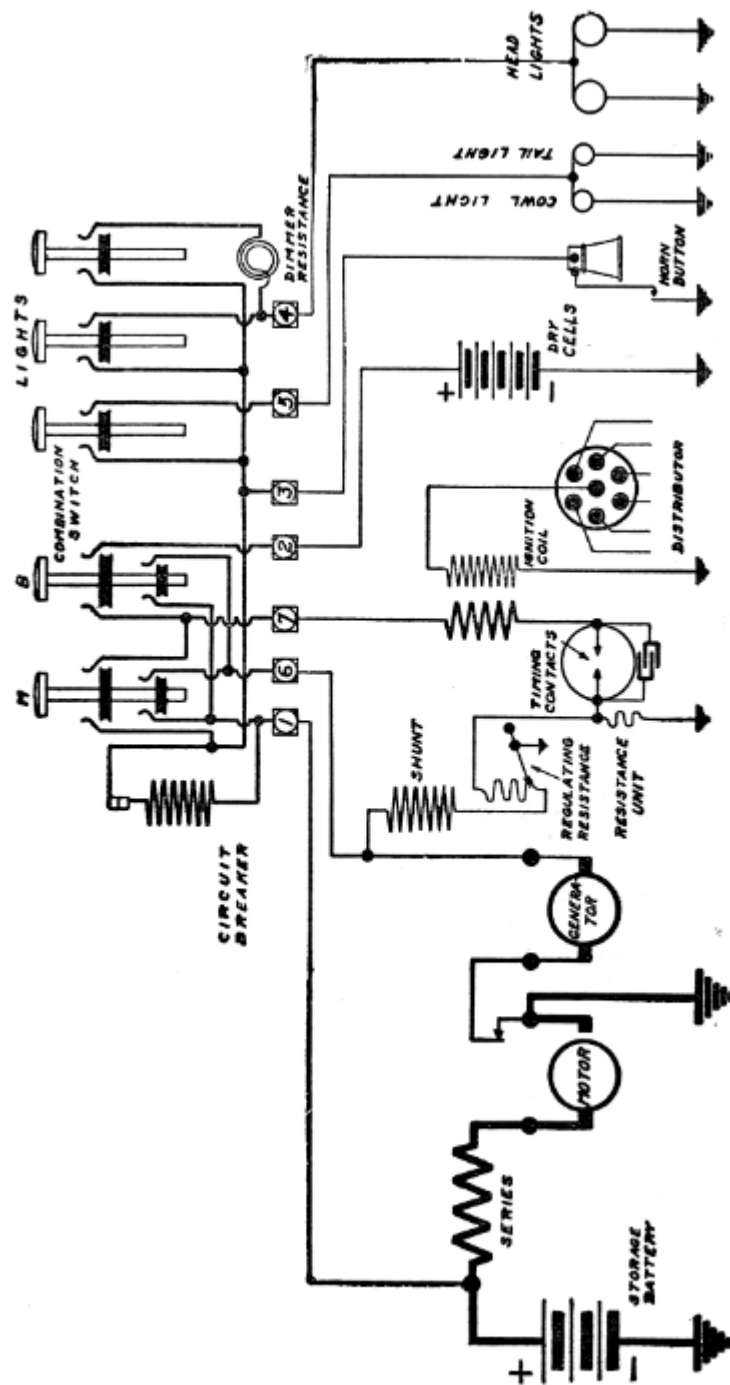
# BUICK 1915 MODELS C-24-25



Motor Generator No. 56  
Battery—Type 3-X-155-2-A

Combination Switch No. 1048  
Ignition Coil No. 2111

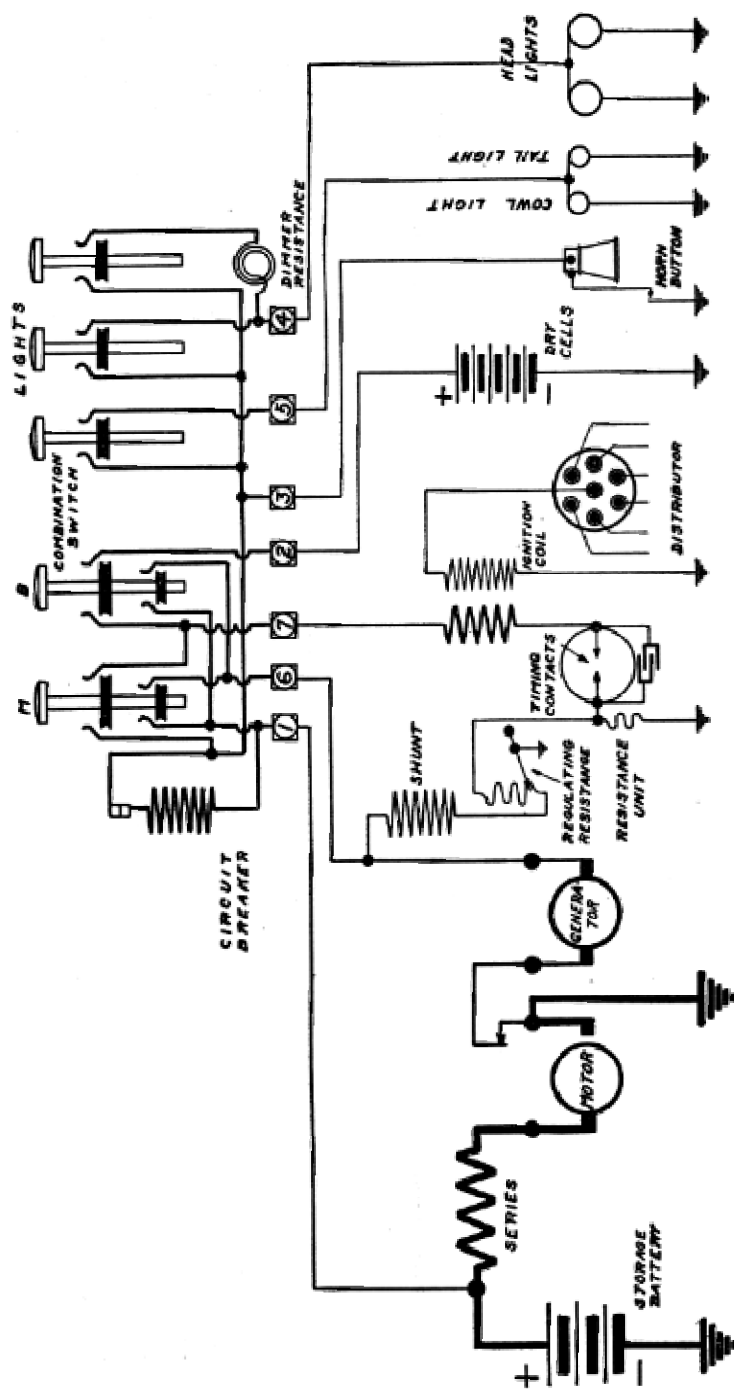
# BUICK 1915 MODELS C-36-37



Motor Generator No. 51  
Battery—Type 3-X-155-1

Combination Switch No. 1048  
Ignition Coil No. 2111

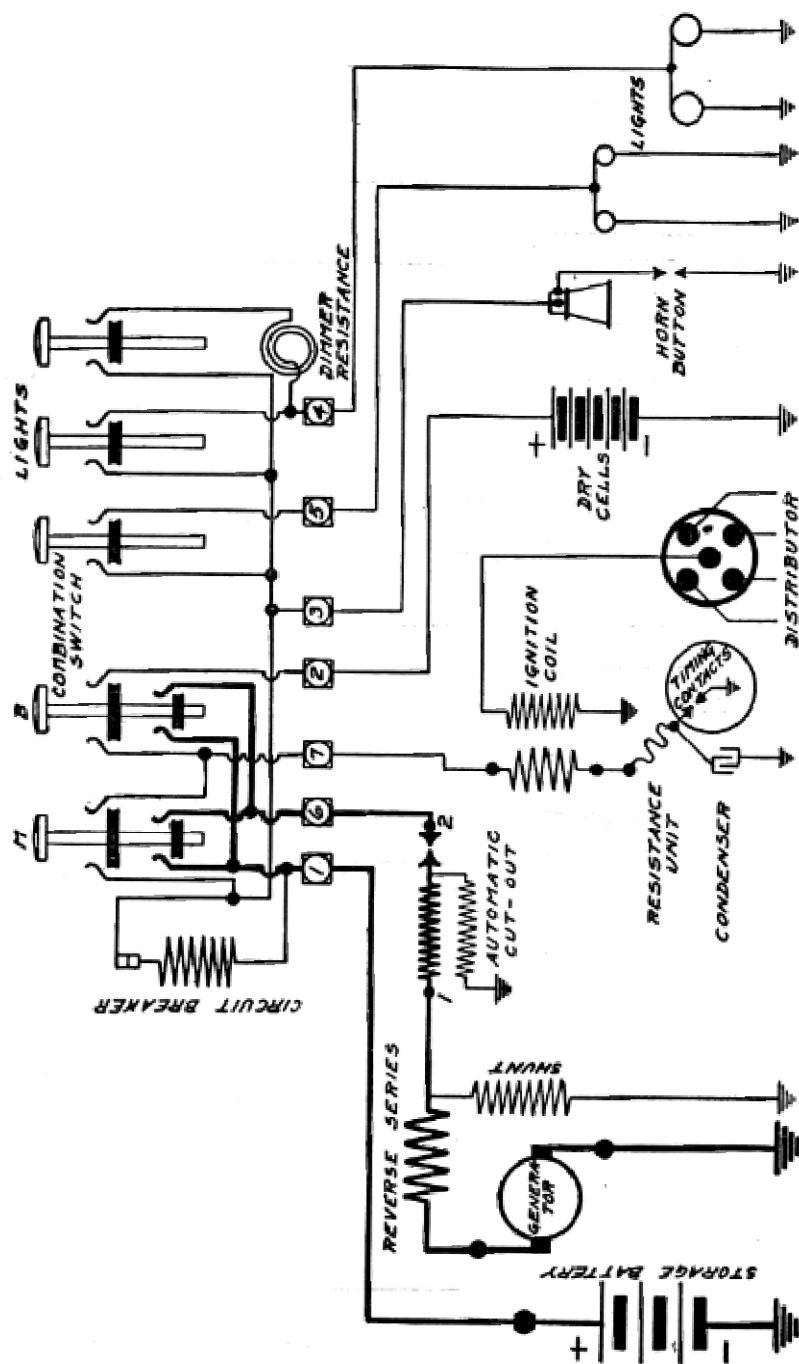
# BUICK 1915 MODELS C-54-55



Combination Switch No. 1048  
Ignition Coil No. 2111

Motor Generator No. 52  
Battery—Type 3-X-155-1

**BUICK MODEL C-4 TRUCK**

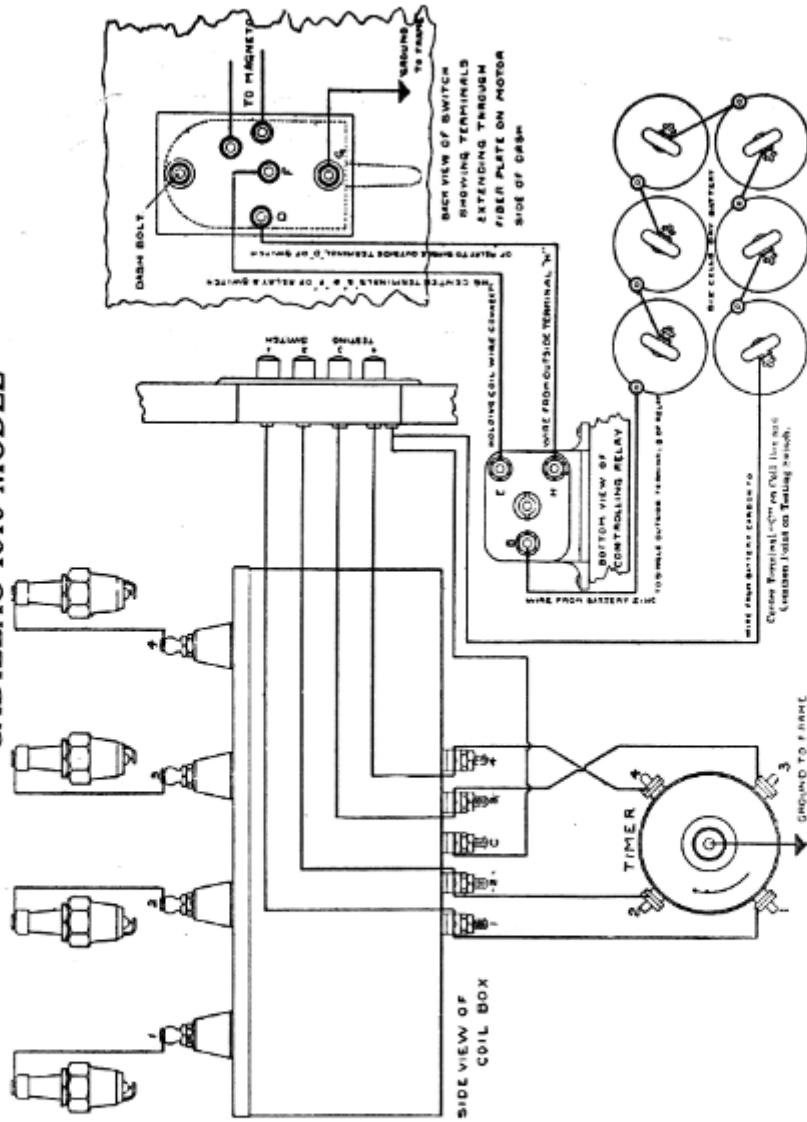


**Motor Generators Nos. 61-67  
Battery—Type 3-X-155-1**

Combination Switch No. 1048  
Ignition Coil No. 2111



# CADILLAC 1910 MODEL

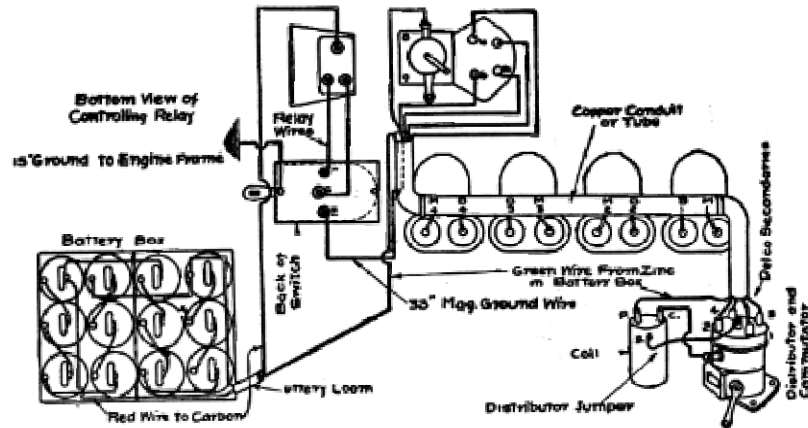


Coil Box No. 2004

Ignition Switch No. 1002

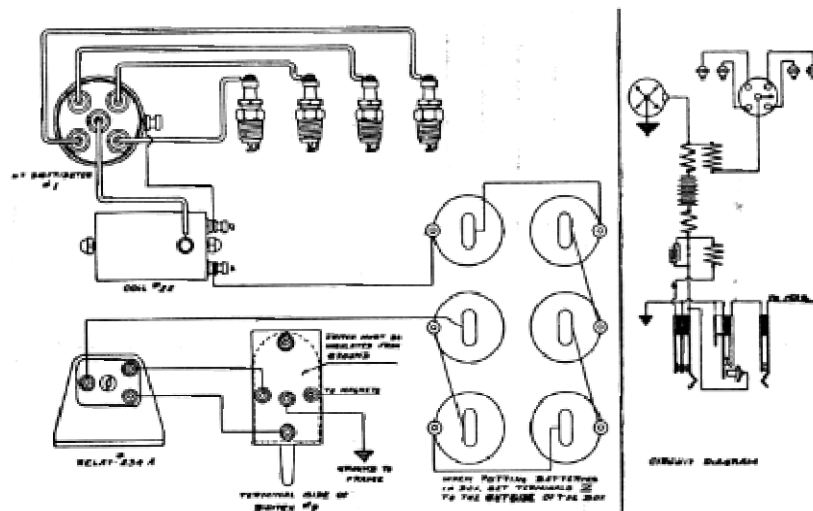
Ignition Relay No. 5661

## CADILLAC 1911 MODEL



Ignition Coil No. 2022  
Ignition Switch No. 2001

Ignition Relay No. 5661  
Distributor No. 5001



Ignition Coil No. 2022  
Ignition Switch No. 1009

Ignition Relay No. 5661  
Distributor No. 5001

NOTE—Beginning with engine No. 54000, Ignition Switch No. 1009 was used instead of Switch No. 1001. The two diagrams show the connections for each switch.

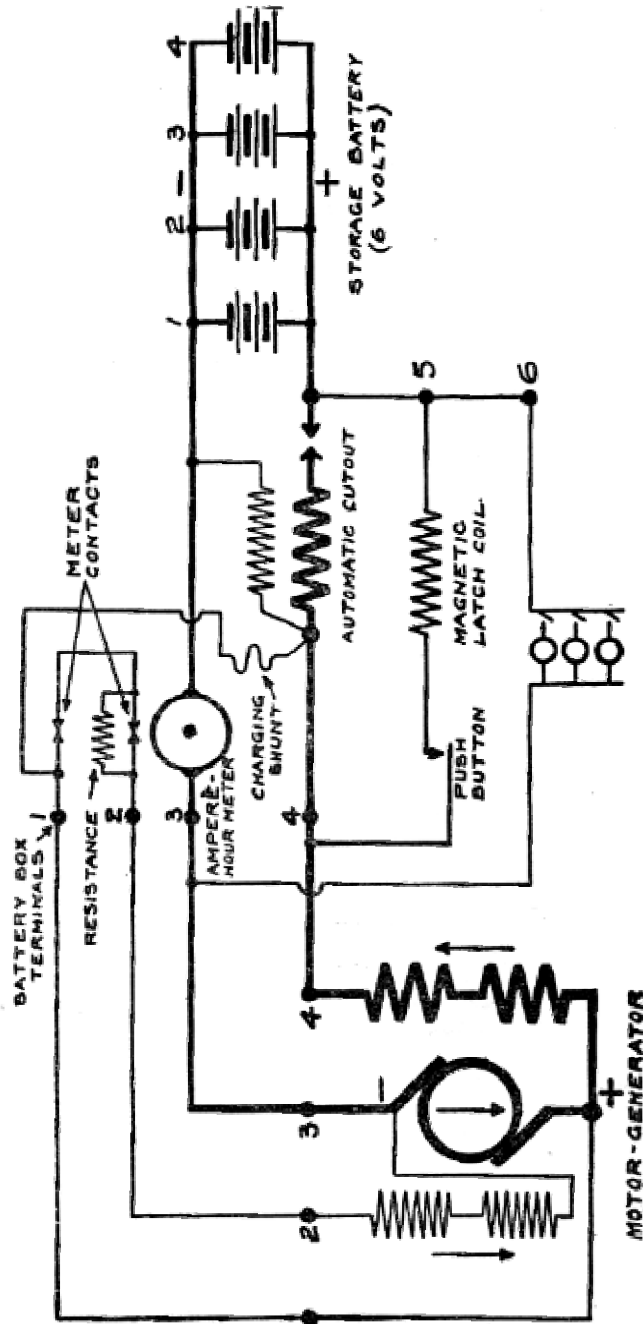
[illegible]

DIAGRAM OF WIRING FOR 1912 CARS.  
TOURING-TORPEDO-ROADSTER & PHAETON

**Motor Generator No. 1  
Battery—Type 12-SD-3**

Ignition Coils Nos. 2022-2045  
Ignition Switch No. 1018

# CADILLAC 1912 MODEL

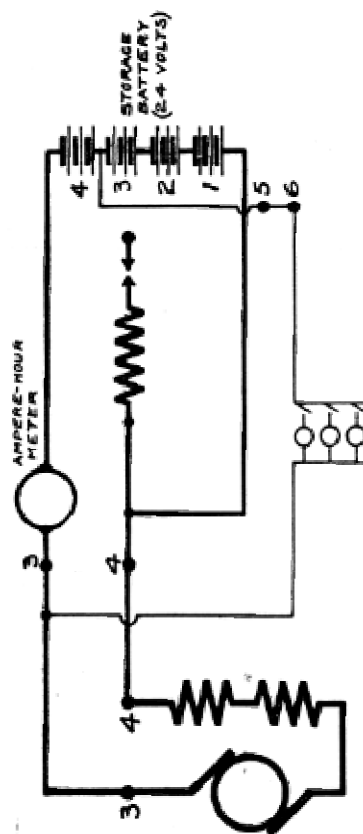


Motor Generator No. 1  
Battery—Type 12-SD-3

Ignition Coils Nos. 2022-2045  
Ignition Switch No. 1018

Note—This is a simplified circuit diagram applicable to all of the 6-24 volt systems, which shows the connections as they exist when the machine is operating as a generator. The heavy lines indicate the main charging circuit.

## CRANKING CIRCUIT OF ALL 6-24 VOLT SYSTEMS

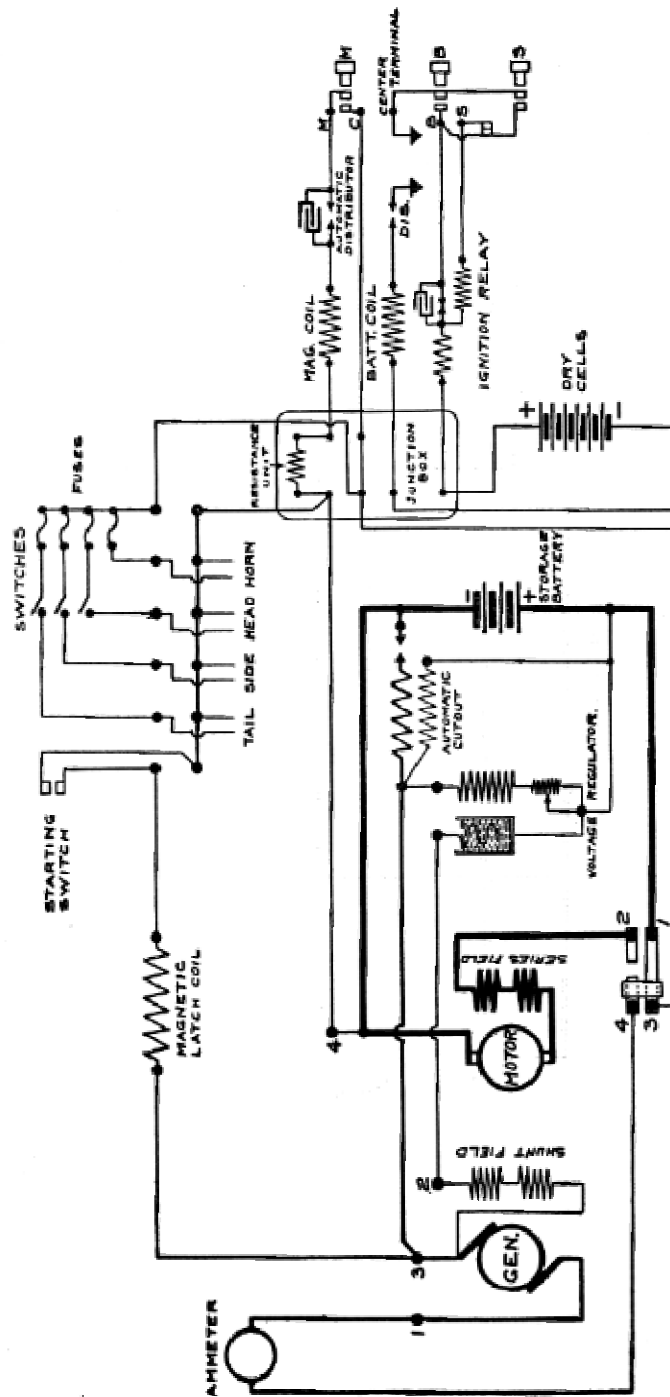


Motor Generator No. 1  
Battery—Type 12-SD-3

Ignition Coils Nos. 2022-2045  
Ignition Switch No. 1018

Note—This diagram shows the cranking circuit applicable to all of the 6-24 volt systems, and shows also the manner which 6 volts is maintained at the lights, while 24 volts is applied to the starting motor.

# CADILLAC 1913 MODEL



Motor Generator No. 4  
Battery—Type 3-MD-9

Ignition Switch No. 1978  
Ignition Coils Nos. 2092-2093

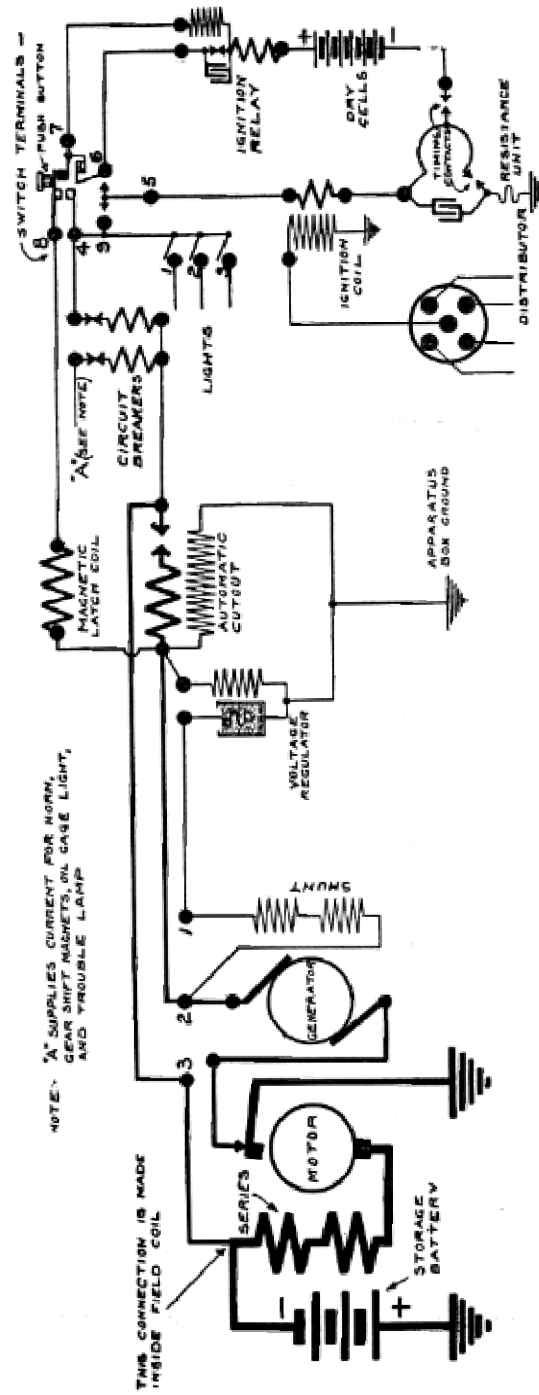
COMPLETE WIRING DIAGRAM  
**DELCO**  
 ELECTRIC SYSTEM  
 THE DELCO SYSTEMS LABORATORY OF  
 DAYTON, OHIO

Ignition Coils Nos. 2092-2093

Ignition Switch No. 1978

Battery—Type 3-MD-9

# CADILLAC 1914 MODEL

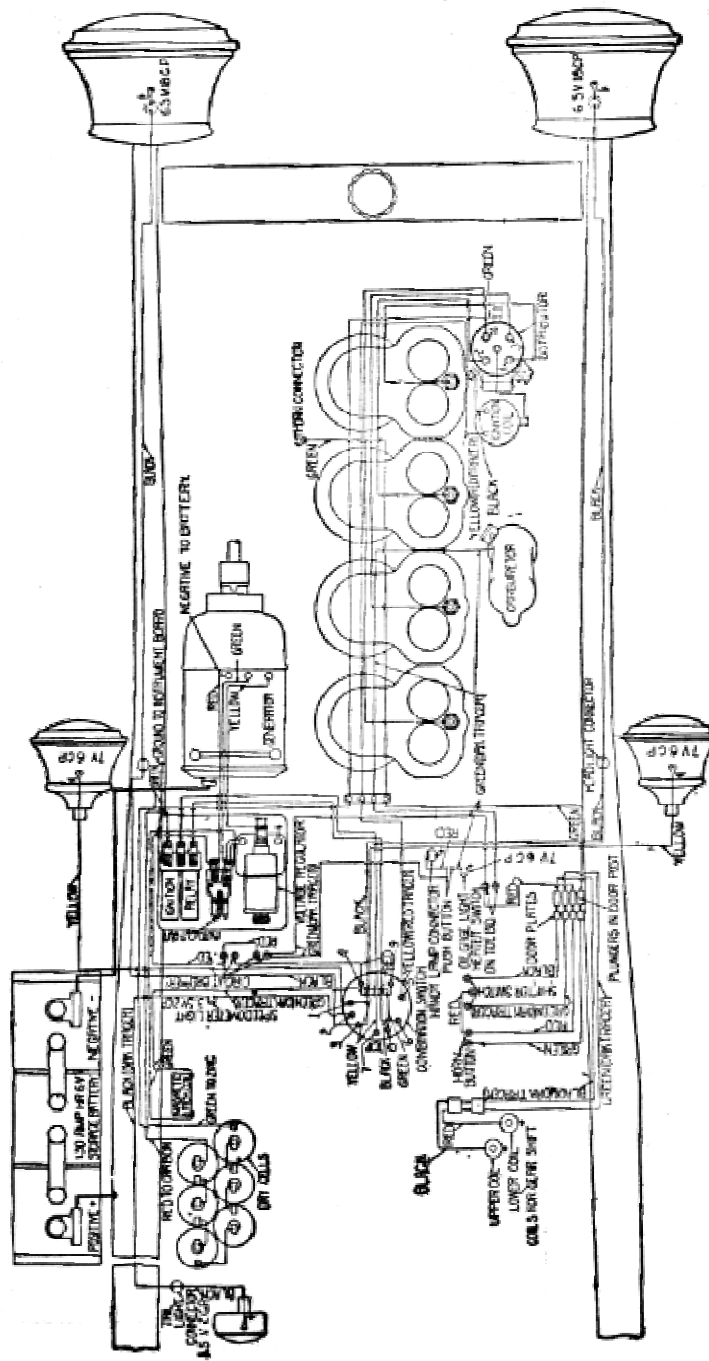


Motor Generator No. 24  
Battery—Type 3-PH-13

Combination Switch No. 1042  
Ignition Coil No. 2104



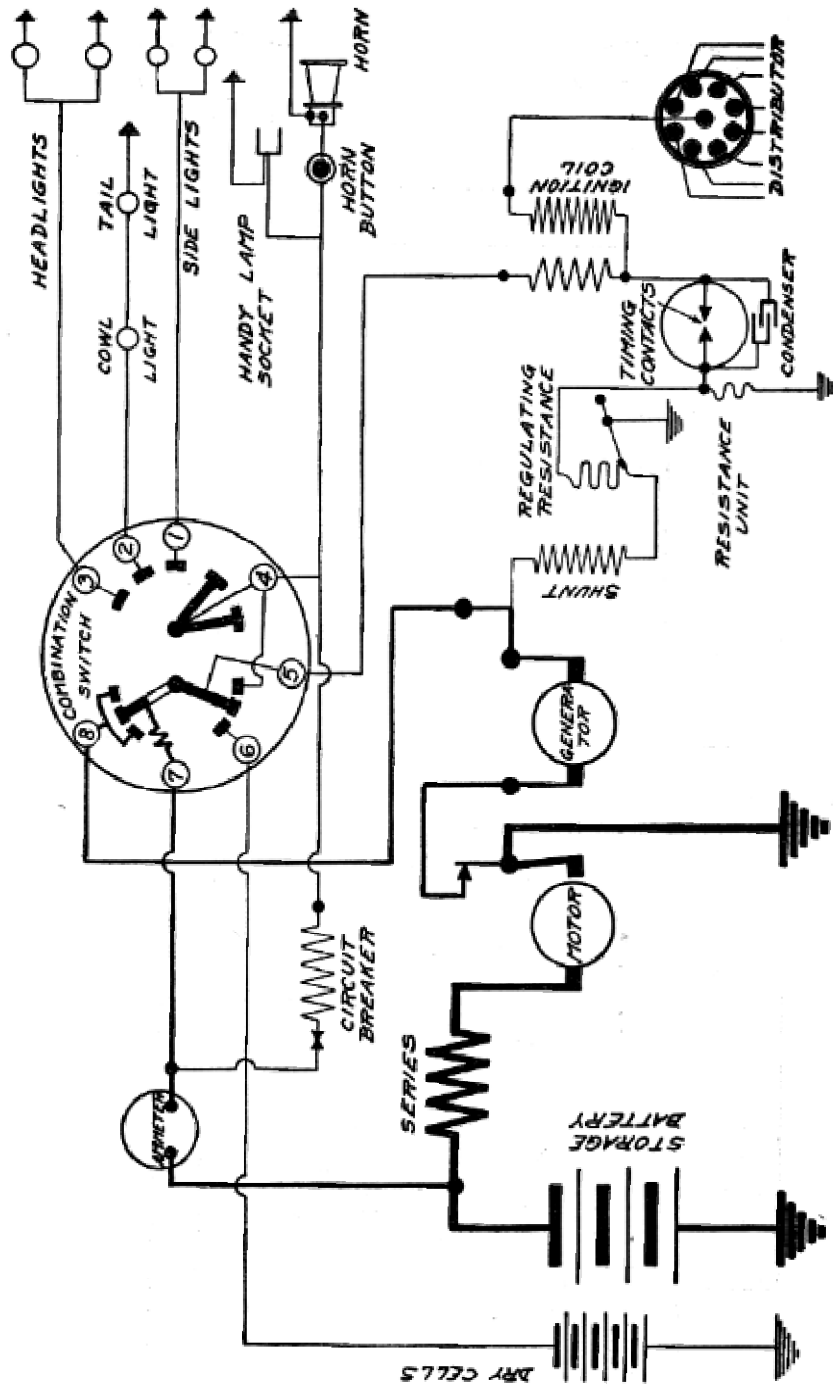
# CADILLAC 1914 MODEL



Motor Generator No. 24  
Battery—Type 3-PH-13

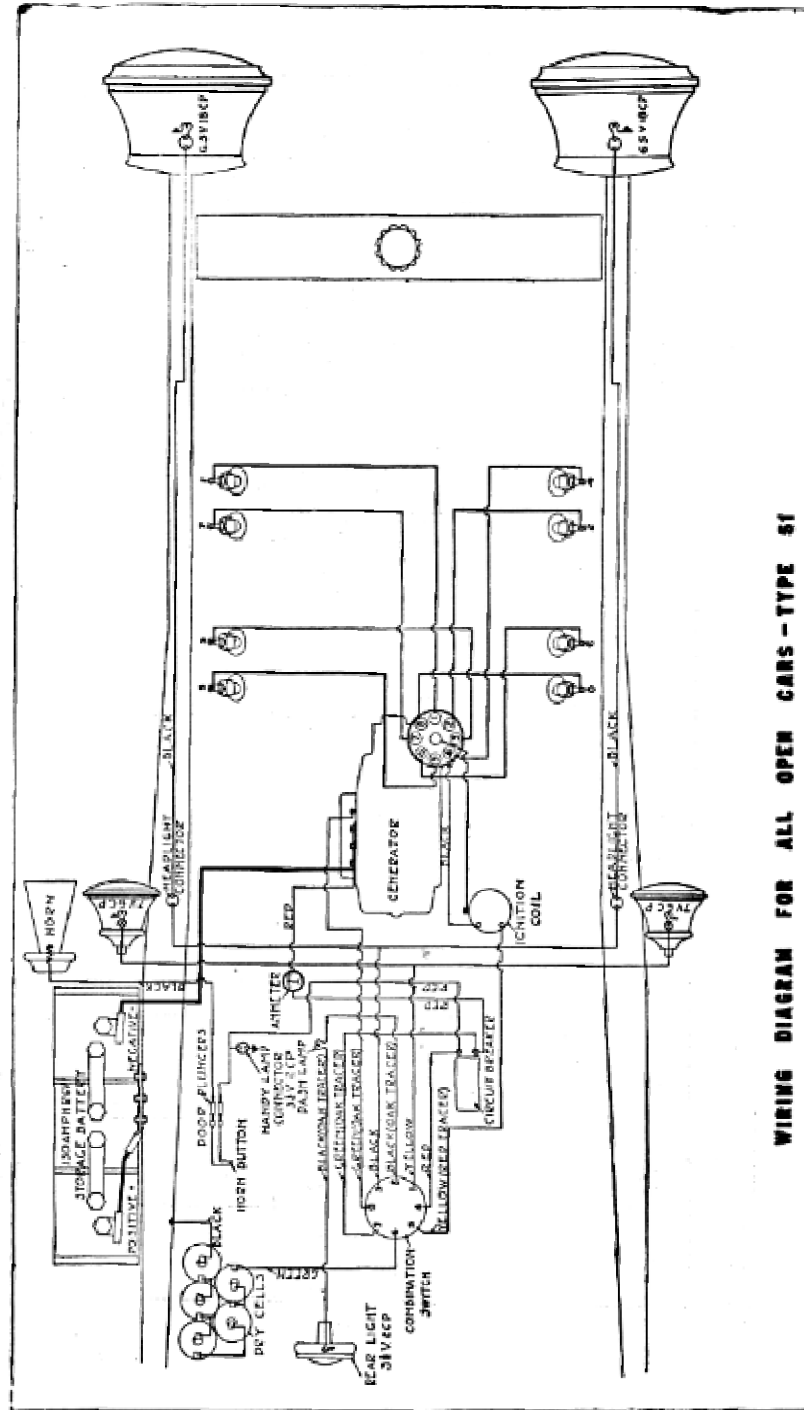
Combination Switch No. 1042  
Ignition Coil No. 2104

# CADILLAC 1915 MODEL



Motor Generator No. 44      Battery—Type 3-PH-135      Combination Switch No. 1045      Ignition Coil No. 2115

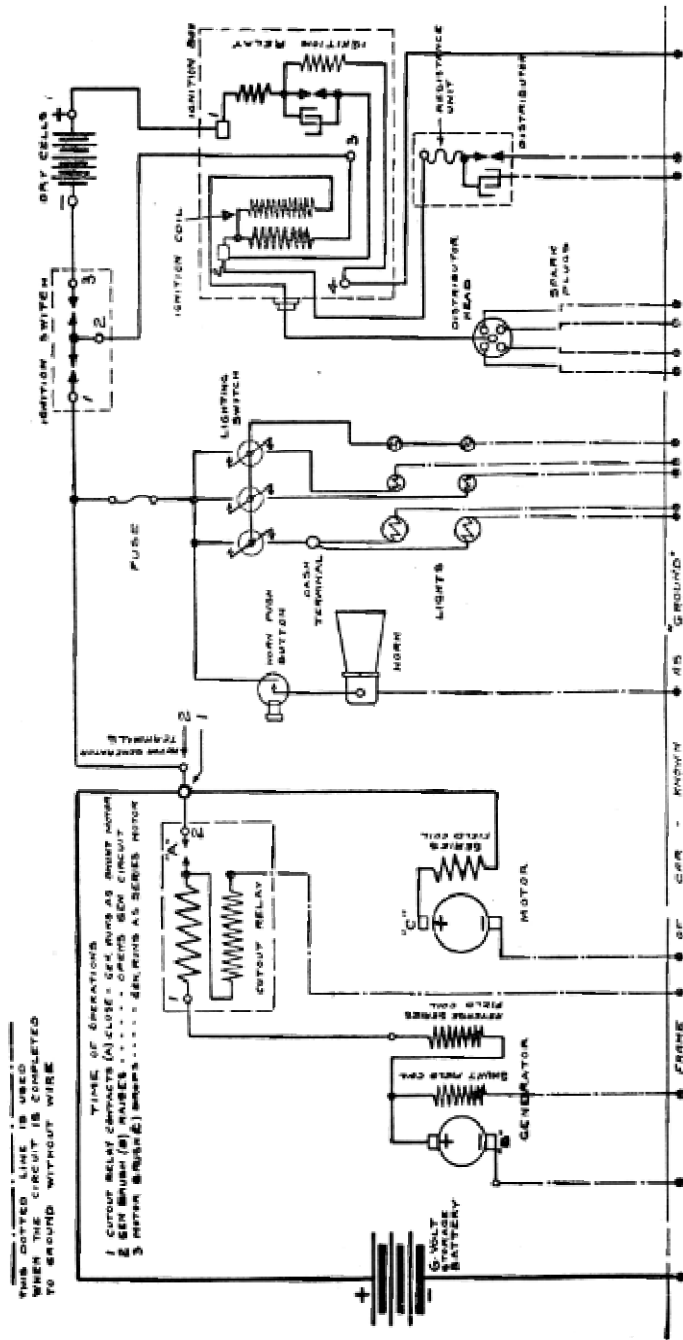
# CADILLAC 1915 MODEL



WIRING DIAGRAM FOR ALL OPEN CARS - TYPE 31

Battery—Type 3-PH-135      Motor Generator No. 44      Combination Switch No. 1045      Ignition Coil No. 2115

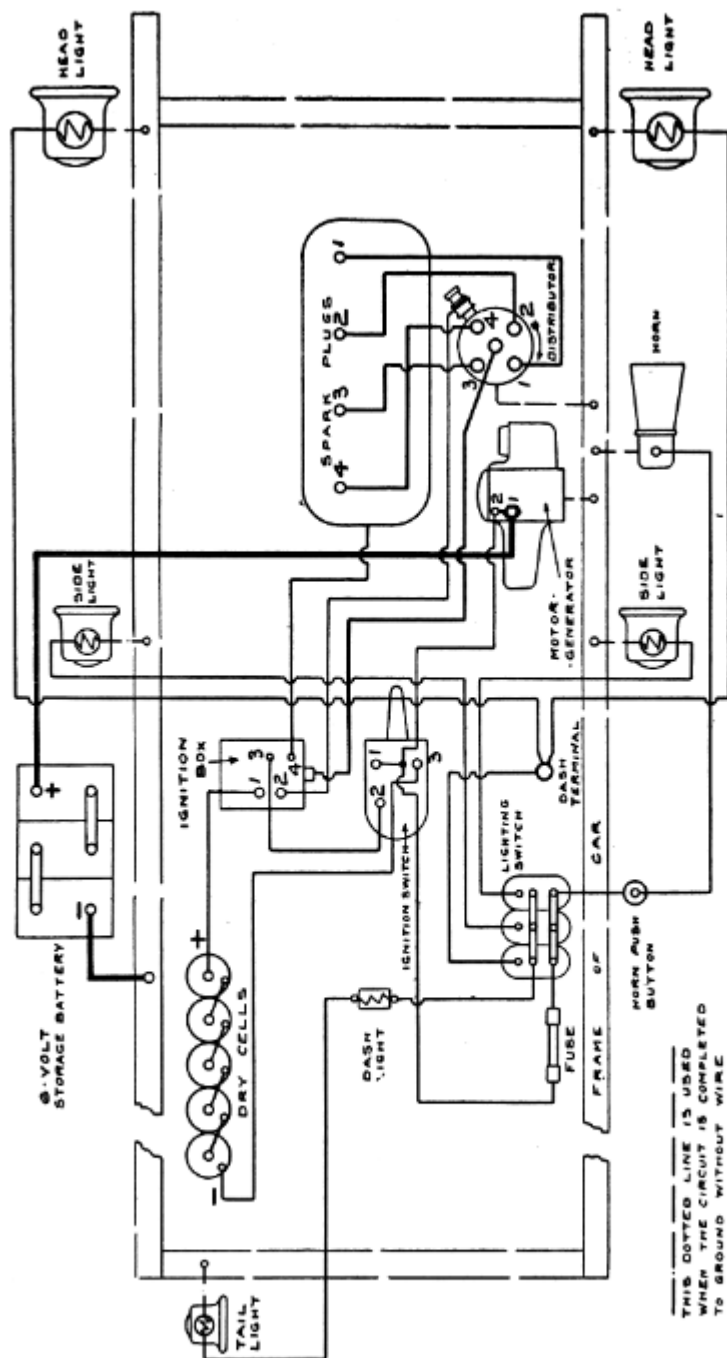
# CARTERCAR 1914 MODEL-7



Motor Generator No. 32  
 Battery—Type 8-X-15-1

Ignition Switch No. 1034  
 Ignition Coil No. 2102

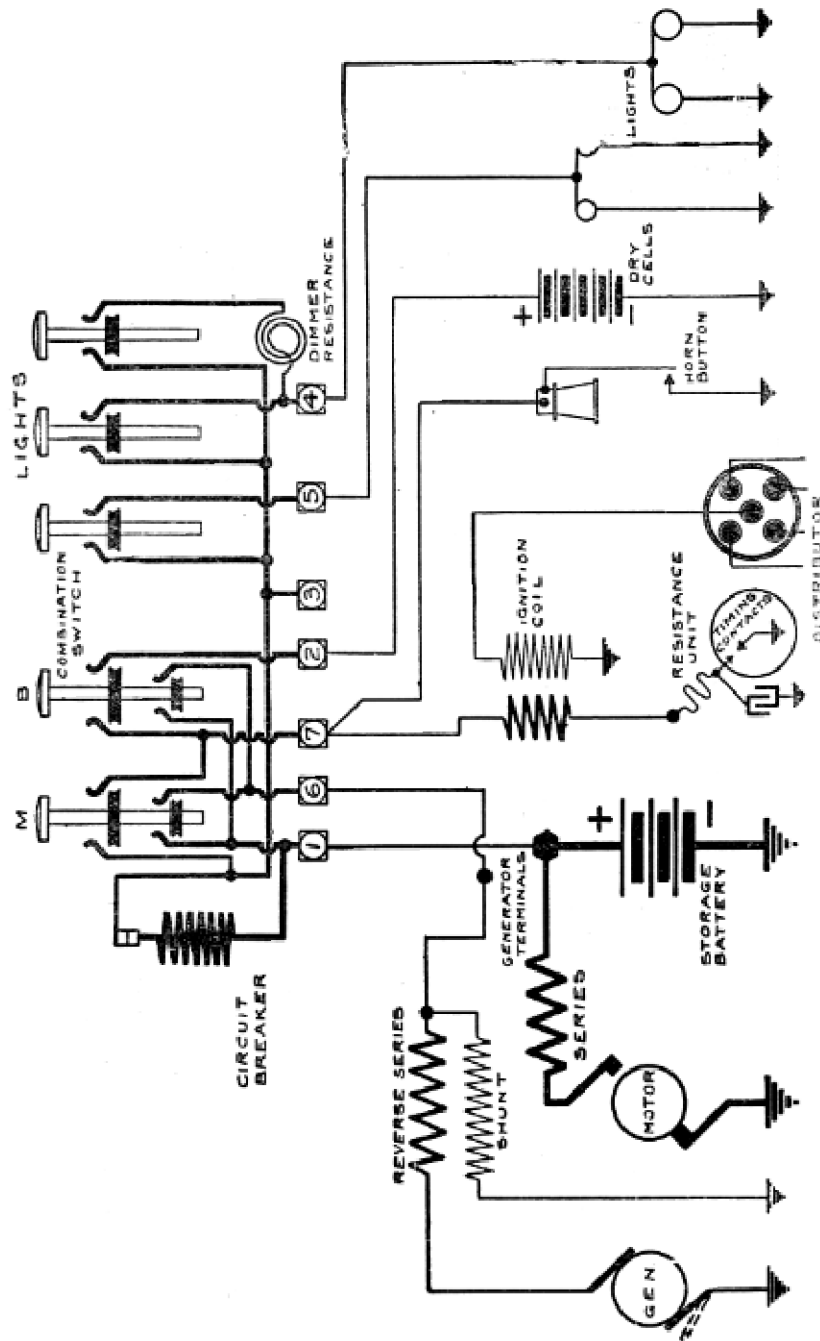
# CARTERCAR 1914 MODEL-7



Motor Generator No. 32  
Battery—Type 3-X-15-1

Ignition Switch No. 1034  
Ignition Coil No. 2102

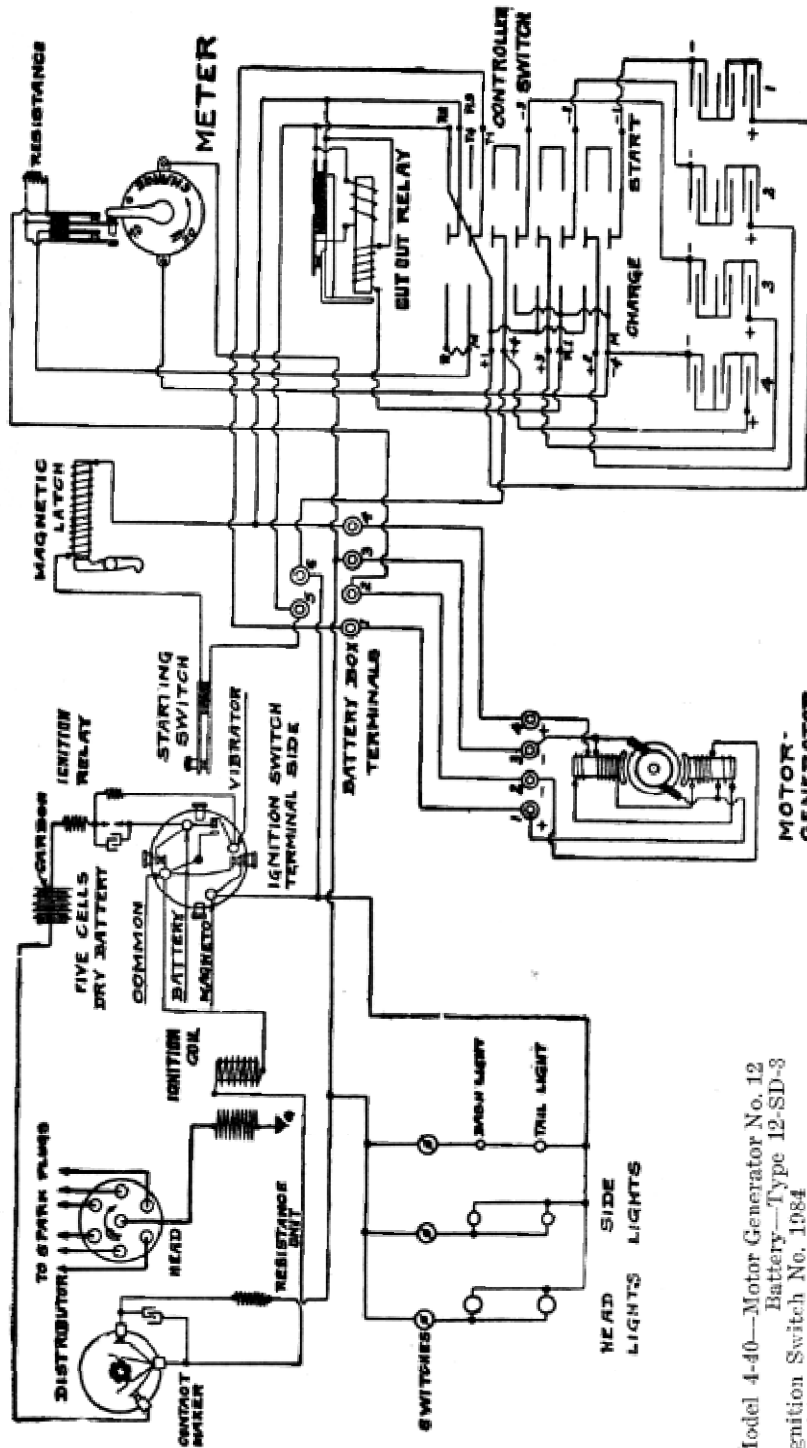
# CARTERCAR 1915 MODEL-9



Motor Generator No. 53  
Battery—Type 3-X-155-1

Combination Switch No. 1048  
Ignition Coil No. 2111

# COLE 1913 MODELS 4-40—4-50—6-60



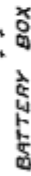
Model 4-40—Motor Generator No. 12  
Battery—Type 12-SD-3  
Ignition Switch No. 1984  
Ignition Coil No. 2045

Model 4-50—Motor Generator No. 8  
Battery—Type 12-SD-3  
Model 6-60—Motor Generator No. 15  
Battery—Type 12-SD-3

**STORAGE BATTERY:**  
Ignition Switch No. 1984  
Ignition Coil No. 2045  
Ignition Switch No. 1989  
Ignition Coil No. 2094

**MOTOR-GENERATOR COMMUTATOR END.**

**SIDE LIGHT**



Model 4-40—Motor Generator No. 12  
Battery—Type 12-SD-3

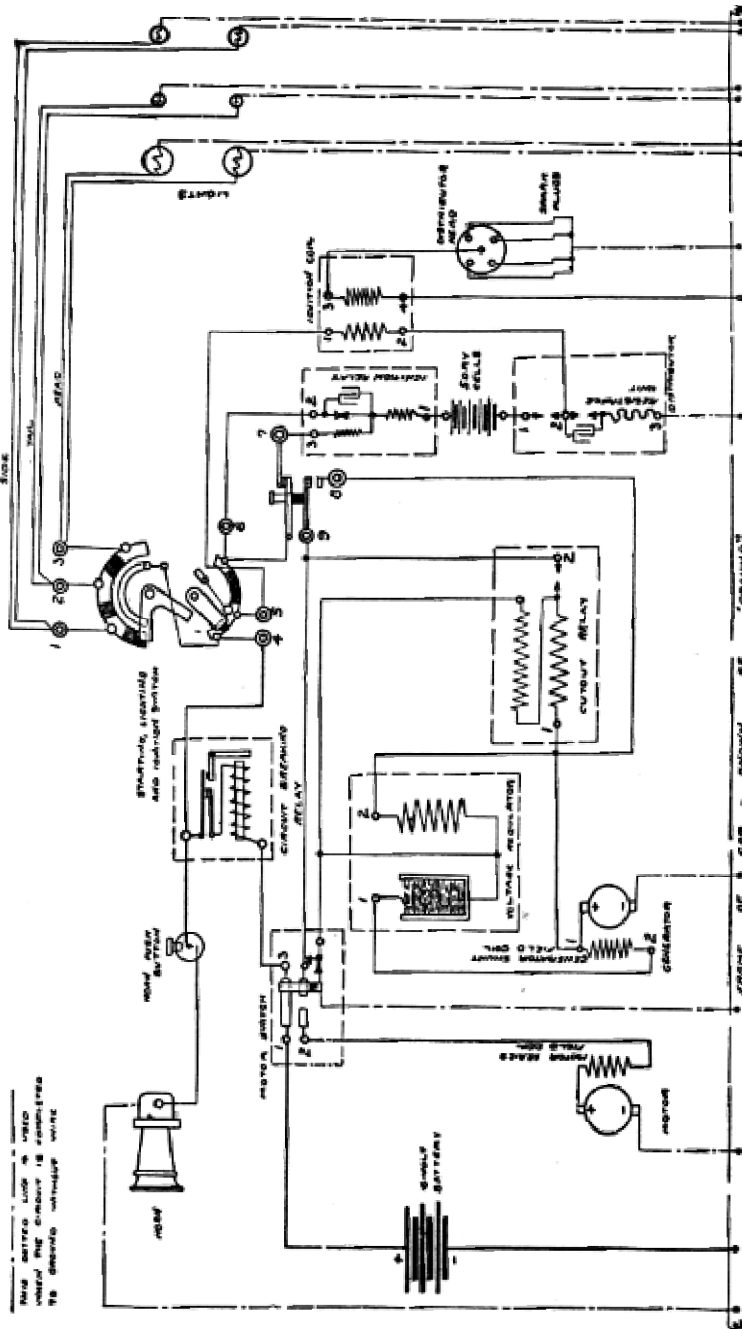
Model 4-50—Motor Generator No. 8  
Battery—Type 12-SD-3

Model 6-60—Motor Generator No. 15  
Battery—Type 12-SD-3

Ignition Switch No. 1984  
Ignition Coil No. 2045  
Ignition Switch No. 1984  
Ignition Coil No. 2045  
Ignition Switch No. 1989  
Ignition Coil No. 2094



# COLE 1914 SERIES-9

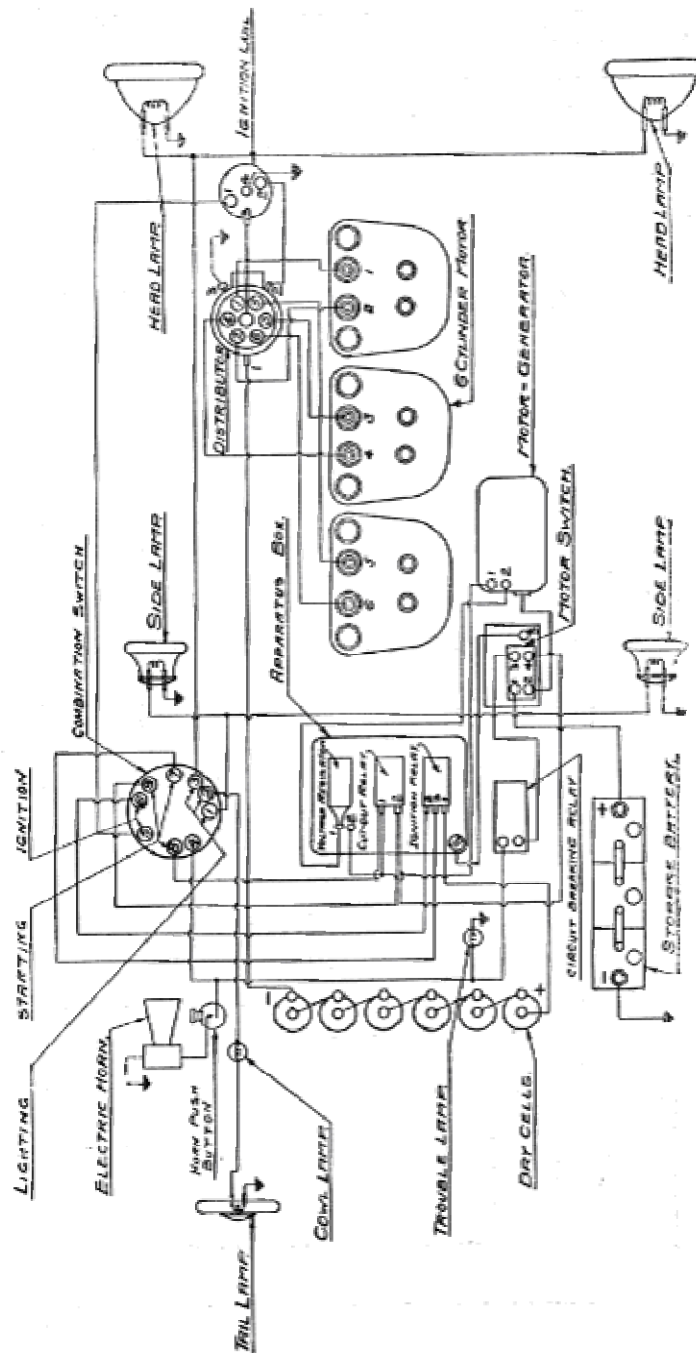


Motor Generator Nos. 27-37—27B-37B  
Battery—Type 3-PH-13

Combination Switch No. 1040  
Ignition Coil No. 2105

Note—For wiring diagrams with 27-B and 37-B motor generators refer to "Supplement to Instructions for Installing Rebuilt Motor Generators," Delco form No. 202.

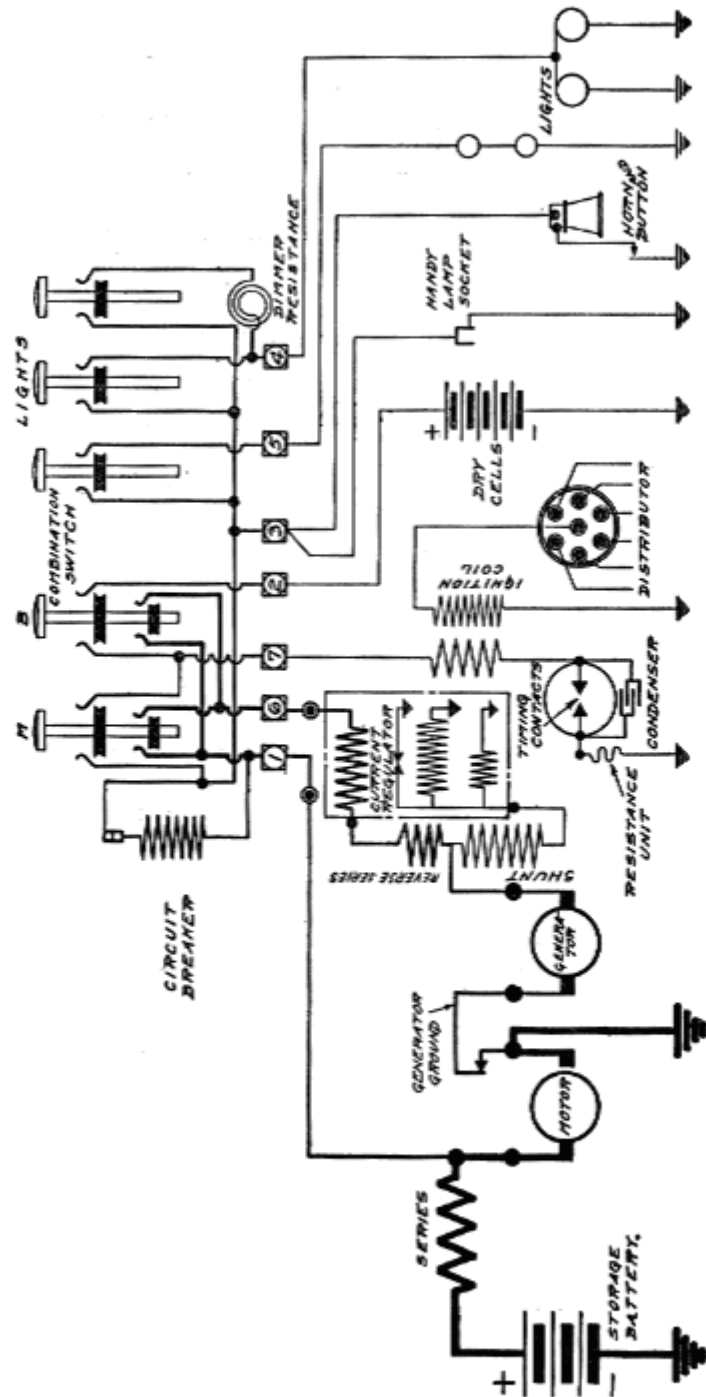
# COLE 1914 SERIES-9



Combination Switch No. 1040  
Ignition Coil No. 2105

Motor Generators Nos. 27-37--27B-37B  
Battery--Type 3-PH-13

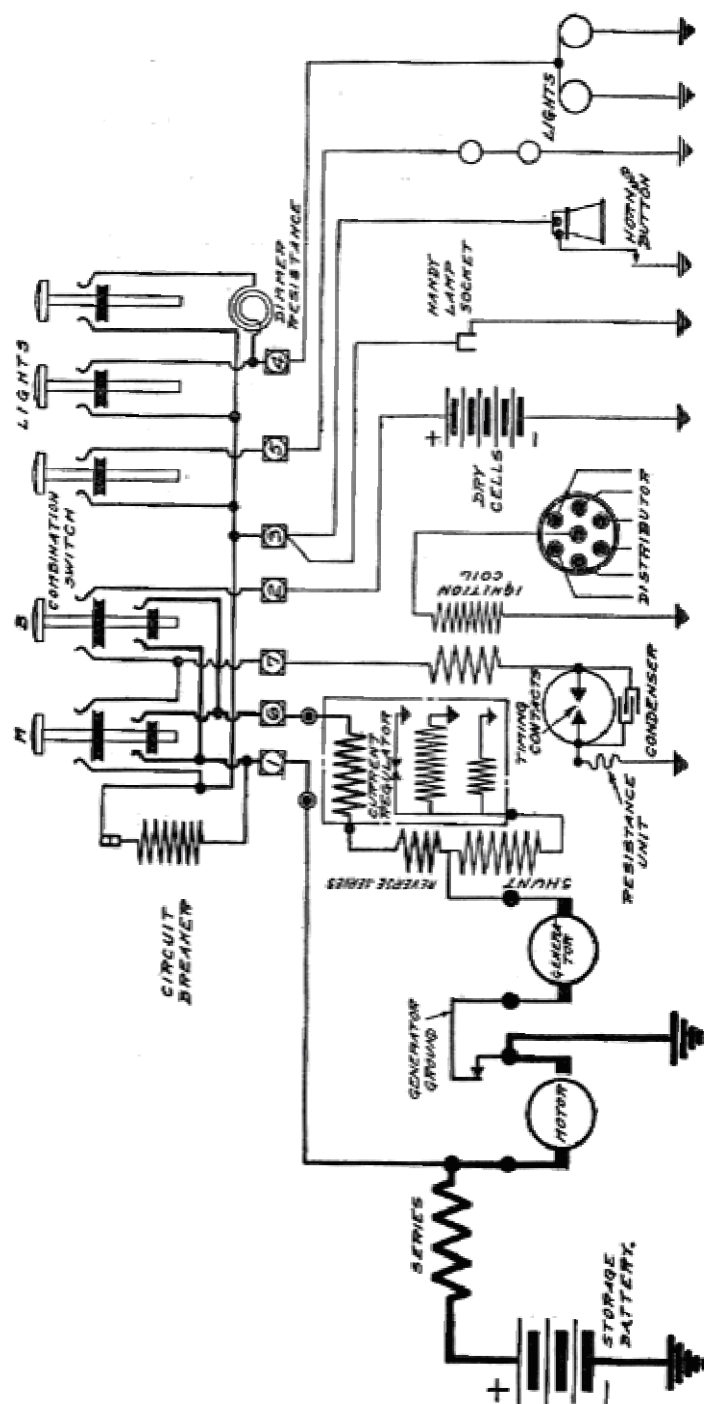
COLE 1915 MODEL 4-40



Motor Generator No. 65  
Battery—Type 3-X-155-1

Combination Switch No. 1048  
Ignition Coil No. 1211

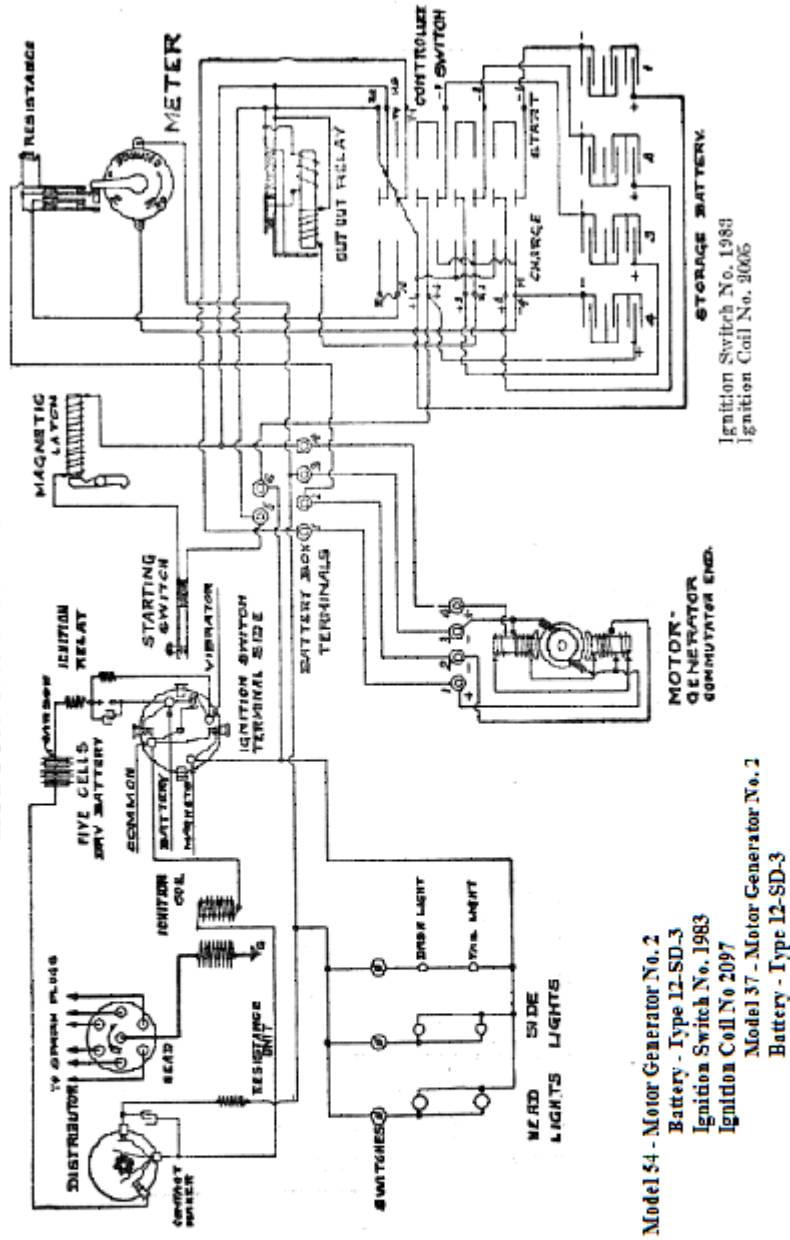
# COLE 1915 MODEL 4-40



Motor Generator No. 65  
Battery—Type 3-X-155-1

Combination Switch No. 1048  
Ignition Coil No. 1211

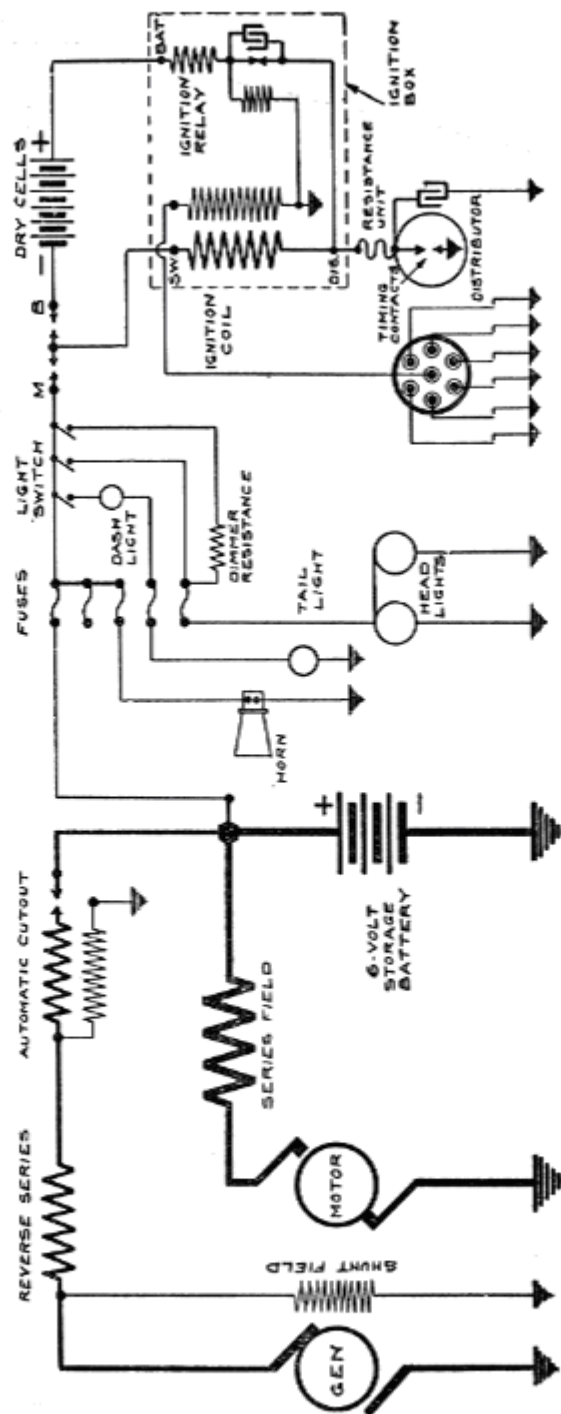
# HUDSON 1913 MODELS 54-37



Ignition Switch No. 1983  
Ignition Coil No. 2097

Ignition Switch No. 1983  
Ignition Coil No. 2095

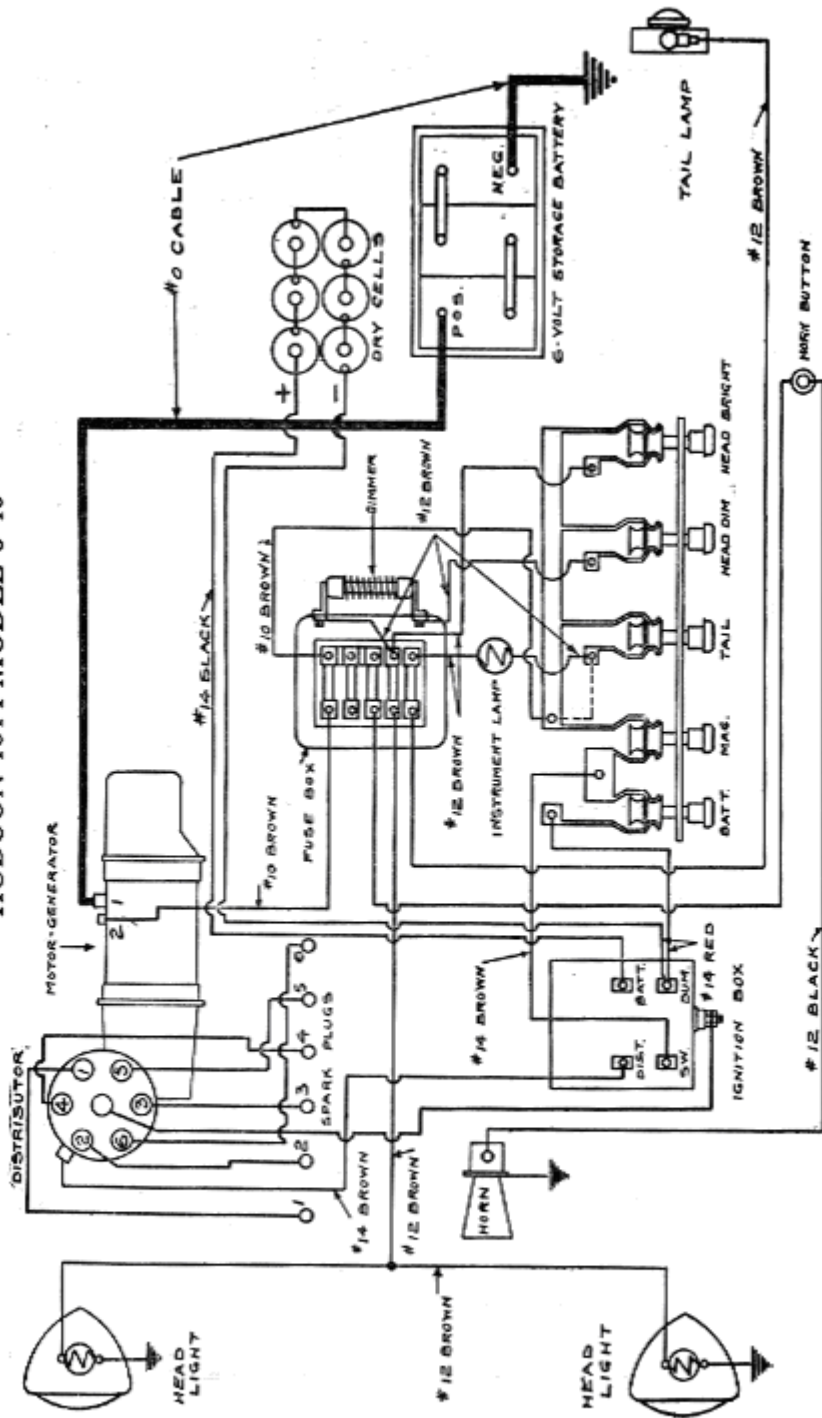
# HUDSON 1914 MODEL 6-40



Combination Switch No. 1043  
Ignition Coils Nos. 2108-2113

Motor Generators Nos. 31-60  
Battery—Type 3-X-15-1

# HUDSON 1914 MODEL 6-40



Motor Generators Nos. 31-60  
Battery—Type 3-X-15-1

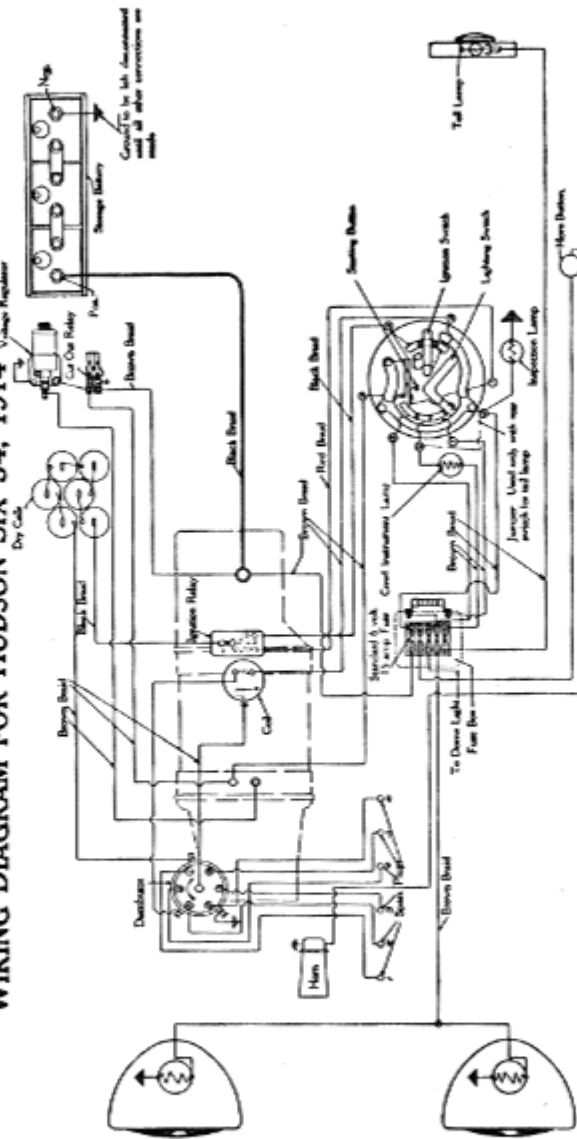
Combination Switch No. 1043  
Ignition Coils Nos. 2108-2113



Combination Switch No. 1043  
Ignition Coils Nos. 2108-2113

# HUDSON 1914 MODEL 6-54

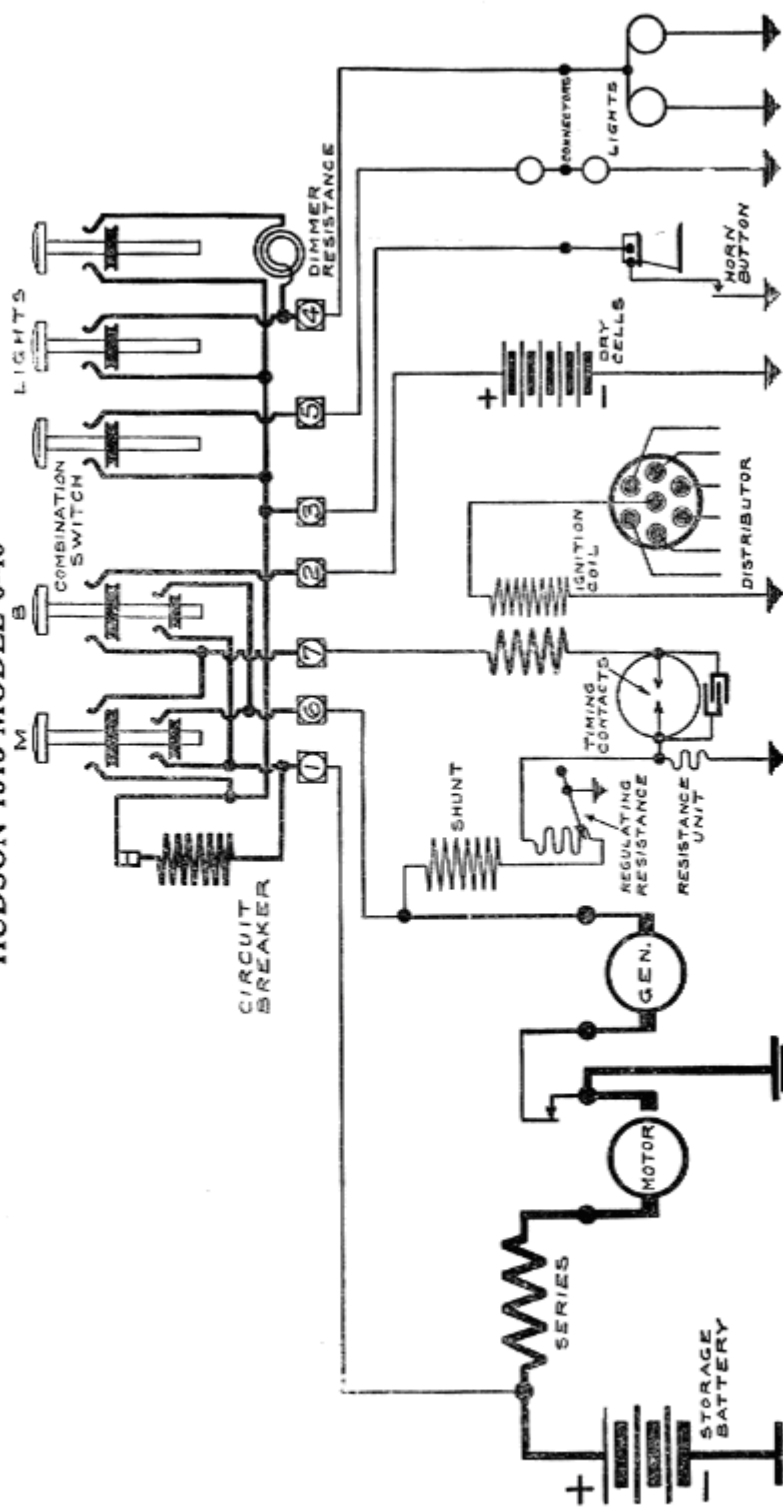
## WIRING DIAGRAM FOR HUDSON SIX 54, 1914



Motor Generator No. 20  
Battery--Type 3-PH-13

Combination Switch No. 1033  
Ignition Coil No. 2101

# HUDSON 1915 MODEL 6-40



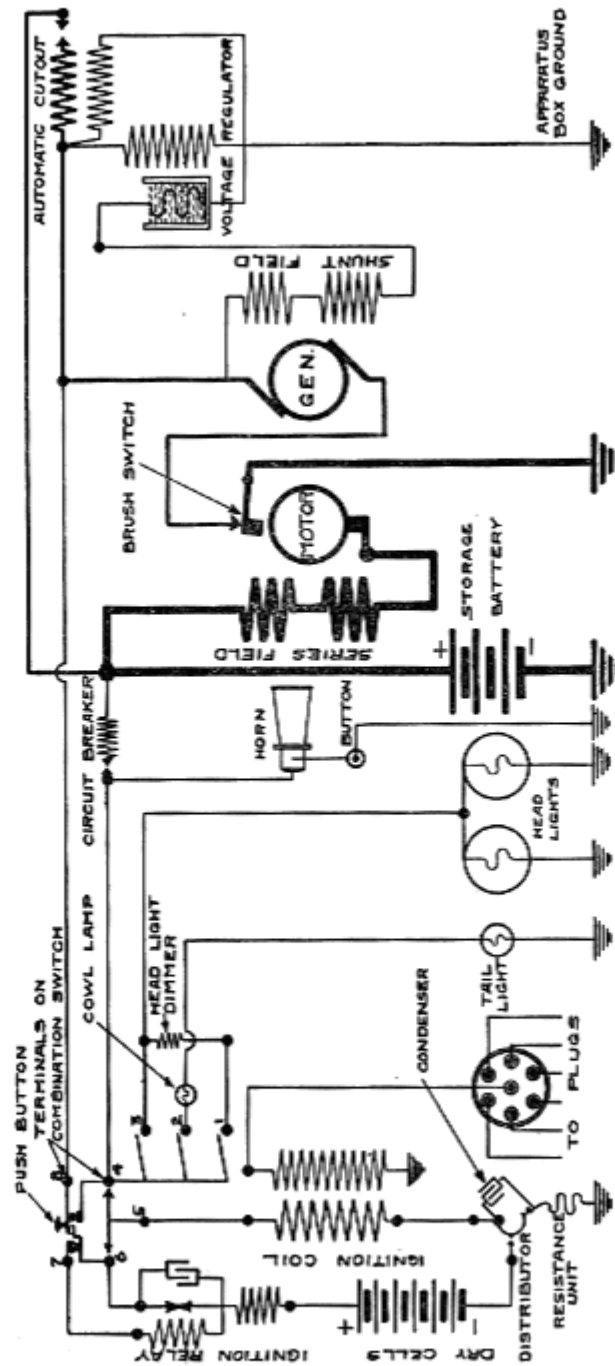
Motor Generator No. 45

Battery—Type 3-X-155-1

Combination Switch No. 1048

Ignition Coil No. 2112

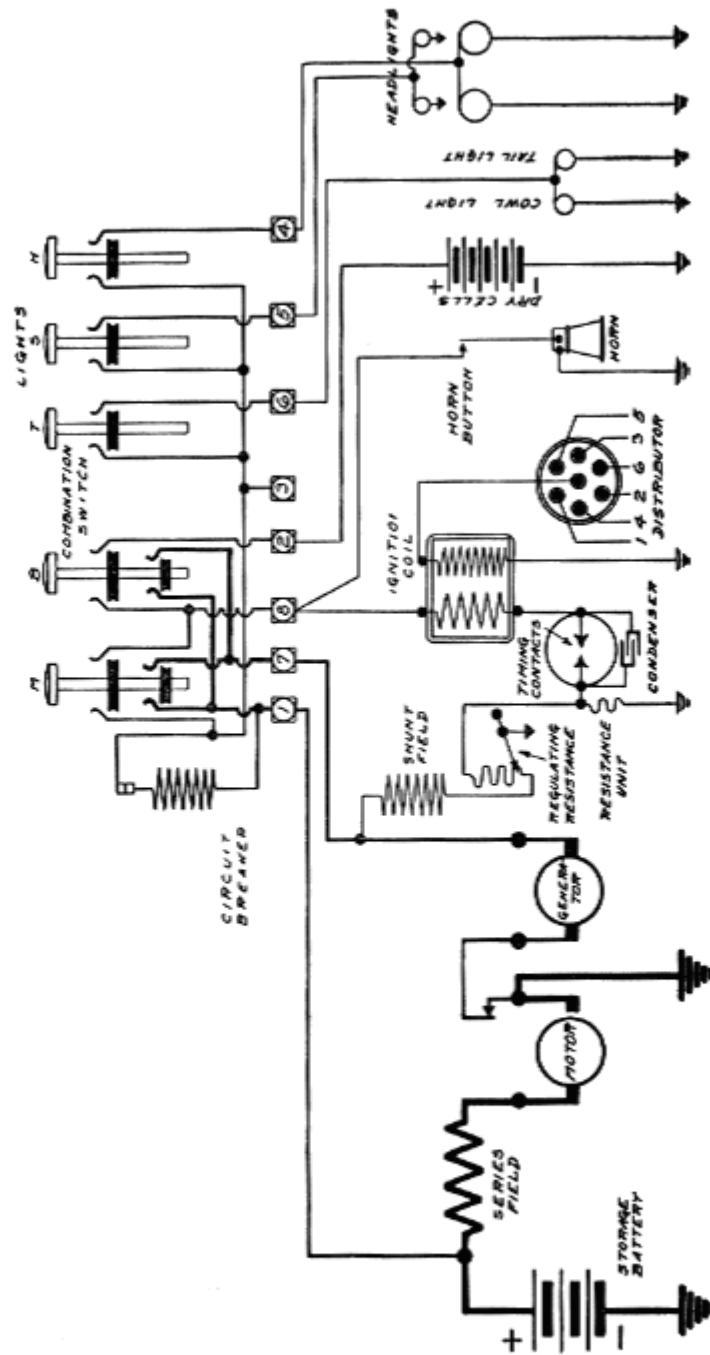
# HUDSON 1915 MODEL 6-54



Motor Generator No. 20  
Battery—Type 3-PH-135

Combination Switch No. 1033  
Ignition Coil No. 2101

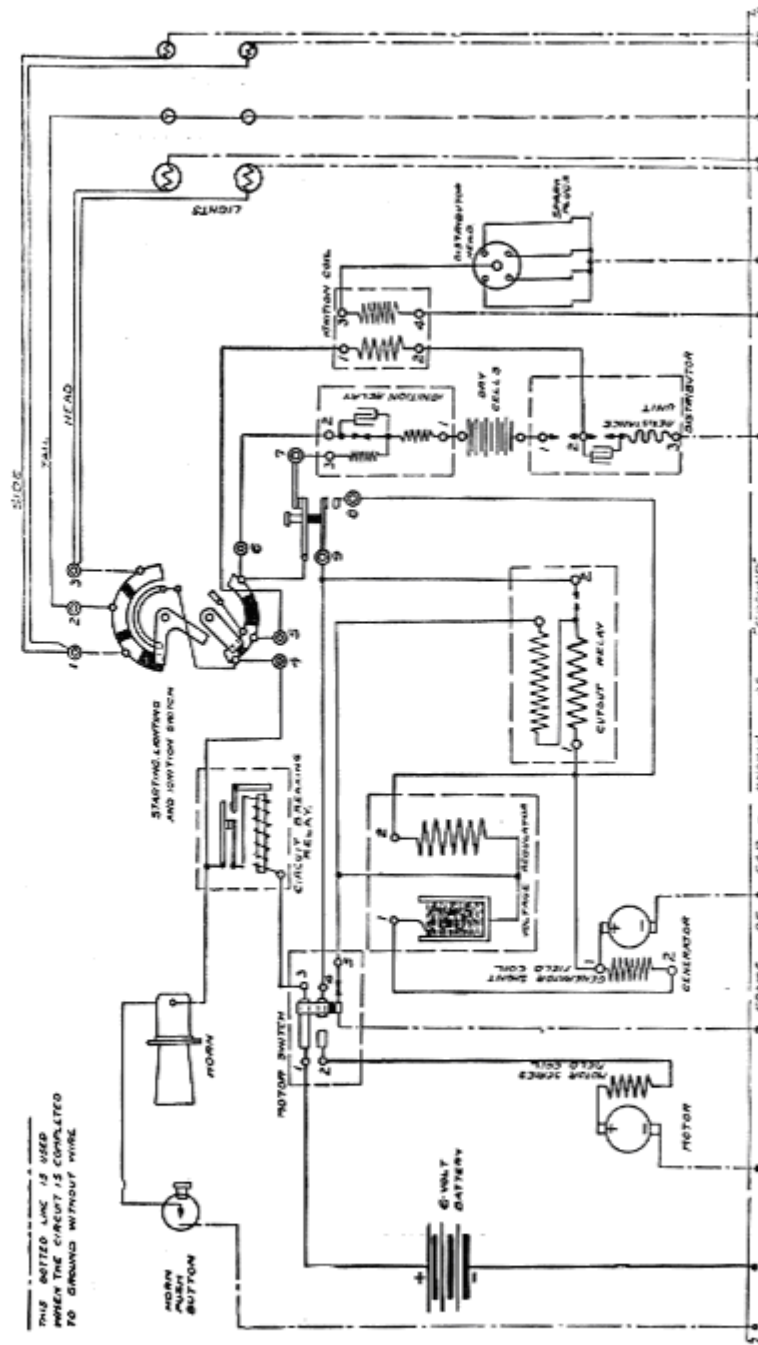
# JACKSON 1915 MODEL 6-40



Motor Generator No. 59  
Battery—Type 3-X-155-1

Combination Switch No. 1050  
Ignition Coil No. 2111

# MOON 1914 MODEL 42

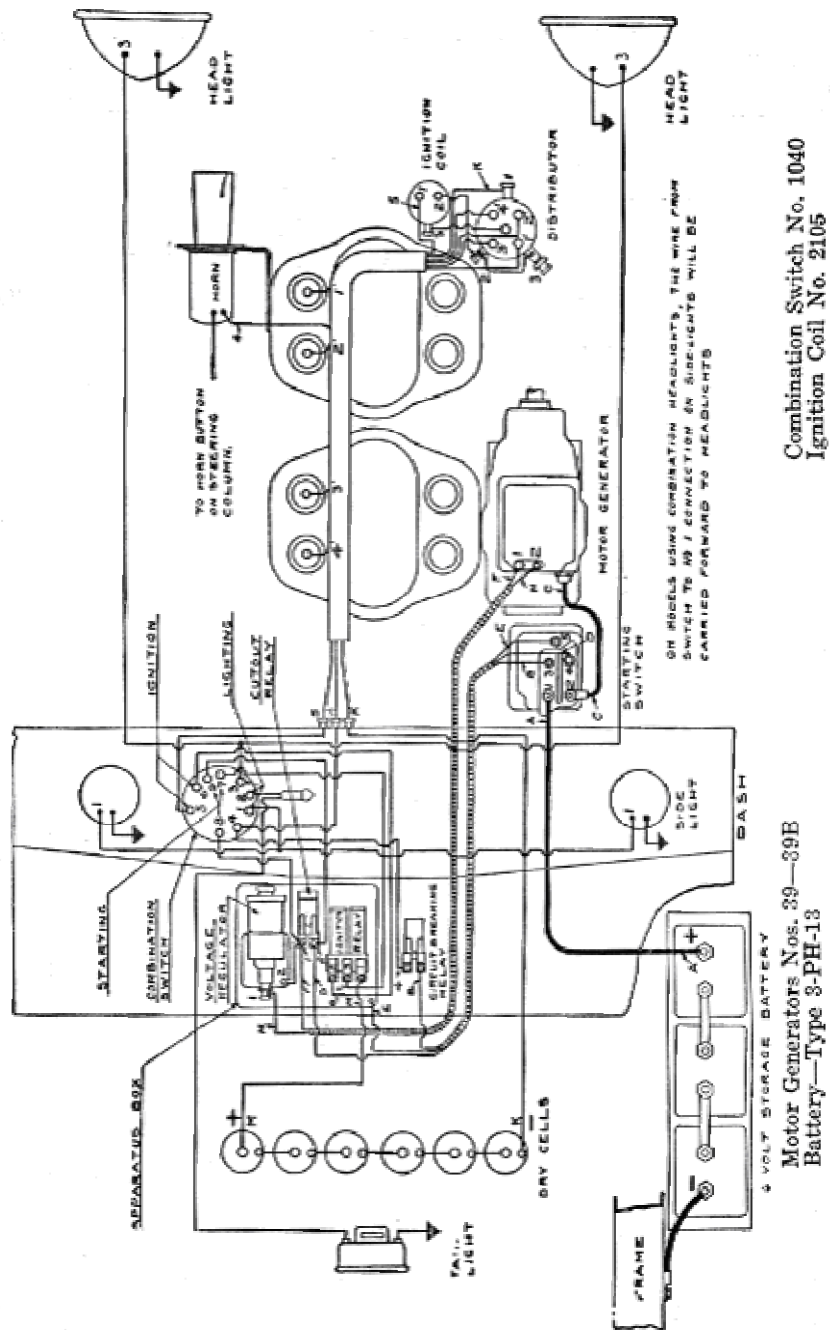


Motor Generators Nos. 39—39B  
Battery—Type 3-PH-13

Combination Switch No. 1040  
Ignition Coil No. 2105

Note—For wiring diagrams used with MG-39-B refer to "Supplement to Instructions for Installing Re-built Motor Generators," Delco form No. 202.

# MOON 1914 MODEL 42



Combination Switch No. 1040  
Ignition Coil No. 2105

Motor Generators Nos. 39-39B  
Battery—Type 3-PH-13

40



Battery—Type 3-PH-13

Ignition Coil No. 2105

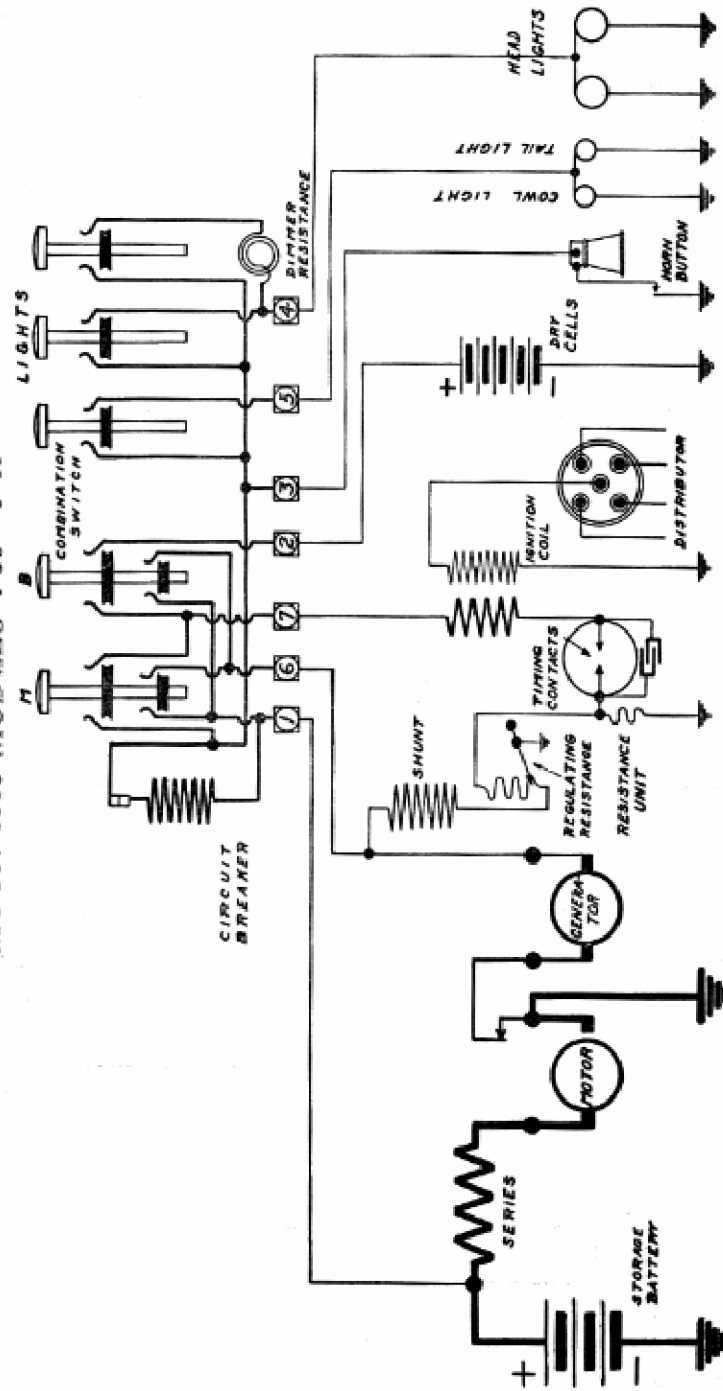
built Motor Generators.' Delco form No. 202.



[illegible]

Combination Switch No. 1040  
Ignition Coil No. 2105

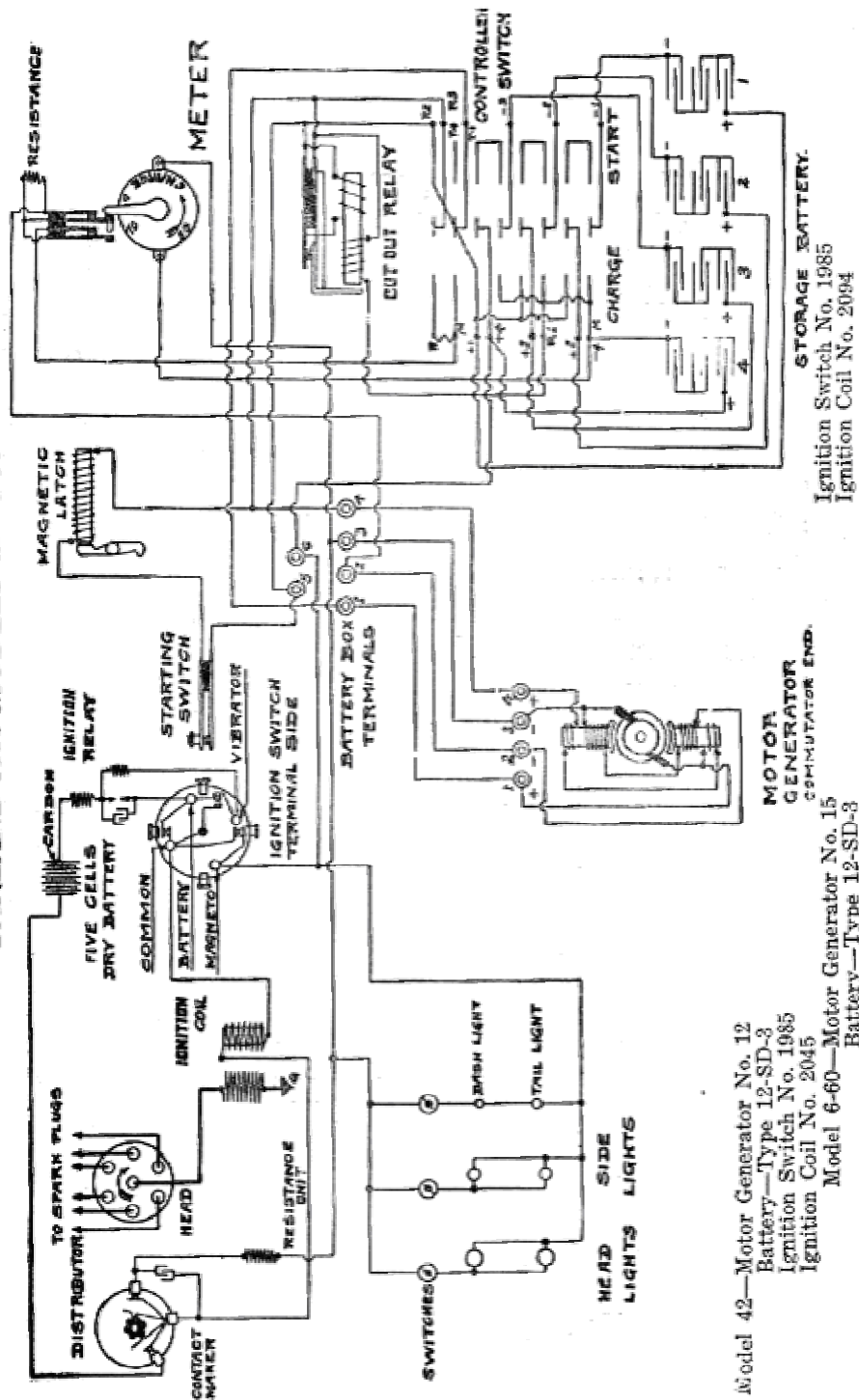
# MOON 1915 MODELS 4-38—6-40



Model 4-38—Motor Generator No. 57  
 Battery—Type 3-X-155-1  
 Model 6-40—Motor Generator No. 58  
 Battery—Type 3-X-155-1

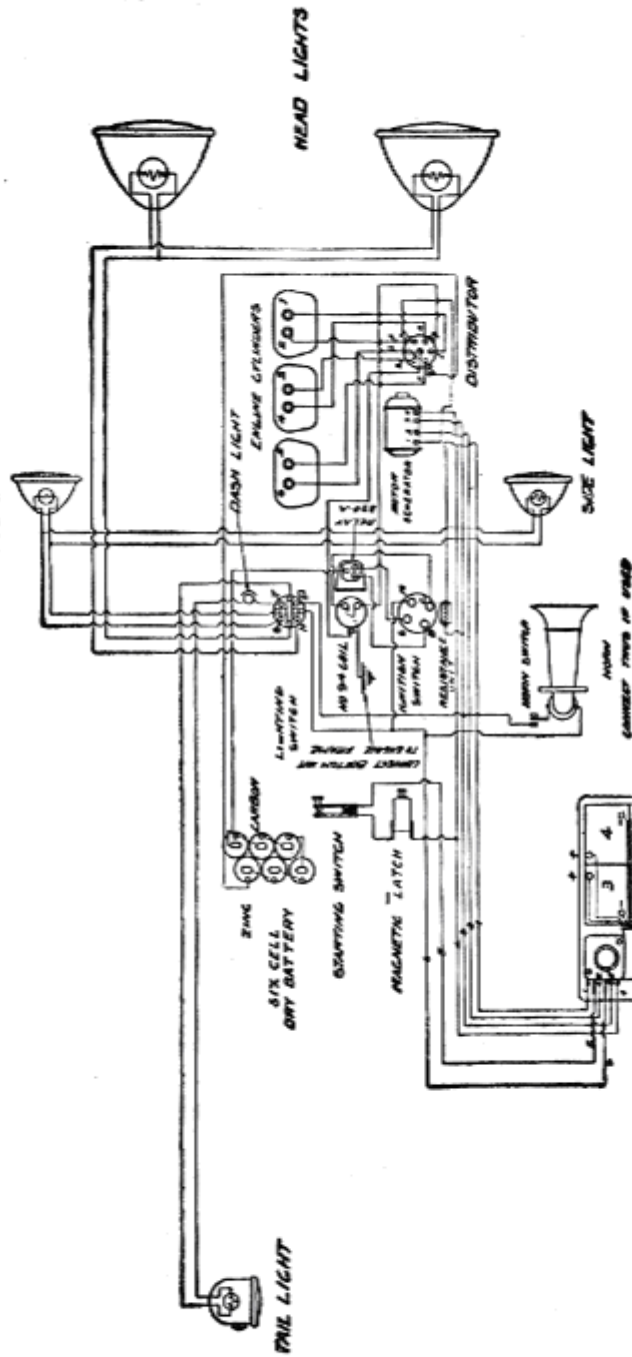
Combination Switch No. 1048  
 Ignition Coil No. 2111  
 Combination Switch No. 1048  
 Ignition Coil No. 2111

# OAKLAND 1913 MODELS 42-6-60



# OAKLAND 1913 MODELS 42—6-60

SIDE LIGHT

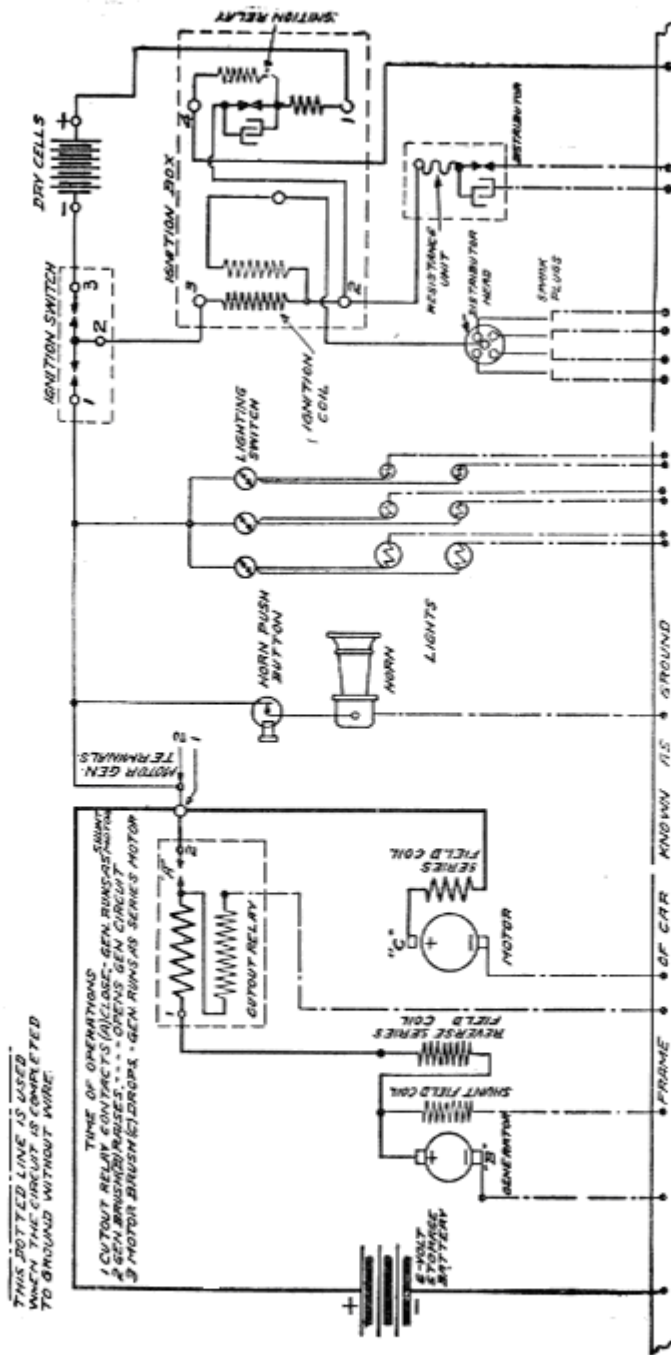


## BATTERY BOX

Model 42 —Motor Generator No. 12  
Battery—Type 12-SD-3  
Model 6-60—Motor Generator No. 12  
Battery—Type 12-SD-3

Ignition Switch No. 1985  
Ignition Coil No. 2045  
Ignition Switch No. 1985  
Ignition Coil No. 2094

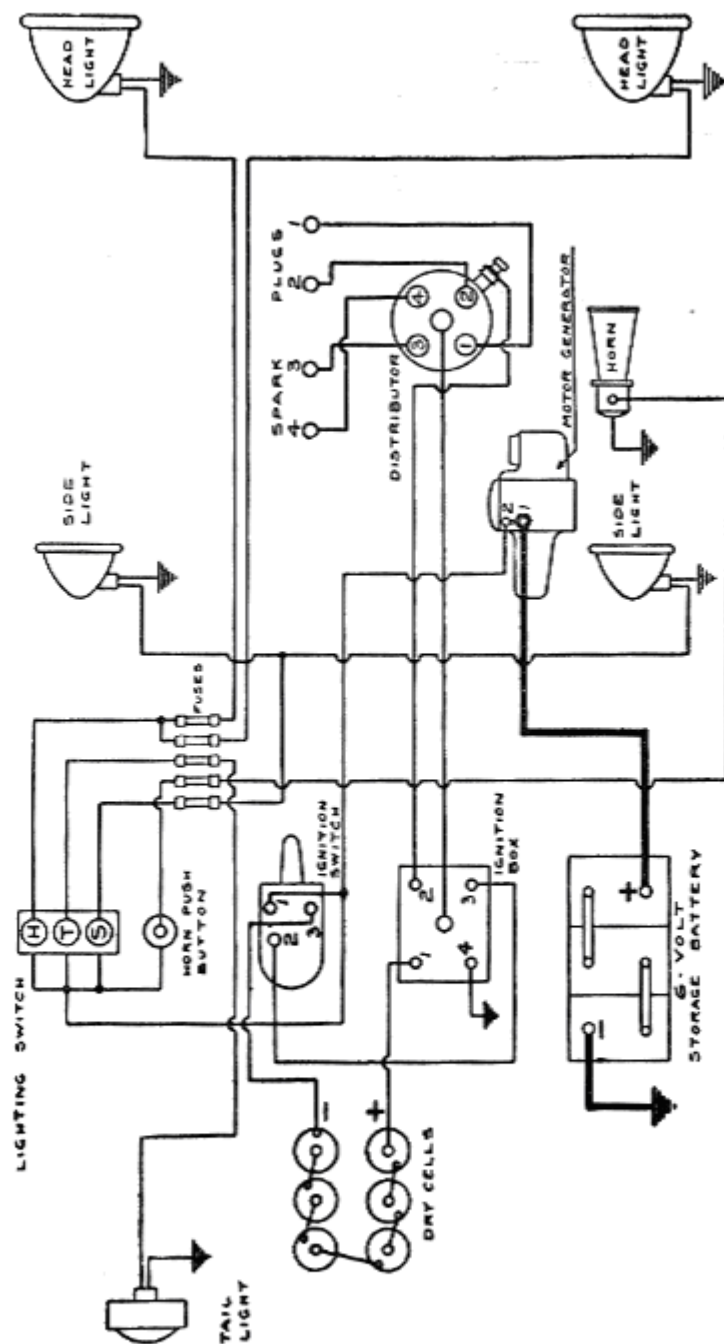
# OAKLAND 1914 MODEL 36



Motor Generator No. 30-41  
 Battery—Type 3-X-15-1

Ignition Switch No. 1034  
 Ignition Coil No. 2106

# OAKLAND 1914 MODEL 36

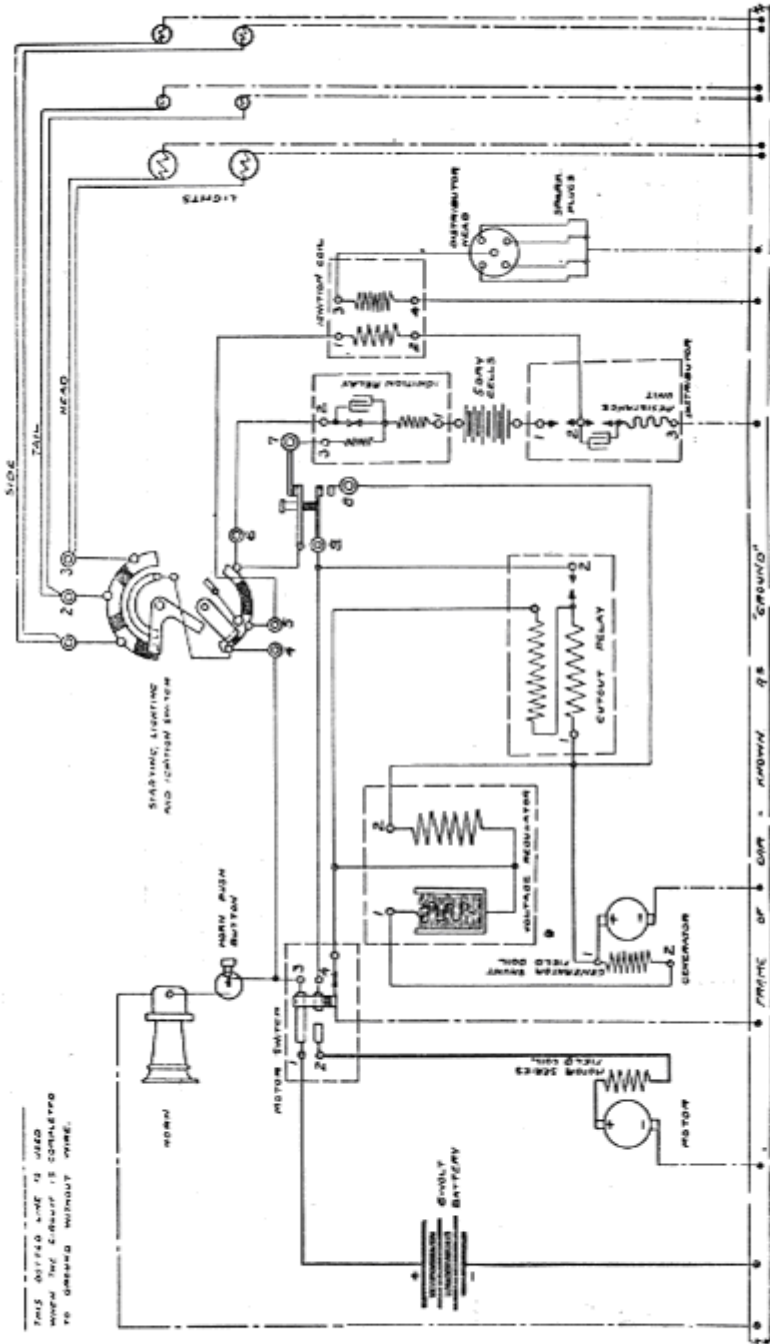


Complete Wiring Diagram, Model 36

Motor Generator No. 30-41  
 Battery—Type 3-X-15-1  
 Ignition Switch No. 1034  
 Ignition Coil No. 2106

# OAKLAND 1914 MODELS 48-62-43

THIS CIRCUIT AND IS USED  
WHEN THE CIRCUIT IS COMPLETED  
TO GROUND WITHOUT WIRE.

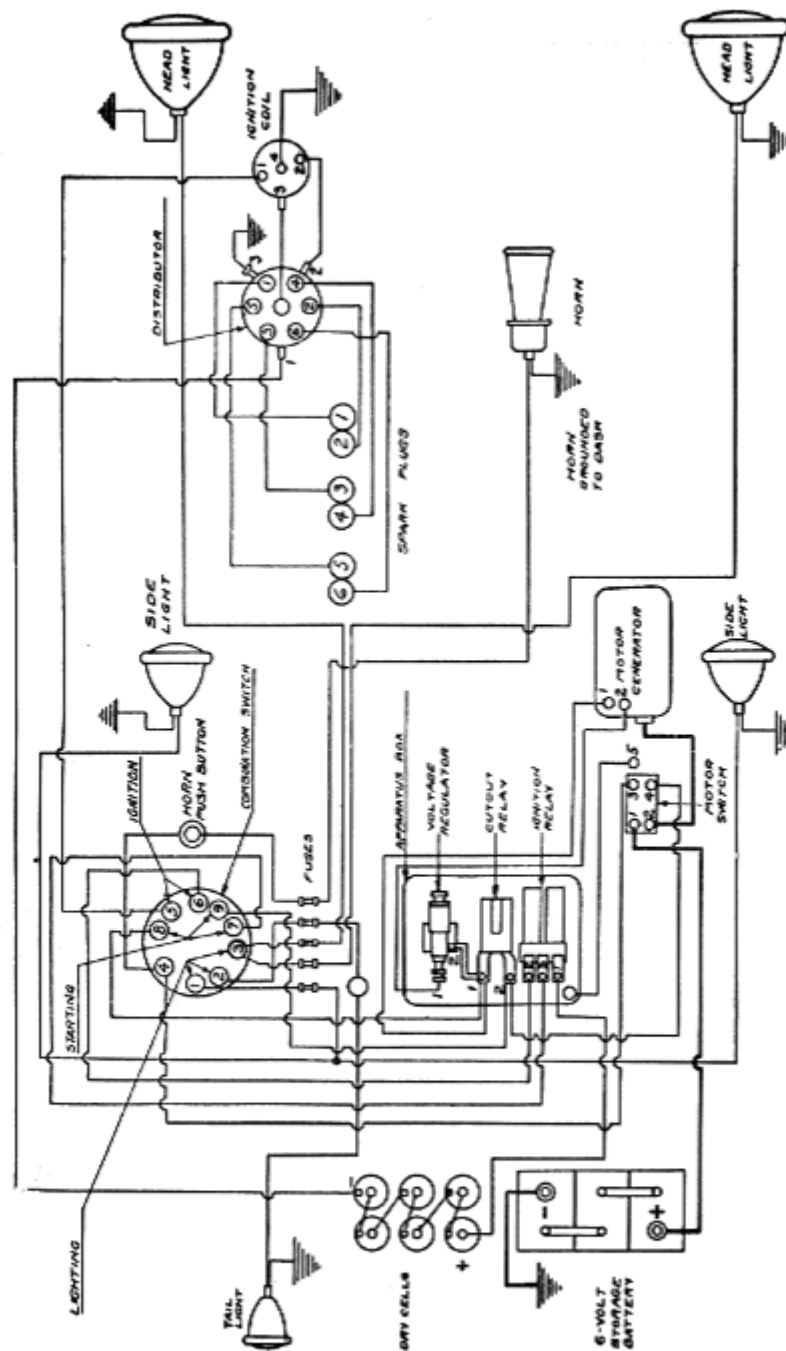


Models 48-62—Motor Generator No. 37-37B  
 Battery—Type 3-MH-11-A  
 Model 43 —Motor Generator No. 27-27B  
 Battery—Type 3-X-15-1

Note—For wiring diagrams with 27-B and 37-B motor generators refer to "Supplement to Instructions for Installing Rebuilt Motor Generators." Delco form No. 202.

Combination Switch No. 1040  
 Ignition Coil No. 2105  
 Combination Switch No. 1040  
 Ignition Coil No. 2105

## OAKLAND 1914 MODELS 48-62-43



Models 48-62—Motor Generator No. 37—37B  
Battery—Type 3-MH-11-A

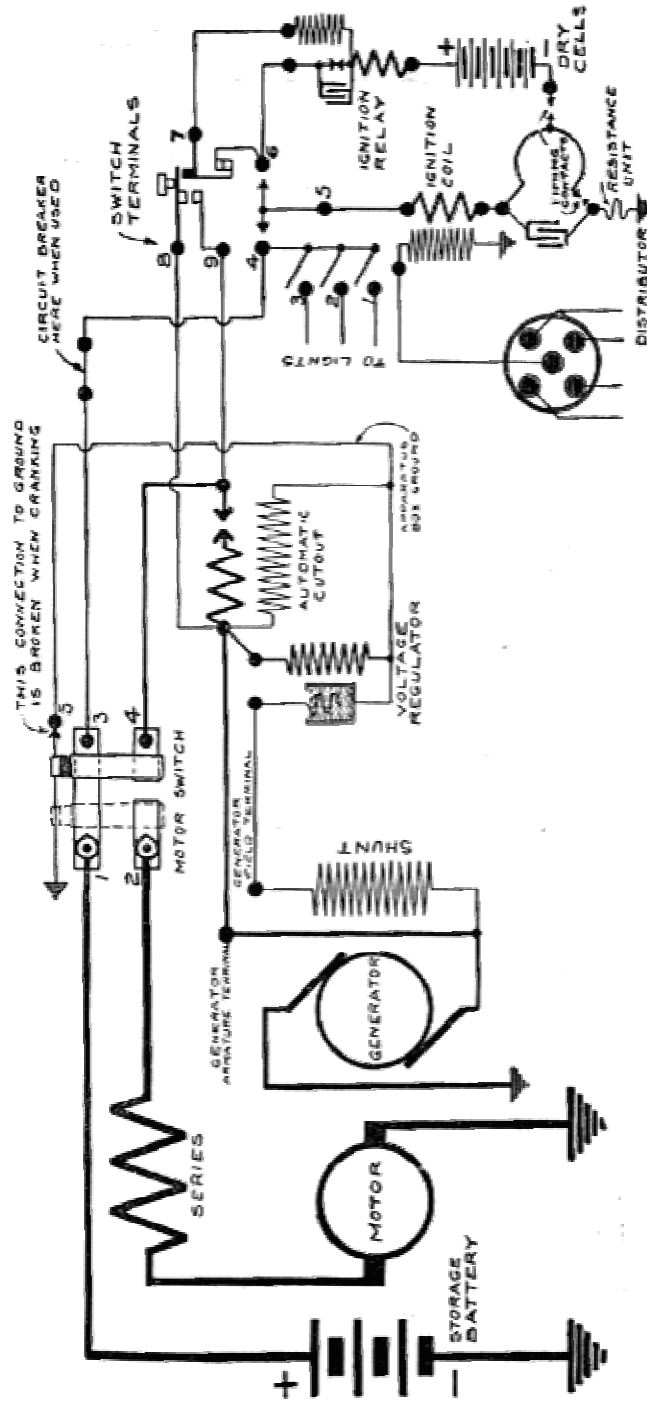
Model 43—Motor Generator No. 27—27B  
Battery—Type 3-X-15-1

Combination Switch No. 1040  
Ignition Coil No. 2105

Combination Switch No. 1040  
Ignition Coil No. 2105



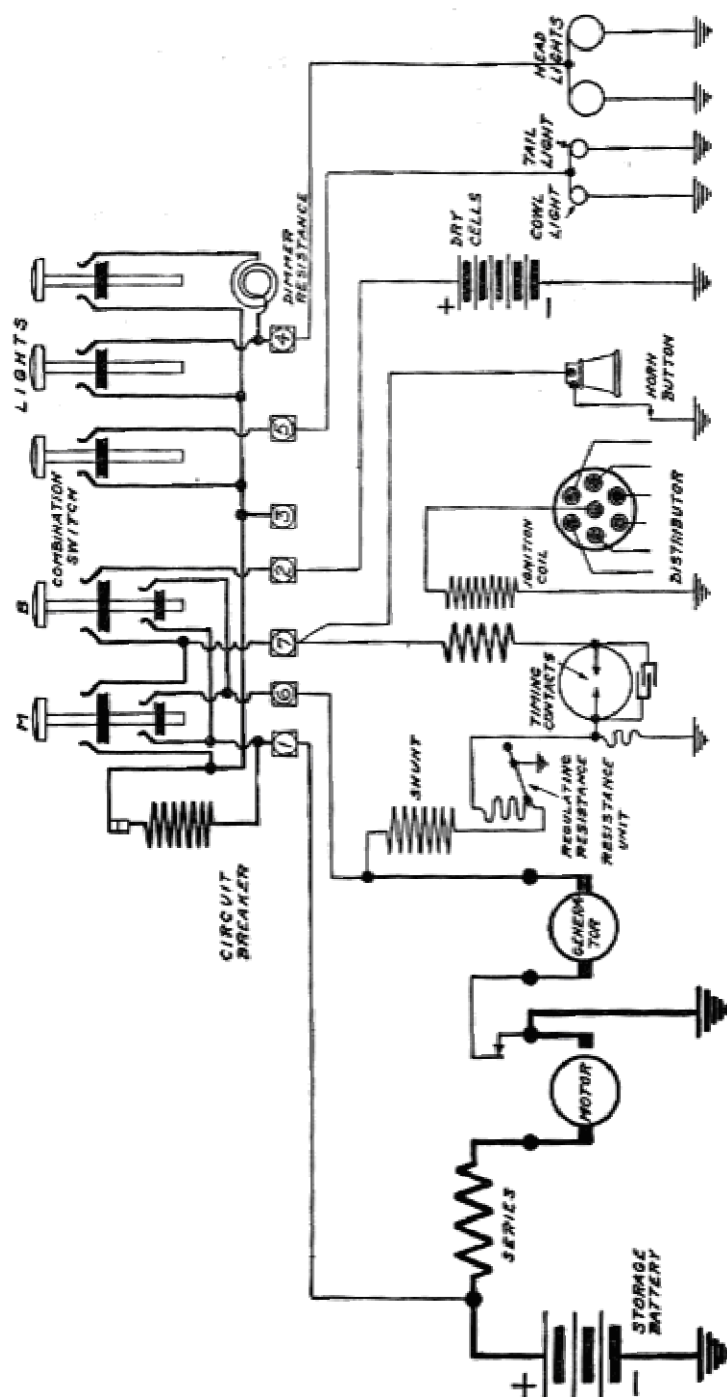
# OAKLAND 1914 MODELS 48-62-43



Models 48-62—Motor Generator No. 37-37B  
 Battery—Type 3-MH-11-A  
 Model 43—Motor Generator No. 27-27B  
 Battery—Type 3-X-15-1

Combination Switch No. 1040  
 Ignition Coil No. 2105  
 Combination Switch No. 1040  
 Ignition Coil No. 2105

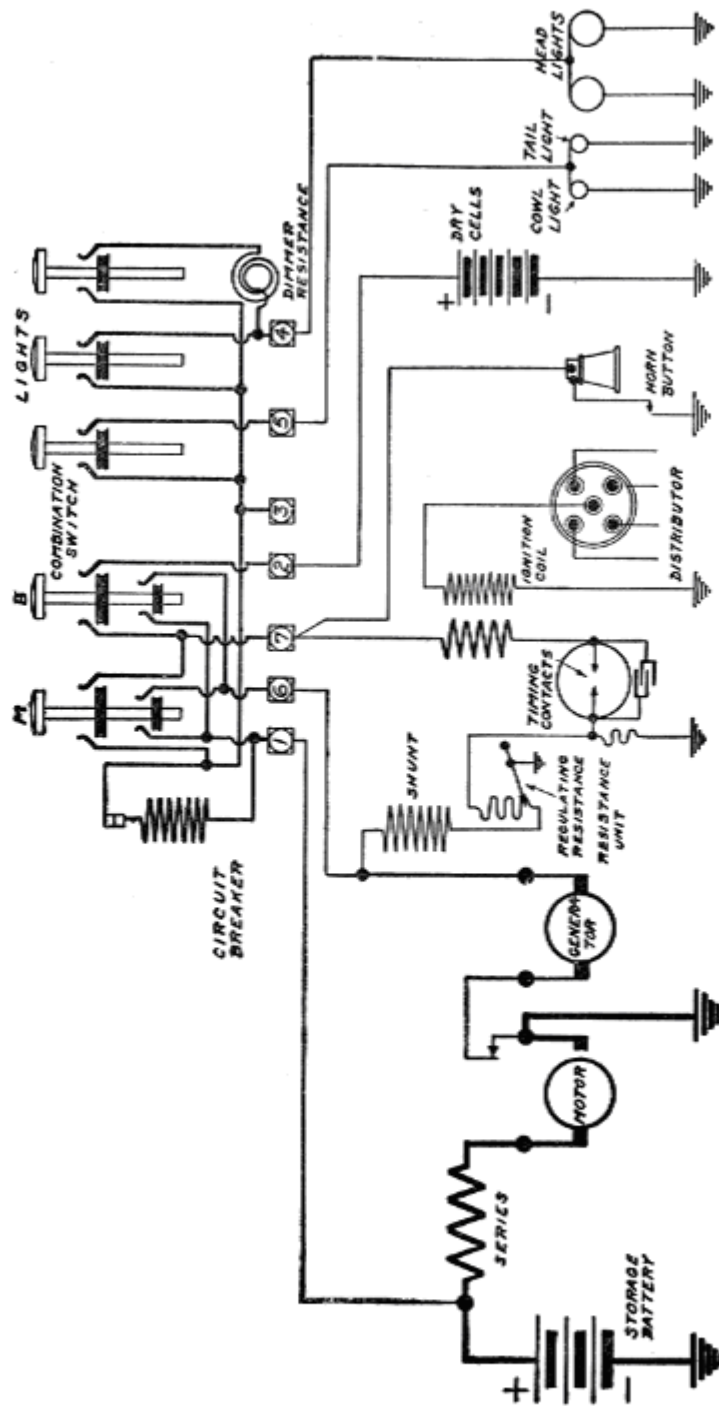
## OAKLAND 1915 MODEL 37



Motor Generator No. 49  
Battery—Type 3-X-155-1

Combination Switch No. 1048  
Ignition Coil No. 2111

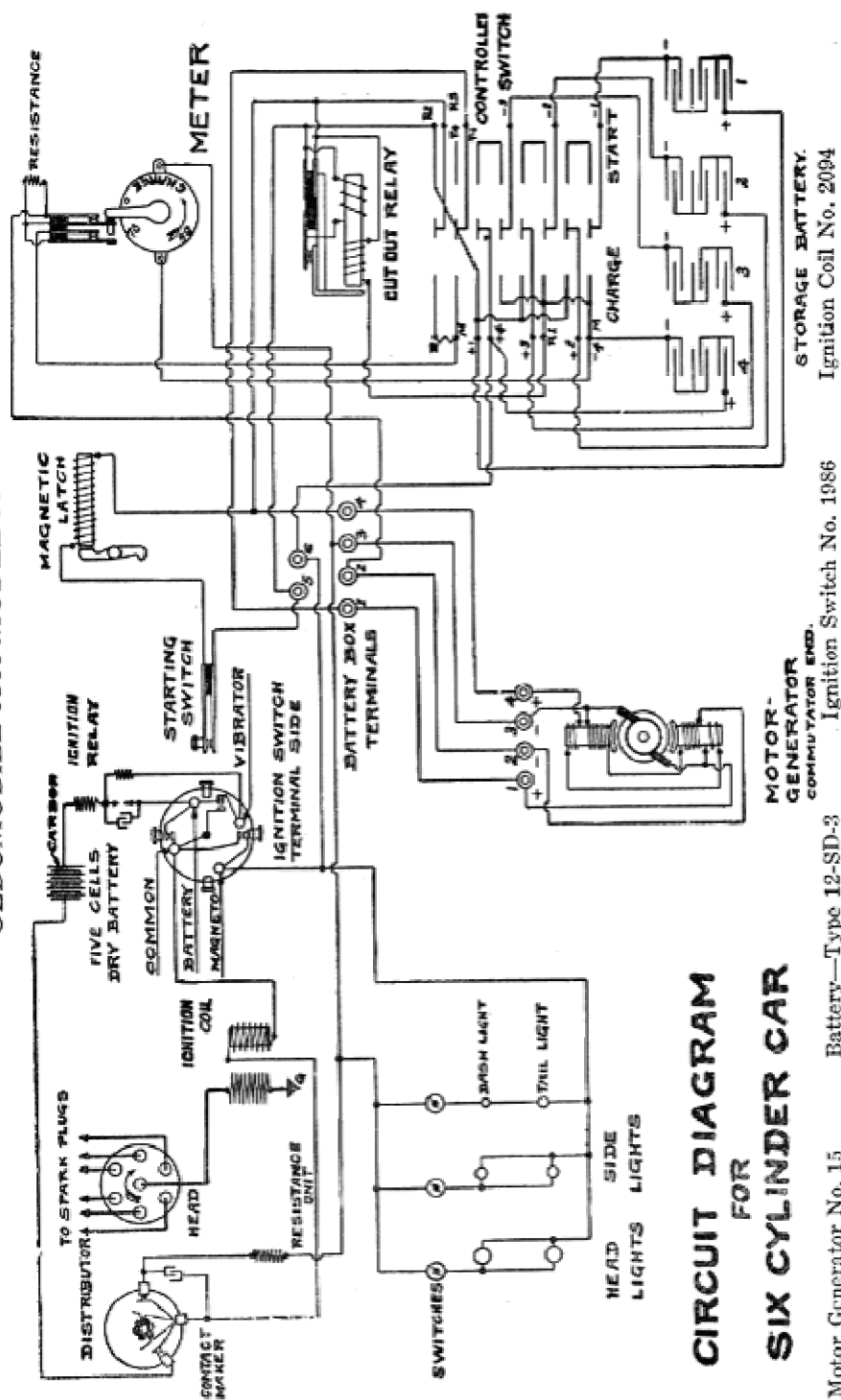
# OAKLAND 1915 MODEL 49



Motor Generator No. 50  
Battery—Type 3-X-155-1

Combination Switch No. 1048  
Ignition Coil No. 2111

# OLDSMOBILE 1913 MODEL 53



[illegible]

Combination Switch No. 1040  
Ignition Coil No. 2105

61

Combination Switch No. 1048  
Ignition Coil No. 2111

NOTE: NUMBERS ON THIS DIAGRAM CORRESPOND WITH THOSE ON OLDS

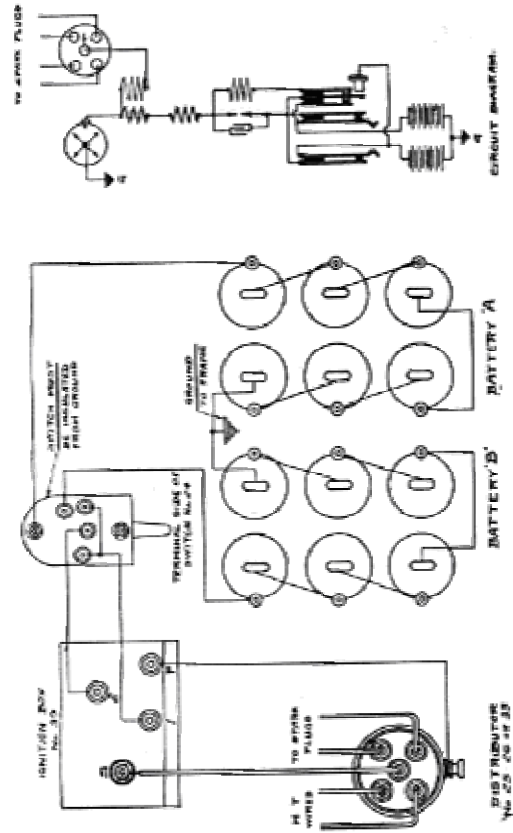
Motor Generator No. 54-54B  
Battery—Type 3-MH-115-A

Combination Switch No. 1035  
Ignition Coil No. 2111

Note—For wiring diagram used with 54-B refer to "Supplement to Instructions for Installing Rebuilt Motor Generators," Delco form No. 202.

NOTE: NUMBERS ON THIS DIAGRAM  
CORRESPOND WITH THOSE ON OLDS  
GENERAL WIRING DIAGRAM, MOD.

# PAIGE 1912 MODEL IGNITION SYSTEM



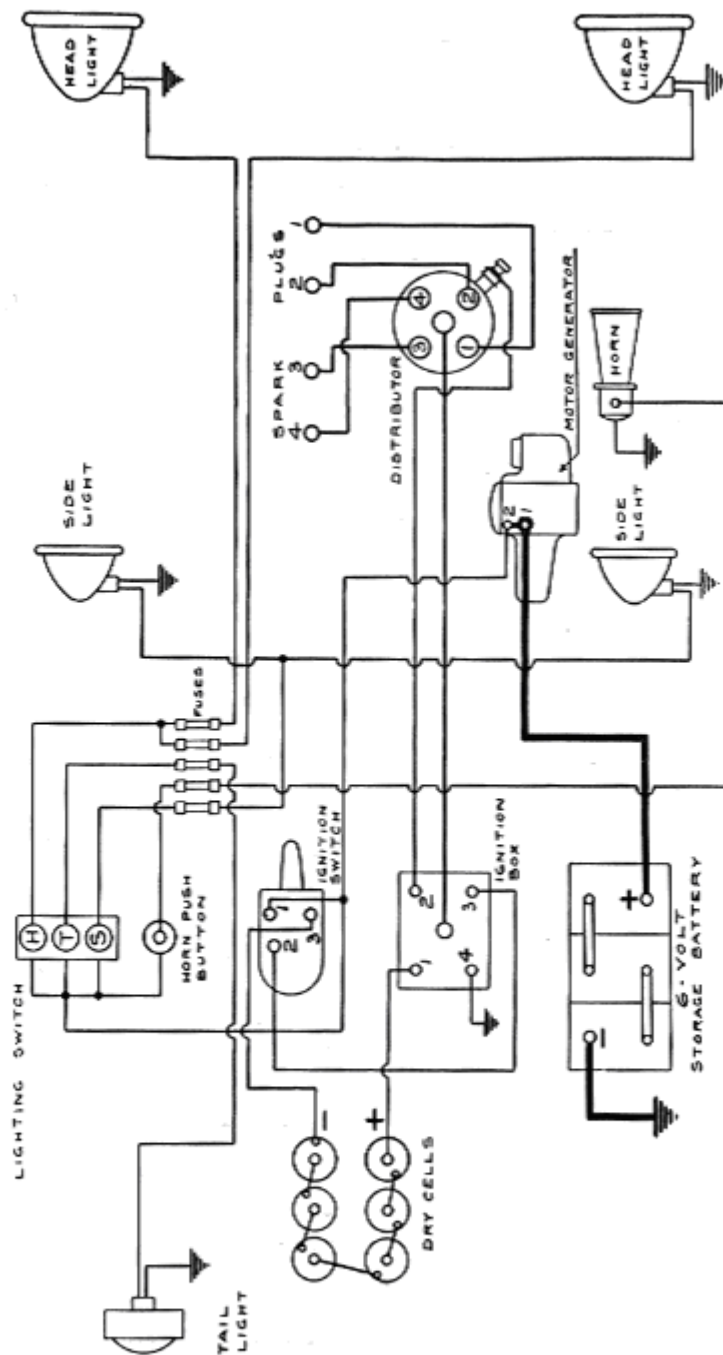
Distributors Nos. 5025-5026-5033

Ignition Switch No. 1024

Ignition Box No. 2039



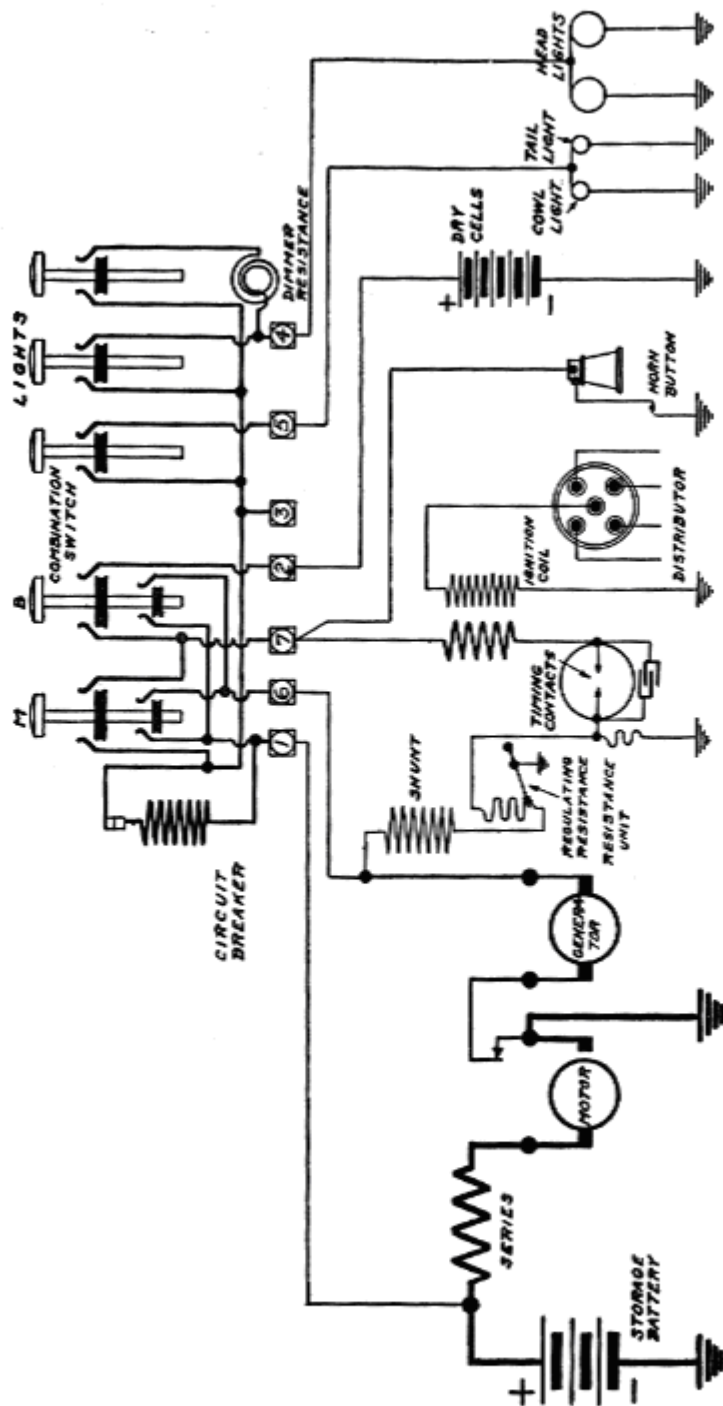
# PATERSON 1914 MODELS 32-33



Motor Generator No. 41  
Battery—Type 3-X-15-1

Ignition Switch No. 1034  
Ignition Coil No. 2106

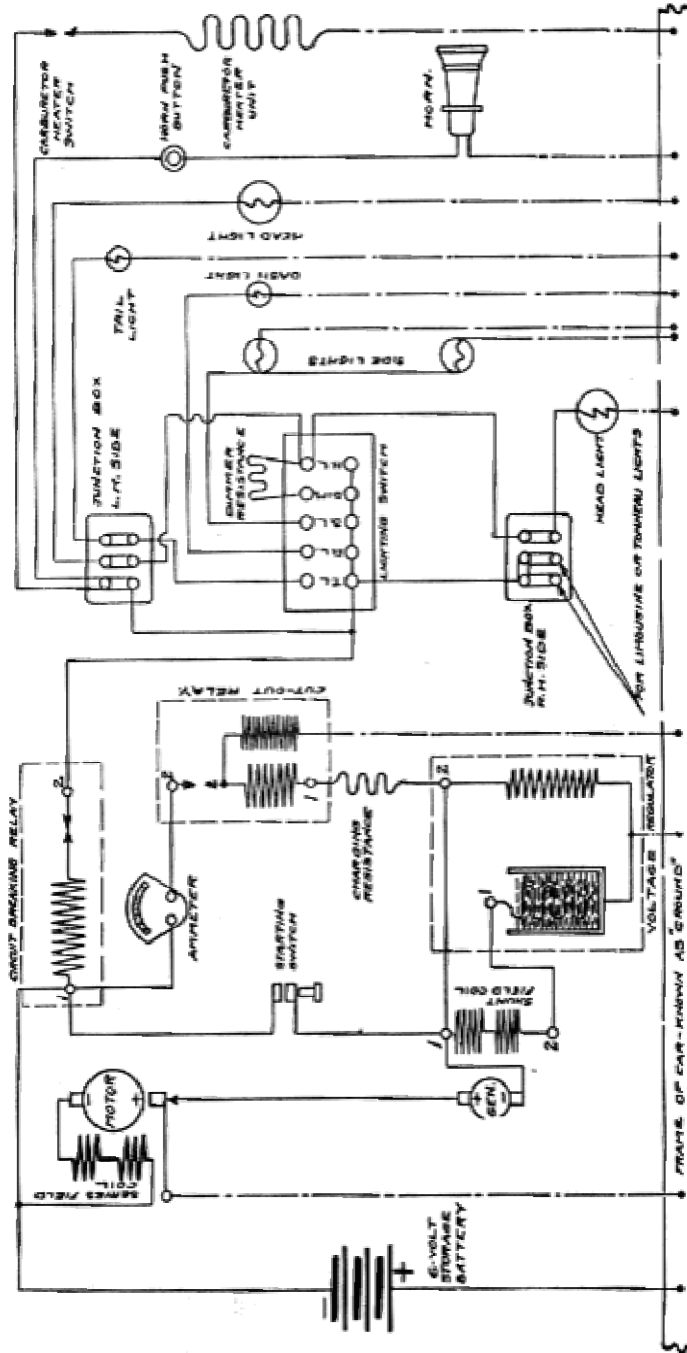
# PATERSON 1915 MODELS 4-32-6-48



- Model 4-32—Motor Generator No. 64  
Battery—Type 3-X-155-1
- Model 6-48—Motor Generator No. 59  
Battery—Type 3-X-155-1
- Combination Switch No. 1043  
Ignition Coil No. 2111  
Combination Switch No. 1048  
Ignition Coil No. 2111

# STEVENS-DURYEA MODEL D-6

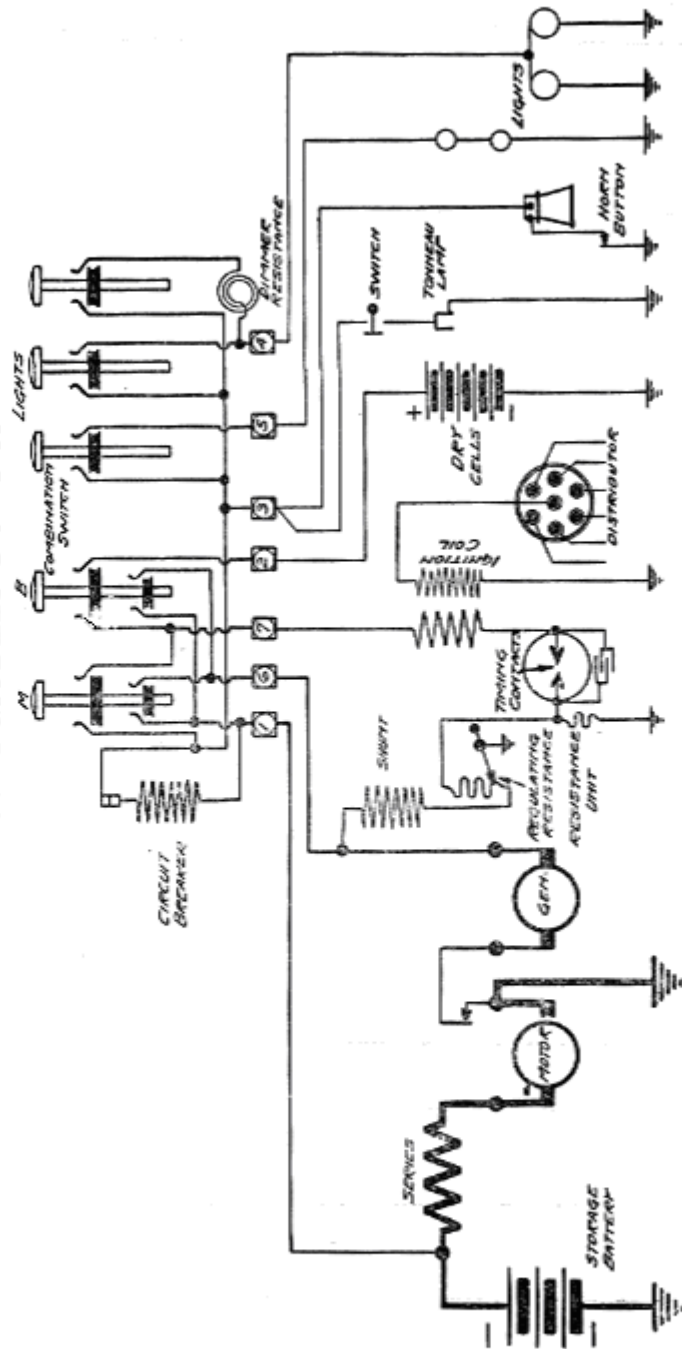
THIS OUTLET LINE IS USED WHEN THE CIRCUIT IS COMPLETED TO GROUND WITHOUT WIRE.



Lighting Switch No. 1044

Motor Generator No. 35 Battery—Type 3-PH-13-F

# WESTCOTT MODELS U-6—O-35



- Model "O"-35—Motor Generator No. 64  
Battery—Type 3-X-155-1
- Model "O". 4—Motor Generator No. 55  
Battery—Type 3-X-155-1
- Model "U". 6—Motor Generator No. 59  
Battery—Type 3-X-155-1

- Combination Switch No. 1048
- Ignition Coil No. 2111
- Combination Switch No. 1048
- Ignition Coil No. 2111
- Combination Switch No. 1048
- Ignition Coil No. 2111

On Model "O"-4 where motor generator No. 55 was used the circuit diagram differs from the above in the part that is contained in the motor generator, but the rest of the wiring is the same as is used on the other models. The generator has a reversed series winding to regulate the output instead of regulator arm and spool.

## DELCO "M" IGNITION

The following applies in a general way to the "M" or "Mag" ignition on all of the Delco systems, up to and including the 1915 systems, but does not apply to the dry battery ignition.

### TIMER CONTACTS

The contact points are of tungsten metal which is very hard and requires a very high temperature to melt. These should be kept clean and smooth on the faces. This can be done by holding in a vice and using fine emery cloth held underneath a flat file. They should be so adjusted that when they are open they are apart ten thousandths of an inch (the thickness of the thin gauge on the distributor wrench) and the contact arm should move about fifteen thousandths of an inch after the contacts close.

The most common causes of contact trouble are due to the following:

No. 1. Resistance Unit shortened out, resulting in excessive current through the contacts, especially at low speeds.

No. 2. Abnormally high voltages due to running without the battery or with a loose connection in the battery circuit.

No. 3. A broken down condenser.

### PIG TAIL

The pig tail should always be firmly secured. This is either a stranded wire or a flat copper strip extending from the breaker arm to the stud in the distributor for holding this arm in place. If this pig tail is not properly secured the resistance in the pivoted joint through which the ignition current must pass will gradually increase and sooner or later cause serious trouble.

### RESISTANCE UNIT

The resistance unit can be easily checked by closing the ignition switch and closing the contacts. If the resistance unit heats up at this time it is in the circuit properly.

### CONDENSER

A broken down condenser will cause faulty ignition and excessive sparking at the breaker contacts. The most satisfactory test is to substitute another condenser.

### IGNITION COIL

The secondary winding of the ignition coil is best tested by a 110-volt test lamp, testing between the high tension terminal and either the low tension terminal or the mounting bracket. The lamp will not burn, but a spark will be obtained when the test point is removed. No spark will be obtained if the secondary is open.

The resistance of the secondary winding is too high for it to be tested with dry cells and a bell or buzzer.

With other conditions normal a good coil will deliver a spark sufficient to jump  $\frac{1}{2}$ " from the spark plug wire to the engine (not to the spark plug.) A shorted coil or open coil will give a weaker spark.

### DISTRIBUTOR HEAD

The distributor head should be properly located, that is with the locating tongue of the hold-down clip in the notch on the distributor head. The head should be kept wiped clean from dust and dirt and in some cases it is advisable to lubricate this head with a small amount of vaseline.

### ROTOR

The rotor should be kept free from dust and dirt and the rotor button polished bright. The rotor button should be fully depressed before putting on the distributor head to make sure the spring will allow the button to go down to the proper level and not subject it to undue pressure on the distributor head.

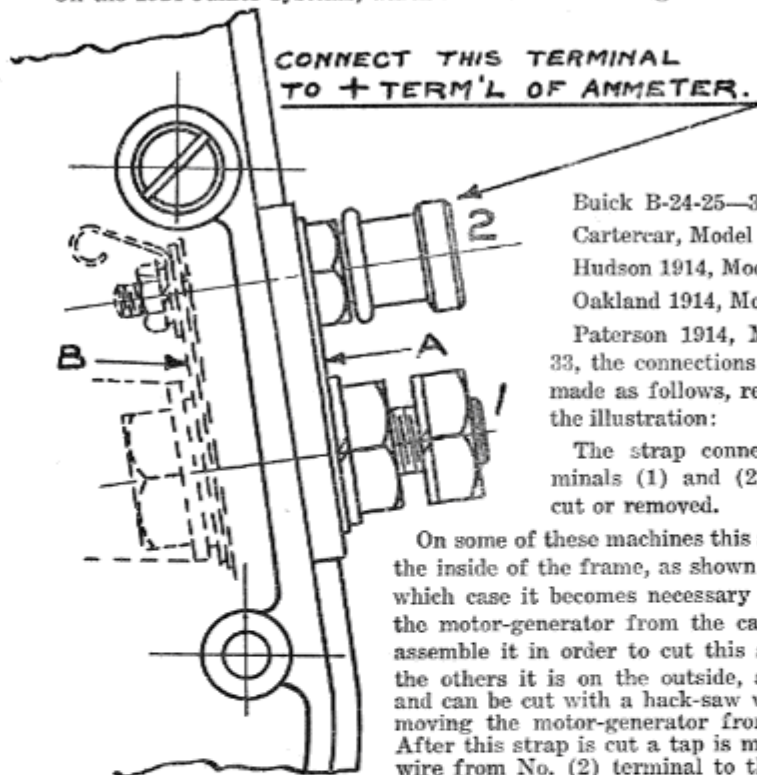
### SPARK PLUGS

The proper setting of the spark plugs is approximately thirty thousandths of an inch. The ignition will work very satisfactorily with considerable variation from this setting.

## CONNECTING AMMETERS

It is impractical to connect an ammeter in the 6-24 volt systems to show the charging and discharging.

On the 1914 Junior systems, which include the following:



Buick B-24-25-36-37  
Cartercar, Model 7  
Hudson 1914, Model 6-10  
Oakland 1914, Model 36  
Paterson 1914, Models 32-33, the connections should be made as follows, referring to the illustration:

The strap connecting terminals (1) and (2) must be cut or removed.

On some of these machines this strap is on the inside of the frame, as shown at "B," in which case it becomes necessary to remove the motor-generator from the car and disassemble it in order to cut this strap. On the others it is on the outside, as at "A," and can be cut with a hack-saw without removing the motor-generator from the car. After this strap is cut a tap is made on the wire from No. (2) terminal to the positive

side of the ammeter, and a wire run from the other terminal of the ammeter to No. (1) terminal.

On the following 1914 Systems the ammeter should be connected in the line from the right side of the cut-out relay to one of the spring terminals on the motor switch block.

This will show the full output of the generator. It is impractical to connect the meter in these systems so as to show the discharge to the lamps. These systems are:

Buick Models B 54-55  
Cole Series 9  
Moon Models 42-6-50  
Oakland Models 43-48-62  
Olds Model 54

On the 1915 systems using either the switch No. 1048 or No. 1050 the ammeter should be connected in the line which connects to the No. 1 terminal on the combination switch with the positive terminal of the meter connected to the No. 1 terminal of the switch.

The meter for this purpose should be of the center zero type, reading at least 10 amperes (preferably 30) discharge, and 30 amperes charge.

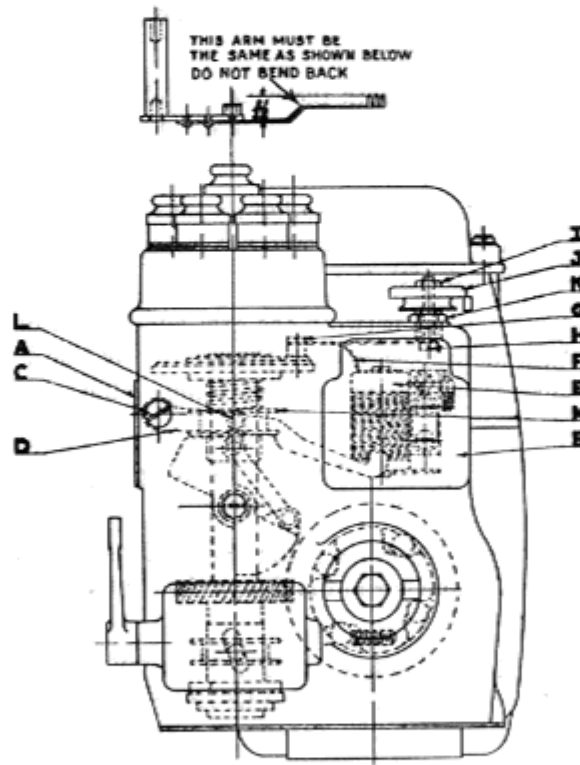
We have found that Weston meters No. 301 and No. 354 are very satisfactory meters for this service. They are manufactured by the Weston Electrical Instrument Company, of Newark, N. J.



## Regulation of Charging Current on Delco Standard Generators

As Applied to the following Delco Systems:

Buick C-36-37-54-55	There are six different sizes of Nichrome wire (this is special resistance wire and must not be replaced by wire of different material) on these spools, which are as follows:		
Auburn Six-40	Piece No.	Size B. & S. Gauge	Diameter of Wire
Cadillac "8"			
Cole 650			
Hudson Six-40			
Jackson Six-40	633	21	.028"
Moon Six-40-4-38	703	22	.025"
Oakland 37-49	702	23	.022"
Olds 42	701	24	.020"
Paterson Four-32-Six-48	817	25	.017"
Westcott "U" Six	955	26	.015"



The above lot of spools, together with the different length brass caps on the ends of the same, are the adjustments for the output of the generator.

On leaving the factory each generator is fitted with a spool which gives the proper output. The necessity of this is caused by the differences in the manufacturing, and the different windings of the armatures to compensate for the different speeds at which they are driven.

On generators which are being driven at, or near, one engine speed, spool No. 702 is most often used, 701 and 703 being sometimes used. On generators Nos. 52 and 58 which are driven at one and one-half times engine speed, spools No. 817 and 955 are used.

The generators commence charging at approximately 7 miles per hour on all cars and reach their maximum charging rate at from 18 to 25 miles per hour, which is from 16 to 20 amperes on all generators (excepting No. 52, which is from 16 to 22 amperes). At higher speeds the current decreases to 10 to 15 amperes.

By installing a spool of larger size wire the maximum charging rate is but very slightly increased, and a higher rate is secured above the maximum point.

By installing the spool with the wide cap at the bottom the maximum charging rate is increased with a corresponding increase at higher speeds.

The contact arm "D" ought to have a tension of not less than six ounces on the spool "E," but it should not be enough to cause the arm to stick up when raised with the fingers.

Note—A poor contact between the arm and spool causes the generator to run at a higher speed when the ignition button is pulled out, and results in excessive clicking of the driving clutch when the engine is operated at low speeds.

The holding spring "F" should be sprung down so as to have sufficient tension to hold the spool firmly.

After making any adjustments always check the charging rate by connecting a reliable ammeter in the line to the forward terminal on the generator.

SERIOUS DAMAGE WILL BE CAUSED BY ALLOWING THE CHARGING RATE TO EXCEED 25 AMPERES, AS THIS IS ABOVE THE CAPACITY OF THE GENERATOR.

**The Dayton Engineering Laboratories Co.**  
DAYTON, OHIO

Form Delco 664—6-10-20—5000—J. W. P.