

# DELCO

## CIRCUIT DIAGRAMS



of

## The 1916 Automobile Systems

The  
Dayton Engineering Laboratories Co.  
DAYTON, OHIO

**T**HIS section of the Delco Service Manual contains all of the 1916 automobile circuit diagrams covering apparatus in production at the date—February 1st, 1916. A few other companies have contracted for Delco equipment which will be used on cars that will be on the market and known as 1916 models. Similar information for these systems will appear in the next edition of the Service Manual and their Model number will distinguish them.

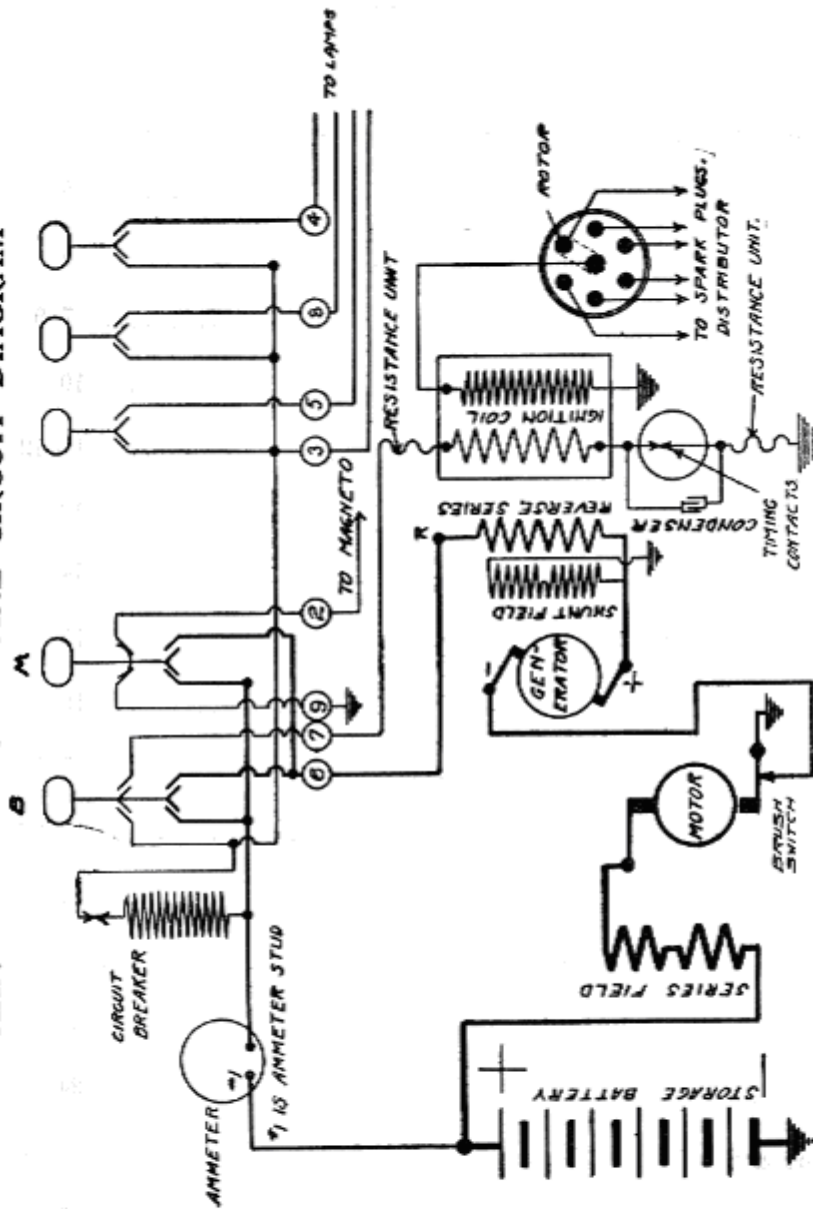
In some instances one circuit diagram is sufficient for two or more different Models. Where this occurs the automobile Manufacturer's Model numbers will appear above the diagram and the Delco apparatus numbers will appear in the same order below the diagram.

Where two or more Delco numbers appear for the same part it indicates that a change has taken place during the production seasons and the different parts are interchangeable. In making any replacements the latest Model will always be furnished.

# INDEX

	Pages
Ahrens-Fox Fire Engine Company, The.....	4
Apperson Bros. Automobile Company.....	5
Auburn Automobile Company.....	6
Buick Motor Company.....	7-9
Cadillac Motor Car Company.....	10
Cole Motor Car Company.....	11-12
Davis, George W. Motor Car Company.....	13
Elkhart Carriage & Motor Car Company.....	14
Hudson Motor Car Company.....	15
Moon Motor Car Company.....	16
Oakland Motor Car Company.....	17-18
Olds Motor Works.....	19-20
Packard Motor Car Company.....	21
Paterson, W. A. Company.....	22
Pathfinder, The Company.....	23
Pilot Motor Car Company.....	24
Sayers & Scovill, The Company.....	25-26
Westcott Motor Car Company.....	27
Third Brush Regulation.....	28-29

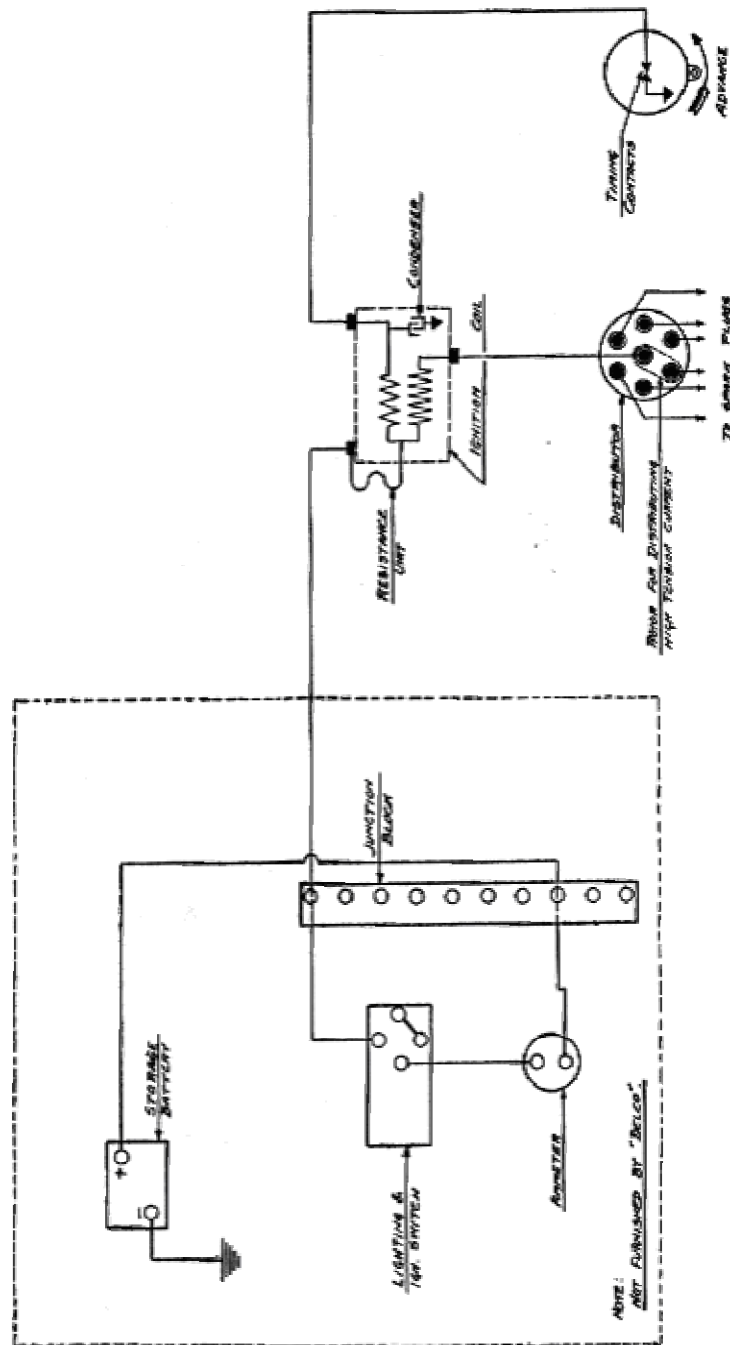
# AHRENS-FOX FIRE ENGINE CIRCUIT DIAGRAM



Combination Switch No. 1063  
Ignition Coil No. 2122

Motor Generator No. 79

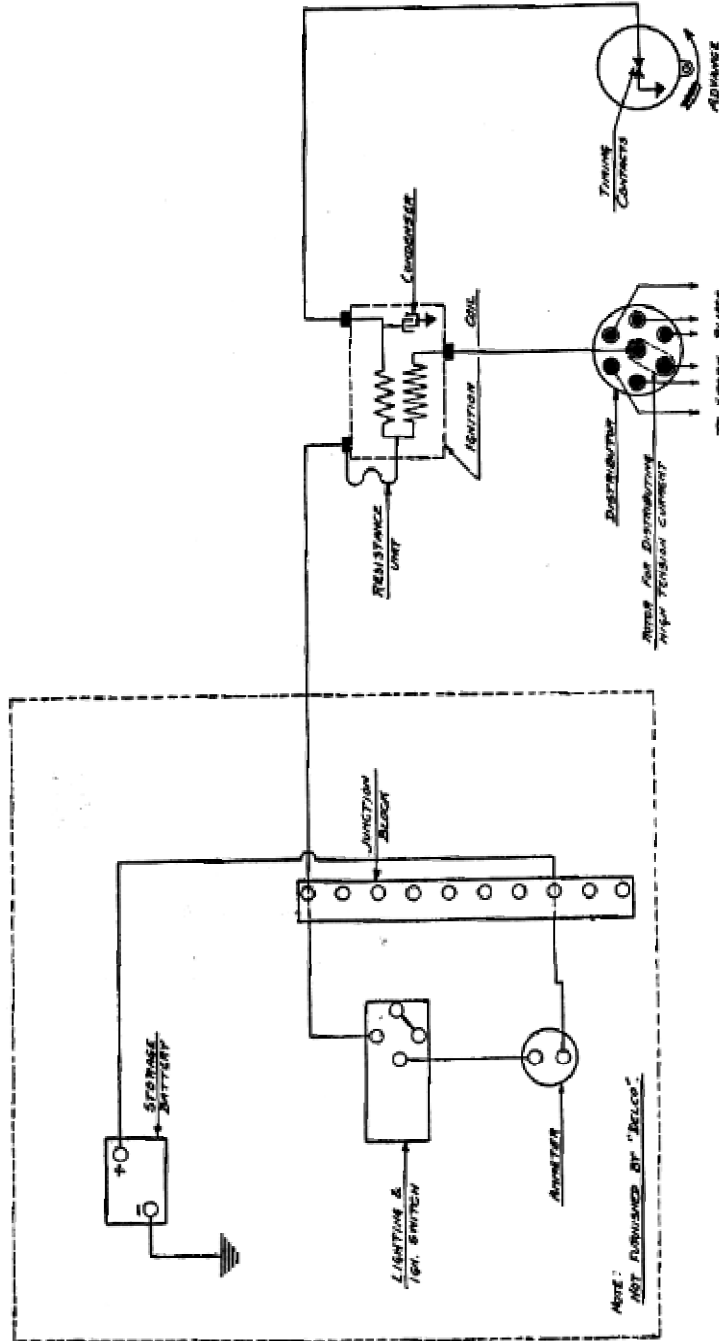
# APPERSON 6-16



This Distributor includes Ignition Coil No. 2129

Distributor No. 5142

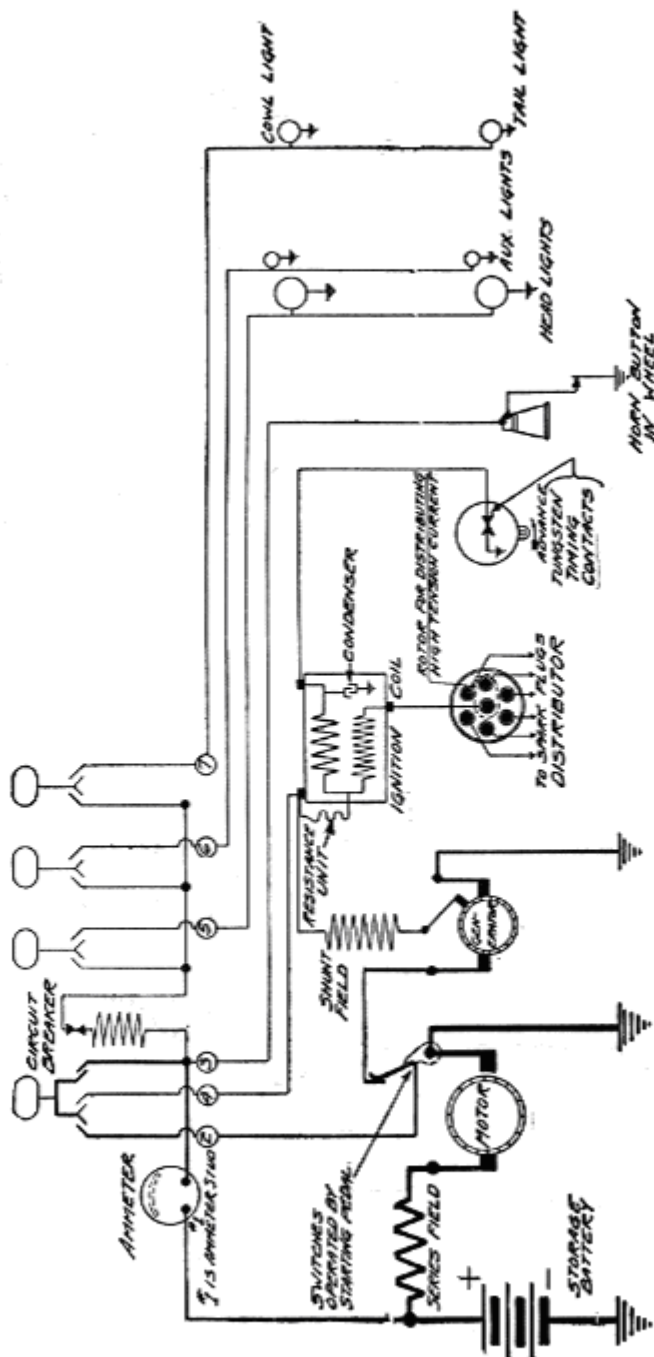
# APPERSON 6-16



Distributor No. 5142

Combination Switch No. 1057 or 1066

# BUICK D 54-55

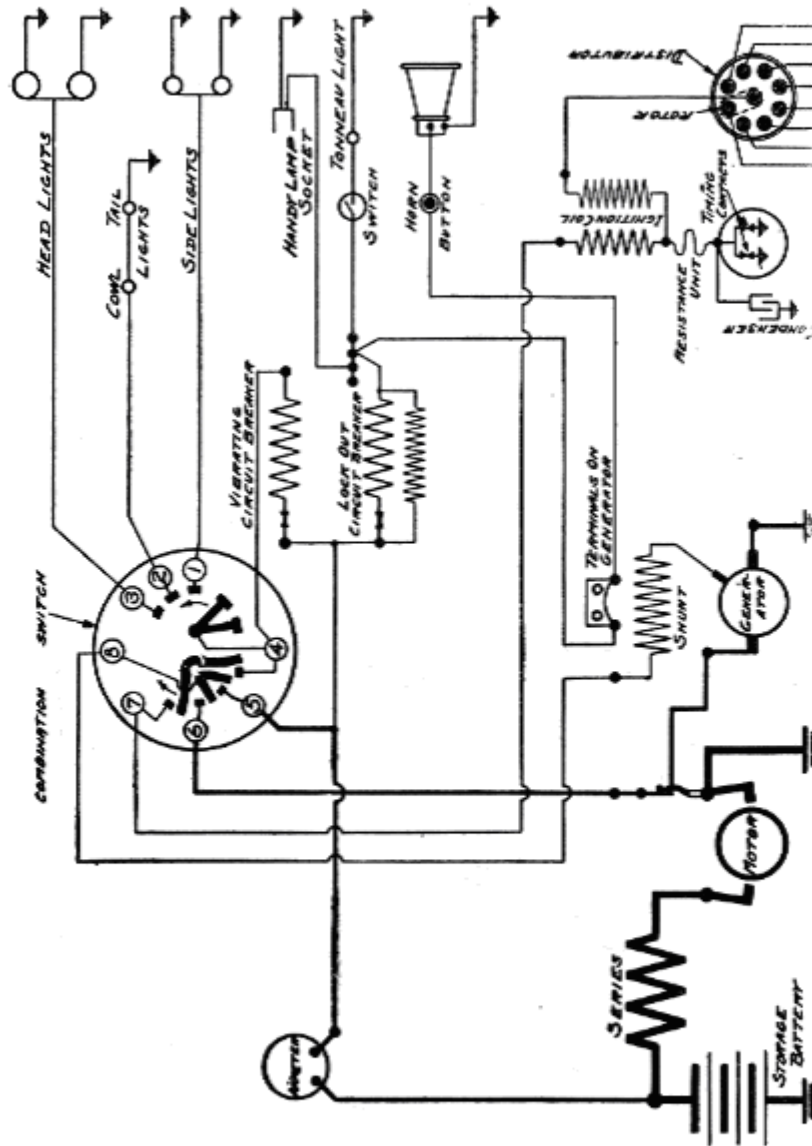


Motor Generator No. 69  
Ignition Coil No. 2123 or 2130  
Ignition Coil No. 2138

Combination Switch No. 1057 or 1066

Combination Switch No. 1057 or 1066

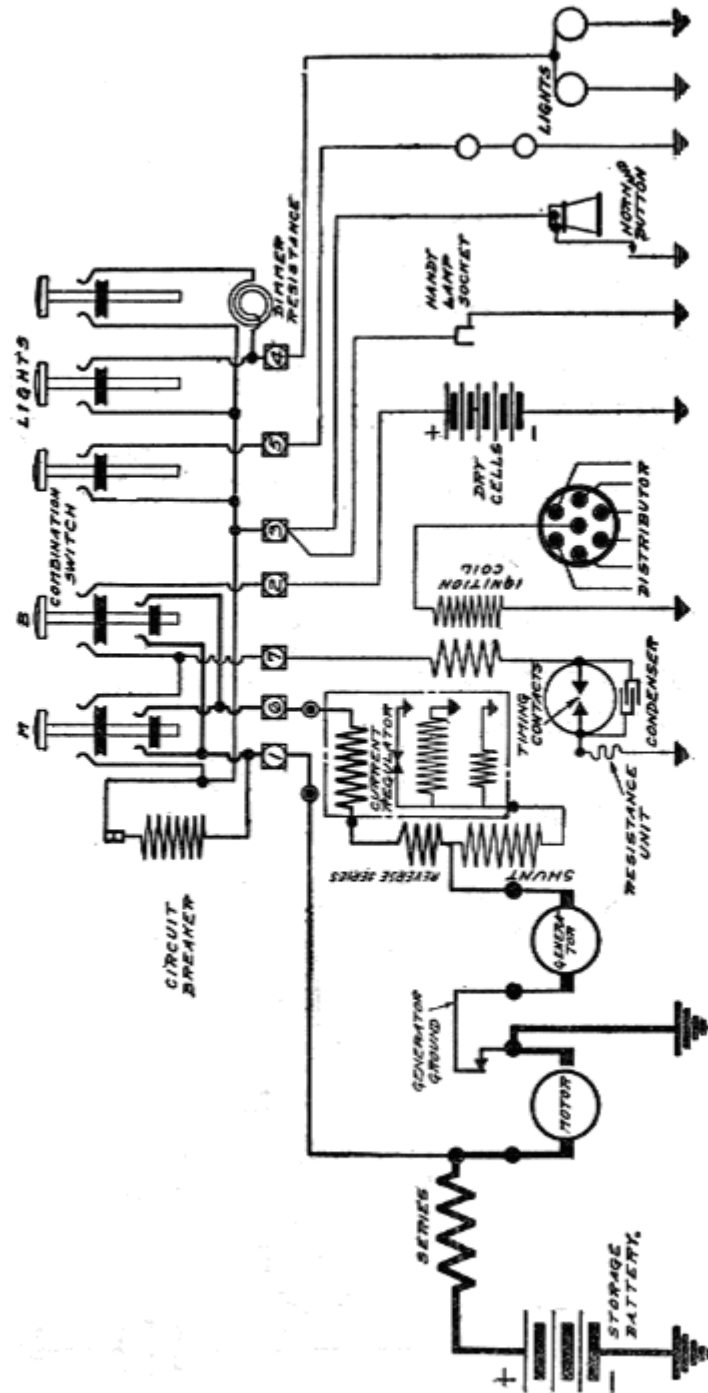
# CADILLAC TYPE 53



Motor Generator No. 78  
Ignition Coil No. 2115

Combination Switch No. 1062 or 1069

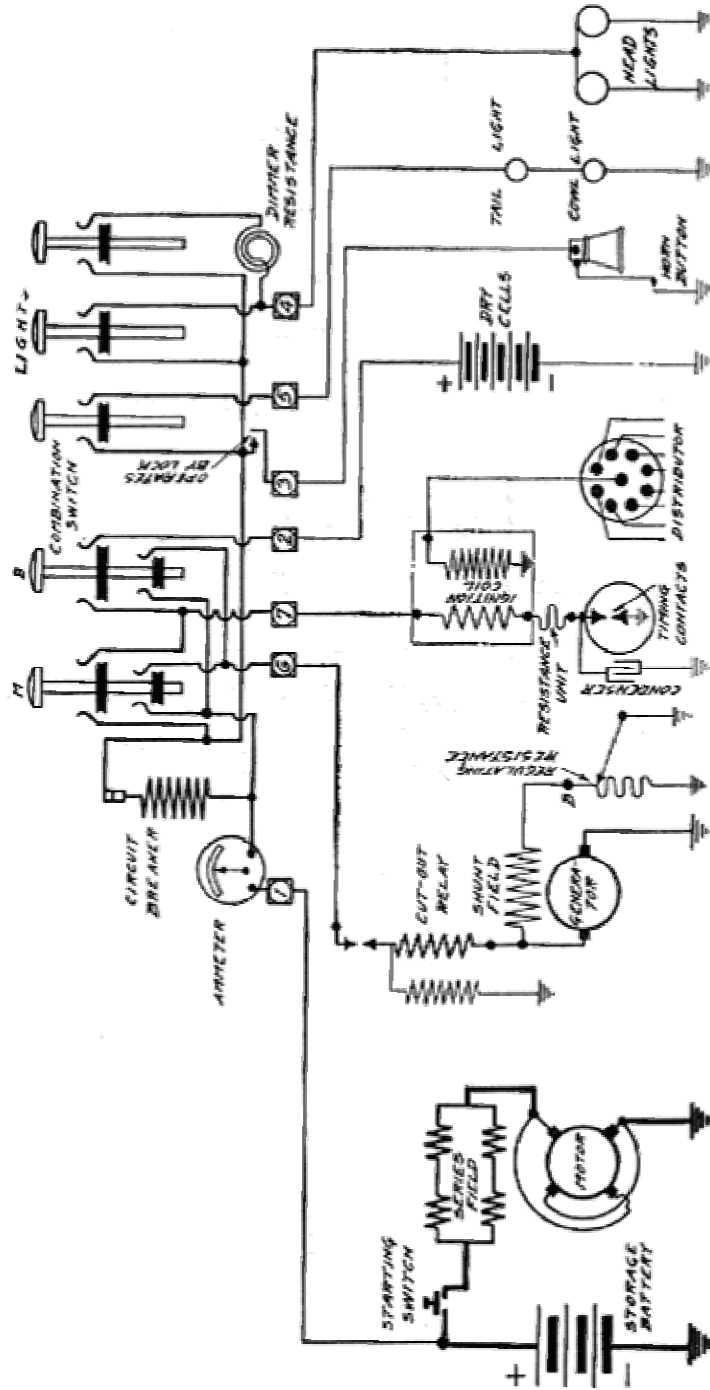
# COLE MODEL 666



Motor Generator No. 77  
Ignition Coil No. 2117

Combination Switch No. 1056

# COLE MODEL 850



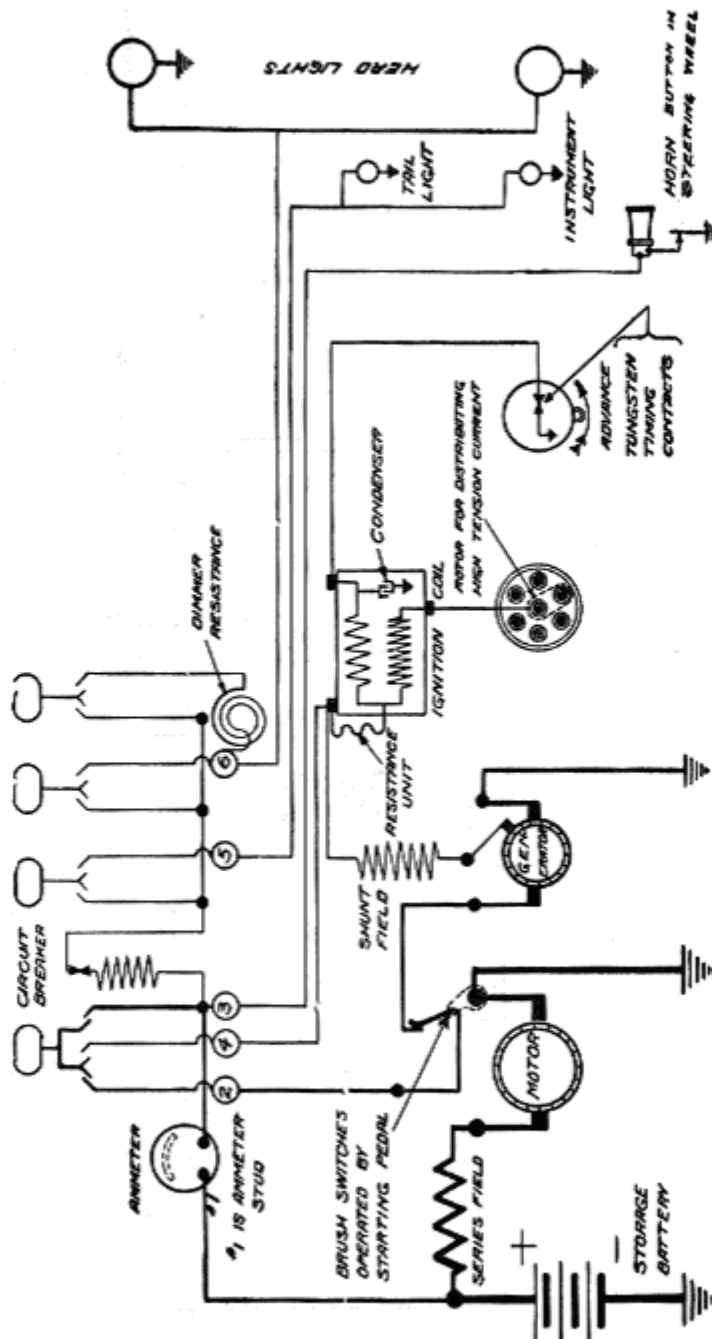
Generator No. 62

Starting Motor No. 63

Ignition Coil No. 2117

Combination Switch No. 1056

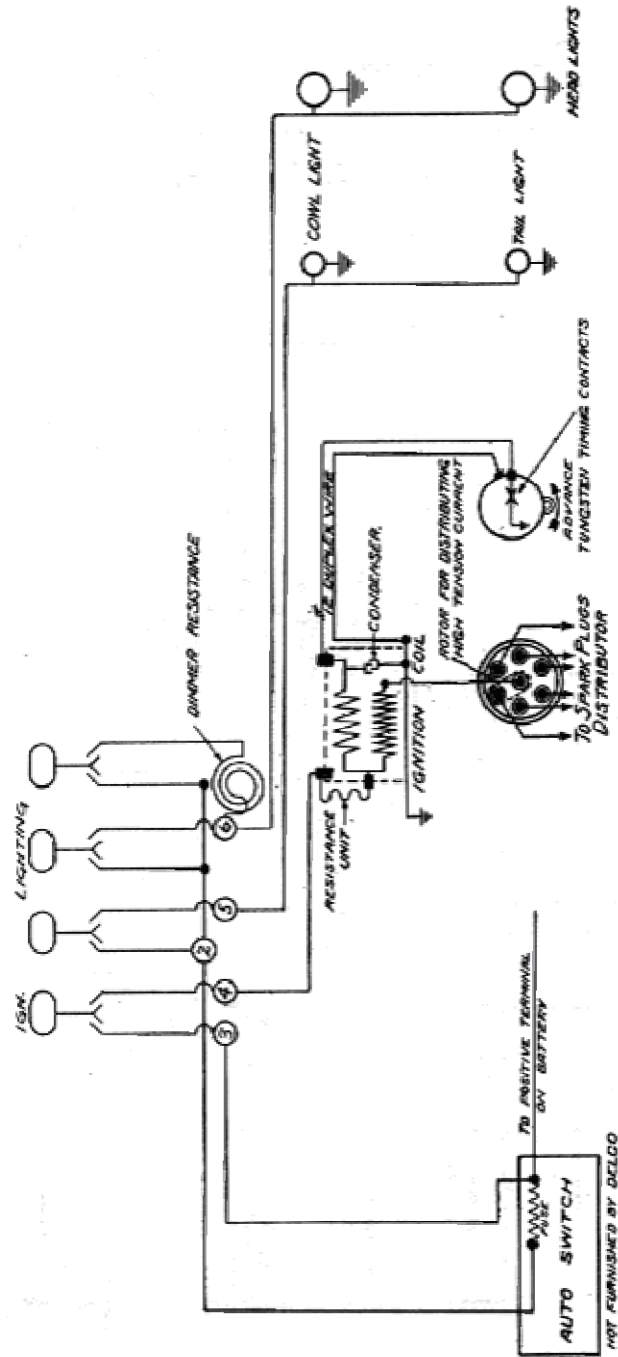
# 1916 DAVIS MODELS C-38; 6-E; 6-G



Motor Generators No. 81, 73, 83  
Ignition Coils No. 2120, 2141, 2142

Combination Switches No. 1058 or 1067  
on all models

# ELCAR 1916

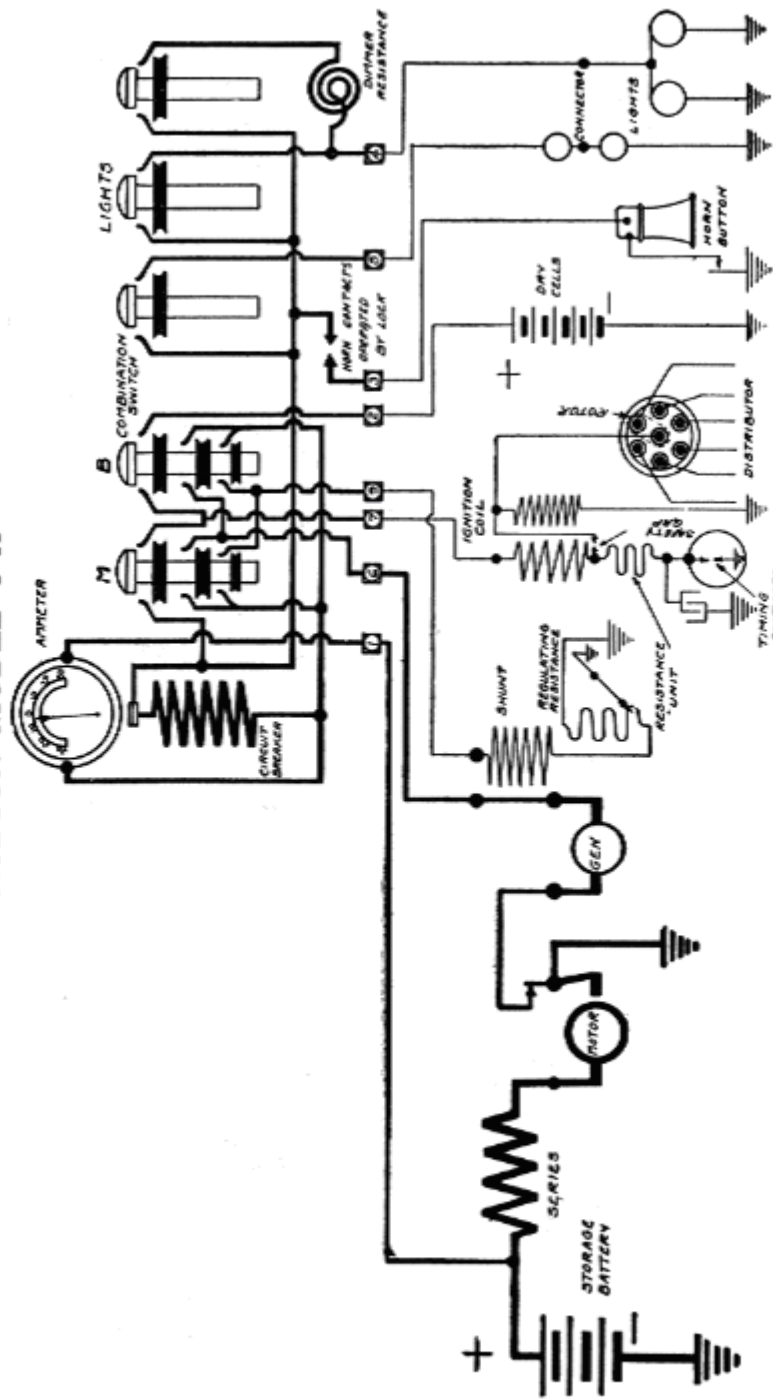


Ignition Coil No. 2118

Distributor No. 5141

Combination Switch No. 1073

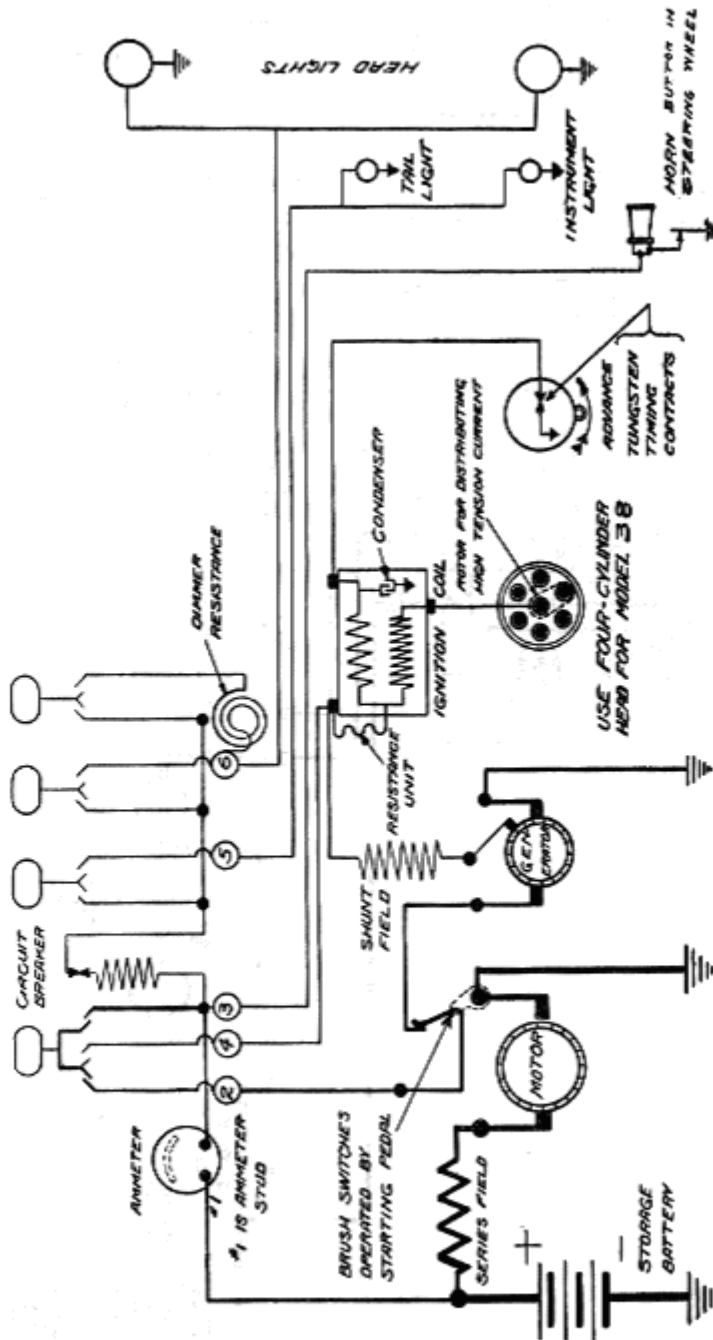
# HUDSON MODEL 6-40



Motor Generator No. 66  
Ignition Coil No. 2116

Combination Switch No. 1055

# MOON MODELS 6-40 AND 6-30

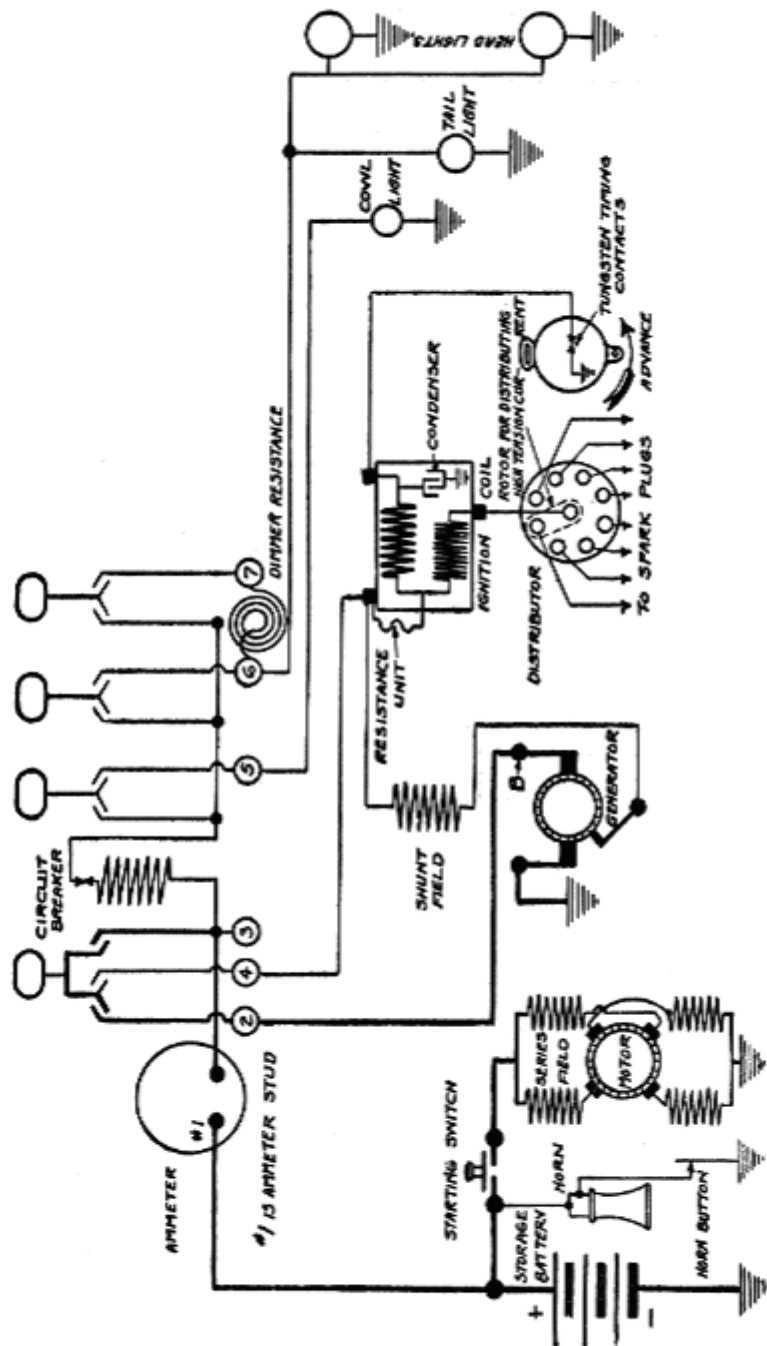


Combination Switch No. 1058 or 1067

Motor Generators No. 73, 83  
Ignition Coils Nos. 2140-2141-2142

Motor Generator No. 68  
Ignition Coil No. 2118

# OAKLAND MODEL 50



Generator No. 91  
Starting Motor No. 72

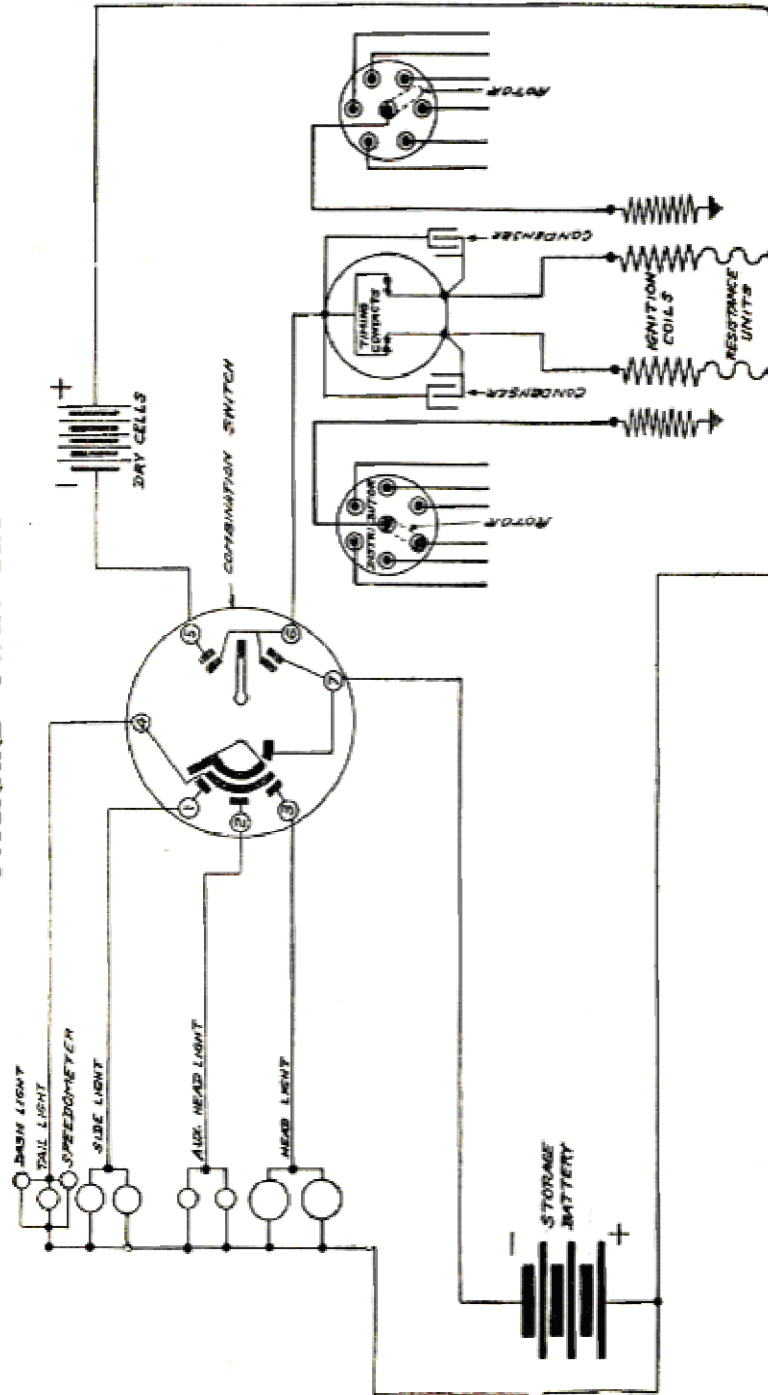
Combination Switch No. 1067  
Ignition Coil No. 2123

Combination Switch No. 1058 or 1067

Ignition Coil No. 2118 or 2121

Combination Switch No. 1066 or 1067  
Ignition Coil No. 2123  
Ignition Coil No. 2130

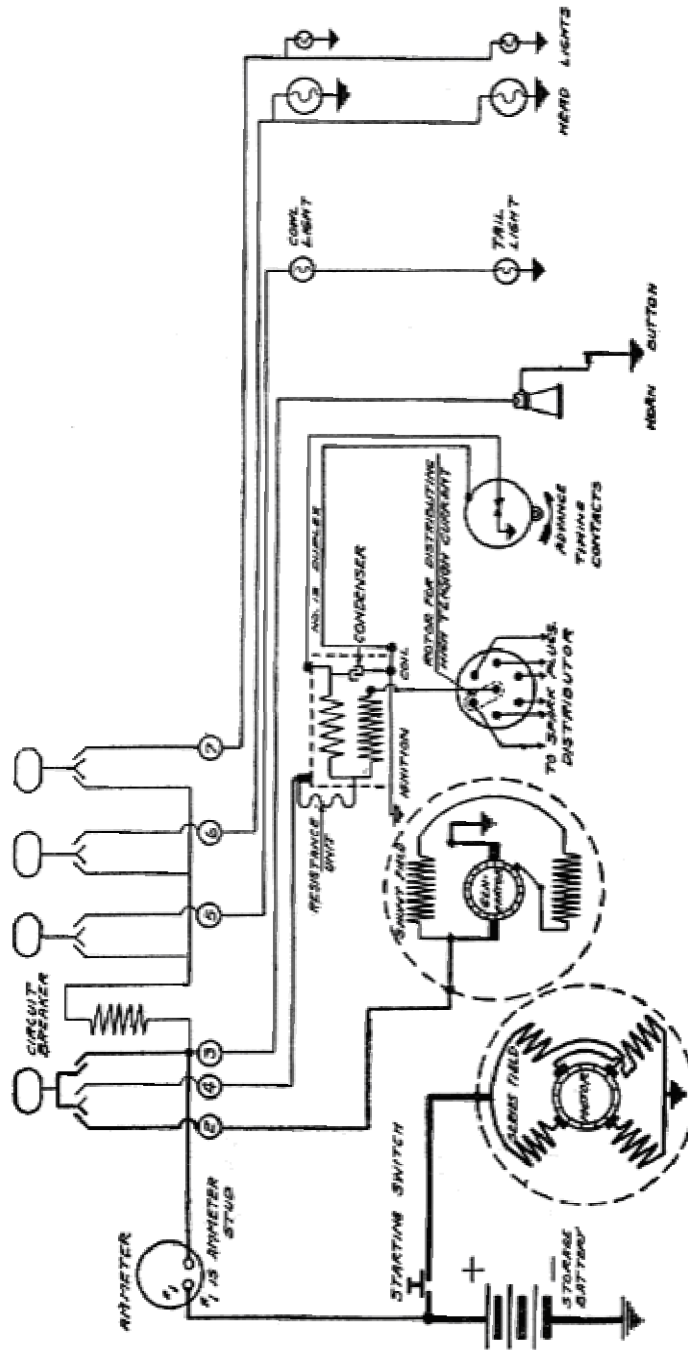
## PACKARD TWIN SIX



Combination Switch No. 1060 or 1070

Distributor No. 5128  
Ignition Coils (2) No. 2119 or 2126 or 2131

# PATERSON 6-42



Generator No. 84  
Starting Motor No. 85

Ignition Coil No. 2123 or 2134  
Combination Switch No. 1066

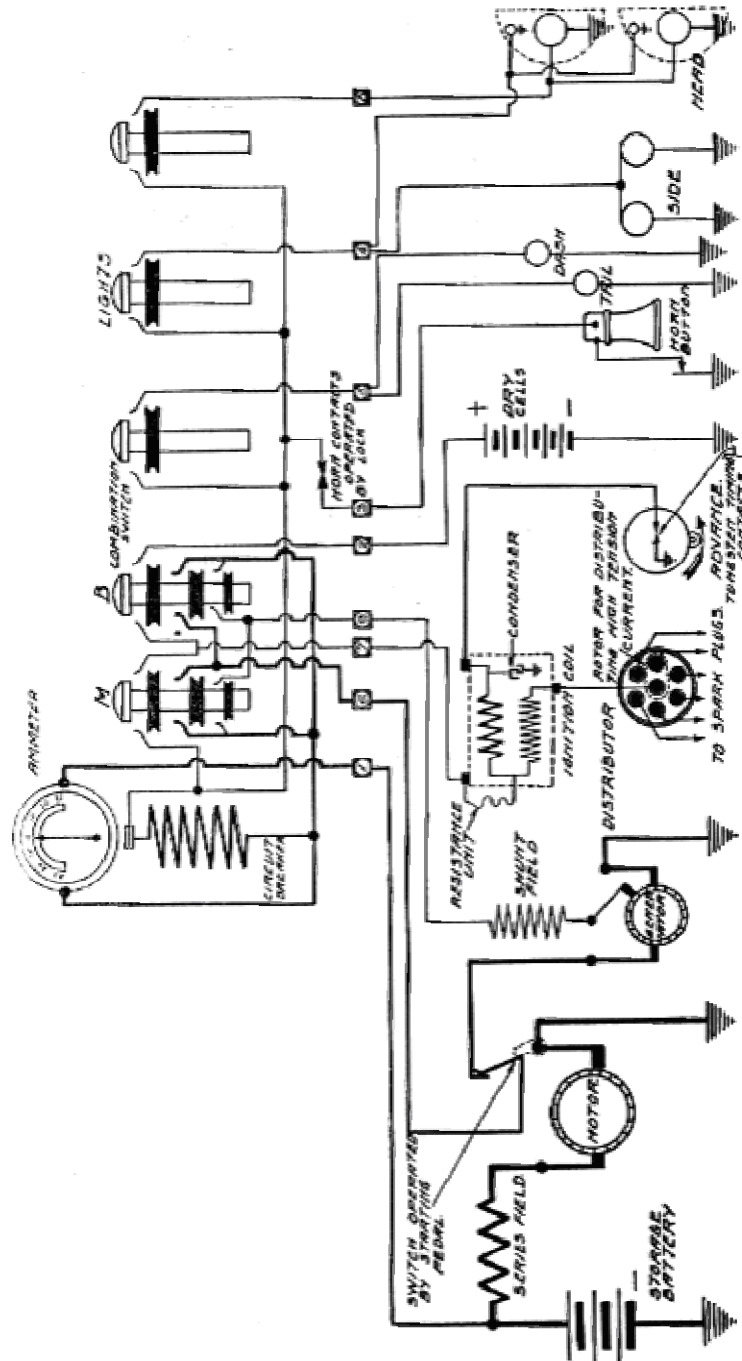
Generator No. 87  
Starting Motor No. 86

The diagram illustrates the electrical wiring for a vehicle, showing the flow from the battery through various components like the starting switch, motor, generator, and dynamo, ultimately leading to the horn and other accessories.

Generator No. 89  
Starting Motor No. 86

Combination Switch No. 1059

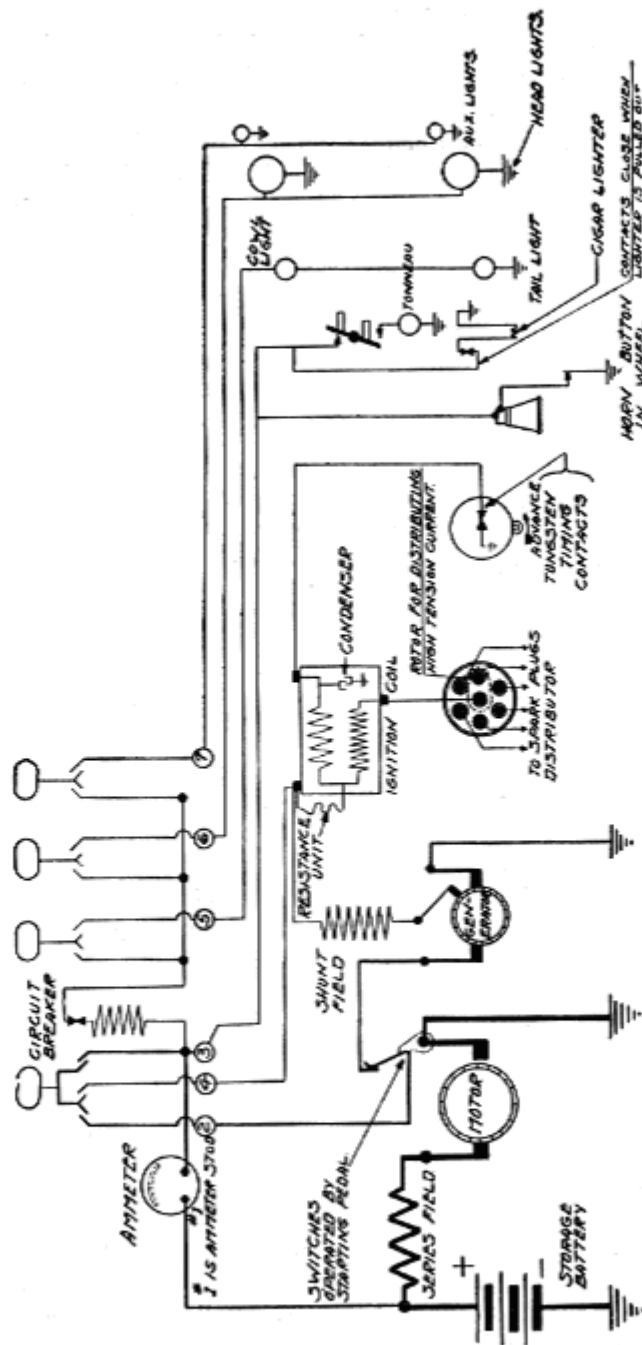
# SAYERS AND SCOVILL 6-CYLINDER



Motor Generators No. 73 and 83  
Ignition Coils No. 2140 and 2142

Combination Switch No. 1064 and 1066

## WESTCOTT MODELS 41-51

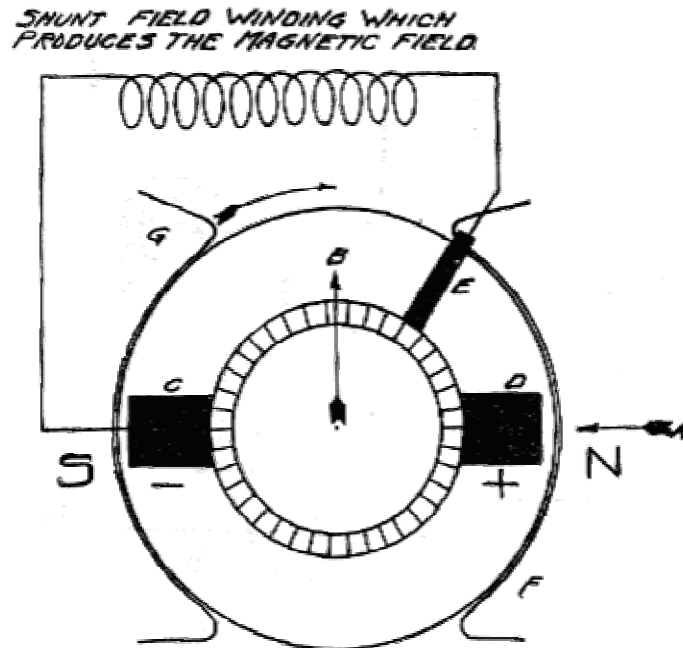


Motor Generators No. 73, 83 and 98  
Ignition Coils No. 2141-2140-2142

Combination Switch No. 1057-1065  
on all models

Due to the fact that the generator must operate through widely varying speeds on the automobile electrical system, regulation of the generator output is necessary. If the ordinary shunt type of generator is used (this being the most common form of generator) and this be so constructed that it would charge the battery at the lower speeds, the charging rate would be excessive at the higher speeds, injuring the generator as well as the storage battery unless some regulation is supplied.

The generator output of all but a few of the 1916 Delco systems is controlled by the third brush form of regulation. By this method of regulation the shunt field current, which produces the magnetic field required by the electrical generator, has its circuit completed through an auxiliary brush between the main brushes on the generator. This circuit is very plainly shown in the accompanying figure.



As the use and driving conditions of different automobiles varies to such wide limits it is very natural to expect that some generators, in order to maintain a properly charged battery, must deliver a higher charging rate than others. For this reason all of the Delco generators provided with this type of regulation are equipped with an adjustable

arrangement of this third brush. On all the single unit type of generator, with the exception of generator No. 70, this third brush is exposed when the front end cover of the generator is removed.

The third brush is supported on an arm which is arranged to lengthen or shorten by means of screws and slots in this arm. In the single unit system using generator No. 70, and on all the two-unit systems the third brush is located on the lower side of the commutator, and is mounted on a plate which is arranged to move to obtain similar results.

The moving of this brush in the direction of rotation of the armature increases the charging rate, and moving the brush in the opposite direction of course decreases the charging rate. These generators leave the factory adjusted to give ample charging rate for the average driver. If the car is driven a great deal and the lights and starter used comparatively little, it is possible to overcharge the storage battery unless the charging rate is decreased.

The overcharging of the storage battery is indicated by the rapid evaporation of the water and occasionally a too frequent burning out of the lamps. Therefore, for this type of driver it is advisable to decrease the charging rate by moving the third brush in the opposite direction from that in which the armature rotates. If this brush is moved, it is necessary to draw a piece of fine sand paper (with the sand side next to the brush) between the brush and the commutator a few times. If this is not done the brush will not make good contact and the charging rate will not be as high as when the brush is well seated.

With the type of driver who uses his car a great deal at night and drives a very little in the day time it is advisable to have a higher charging rate than these generators develop with the factory adjustment. With this type the third brush should be moved in the direction of rotation of the armature, and the brush sanded as described above. When the charging rate of the generator is increased it is always essential that the charging rate be carefully checked up by the use of the ammeter on the combination switch, and in no case should this exceed 20 amperes to any extent unless it is positively known that the driver never operates his car at fairly high speeds, excepting for short runs. Checking of the charging rate should be obtained after the brush is well seated and the engine is gradually speeded up, observing the maximum charging rate indicated on the ammeter. This test should be made when all the lights are off.

Form Delco 112 - 1-27-20 - 5000 - J.W.P.