The Automobile

HELP THE ENGINE TO ADJUST ITSELF IN HOT WEATHER.

It makes a difference to the motorist whether the thermometer stands at 90 degrees in the shade or at zero. He will soon find out that during the heated term the engine readily becomes overheated. He should be familiar with the various causes of this automotive situation. One reason may be because the engine is getting too much fuel. If the engine is fed too much gasoline, it will tend to get too hot. The remedy in such an instance obviously lies in thinning down the mixture. A driver will usually find that the fuel required for summer motoring should be leaner than that used in winter.

The summer driver finds that the water in the radiator has a greater tendency to boil, which is the result of an overheated engine. However, the most effective results will be secured when this water is not too cold. Some engines develop much less than the maximum horsepower because they are too well cooled. Others seem to become overheated in spite of the best care.

Such conditions would not obtain if various parts were working as the designer intended they should. During the cold weather the motorist who habitually drives with a retarded spark may observe no serious consequences because the outside temperature is in his favor. But in the good old summer time he finds that his engine overheats and gives trouble. This is because he has not changed his method of driving as should be done.

In hot weather to drive with a retarded spark is to invite the engine to overheat itself. Because the engine may knock at little at low speed the driver may have a tendency to leave the lever partly retarded all of the time instead of advancing it when a higher speed is reached.

TIMING OF THE SPARK.

With the battery type of ignition system some change in the timing of the spark usually needs to be made to give the desired result at all points throughout the range of engine speeds. Of course, when the engine is turning over slowly under a heavy load the spark must be kept retarded to prevent knocking. However, when it is running at the higher speeds or at medium speed under light loads the spark must be advanced to secure proper power, efficiency or operation and to prevent overheating.

Most battery systems are equipped with a governor which automatically advances the spark as the engine speed is increased, but some are not and in either case considerable manipulation of the hand spark lever may be necessary to secure the best results.

Overheating may sometimes be traced to sediment in the radiator, which cuts off the free radiation of heat. The use of a saturated solution of washing soda and water will usually remove this. During the hot weather each year, it is well to fill the cooling system with a solution of this sort and run the engine for several hours. Then drain this solution off and refill the system with clean water.

If, in the system used, a pump is employed, the upper hose should be disconnected from the radiator and the engine should be run to pump the solution out of the system. At the same time fresh water run from a hose or other source should be fed into the top of the radiator as fast as it is pumped out and thus flush the entire system before connecting up the hose again.

Where the thermo-syphon system is used, which does not employ a pump, it is, of course, impossible to do this. But one should remove both upper and lower hose connections after running the engine with the solution and wash it out as well as possible with fresh water. A hose inserted in the upper connection of the cylinder would force out all the solution with a collection of sediment, and the same process with the radiator ought to clean it out.

FAN BELT MAY GIVE TROUBLE.

Fan belts are more likely to get out of order in summer than in winter. This may be because the engine throws grease and oil more readily in hot weather. Belts should have oil enough to keep them soft and pliable, but not enough to cause slipping. They should be wiped free of all oil occasionally. It is always possible to adjust the belt. The belt should be tightened so that there is sufficient tension to drive the fan at all engine speeds.

Wherever the flywheel has spokes to form a fan the oil pan and hood should be kept tight so that the air will be drawn through the radiator rather than through other openings. If the radiator is not kept free from oil the outside passages will collect dust, which will prevent a free flow of air and reduce the radiating surface. The same effect follows if the front radiator is too thickly smeared with paint.

The pump, while it will wear out in time, is one of the last places to look for trouble. The action of the pump may be determined usually by removing the radiator filler cap when the engine is running and noting whether or not the water is circulating. But if a baffle plate is placed in the filler opening it cannot be seen. Then a test may be made in the same manner by which the cleaning solution is washed out.

With the thermo-syphon system very little pressure is generated and a slight obstruction will stop the flow of water. Therefore it is more necessary to keep the system free from sediment and to see that the gaskets at the joints are made with circular openings of full size in order not to obstruct the flow of water. Likewise, water must be kept above the pipe leading to the top of the radiator in order to have any circulation in this type of cooling system.

Sometimes the lining of the hose is loosened and folds back inside, so that the water does not flow freely. This is due to carelessness in stretching the hose over the pipes at the radiator and cylinder block. Also the lining of the old hose will sometimes loosen up and pieces will lodge where they cut off the circulation.

In conclusion, keep the engine free from carbon and keep the valve push rods adjusted close and be sure the exhaust from the muffler is free. Discomforts and troubles during the warm weather months can be largely eliminated if the motorist remembers how the engine is different in summer.

How Heat Travels.

A few months ago the man who suggested that it might be posible to measure the heat received from a girl's cheek three-quarters of a mile away, or from a candle 4 miles away, would probably have been looked on with some suspicion. But this seemingly incredible thing has now been done by means of an instrument invented by Professor C. V. Boys, of England.

This instrument was constructed to measure the heat received from the brighter stars. It is made of a "suspension fibre" some thousands of times finer than any made before, and to obtain this fibre certain precious stones were melted down and drawn out into filaments at a high speed and under a high temperature.

The metal substance was stretched by being fixed to an arrow, which Professor Boys shot from a bow through a hot flame down a room about ninety feet long. Most of the melted substance remained behind, but between it and the arrow floated a fibre as delicate as a spider's web, and less than one ten-thousandth part of an inch in diameter.

But the invention, though wonderful, has failed in its chief purpose, for the heat from the stars is too slight for even this delicate instrument to register.

The Tree Climbing Fish.

"Do you think it's true about this tropical fish climbing the palms?"

"Sure it is. I've often seen birds find a good perch in the trees."

Variety of Industries.

Birmingham, England, is said to produce the largest variety of manufactured goods of any city in the world.

Said to date back to the 18th century, this frame structure at Sillery, Quebec, is described as the "oldest house in Canada." Acquired by the Dominion Historical Society, it will be used for exhibition purposes.

Acting to Unseen Audiences.

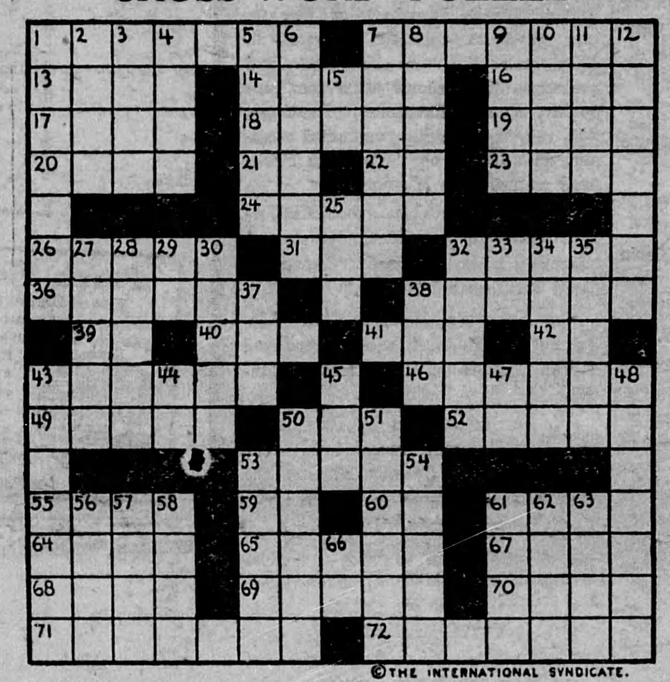
The broadcasting of plays offers a wide scope for the expression of dramatic talent.

In wireless acting the technique is almost entirely vocal, and beauty of face and form are unnecessary. On the stage an actor has the advantage of being able to convey by his gestures, facial play, and deportment the sense and action of the play; but the wireless actor must remember that his audience cannot see him, and that they rely up his voice to convey every movement of the play.

The aspiring wireless actor must have other qualifications besides tone and quality of voice. He must learn dramatic values. He must be able to convey the varying degrees of dramatic emotion of the character he is portraying. By the caress in his voice his unseen audience must be able to imagine his arm round his lover; by his sigh they must imagine the despair that clouds his features.

We are made aware of the hero's virtue, not, as formerly, by his blue eyes and innocent expression, but by the quality of his voice. All the emotions must be conveyed to the listener by careful vocal expression.

CROSS-WORD PUZZLE



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HORIZONTAL

1—Thrive
7—Tropical fruit (pl.)
13—Wander
14—Kingly
16—Collected
17—Ardor
18—Happening
19—Girl's name
20—Hat material
21—Civil Engineer (abbr.)
22—Negative
23—Burn
24—Large plants
26—Storms
31—Somber
32—Hesitate
36—Rocks
38—Impede
39—Toward
40—To cut off
41—A human being
42—Father (familiar)
43—Artists' stands
46—Avaricious persons
49—Lees
50—Head covering
52—Blaspheme
53—The whole range of anything
55—Sensitiveness of feeling
59—Indefinite article
60—Abbr. for name of a continent
61—A minute particle
64—Scent
65—Several things considered as a whole
67—Mohammedan chief
68—Nature
69—Small Spanish horse
70—An elderly man
71—Soaked in a liquid
72—Argued

VERTICAL

1—Likes better
2—Part
3—Egg shaped
4—Dispatched
5—Build
6—Wanderers
7—Prohibited
8—Female singing voices
9—One spots
10—Cognomen
11—Girl's name
12—More precocious
15—You
25—Consume
27—Rose oil
28—Water fowl
29—Printer's measure
30—Exchanges for money
32—Overpowering fear
33—Part of verb "to be"
34—The one above
35—Burns
37—Wireless call for aid
38—Cut of pork
43—Newspaper writers
44—For example (abbr.)
45—An animal
47—Day of the week (abbr.)
48—Cut off
50—Preserved
51—Kicked, as a football
53—Determine by measurement
54—Nice perception
56—Entrance
57—Contend with
58—Woody plant
61—Plateau
62—Overlook
63—Part of automobile
66—Within

WIRELESS FROM THE HUMAN BRAIN

Have you ever become suddenly conscious of someone looking at you, and instinctively turned round to see who it was? Have you ever felt a pair of eyes staring at you? People usually feel uncomfortable when sitting in a railway carriage with a battery of eyes opposite. Why? Again, when folk meet for the first time they find it awkward to hold each other's gaze for more than a few seconds.

But who would believe that when you peer into the eyes of another person a beam of electrical energy—a human wireless ray—actually travels from your eye? A British doctor has proved this astonishing statement to be a fact. Dr. Russ has invented an instrument which is set in motion when anyone looks at it through a pair of opera glasses twelve feet away!

Measuring the Eye's Power.

"There is an electrical change with every heart-beat of a normal person," Dr. Russ stated recently. "And the retina of the eye shows minute electrical activity during vision." This conclusion has been reached after a long series of experiments since 1917. The force is apparently generated in the brain and escapes from the body through the eyes.

The peculiar instrument used to demonstrate this force consists of a cylinder, about four inches long and of three inches diameter, made of strips of mica and metal. This is suspended by a thread of unspun silk inside a small cabinet having a window in front. The cylinder is free to turn, for the supporting thread is over a foot long and goes up through a tall chimney fitted to the top of the carinet. When anyone glances at it this cold, lifeless affair dances in the most uncanny manner.

Thus the power of the eye is an actual fact. Schoolboys, of course, have long suspected it. But science has only just confirmed their speculation that there really is something in the headmaster's glare. More, this eye-ray-meter actually measures the power of the eye. Ordinary people, even children, move the needle about fifteen degrees. But Dr. Russ stated that he has seen it soar to sixty degrees under the smile of a wellknown actress. This is quite understandable, but a similar result happened when a flying officer, no doubt an ace of aces, focused his eyes upon it.

It makes one wonder how far the needle would whiz round if a first-class pawnbroker tried his optical powers on the instrument. Probably the indicator would touch 100 and ring the bell. And probably the wily pawnbroker would ask for his penny back!

No experiments have yet been tried with those amiable persons who have developed a specially penetrating gaze for use when their husbands return home very late—from the office. Perhaps they would break Dr. Russ's instrument altogether.

One of the possible uses of this invention is in connection with the diagnosis of disease, for a person in very poor health has little or no effect on the eye-ray-meter. Experiments are also being carried out to see whether the force from the eyes can interfere with wireless broadcasting. So far, no conclusive results have been obtained, but it is thought that the waves emitted by the eyes of human beings and animals are of the same nature as those employed in wireless work, but of an exceedingly short wave length.

INTENSIFYING TOURIST INFORMATION

Canada Should Take Advantage of Exceptionally Favorable Conditions for Tourist Business.

"Tourist traffic is one industry ripe for development in Western Canada at the present time," is the statement of one of the engineers of the Natural Resources Intelligence Service of the Department of the Interior, on returning from an investigation of the natural resources of southern Alberta and British Columbia. This engineer states that our attractions to tourists in this area constitute one natural resource ready to "cash in" on immediately with little expenditure, and no diminution of the original assets on which it is founded.

Canada has the natural attractions to meet any competition for the American automobile and other tourist traffic. She has the big game and other sporting attractions, the waterways, scenery, summer climate, and so on. The service provided by our railways is the best and our highways are now comparable with many of the main highways in the United States, and they are being rapidly extended and improved.

We have the material to sell and we have a ready market, creating a situation of remarkable possibilities. It is a situation which has developed very abruptly—mainly within the last few years. Next door we have a nation, with nearly 110,000,000 people and over 15,000,000 automobiles, bordering us clear across the continent. Most of the motor cars are owned by people with the means and inclination to travel. It is doubtful whether any country ever faced such favorable conditions as Canada enjoys to-day with regard to the tourist traffic—a class of business which has long been nursed as a large source of income in such countries as France, Italy and Switzerland.

In the report of the United States foreign trade for 1923 the expenditure of tourists abroad is estimated at $500,000,000. The increasing tourist travel in Canada bids fair to absorb a considerable portion of this annual expenditure.

What is required more than anything else to take full advantage of this situation and to create a still more thriving and remunerative industry is a spirit of co-operation among the various organizations dealing with this traffic. The efforts of the Natural Resources Intelligence Service are being directed toward this end.

As an agency for selling interest in our natural resources Canada's tourist traffic plays an important part. The American tourist generally has an eye to business as well as pleasure. Many of them make their trips to Canada a tour of investigation, resulting often in investments in this country. Canada's business growth has created an interest among American business men that is simply revolutionary as contrasted with their attitude toward the Dominion only ten years ago.

World's Largest Electric Fan Made for African Gold Mine

The largest fan in the world is at present being erected on one of the Rand gold mines. Thirty feet in diameter, it will carry eight blades, each ten feet across, writes a Johannesburg correspondent of The Morning Post, London. It will drive 9,000 cubic feet of air a minute, and it will take a 15,000 horse-power steam engine to turn it at 120 revolutions a minute. The fan is to be placed above a circular shaft 3,500 feet deep to draw out the foul air from the entire underground workings.

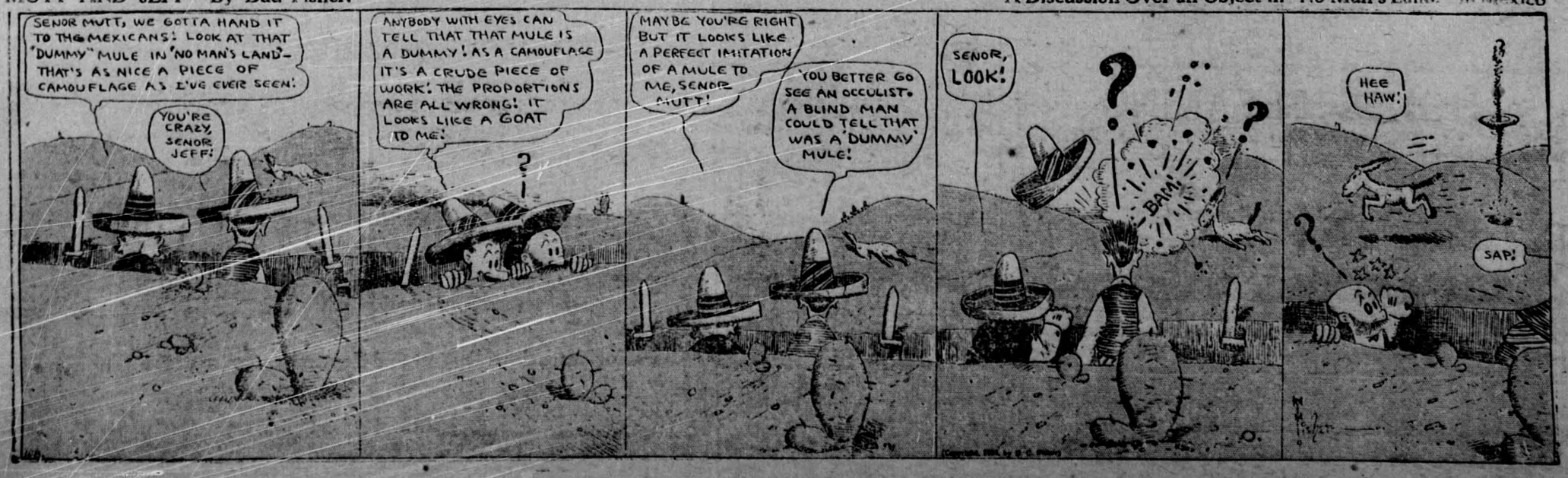
Solution of last week's puzzle.

The Origin of Chapels.

The word chapel comes from capa, a chest. The word was originally applied to the chest in which the relics of a saint were deposited, afterwards to the apartment in a church or cathedral in which the chest was kept. These chapels were dedicated separately, but were known by the name of the saint whose relics they contained.

Small Part.

Originally Wordsworth and Coleridge planned to write "The Ancient Mariner" together, but Wordsworth contributed only six lines.

MUTT AND JEFF—By Bud Fisher.

A Discussion Over an Object in "No Man's Land," in Mexico