

# The Automobile

MAIN FACTORS OF GAS ENGINE ARE EXPLAINED.

Under the hood of the modern automobile is a marvelous mechanism. With very little attention from the car's owner this piece of machinery goes on day after day performing the service for which it was designed. Without this dependability the motorist's life would be hectic indeed.

This is the gasoline engine now used in practically all automobiles in this country. It consists in its simplest form, of a single cylinder something like a stovepipe. Inside of this cylinder slides a plug of metal, shaped to fit the interior of the cylinder snugly. This piston is connected to a crank by means of a connecting rod which transforms the back-and-forth or reciprocating motion of the piston into a rotary motion. In the automobile this rotary motion in turn is transmitted to the rear wheels.

Engines in motor vehicles are now made up of from four to twelve of these cylinders coupled together. They are most usually found in a combination of six cylinders. However, there are many four-cylinder cars and some have eight and twelve cylinders. While the original motor car engine had but one cylinder, a larger number of cylinders were added as greater power and flexibility were desired. The tendency now is to greater use of six and eight cylinder machines.

## CYLINDERS ACT ALIKE.

To understand the operation of the single cylinder is to appreciate the action of the twelve-cylinder engine or any other number. The twelve cylinders do the same sort of work as the single cylinder except that each does it at a different time.

By way of causing the engine to generate power a mixture of gasoline and air in the form of a vapor is fed into the cylinder above the piston. To provide this mixture a carburetor is attached to the engine and a valve is furnished which opens to permit the mixture to enter at the proper time. This valve is opened by a cam which is driven by a suitable gearing attached to the crankshaft.

This mixture is compressed in the cylinder and then ignited by means of a spark which occurs at the spark plug. When the mixture is ignited it burns rapidly and produces heat. This in turn causes pressure on the piston, forcing it to slide in the cylinder and through means of the connecting rod to turn the crank.

The piston having been forced to

the end of the cylinder, another valve, called the exhaust valve, is caused to open and the burned gas is allowed to escape from the cylinder into the muffler. The muffler provides a chamber in which the gas cools and silently escapes to the air.

The action of the engine is divided into five points. First, the piston travels outward and draws gas from the carburetor through the open inlet valve into the cylinder. Second, the inlet valve closes, the piston travels inward and the gas is compressed into a small space at the top of the cylinder. Third, a spark occurs igniting the gas and causing it to expand. This forces the piston outward and produces the power which drives the machine. Fourth, the exhaust valve opens and the piston goes inward. Fifth, when the piston has reached the furthest inward position the cylinder is ready to take in a new charge of gas and repeat the cycle.

## OIL SUPPLIED AUTOMATICALLY.

A lubricating system is embodied in the engine so as to keep the pistons and other sliding parts from excessive wear. This automatically supplies oil to all the bearings whenever the engine is in operation.

To keep the tremendous heat of the burning gas from overheating the engine, a cooling system is provided. This usually consists of jackets for water, which are located around the cylinders so as to absorb some of the heat, a radiator on the front of the car for cooling the water and a pump to keep the water circulating through the cylinder jackets and the radiator.

Then there is an igniter for distributing the sparks to the different cylinders at the proper time, an electric generator for providing electricity to cause the spark, a battery in which to store the current generated, and an electric motor operated by the battery for cranking the engine in starting. These are the main factors in the modern gasoline automobile engine. With an ordinary car it will give dependable service to the motorist over a long period of time.

## Ink.

And a small drop of ink. Falling like dew upon a thought, produces That which makes thousands, perhaps millions think.

—Byron.

## Commercial Fish Production in Western Canada.

The value of production of the commercial fisheries of the three Prairie Provinces and the Yukon Territory in 1925, as reported by the Dominion Bureau of Statistics, was \$2,380,526, an increase over the preceding year of \$307,591. Manitoba and Alberta show increases in value while slight decreases are shown for Saskatchewan and Yukon Territory. Pickeral, whitefish and tullibee, in the order named, are the principal kinds of fish in Manitoba; whitefish and trout in Saskatchewan; whitefish, pickeral and pike in Alberta, and salmon in the Yukon Territory. The catch of whitefish in the provinces and territory under review amounted to 115,620 cwt., valued at \$1,044,852. This value represents 44 per cent of the total value of the commercial fisheries of the provinces and territory.



Explained. "Why are you looking for two summer resorts? Isn't one enough for you?" "Sure, but I want another one for my wife."

## Recipe for Summer.

For perfect strawberrying wait till the sun is high  
And take no basket. Let the fields be warm  
Down to their roots. Then choose a meadow  
Of sheeted daisies mixed with buttercups,  
Sloping if possible to an expanse of sea.  
Be sure the clover is abundant there,  
So that you breathe its fragrance with each breath.  
If birds are singing, pause to listen to them.  
Till sight and smell and sound are all commingled  
In one emotion; then, facing north,  
Look for your berries near the reddening leaves,  
And, having found them, pick the ripest ones,  
And eat without delay, staining your fingers—  
So you will find the recipe for summer.  
—Elizabeth J. Coatsworth.

## Theft of a Hedge.

A handsome privet hedge surrounded the home of S. Foster Hunt at Providence, R.I., but someone stole 15 feet of it. The hedge, deep rooted, provided a difficult and tiresome task of removal, and it was obtained only by dint of great digging and pulling, but apparently no one saw the thief and he worked undisturbed until he had dug up enough to start a new hedge of his own.

## Pacific's Great Size.

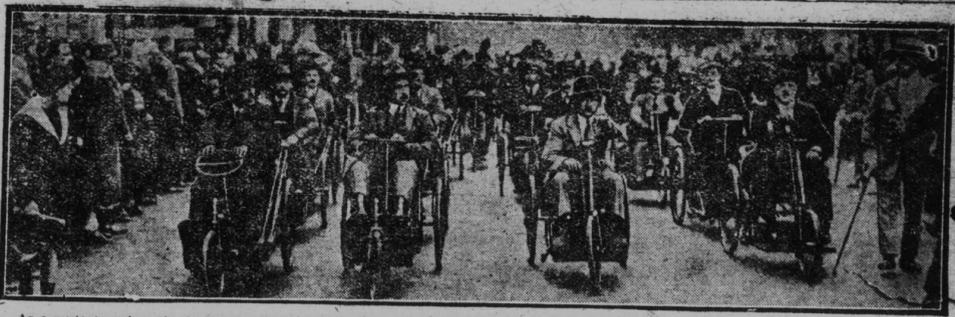
In area the Pacific ocean is greater than that of all the land in the world. The secret of happiness is not doing what one likes, but liking what one has to do.

## Germans Are Rebuked in Von Bissing Will

London, Aug. 8.—In his will Baron Walter von Bissing, half-brother of the General von Bissing who, as Military Governor of Belgium in the Great War, allowed the death of Edith Cavell, reaffirmed his dislike for Germany. Born a German, he became a naturalized Englishman and a resident of Sussex. He died recently in San Remo, Italy.

## Gratitude.

Once in a long while some boy or girl we have tried to help returns to speak the golden word of gratitude, whereas we take fresh courage to do our little share toward the happiness of another. Recently a girl of twenty called, and in conversation remarked: "I have your picture in a locket and I carry it always close to my heart." When doubt was jokingly expressed she pulled up the locket from some hidden recess and opening it revealed a much crumpled newspaper cut that seemed as proud of it as though it were a two-hundred-dollar miniature, and when presented with a better one still carried away the old one that had done good service for several years.—J. J. Ke-so.



As a protest against the Mellon-Berenger Debt Agreement, 20,000 French war veterans recently paraded past the George Washington statue in Paris. The photograph was taken after they had visited the Arc de Triomphe and laid a wreath there. France's debt problem may be expressed by the fact that the franc at present is worth less than three cents instead of the normal twenty cents.

## Cosmetics of Tutankhamen Exhibited to British Scientists

London.—A tiny vial, containing cosmetics used by Tutankhamen 3,300 years ago, found in the alabaster coffer in his tomb, was produced at the British Association meeting at Oxford by Charnston Chapman, an eminent chemist, to whom it has been entrusted for analysis.

Scientists of both sexes smelled eagerly at the vial, which gave off a strong odor of coconut, but Mr. Chapman said the analysis had progressed far enough to make it certain that there is no palm kernel or coconut fat in it. He hinted that what the Bible calls "spikenard" might be found. The body of the ointment appears to be animal fat.

## Coal Strike Enables Londoners to See the Sun

London.—English industry is suffering from the continuance of the coal strike, but English weather is benefitting from the stoppage. Not since the last coal strike has the atmosphere been so clear and the visibility so good. On the longest day of the year Londoners could see the Surrey Hills, forty miles away—a treat rarely vouchsafed to them.

## British Incomes Would Allow \$1.25 Per Family

London.—Not more than 1,000 able-bodied idle rich in this country draw incomes exceeding \$50,000 a year from investments, according to Sir Josiah Stamp, eminent economist, and Dawes Plan expert, who addressed the British Association. Many rich people, he said, do important work for which they are not paid. If all the incomes in Great Britain in excess of \$1,250 a year were pooled, and, after deducting the present tax, distributed among the whole people, there would not be more than \$1.25 additional for each family.

## Black-Eyed Susans.

The sky was the bluest blue,  
The clouds were the fluffiest white,  
As over the hill we went, we two,  
To look for a new delight.  
And we found it not far away  
In a field near a singing brook;  
A riot of color so gay  
That we lingered awhile to look.  
Then I lifted her over the fence  
For her age is—well, not quite three,  
And we've hardly known where to commence  
To harvest a treasure so free.

Oh, the Black-eyed Susans, pretty little Susans,  
Such a lot of Susans, in frocks of orange-gold.  
How my little maiden loved their tawny brightness,  
How we kept on gathering all her hands would hold!

My dear Black-eyed Susan, so glad I am she grew,  
—Katharine Allison MacLean in Christian Science Monitor.

## Spaniards and Trees.

In Spain, according to Eleanor Elser, in "Spanish Sunshine," it is not unusual to find signs like the following (which Miss Elser saw near a fine tree in one of the parks in Seville):  
To the Wayfarer.  
Ye who pass by and would raise your hand against me,  
Hearken ere you harm me!  
I am the heart of your hearth on the cold winter nights,  
The friendly shade screening you from the summer sun.  
My fruits are refreshing drafts,  
Quenching your thirst as you journey on.

I am the beam that holds your house,  
The board of your table,  
The bed on which you lie  
And the timber that builds your boat.  
I am the handle of your hoe,  
The door of your homestead,  
The wood of your cradle  
And the shell of your coffin.  
I am the bread of kindness and the flower of beauty,  
Ye who pass by, listen to my prayer:  
Harm me not!  
The Spaniard has a great admiration for all trees, and this is one of his ways of showing it.—E. A.

## TINY STANDARD PIANO PRESENTED TO QUEEN FOR HER DOLL'S HOUSE

The Queen's collection of doll's house furniture has been augmented by a standard piano on a three-inch scale in the form of an inkstand. It is made of satinwood and, while it cannot be played, it is outwardly perfect and complete, even to the pedals. The occasion of the presentation was a visit of the King and Queen to the Broadway piano factory, in East End, London. They received an enthusiastic demonstration in the decorated streets. Their tour of the factory lasted an hour and a half, and included inspection of instruments manufactured by the firm since 1790, including the Broadwood used by Chopin. Ten employees were introduced to the King and Queen whose collective terms of service totalled 528 years. Queen Mary's doll's house also boasts a miniature phonograph, which really plays. It is a cabinet model four inches high and plays records one and five-sixteenths inches in diameter. It took seventy persons to turn out this instrument, and when it was finished there was considerably more difficulty in making records to fit it. But the realism had to be complete, and at last the makers managed to get a few bars of "God Save the King" on a tiny disk. Other pieces in the doll's house are "Rule Britannia," "Sweet Home," "Men of Harrow," the "Blue Bells of Scotland," musical instruments, like everything else in the miniature English mansion, are constructed on a scale of one inch to the foot.

## German Workmen Get \$9.56 Weekly Average

Berlin.—The average skilled workman in the fifteen leading German industries earns the equivalent of \$9.56 a week of forty-eight hours, the Ministry of Industry and Commerce reports. From this wage the employers deduct for the Federal government an income tax averaging nine per cent for single persons and eight per cent for married.

The organized building trades workers, plutocrats of German labor, draw \$13.15 a week. Miners rank second with \$11.70. The average weekly pay of unskilled male workers is \$7.75. The cost of living as shown by official reports is almost as high as that outside of metropolitan districts in the United States.

Strikes are few because jobs are scarce. Forty-eight adults out of every 1,000 men, women and children are jobless in Berlin.

## Will Not Blend.

The Fascist Government is trying to popularize the potato in order to save wheat by minimizing the consumption of macaroni and spaghetti, but something an Italian and a potato seem about as far apart as an Irishman and spaghetti.

## Romans Had Many Slaves.

Slavery was commercialized by the Romans, some of whom had 10,000 slaves.

## Happiness is a Perfume you cannot pour on others without getting a few drops on yourself.

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## MUTT AND JEFF—By Bud Fisher.



## The Noise Reminded Mutt of a Glass of