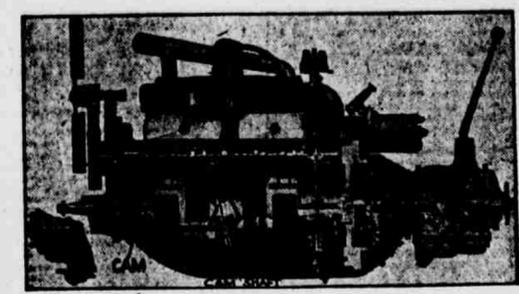


EXPLAINS VALVE TIMING AND CAM CONTOUR OF ENGINE

The Fifty-third of a Series of Articles by an Expert for the Automobile Owner.

By WALTER SHIELDS.

The valves of an automobile engine control the flow of gas to and from the cylinder, those valves controlling the fresh gas being called the inlet valves and those controlling the burnt gas the exhaust valves.



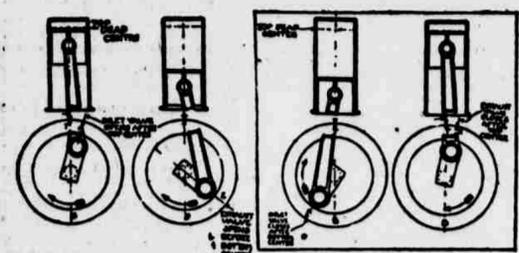
Section through an eight cylinder engine showing the position of the camshaft.

The inertia of the gas the cylinder continues to fill after the piston has passed the lower end of its stroke. In the average engine the inlet valve will open a few degrees after top dead center and close a little after bottom dead center, remaining open in all about 200 to 215 degrees measured on the flywheel.

Table of valve timing figures for various car models including Chevrolet, Ford, and others, listing intake and exhaust valve timing in degrees.

Table of valve timing figures of some typical American engines. The inlet figures are all after top dead center or on top center (TC). The exhausts are all before bottom center for opening and after top for closing except where TC (top center) is mentioned and a + appears. This latter means closing before top center.

Which in turn moves a valve. When the sharp end of the cam is straight up the valve is open all the way. When the sharp end is down the valve is closed.



Section through an automobile engine to show the position of the crank at opening and closing periods of the valves. The inlet valve opens after top dead center while the exhaust valve opens at B before bottom dead center and remains open until the crank reaches K, after top dead center.

top dead center. Good average figures for timing are: Inlet opens eight degrees of crankshaft travel after top dead center and closes forty degrees after bottom dead center. Exhaust opens forty degrees before bottom dead center and closes five degrees after top dead center (piston at top of stroke).

New Bethlehem Service Station.

rules about improving it would be folly. Designers often experiment in order to get the best results after a theoretical timing has been worked out.

Table showing flywheel inches per degree for various engine models.

The owner should never attempt to change the valve timing by altering the position of the camshaft with relation to the crankshaft, for while one result may be had which is better, another is automatically produced, which makes general running worse than before.

Joins Reo Company.



A. M. Welch, the new assistant manager of the Reo Motor Car Company, entered the motor car industry in 1913. His first position was with the Electric Vehicle Company of Hartford, Conn.

HUDSON MAKES SALES DRIVE.

Harry Hoopst Plans Big Sale of Used Cars. "Do you know," said Harry S. Hoopst, president of the Hudson Motor Car Company of New York, "that there are only eighteen working days this month?"

Paine Goes Into Army.

William D. Paine, who has been Eastern district sales manager for the Buick Motor Company for the last six months, has resigned to accept a captaincy in the United States Army.

New Case Six Looks Good From Every Angle.



Here is one of the attractive models in the very extensive line of Case cars which the H. A. Benders Motors Corporation at 1876 Broadway is handling in this territory.

FRANKLIN CO. IN BIG EXPANSION

Sales Force Is Enlarged and Charlie Ackerman Becomes Sales Manager.



The Franklin Automobile Company, which made a great record in this city during 1917 under the guidance of Glenn A. Tidale, its president, has very ambitious plans for 1918.

In these strenuous days the Franklin has proved itself a strong favorite with buyers because it has many features of economy that have demanded attention.

"Bethlehem Service" is getting to be very well known throughout the city because it is a night and day proposition and never "falls down."

GETTING READY FOR BIG BRONX SHOW

Fine Array of Cars Promised in Second Field Artillery Armory.

The Bronx Automobile Show will open next Saturday. It is being promoted under the auspices of the Bronx Automobile Dealers Association, and it is the first time that such an exposition has been held.

There is a very good reason for staging this show at this time. Many Bronx motor car owners have been in the habit of going to Manhattan when their cars require service, believing that efficient repairs could be obtained in the Bronx—an impression which is erroneous.

WIRE WHEEL LITIGATION.

Suit Brought Against Dealer by Wire Wheel Corporation.

Patent litigation again entered the automobile field yesterday when it became known that a suit had been started by the Wire Wheel Corporation of America to protect its rights under the basic patent of the wire wheel.

Palme Goes Into Army.

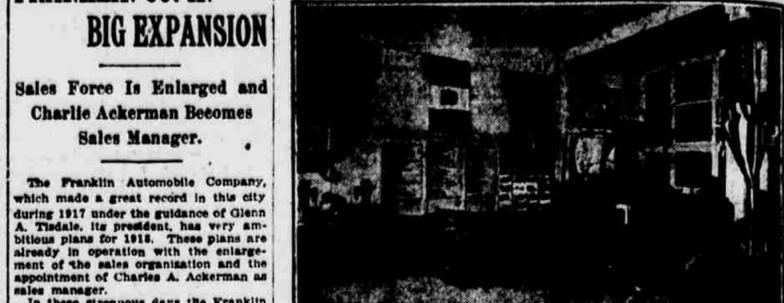
William D. Palme, who has been Eastern district sales manager for the Buick Motor Company for the last six months, has resigned to accept a captaincy in the United States Army.

New Case Six Looks Good From Every Angle.



Here is one of the attractive models in the very extensive line of Case cars which the H. A. Benders Motors Corporation at 1876 Broadway is handling in this territory.

Maxwell's Novel Truck Display.



Harry J. De Bear, manager of the New York branch of the Maxwell Motor Sales Corporation, Broadway and Fifty-ninth street, has just put into operation a novel plan of merchandising.

In this truck department there is placed on exhibition a Maxwell one ton worm drive truck chassis for the close inspection of the various commercial house representatives interested in motor truck conveyances.

I expect to have a very capable organization, one that will certainly do big things for the Franklin this year. Being very familiar with the Franklin car, my new work does not seem at all strange.

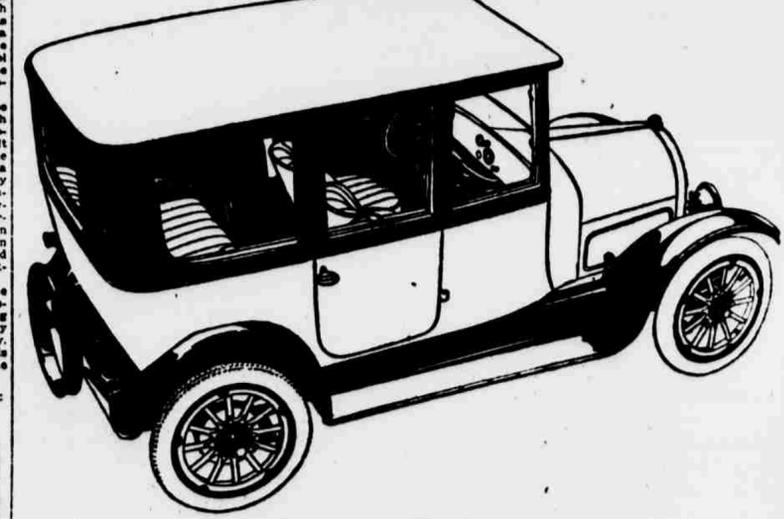
Overland '1240

The Thrift Car

Bad weather does not deprive the nation of the full services of busy men and women who use this Overland Small Sedan to save time, protect health and increase activities.

Adjustable windows—refined interior furnishings—divided front seats—room for five. This car meets the dictates of propriety and good taste as fully as it complies with the wisdom of economy.

Why delay?



Appearance, Performance, Comfort, Service and Price

Light Four Model go Small Sedan

WILLYS-OVERLAND, INC.

Broadway at 50th Street. Telephone, Circle 1360. BROOKLYN. Cor. Fulton St. & Bedford Ave. Tel. Bedford 8880. NEWARK. 526 Broad St. Phone Mulberry 2644.