HIS LIFE RUINED BY DYSPEPSIA

Until He Tried "FRUIT-A-TIVES" The Wonderful Fruit Medicine

MR. FRANK HALL

Wyevale, Ontario.

"For some two years, I was a sufferer from *Chronic Constipation and Dyspepsia.*

I tried every remedy I heard of without any success, until the *wife of a local merchant recommended 'Fruit-a-tives'.*

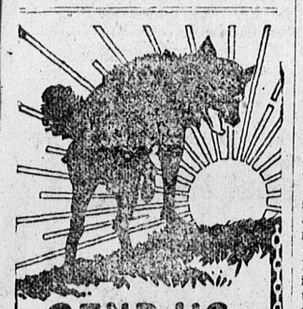
I procured a box of 'Fruit-a-tives' and began the treatment, and my condition commenced to improve immediately.

The Dyspepsia ceased to be the burden of my life as it had been, and I was freed of Constipation.

I feel that *I owe a great debt to 'Fruit-a-tives'* for the benefit I derived from them."

FRANK HALL.

50c. a box; 6 for $2.50, trial size 25c. At all dealers or sent postpaid by Fruit-a-tives Limited, Ottawa, Ont



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Don't sell furs of an unknown value to unknown peddlers. Send to a reputable House capable of grading and shipping your furs to the world markets where they'll bring the highest price for you. Ship your Raw Furs to us. We'll value them and remit you the cash the day we receive your furs. If our price isn't as good as you expect, return the check and we'll return your furs at once. We pay all express charges.

Quick returns—High Valuation—Courteous Treatment. References: Any branch, Bank of Montreal or Bradstreet's Mercantile Agency. Send your name and we'll supply you with shipping tags.

REAL SIBERIAN BAIT—Lures all fur bearing animals. One bottle .90 Registered Postpaid. Two bottles $1.75 Registered Postpaid. Special price per dozen. Traps and Hunting Goods of every description always in stock

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HINTS FOR The Motorist

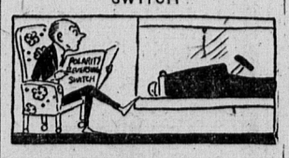
BY ALBERT L. CLOUGH

LIGHTING CURRENT DISABLES MAGNETO

A. S. writes: My car suddenly ceased to run on the magneto, although it would do so on the dry-cells. This was just after the following happening: While using a defective electric light cord, in making adjustments on the throttle-rod, a short-circuit occurred between the car and the cord. Is it possible that this accident accounts for the trouble and how? If so, what is the remedy? Can the excessively damp weather followed by a cold snap, account for the trouble?

Answer: If a flow of electric light current actually occurred from some point in the primary winding to ground through the magneto and engine, we should expect it to have demagnetized the magnets and although this seems a very unusual happening it may be exactly what took place. Your remedy is to take your car to an electric service station and have the magneto recharged by the use of direct current, which can be done without any disassembling. If this does not set matters right it may be that the magneto winding is open circuited or grounded, in which case you will have to have it taken out. We hardly think that the weather could have had any influence as the magneto runs in oil and is fully enclosed.

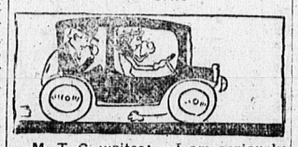
POPLARITY REVERSING SWITCH



G. B. asks: What is the function of the popularity changing switch, used with the —— starting and lighting system? They advise that this should be operated about once every month or so.

Answer: Where two contact-points are used to make and break an electric circuit and the current flows constantly in one direction, one of these contacts wears away and the other does not and in order to equalize the rate of contact wear, it is advisable occasionally to change the current direction so that the cantact that has been wearing may cease to do so and even build up sightly. In the system you refer to there is a vibrating-contact voltage regulator of the variable peld resistance type and also the usual form of cut-out or relay and the object of the polarity changing switch is to reverse the directon of current through the contact of these devices and to protect them against excessive wear. When the switch is operated the battery reverses the generator fields and the x generator brush becomes the—brush and vice versa but as the connections to the battery have been reversed the current flows in the same direction to the battery.

EXHAUST GASES ENTER CLOSED CAR

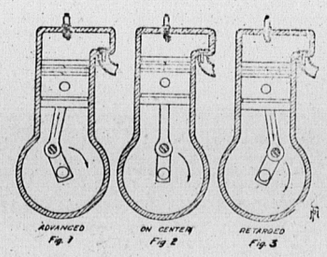


M. T. C. writes: I am seriously troubled by the exhaust gas, which enters the body of the small coupe which I drive. The connections between the exhaust pipe and the manifold and muffler have both been packed but this has not overcome the trouble. Can you suggest anything?

Answer: It is certain that all exhaust connections are tight and the muffler itself does not leak, the only suggestion we can make is this: That you adopt some means of closing the slots in the footboard through which the pedals and levers pass, for the purpose of preventing entrance into the car of exhaust gas that may be swept under it by the wind or otherwise. Attachments for this purpose are furnished for some makes of cars, consisting of rubber pads that slide with the pedals and seal the slots. If you have a heater in the car floor or any means for warming the intake by exhaust heat, it will be well to see that these devices are not causing the trouble. Are the connections between the exhaust manifold and the cylinders perfectly tight?

IGNITION, THE SPARK

In the first part of this article it was stated that the fuel charge in a cylinder should be ignited and its useful pressure developed at the instant when the piston is at the top of its stroke and ready to transmit this pressure, through the connecting-rod, to turn the crank-shaft in the direction in which the engine is running. It is commonly believed that electricity acts instantaneously and moreover that there is no difference of time between the act that causes an explosion and the actual occurrence thereof, and if this were the fact it would only be necessary, in the ignition of a gasoline engine, to have the spark producig mechanism go into action just when the piston reached upper dead-center, in order to realize the condition above stated. In reality, however, the effects produced by electricity are not instantaneous, although they are so quick that they seem so to the unaided senses and it is also true that there is an interval, although a very minute one, between the kindling of an explosion and its full development. Both require actual time that is capable of being measured by refined methods. In an electrical ignition system there are mechanical parts that have to move, whenever a spark is to be produced and it is a fact that a very little time, but still some time is required to move anything, no matter how light it is. Moreover electrical ignition requires the magnetization, by the current of certain devices included in the system and the development and dying out of magnetism require a very minute, but still an actual and measurable interval of time. When the spark actually occurs between the plug points in the cylinder, it is only the mixture immediately in their vicinity that is lighted at first and combustion has to spread from this point throughout the contents of the cylinder until all the gas and air present have become inflamed, before the pressure is actually developed. This requires but an extremely short time, but it requires some time and indeed, if too much air or too much fuel is present in the mixture, the time occupied becomes quite perceptible. The loss of time in securing the necessary movement of mechanical parts involved in ignition is known as "mechanical lag"; that absorbed in the electrical and magnetic actions upon which ignition is dependent is called "electrical lag" and that taken up, so to speak, in making the fire fully burn, after it is kindled, is spoken of as "combustion lag." A system of ignition may possess all these "lags", in varying amounts and all three of them have to be added together to determine the time elapsing between the instant that the mechanism is ready to produce a spark and that at which the explosion pressure is ready to act effectively upon the piston. In the best modern systems, mechanical and electrical lag have been reduced to very small values, but cannot be entirely done away with. Combustion lag is, however, always present, no matter what system of ignition is used, so that there always is a delay between the beginning and the completion of the act of ignition which though slight in itself, is of importance. Referring to Fig. 1 in the accompanying diagram, it will be noted that the crank is shown as about 30 degrees or one sixth of a revolution short of its upper dead-center position. Assuming, as before, that the engine is running at 3,000 revolutions per minute or one turn each fiftieth of a second, one three-hundredth of a second will be required for it to move from this position to the dead-center position shown in Fig. 2, at which the working pressure should be developed ready to act on the piston. Now the total "lag" in an ignition system is often as much as the one three-hundredth of a second just spoken of and in some systems it may be considerably greater than this. Furthermore, it is practically the same in duration whether the engine is running fast or slowly. Suppose now that the spark producing mechanism is so coupled to the engine that it begins to act just as a piston reaches upper dead-center. Under these conditions, ignition would not be consumated until one three-hundredth of a second later than the dead-center position and, in this interval the crank and other parts would have moved into the position shown in Fig. 3 or about 30 degrees after dead-center, so that the evil effects or retarded ignition, as previously described, would be realized. The remedy for this situation is obvious and consists of so coupling the sparking mechanism with the engine that it shall start to act 30 degrees prior to the pistons reach ing dead-center, as shown in Fig. 1, for by this adjustment, ignition will have time to be fully completed when the dead-center position is just attained. The above statements are made to explain why it is that the sparking mechanism must be advanced to give good results at high engine speed, and a homely illustration of the principle involved is found in the fact that the gunner who seeks to hit a bird on the wing must fire at a point in advance of his game and not directly at it. Moreover, the slower the bird is flying the less distance ahead of it he must aim and this principle applies in ignition, for it the engine is running at only 1,500 turns per minute, it will rotate but 15 degrees in one three-hundredth of a second and the ignition action need be started only 15 degrees ahead of dead-center. The means for varying the commencement of the ignition operation will be described later.



LOW TENSION MAGNETO FOR IGNITION

F. M. writes: I have a gallon engine equipped with single-spark ignition from dry-cells only. Would it be possible to install a low tension, belt-driven magneto, using the dry cells to start on and the magneto to run on I cannot use a high-tension magneto as there is no way to time it. What is the voltage of a low-tension magneto and how should it be wired to the coil? Would there be any advantages in using it?

Protection against Rough Weather

Frequent application of MENNEN'S COLD CREAM renders your hands and complexion soft and smooth in spite of the assaults of winter weather.

MENNEN'S COLD CREAM is a mineral cream. It is beneficial to the skin. It will not grow hair.

MENNEN'S COLD CREAM

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Answer: You could do so. These magnetos are of about 6 volts and one of them would take the place of your dry-cells and prove an economical proposition. You require one that gives a direct current and has a governor on it to keep the voltage constant. We think that some of the auto-wrecking concerns have these machines on hand at low prices. You should use a three-point ignition-switch, wiring the coil to the switch lever, the dry-cells to one switch point and the magneto to the other and grounding one side of both the cells and the magneto.

STIFFENED ENGINE OIL INTERFERES WITH CRANKING

W. H. D. writes: On these cold morning I have much trouble in starting my engine, although I fill the water system with hot water and prime the cylinders. It feels as though the pistons must freeze in the cylinders, it cranks so hard. What can I do to better the situation?

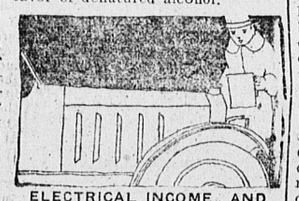
Answer: A warmed garage is the only satisfactory remedy, but the use of a different engine oil that does not stiffen so much at low temperatures, may be of some assistance. You better take this matter up with some reliable oil supply concern. Some motorists find that jacking up one rear wheel,

engaging high speed and turning the engine over by the wheel is easier than doing it with the crank. Have you tried priming the cylinders with high-test gasoline or a mixture of gasoline and ether? Keeping the cylinders slightly warm, by running an electric heater under the hood during the night, might be found to be worth while.

WOOD VS. DENATURED ALCOHOL

M. T. asks: Which is more economical to use in the radiator to prevent freezing denatured or wood alcohol?

Answer: With wood alcohol selling at present, at about twice the price of denatured alcohol, the latter is much the more economical to use. Using the same proportion of wood and denatured alcohol in the mixture, the former gives slightly greater protection against freezing, but not nearly enough to make up for the great difference in price in favor of denatured alcohol.



ELECTRICAL INCOME AND OUTGO

The Battery Cannot Returne More Than It Recovers.

An automobile storage battery is like one's bank account. One cannot draw out more than is put into it and still avoid trouble, for, sooner or later the "drafts" will not be honored. Yet, in the case of thousands of batteries, this sort of procedure is being attempted, during this season of long nights and cold days—the demand for stored current is allowed to exceed the total of effective charging current furnished, and the supply of stored electrical energy becomes exhausted, or in other words, the electrical account becomes "overdrawn." There are just two ways in which to relieve this situation, namely: To put more current in or to take less current out. In order to effect the former, the following suggestions are made: So adjust the regulation of the generator that it shall produce a greater charging current, or in other words increase its charging rate. This can be done on practically all modern generators—on those having third brush regulation by readjusting the third brush position and on those with field resistance control, by re-setting the voltage control magnet. Give the battery more time to do its charging, by operating the car, at least, part of the time, on second speed, with the engine running just fast enough to develop the normal charging rate. This practice alone will usually keep a battery at full charge. Running the engine idle, merely for charging purposes, is not to be recommended, because it is too expensive and bothersome. charge the battery from an external source of current when necessary, which should be the way be very seldom, if the charging rate is adequate and the battery itself in good condition. If outside charging is frequently necessary, it is better to own a small rectifier than to be continually taking the battery to a charging station. The followins suggestions may enable the demand for current to be reduced: Use the lights only when required and use the small headlight bulbs or the dimmer when admissibe. Replace very large headlight bulbs by smaller ones. Temporarily discontinue the use o felectrical accessories, such as a cigar-lighters, spot lights, trouble-lamps and electrical vulcanizers. Be sure there are no internal short-circuits in the battery. Avoid leaving the ignition switch on, when engine is dle. Provide a warm place for the car, so that low temperature shall not reduce battery efficiency or require long starter motor runs. Adopt a method of priming the cylinders in the interest of prompt starting.

Questions of general interest to motorists will be answered in this column, space permitting. If an immediate answer is desired, enclose self-addressed, stamped envelope. Address Albert L. Clough, care of our office.

109 years

is the proud record of success that belongs only to

JOHNSON'S Anodyne LINIMENT

A doctor's famous prescription—internal and external use—for Coughs, Colds, Sore Throat, Grippe, Cramps, Sprains, etc. Soothes, heals, and stops pain.

W-S-S

THE British are noted as great tea drinkers and are naturally good judges of tea.

So when we learn that over 70% of the tea used in Great Britain is Indian tea we can be sure that Indian tea is of the very best quality.

In Canada the preference for Indian tea has become just as strong, as evidenced by the success of Red Rose Tea which consists chiefly of ASSAMS—the richest and strongest of Indian teas.

Red Rose is always sold in sealed packages.

RED ROSE TEA "is good tea"

Red Rose Coffee is as generously good as Red Rose Tea

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THE CANADIAN WHEAT BOARD

Price of Wheat Grown in the Provinces of Manitoba, Saskatchewan, and Alberta, for use as seed, therein

In order to assist farmers in the production of a greater crop the Provinces of Manitoba, Saskatchewan and Alberta to purchase their seed wheat requirements, it is hereby ordered by the Canadian Wheat Board that:

1. Pursuant to Section 5 thereof, Regulation No. 75 of the Board issued December 27th, 1919, is hereby cancelled.

2. Until March 31st, 1920, the price of wheat grown in the Provinces of Manitoba, Saskatchewan and Alberta, sold locally from country elevators in the said Provinces, for use as seed therein, shall be $2.45 per bushel, basis One Northern in store Public Terminal Elevators, Fort William and Port Arthur and licensees of the Board selling such wheat shall pay to the Board the sum of 30c for each bushel of wheat so sold.

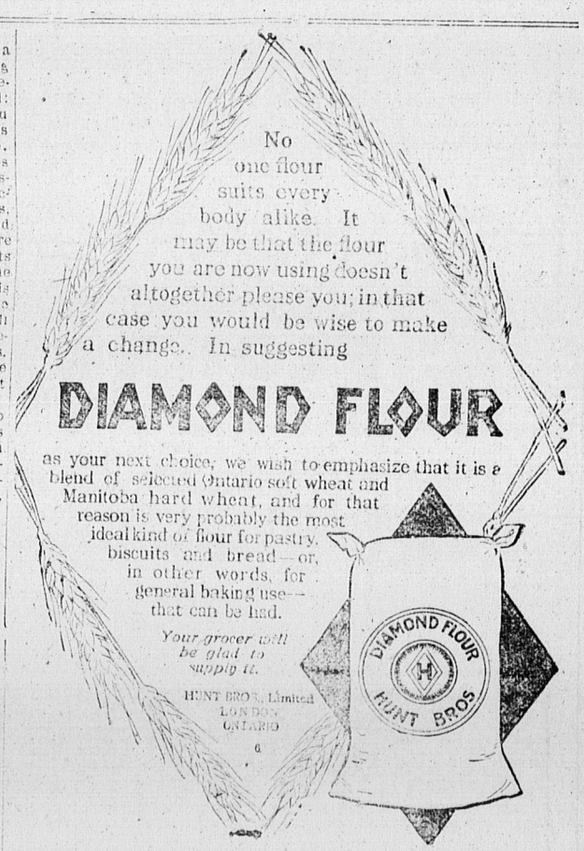
3. Licensees of the Board selling wheat grown in the Provinces of Manitoba, Saskatchewan and Alberta, locally from country elevators in the said Provinces, for use as seed therein, shall in making returns to the Board, pursuant to the regulations of the Board, report all sales of wheat so sold and shall with each report remit to the Board the proper amount required by this regulation.

4. Carrying Charges in accordance with Regulation No. 10 of the Board or such other regulations as may be substituted therefor, will be paid to licensees of the Board on the street wheat sold for seed in accordance with this regulation until the date on which the wheat is so sold.

5. This regulation is effective from midnight February 21st 1920 until further notice. (Sgd.) JAMES STEWART, Chairman (Sgd.) H. TOOLEY, Secretary.

CAKELESS DAYS IN PARIS

PARIS, Feb. 24.—The prefect in an announcement making Tuesday and Wednesday of each week days on which cakes may not be sold or eaten, points out that persons who infringe the regulation render themselves liable to fines ranging as high as 1,000 francs and prison sentences of from one week to two months. The announcement says that even bread with jam or other substance in which sugar is used is prohibited in restaurants or tea house on "cakeless" days.



CANADIAN NATIONAL RAILWAY

PRINCE EDWARD ISLAND

Time Table in Effect, January 19th, 1920

ATLANTIC STANDARD TIME.

Read Down					Read up		
P.M.	P.M.	A.M.			P.M.	A.M.	P.M.
2.45	12.40	6.25	Dep.	Charlottetown	Arr.	6.35	10.40	12.40
3.58	2.14	7.21		Hunter River		5.37	9.03	11.24
4.45	3.05	7.55		Emerald Jct.		5.00	8.05	10.38
6.10		8.45	Arr.	Borden	Dep.	4.10	6.40	
4.10		6.40	Dep.	Borden	Arr.	6.10	8.45	
5.00	3.05	8.05		Emerald Jct.		4.40	8.10	10.38
5.34	3.53	8.42		Kensington		3.53	7.15	10.03
6.05	4.35	9.20	Arr.	Summerside	Dep.	3.29	6.45	9.30
		Tues. Thur Sat. A.M.				Mon. Wed. Fri. P.M.		A.M.
6.20		11.30	Dep.	Summerside	Arr.	12.20		9.00
7.23		1.14		Port Hill		10.41		7.58
8.18		2.44		O'Leary		9.21		7.02
8.08		3.51		Alberton		8.02		6.13
9.45		5.00	Arr.	Tignish	Dep.	7.00		5.35
		P.M.						
		Mon. Wed. Fri.					Mon. Wed. Fri.	
P.M.		A.M.				A.M.		P.M.
3.10		7.00	Dep.	Charlottetown	Arr.	10.10		6.10
4.30		8.55		Mount Stewart		8.55		4.30
5.00		9.32		Morell		8.22		3.25
5.22		10.02		St. Peters		8.00		3.00
6.30		11.35	Arr.	Souris	Dep.	6.50		1.35
		P.M.				A.M.		
		7.50	Arr	Elmira	Dep.	5.30		
		Mon. Wed. Fri.					Mon. Wed. Fri.	
P.M.		A.M.				A.M.		P.M.
4.35		8.10	Dep.	Mount Stewart	Arr.	8.50		4.10
5.27		10.20		Cardigan		7.48		2.48
5.51		11.00		Montague		7.23		2.10
6.25		11.40	Arr.	Georgetown	Dep.	6.45		1.25
Daily ex. Sat & Sun		Sat. only				Sat. only		Daily ex. Sat & Sun
P.M.		P.M.				A.M.		A.M.
3.30		4.00		Charlottetown		10.25		10.40
5.15		5.45		Vernon River		9.09		8.45
7.25		6.45	Arr.	Murray Harbor	Dep.	7.30		6.45

Except as noted, the above trains run daily, Sunday excepted.

H. H. MELANSON, Passenger Traffic Manager, Toronto, Ont.

W. T. HUGGAN, District Passenger Agent, Charlottetown, P.E.I.

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