The Automobile

CARE REQUIRED TO FFED GAS TO AUTO PROPERLY.

The one substance which the automobile requires more of than any other is gasoline. It is the motor vehicle's main ration. For no other single reason does the motorist stop his machine at a servicing shop so often as for gasoline. Consequently it is not a bad idea for the car owner to know something about his machine's principal diet.

It will not cheer him to learn that gasoline engines are only about 20 per cent. efficient in direct propelling of the car. He has heard efficiency experts declare that human beings are only about one-fifth as useful as they might be.

Don't conclude that 80 per cent. of the gasoline is wasted. It is merely necessary to use the 80 per cent. in other ways to get the 20 per cent. applied directly on the business of moving the car forward.

Engineers through exhaustive experiments have made it also possible for a gasoline engine to be better than 20 per cent. efficient. However, this has been accomplished somewhat at a sacrifice of ease and comfort. But most owners do not want greater mileage per gallon of gas at a big sacrifice of comfort. And there you are.

DIFFERENT PLANS OF FUEL.

For example, one may adjust the carburetor so that a very lean bixture of gas is used. Result, a high mileage per gallon of gas but slow acceleration, poor hill climbing, difficult regular running of the engine when at a low temperature and exceptional skill required for driving.

Or a designer may increase the compression. But when there is a steep hill to ascend, a big load to haul or a slight accumulation of carbon the engine will probably knock. Motor fuels are now being developed that will operate under higher compression without causing knocking, and therefore increase in efficiency. This may be the rule in the near future.

About 35 per cent. of this 80 per cent. loss can be accounted for by the water jacket. This loss is necessary in order to keep the various parts cool enough to operate. The temperature of the burning mixture being about 3,000 degrees, when brought in contact with the metal parts of the engine naturally would burn the lubricating oil from their surfaces, so that the piston would not slide up and down in the cylinders. It would heat the metal parts so that to control the ignition would be impossible.

The water packet is to cool these metal parts so that a film of oil can be maintained. But in doing this considerable heat generated by the gasoline is carried off and cannot be used in moving the car.

The exhaust accounts for another 35 per cent. It would be impracticable to design an engine that would expand the gas down to no pressure. Such an engine would need to be bulky as compared with the present types.

The exhaust valve is set to open when there is still considerablep ressure in the cylinders. This pressure means, of course, that there is still heat in the cylinders, that the gas is still burning. The gas engine is a heat engine; that it, it derives its power from heat. Therefore, when the cylinder exhaust valve is opened while there is still heat in the engine, about 35 per cent. of the total amount of heat generated by burning the gasoline is lost. Another reason why this loss is necessary is because time must be given to clean the cylindess of burning gas on one stroke so it can take in a charge of fresh gas on the next.

FRICTION COSTS 10 PER CENT.

Friction mostly accounts for the other 10 per cent. of loss. In order to use the heat developed, it is necessary to have some sort of mechanical devices that slide over each other, such as the pistons in the cylinders and bearings that hold the crank shaft in place. Wherever these sliding parts come there also comes friction. Some little power also must be expended to operate the cooling fan, the valves, lubricating pump, ignition device, generator for charging the batteries and, in most cases, water circulating pump.

Those wishing to get the highest possible gasoline power, should exercise great care in keeping the carburetor properly adjusted, in operating the spark scientifically and in watching the radiator. Some cars have a thermostat control of the radiator shutters, which open or close them as the engine gets hot or cold. These help to keep the engine operating at the best temperature.

The quality and quantity of oil should be watched carefully. There is a little friction in the oil itself. Use an oil as light as possible so that there will me a minimum of friction and yet heavy enough to insure keeping the metal parts separated.

Mary Patricia Wilson, two years and eight months old, of Melbourne, Australia, crowned for the year as the prettiest baby in the British Empire. Over 60,000 entries were made in the contest, held under the auspices of the national baby week council.

One of Our Conquerors.

The part played in the building of our Indian Empire by a pistol which failed to go off is recalled by the Clive bi-centenary.

Robert Clive was born on September 29th, 1725, and left England for India before he was twenty. In his early days in the East he attempted to commit suicide, but his pistol refused to go off. Later he obtained military employment and commanded the British garrison during the siege of Arcot, which has been described as the "turning point" of our career in the East.

His subsequent career was one of the most brilliant and eventful in British history. While still a comparatively young man he laid the foundations of our Indian Empire. His real work in India occupied, all told, a period of rather less than twelve years and he was only forty-nine when he died—by his own hand.

Weight of Water.

A gallon of water weighs eight and a half pounds.

Vitamin in Whales.

Whale oil si rich in fat-soluble vitamins.

An absent-minded man supped with a friend one night. The next day he wrote to his friend as follows: "I left my knife at your lodgings yesterday; please send it back to me if you find it. P.S.—Never mind sending the knife, as I have found it."

Saguenay River Industrial District.

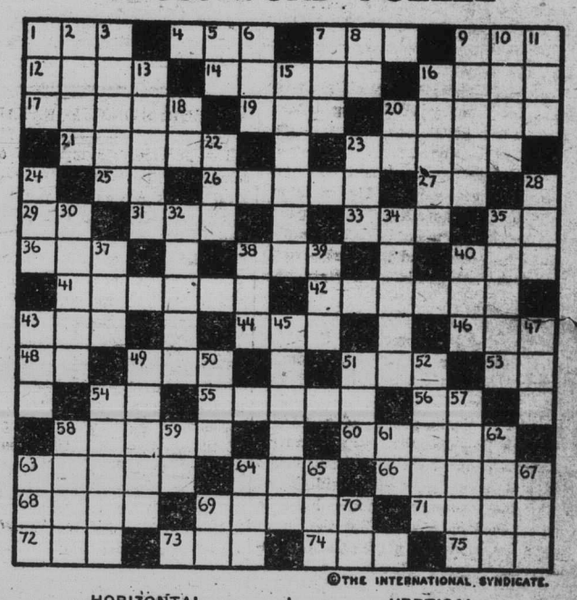
The Saguenay River district of Quebec has been, within the past year or two, the scene of a number of very important industrial developments. At the Grande Decharge, the Duke-Price interests have recently completed a 360,000 horsepower hydro-electric plant, while at St. Joseph d'Alma, Price Brothers are erecting a newsprint mill with a daily capacity of 200 tons. At Port Alfred the Port Alfred Pulp and Paper Co. are erecting a pulp mill of 100 tons daily output. At Caron Falls, the Aluminum Co. of Canada is constructing a hydro-electric plant with a capacity of 800,000 horsepower, to be followed by an aluminum plant which, it is said, will employ from 5,000 to 6,000 hands. Fifteen hundred men are now employed on the clearing work. In the immediately adjoining territory, the Chicoutimi Pulp Co. has a mill at Chicoutimi, while Price Brothers have pulp and paper mills at Kenogami and Jonquiere.

Chains for Winter Days.

Motorists who drive continually under all conditions should use only chains which are scientifically hardened and properly tested for service on both snow-covered or wet, slippery pavements.

Asparagus is one of the oldest known plants used for food.

CROSS-WORD PUZZLE



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HORIZONTAL

1—Pooh
4—Prefix meaning "three"
7—Pronoun
9—Brother (abbr.)
12—A desert wanderer
14—An anesthetic
16—Wild animal
17—A countryman
19—Total
20—Sawmill-truck
21—Split
23—A priest of ancient Britain
25—Musical note
26—To attempt
27—A heavy weight (abbr.)
29—Preposition
31—To tangle
33—A type measure (pl.)
35—To have existence
36—Young animal
38—A high explosive (abbr.)
40—A month (abbr.)
41—Quick in action
42—Hardens by use
43—Great period of time
44—Part of verb "to be"
46—A sailor
48—A New England State (abbr.)
49—Cyclopedia (abbr.)
51—A race of people (abbr.)
53—French definite article
54—Musical note
55—Combining form meaning "bone"
56—Like
58—Animals of imperfect growth
60—Part of stomach of ox used as food
63—One's father's sisters
64—The whole
66—Anger
68—Founder and Queen of Carthage
69—Big
71—Girl's name
72—Some
73—Asiatic bovine animal
74—To put on
75—Man's name (familiar)

VERTICAL

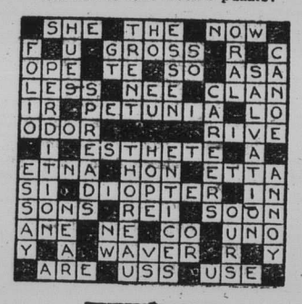
1—The laurel-tree
2—In a row (poet.)
3—Cod-like fishes
5—Musical note
6—Possessive pronoun
7—To shut in
8—Suffix denoting the agent
9—Start
10—To invade suddenly
11—Metal-bearing rock
13—Obscure
15—A great bay in Canada
16—A set-to (pl.)
18—Life Guard (abbr.)
20—British (abbr.)
22—To consume
23—Color
24—A dandy
28—A number
30—Cryptogamous plants
32—A monastery
34—A river in E. France and Belgium
35—Fundamental
37—Favorite American dessert
38—A drink
39—To bind
40—Mineral coal used for ornaments
43—Part of body
45—To clatter
47—A color
49—Division of a long poem
50—A kind of lettuce
51—Very warm
52—Scotch word for "child"
54—Bay between New Brunswick and Nova Scotia
57—A country of Europe
58—To spoil
59—"Till sale" (abbr.)
61—Right Worshipful (abbr.)
62—Girl's name
63—Girl's name
64—Noah's ship
65—Boy
67—Head covering
69—Southern State of U. S. (abbr.)
70—Preposition

The Most Appropriate Not Available.

"With these very short skirts I want to wear the most appropriate shoes."

"Yes; but a woman can't wear hip boots."

Answer to last week's puzzle:



Lavish Nature.

"Here we have a natural laundry," explained the guide. "On one side a hot spring boiling the clothes, on the left a cold spring for rinsing them."

"And this rock between?"

"Soapstone."

Simple Things.

Sometimes such simple things can
make me weep,
Such tiny things.
Across the hill the distant bleat of
sheep,
Or fluttering wings.
The voice of the wind in the dead of
the night,
The moaning sea,
The star that shall herald with silver
light
The day to be.
Birds that, in the first grey tint of
dawn,
Peep from their nest.
A babe that nestles close against
Its mother's breast.
Brown leaves that tumble down, a
mournful heap,
From wind-tossed trees.
It seems so strange—they make me
yearn to weep,
Such things as these.

—Heather Gwynne.

Mixing Up Dates.

In the city of Constantinople, Turkey, are found four differing calendars. The people stick to their own particular religious calendar, consequently Sunday for one is Wednesday for another, and Tuesday for some is Friday for others.

Not only that, but the various religions have time and again attempted to have different hours for their clocks. This scheme has failed to work to any extent, but to practically everybody in the city it is 12 o'clock at sunset, this in spite of the fact that the governmenal clocks say 12 o'clock a midday.

What You Breathe.

The average person inhales about 2600 gallons of air daily.

Ready for Winter.

I have dropped the leaves from each
twig and bough,
I am ready, all ready, for winter now.

Stripped of their fluttering flags and
sails,
My trees have no fear of the winter
gales.

Their sap is safe 'neath the frozen
ground,
Till the clear, high summons of Spring
shall sound.

Each bud is wrapped warmly, secure
and tight,
And each has a waterproof new and
bright.

My bulbs are well covered, my seeds
are sown,
And away to the south have my song
birds flown.

The year's been so busy and happy
and blest,
And now I am weary and long for
rest.

Wrapped in my leafy blanket light,
I wait for the snow's warm coverlet
white.

I will not care for the winter's blast
And whirling snow-wreaths driving
fast,

They will but cover me still more deep,
And only lull me to sweeter sleep.

Drowsed with content I will stretch
my form
And dream of the fifes of the far-flung
storm."

Then Mother Earth sank into slumber
deep,
Smiling, "Good-bye, labor, and welcome sleep!"

—May Howe Dakin.

His Own Words.

Mr. Pester—"I'm going upstairs to kill that trombone player."

His Wife—"You let him alone. Only last night I heard you say you liked a man who could blow his own horn."

In the Book of Exodus candlesticks are first mentioned.

Growing a Good Roads System.

It is not so long since a good gravel road was the acme of perfection in road building and those using the roads were delighted with highways of this description. Property that was offered for sale had a special appeal if it could be advertised as being situated on a gravel road. A Canadian farmer is still well satisfied with gravel roads and even the fact that he cannot travel exclusively on this class of roadway does not deter him from getting to any point he wishes. An occasional detour is accepted as inevitable and is made the best of.

The city man, however, having become accustomed to paved streets, expects to have these provided wherever he has the will to go. He may complain of his frontage tax on his 33 or 50 feet of pavement, but he cannot see why in front of the thousand or more feet of frontage of the individual farm the roadways are not all paved. True, he would like to whizz by on smooth highways just to get to some destination, forgetful entirely of the intermediate scenery or of the fact that the roadway was not built for his exclusive use. There is far too much unjustifiable complaining about our roads. Wonders have been performed upon them in the past few years. and the transformation to motor roads is going on as rapidly as reasonably possible. It cannot all be done at once, and detours will be necessary yet for a while. In many cases the detour is the only place where the motorist slows up sufficiently to see the country through which he is travelling, and in doing this it is conferring an unexpected favor upon the driver.

Canada's roads are good and it will be only a short time until detours are a thing of the past. In the meantime patience should be exercised. We did not reach manhood in a day; we had to grow up, and so does our good roads system. Canada possesses an abundance of good road material among her natural resources, says the Natural Resources Intelligence Service of the Department of the Interior, and is thus fortunately situated in her endeavors to cater to the ever growing body of motorists and other improved roads enthusiasts.

Monument to Fulton.

A monument to Robert Fulton, American inventor of the steamboat, is to be erected in a small French town where he conducted tests with a miniature steamboat in 1802.

A Horsepower.

A horsepower is equivalent to raising 33,000 pounds one foot a minute.

MUTT AND JEFF—By Bud Fisher. **Mutt Shifts from a New England State to the Middle West.**