The Automobile

AUTO DEPENDS ON ENGINE TO BE SUCCESSFUL.

The heart of the automobile is the engine. If this vital organ does not function properly the finest body and chassis in the world will not make a usable automobile. If you puncture a tire you can drive on to the next service station with the thing flat. If a fender is ruined or the top wrecked progress toward your destination is not necessarily blocked. But if the engine fails to go, the motorist is out of luck. A repair job is necessary right then and there if it is to go ahead under its own power.

Consequently, it is a good idea for the owner of an automobile to know something about that important factor under the hood known as the engine. He understands something of how an engine functions and what makes it go. If he knows what makes it go, he will be more likely to know what to do when, for some reason or other, it suddenly stops on him.

The gasoline engine which is now used in the majority of all automobiles in this country 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. This rotary motion in turn is transmitted to the rear wheels.

FOUR TO TWELVE CYLINDERS.

Engines in modern automobiles are made up of from four to twelve of these cylinders 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. The original motor car engine had but one cylinder. However, as greater power and flexibility were desired, more cylinders were soon added. To-day there is a tendency to greater use of six, eight and twelve cylinder machines.

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

In order to cause 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.

Next this mixture is compressed in the cylinder and then ignited or set on fire 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.

FUNCTION OF MUFFLER.

When the piston has been forced to the end of the cylinder another valve, called the exhaust valve, is caused to open and the burned gas is permitted to escape from the cylinder into the muffler. The muffler provides a chamber in which the gas cools and escapes.

To sum up the action of the engine, it can be said, 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, causing it to expand, forcing the piston outward. This produces the power which drives the machine. Fourth, the exhaust valve opens and the burned gas is forced out as the piston goes inward. 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.

In order to keep the pistons and other sliding parts from excessive wear a lubricating system is embodied in the engine. This automatically supplies oil to all the bearings when the engine is in operation.

In order to keep the tremendous heat of the burning gas from over-heating 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.

In addition to all this there is an ignitor 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 which make up the modern gasoline automobile engine and enable the motorist to make his car take him where he wants to go.

He Proved His Case.

The little man of the club, his back supported by the mantleshelf, was talking about Ireland, and he said many hard things concerning the country and its people.

A big man stood by, listening to the other's vaporings. He smiled occasionally until the little man said in a very loud tone:

"Show me an Irishman and I'll show you a coward."

The big man touched the little man on the sleeve and said in a heavy bass voice:

"I said, show me an Irishman and I'll show you a coward," replied the little man, whose knees were shaking under him.

"Well, I am an Irishman."

"You are an Irishman? Well"—and a smile of joy flited over the little man's face as he saw a hole through which he could crawl—"I am a coward."

Mlle Irene Curie, daughter of the famous discoverer of radium, has just won a degree of doctor of science by delivering a thesis on the Alpha rays of Polonium at the Sorbonne, Paris.

A Bargain.

It must certainly be admitted that Lightning was not quite what its name would suggest. In fact, as a race horse it was a "washout,' 'and would have been more at home in a hearse. It had just lost its nineteenth race of the season—not only lost it, but had come in last.

Soon after the owner met a man he knew who wanted to buy a horse.

"Do you want to buy a good mount?" he asked.

"What's the matter with it?" inquired the other.

"Nothing," said the owner, lying bravely.

"Well, what do you want to sell it for?" was the next question.

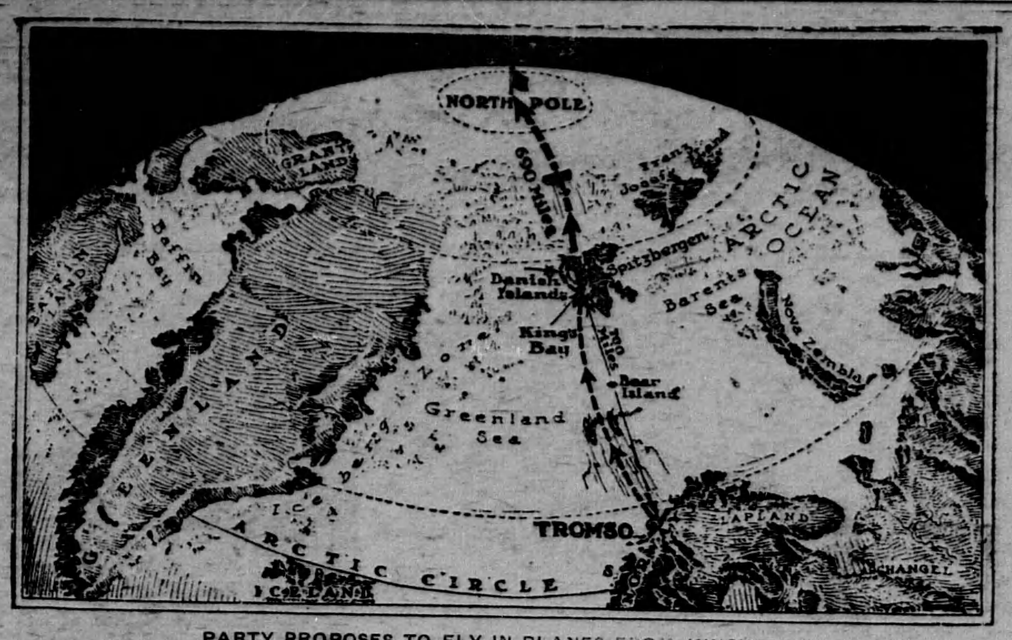
"Nothing," came the reply.

"All right, then," said the prospective purchaser, who had seen Lightning's last performance, "I'll have it."

Thankfulness.

For flowers that bloom about our feet,
For tender grass, so fresh and sweet,
For song of bird and hum of bee,
For all things fair we hear or see,
Father in heaven, we thank Thee.

One of the latest English fads is the collection of cactus plants.



PARTY PROPOSES TO FLY IN PLANES FROM KING'S BAY

The present base of the Amundsen-Ellsworth North Pole expedition at King's Bay is shown on the map herewith. This also indicates the relation of this area to Norway on the south and to the objective of the party. The two ships, Farm and Hobby, are seeking out a suitable jumping-off place at some point north of King's Bay. The location of this will depend upon ice conditions.

May's Floral Festivals.

During practically the whole month of May, floral festivals, symbolical of the triumph of spring over winter, are celebrated in various parts of the world.

Most picturesque and famous of them all is the Kyoto Cherry Blossom Festival, Japan's great national holiday.

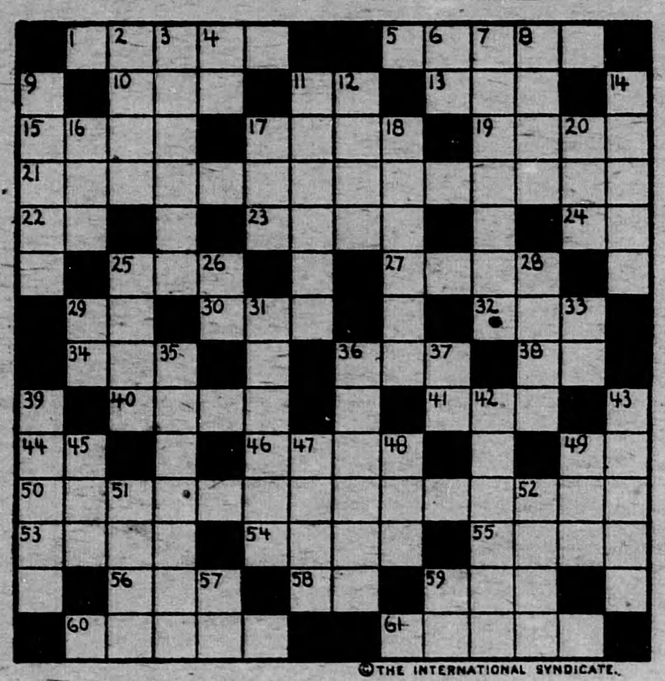
Every town and village throughout the empire celebrates the occasion, but its pivotal point, so to speak, is the famous cherry tree at Kyoto, the first blossoming of which is regarded as an event of national importance, to be communicated by telegraph far and wide.

Switzerland holds its Narcissus Festival at Montreux, usually towards the end of the month. It draws visitors from all parts, special trains being run from Berne, Geneva, and other towns during the two days the celebrations last.

The United States has a May flower festival—Decoration Day. This was originally instituted to show respect for the dead who fell in the Civil War. The graves of the fallen heroes are everywhere decorated with blossoms.

Similarly Vienna has its Daffodil Day, Geneva its White Rose Day, while France celebrates Lily Day.

CROSS-WORD PUZZLE



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SUGGESTIONS FOR SOLVING CROSS-WORD PUZZLES

Start out by filling in the words of which you feel reasonably sure. These will give you a clue to other words crossing them, and they in turn to still others. A letter belongs in each white space, words starting at the numbered squares and running either horizontally or vertically or both.

HORIZONTAL

1—Prefix meaning "chief"
5—Roosters
10—What one rows with
11—A New England State (abbr.)
13—The spawn of fish
15—The poison-tree of Java
17—Mountain range between France and Switzerland
19—A lively dance
21—Lawful
22—Personal pronoun
23—Incipient decay in overripe fruit
24—Prefix meaning "back; again"
25—Vicious
27—A wanderer of the desert
29—Musical note
30—One of the grains
32—Permit
34—Public vehicle
36—Large city of U. S. (abbr.)
38—Negative
40—A thick slice
41—Deed
44—Indefinite article
46—Treats
49—Latin for "gold" (abbr.)
50—Disdainfully
53—A certain pace
54—A country of Asia
55—A plant of the cabbage family
56—A Turkish governor
58—A heavy weight (abbr.)
59—Fuzzy covering
60—Roman goddess of grain and harvests
61—Filthy

VERTICAL

2—A horse color
3—A coarse variety of cinnamon
4—A short space of time (abbr.)
6—Conjunction
7—Pertaining to a corona
8—Sharp
9—Dominion of a duke
11—A thin piece of meat for broiling
12—Authentic
14—A narrow passageway
16—An American poet
17—A triangular boat sail
18—To join, connect
20—A part of the head
25—Cut slantingly
26—Perform
28—Flexed
29—Member of Congress (abbr.)
31—Books for holding photos
33—Preposition
35—Used for drying ink
36—A native of island of Crete
37—A Middle West State of U. S. (abbr.)
39—Treaties
42—Private meeting of members of a political party
43—Purchaser
45—Correlative of "neither"
47—Saliva
48—Total
49—The whole
51—A knot or knob
52—Separate into grades
57—Personal pronoun
59—Musical note

The Rainy Day.

When there comes a day that's rainy,
As it's certain, sure to do,
Just draw upon your savings
Instead of looking blue.
If you haven't saved much money,
Then draw upon a smile,
And see if that won't help you
Over many a weary mile.

When there comes a day that's rainy,
Don't fill it up with sorrow,
But set about a job or two—
It may be fine to-morrow;
The rainy day is dripping down
On other folks than you—
Maybe in trying to cheer them up
The sun will shine for you.

Robins at Dawn.

As dawn came wanly sliding
In at my window grey
A burst of music waked me,
A chorus wild and gay—
A mad and merry chorus
From trees about the lawn—
A jolly band of robins
Glad hailing in the dawn.

Such wild delight, such music bright,
Burst from their pulsing throats,
Such scorn of fear and love of cheer
Bubbled from ringing notes,—
No pipes of Pan though piercing sweet
Could fling out more delight
Than my red-vested choristers
Singing Thy Dawn of Light.

—May Howe Dakin.

Solution of last week's puzzle.

Nova Scotia Butter Boom.

The outstanding feature of the agricultural industry of the province last year was the continual growth of the creameries industry. The year 1924 showed an increase over the previous year of 563,156 pounds of butter, and an increase in business done of $153,328.

Pieces in a Piano.

More than 1,000 different pieces of material, varying from felt to wood, ivory and many kinds of metal, enter into the making of a high-grade piano.

Natural Resources Bulletin.

The Natural Resources Intelligence Service of the Dept. of the Interior at Ottawa says:—

Canada has made tremendous progress in the past twenty-five years in the production of wheat, and the extension of her wheat areas is attracting considerable attention among wheat-growing and wheat-buying countries. At the opening of the present century the excellence of Canadian hard wheat became recognized, but occupied a comparatively inconspicuous position in the wheat markets of the world. Within the past twenty-five years—but a day in the life of a nation—that position has been entirely reversed, and Canada has advanced from ninth to second place as a grower of wheat, and from fifth to first place as an exporter of this cereal.

The rapid increase in Canadian acreage devoted to wheat is shown by the following figures: In 1900 in all Canada there was but 4,224,542 planted to wheat; in 1910 this area had increased to 8,863,151 acres; in 1920 to 18,232,374 acres; and in 1924 to 22,055,710 acres. The production of wheat in 1901 amounted to 55,572,368 bushels, in 1910 to 132,048,782 bushels, in 1920 to 263,189,300 bushels and in 1923 to 474,199,000 bushels.

Canada's influence on the world's wheat markets is illustrated by the enormous growth of exports. From the small amount of 6 871,939 bushels in 1901 they took what was at that time a big jump to 18,688,092 bushels in 1902, and 24,566,703 bushels in 1903. In 1910 46,589,228 bushels of wheat was poured into the world market, in 1915 exports were 140,306,613 bushels and in 1924, 214,630,825 bushels.

Canada has a wonderful opportunity, not only in the productiveness of her wheat fields and in the quality of the wheat that her soil and climate produces, but in the fact that the wheat industry of Russia, which was a chief competitor, has not recovered its pre-war status. Canadian wheat is much in demand both in Great Britain and on the Continent and can be produced at a comparatively low cost, in competition with American grown wheat.

The farm cost of producing wheat in Western Canada in 1923, as estimated by the United States' Tariff Commission, was 82 cents a bushel, including a land charge, figured as interest on stated land values. These figures were opposed to a cost of $1.47 per bushel, the estimated cost of producing similar wheat in Minnesota, Montana and Dakotas, made by the same authority.

Canadian wheat is acknowledged to be of an unusually high order and, through the Canadian system of grading and elevator regulations, merits the standing it has among foreign buyers.

Poppy.

The poppy flaunts the petticoat
Of airy films that fly and float;
Of fairy gauzes, fairy fine,
Lucent and crystalline.

Lighter than lightest gossamer,
Or the moth's wing at eve astir;
Frills of the scarlet sun arow,
And rosiest rose on snow.

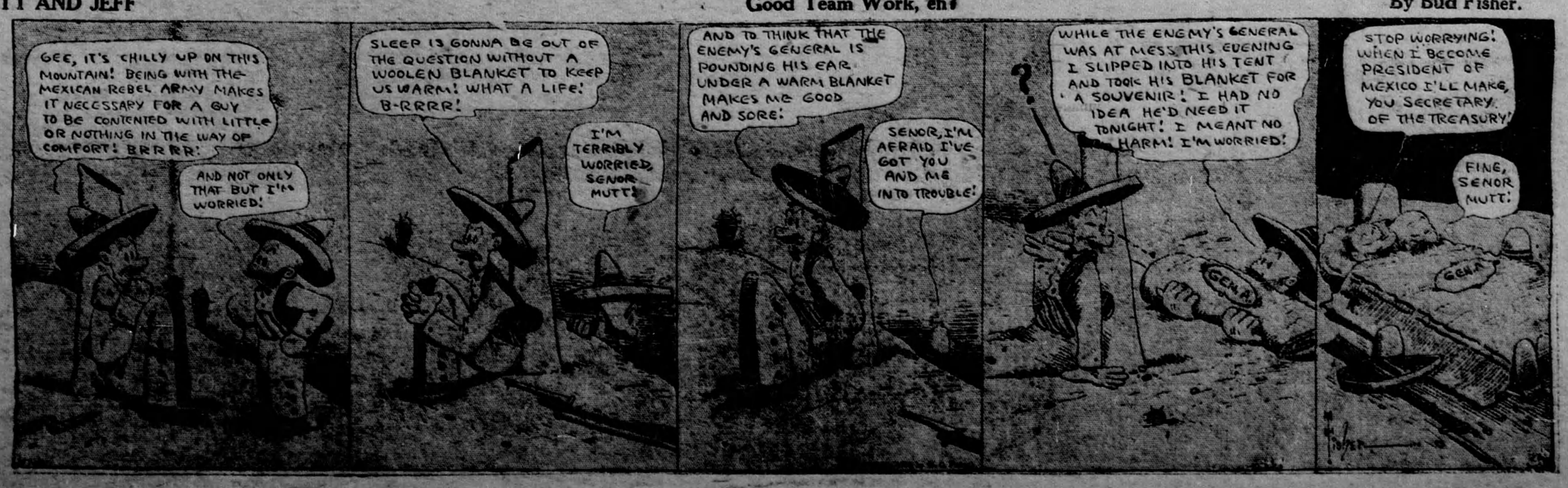
No dancing graces can reveal
Flounces like hers from knee to heel,
No fairy twirl of fairy girl
Scatters such rose and pearl.

The fairies laundered this last night,
A glow worm light for candle light;
This in the dews was washed and steeped
While drowsy mortals slept.

The little fairy fingers feat
Ironed it out so neat and sweet,
And set the frills with dainty skill
Ruffled at the wind's will.

The poppy wears her silk and lace,
Clear starched, with such a delicate grace;
Her silken flounces hides and shows
As the wind goes and blows.

—Katherine Tynan.

It is not work that kills men; it is worry. Work is healthful; you can hardly put more upon a man than he can bear. Worry is rust. It is not the revolution that destroys the machinery, but the friction.—Henry Ward Beecher.

MUTT AND JEFF — Good Team Work, eh? — By Bud Fisher.