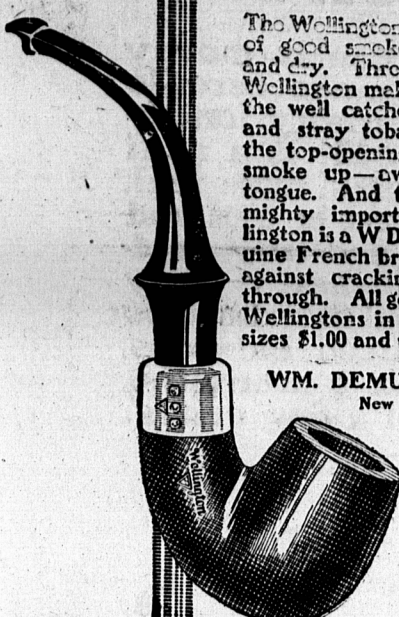


**W.D.C. Wellington**  
THE UNIVERSAL PIPE



The Wellington is a storehouse of good smokes—clean, cool and dry. Three things about a Wellington make it so. First, the well catches all moisture and stray tobacco. Second, the top-opening bit sends the smoke up—away from the tongue. And third—which is mighty important—the Wellington is a W.D.C. Pipe, of genuine French briar, guaranteed against cracking or burning through. All good dealers sell Wellingtons in all shapes and sizes \$1.00 and up.

WM. DEMUTH & CO.,  
New York

**HINTS FOR The Motorist**  
BY ALBERT L. CLOUGH

**KEEPING DOWN THE REPAIR ACCOUNT (Continued)**

Recipe: Oil And Grease, When And Where Needed

Careful attention paid to adjustments goes far toward reducing this end. Gears too tightly adjusted wear themselves out very quickly and when set either too tight or too slack cause serious damage to gears the meshing of which they control. The prompt correction of defects, when they first develop and before their consequences have become serious, is another important consideration. If a loose connecting rod bearing is at once taken care of, when its hammering is first noticed, the repair outlay need not be large, but, if repairs are neglected until the rod has broken loose and wrecked the crank case and perhaps the whole cylinder block, the replacement expense will be staggering. It is only when the "stitch in time" is taken that the "nine" can be saved and the operator, who always has one ear open for unusual car sounds, is the one who is likely to detect the need for the timely small repair, the performance of which may obviate a "major operation." But after all, there is one way of reducing the need for repairs, more important than all others combined, namely, the continuous effective lubrication of all car parts. Cars that are well lubricated can do strenuous work for long periods and even withstand moderate abuse, without serious deterioration, but a car that is not oiled and greased can hardly be moved without beginning to suffer unnecessary wear, which will very soon call for repairs. Let no motorist fail to realize that, in nine cases out of ten, it is imperfect lubrication that brings a car to the repair shop. Repair expense is nothing else than tribute exacted by the Demon Friction.

**He Knows**

All doctors know what a wonderful protector to the skin there is in the healing, soothing oils and disinfectant properties of

**LIFEBODY HEALTH SOAP**

and how effective Lifebody is for washing blankets, bedding and all garments that touch the skin.

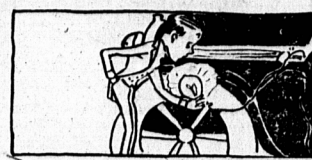
The carboxide odor in Lifebody is a sign of its protective qualities—vanishing quickly after use.




be taken on high? As it is now, I cannot get into second speed until the car has practically stopped moving and the result is that I generally have to let it stop entirely and finish ascending the grade on low.

**Answer:** This is the change of gear which generally gives the most trouble, but we think that you will be able to accomplish it successfully if you proceed as follows: Release the clutch, throw gear lever from high to neutral position, let in the clutch, speed up the engine slightly with the accelerator, release the clutch, throw gear lever into second speed position and engage clutch. The success of the operation depends upon speeding the engine to the required extent, thus bringing the countershaft gear a speed corresponding to that at which its mate is being driven by the car and a little practice is required to do this correctly. While there are a number of separate acts involved in the operation soon comes to be done almost unconsciously and very quickly and it permits the change to be made promptly and without clashing.

**BATTERY DOES NOT RECEIVE CHARGE**



**H. W. writes:** The ammeter on my car shows no changing current no matter what the engine speed and the battery is nearly run down, what is wrong?

**Answer:** Either the generator is not in condition to deliver current or the relay does not connect it to the battery. When it should do so with the engine running, connect a lamp of the voltage you use, one of its terminals to the ground and the other to the generator connection from which current should flow to the battery. If the lamp lights the generator is working properly and vice versa. If the lamp does not light the relay to view and with the engine at a fair rate of speed, bring the contacts of the relay together with the fingers. This should cause charging to commence and you may be able to see what is wrong with the relay. It may be that the relay armature works hard or the contact points are corroded. Possibly the relay magnet coil is burned out or otherwise open circuited. If anything serious is wrong with it, you better have it repaired at an electrical service station.

Questions of general interest to motorists will be answered in this column, space permitting. Address Albert L. Clough, care of this office.

**KNOWLEDGE IN A NUTSHELL**

- A cubic is two feet.
- A pace is three feet.
- A fathom is six feet.
- A plan is three inches.
- 9 league is three miles.
- There are 2,540 langoures.
- A great cubit is eleven feet.
- Two cubits is every second.
- Bran, twenty pounds per bushel.
- Sound moves 743 miles per hour.
- A square mile contains 640 acres.
- A barrel of ice weighs 600 pounds.
- Slow rivers flow five miles per hour.
- A barrel of flour weighs 136 pounds.
- A barrel of pork weighs 300 pounds.
- An acre contains 4,840 square yards.
- Oats, thirty-three pounds per bushel.
- Barley, forty-eight pounds per bushel.
- A hand (horse measure) is four inches.
- A span is ten and seven eighths inches.
- A rifle ball moves 1,000 miles per hour.
- A storm blows thirty-six miles per hour.
- A rapid river flows seven miles per hour.
- Buckwheat, fifty-two pounds per bushel.
- Electricity moves 228,000 miles an hour.
- A hurricane moves eighty miles per hour.
- The first lucifer match was made in 1829.
- A firkin of butter weighs fifty-six pounds.
- Coarse salt, eighty-five pounds per bushel.
- A tub of water weighs eighty-four pounds.
- The average human life is thirty-one years.
- Timothy seed, forty-five pounds per bushel.
- The first steamboat plied the Hudson in 1807.
- The first horse railroad was built in 1826-27.
- A day's journey is thirty-three and one-eighth miles.
- A moderate wind blows seven miles an hour.



You want him good and healthy. You want him big and strong. They give him a pure wool jersey. Made by his friend, Bob Long.

Let him romp with all his vigor. He's the best boy in the land, and he'll always be bright and smiling. If he wears a Bob Long Brand.

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**A "LONG" HIT WITH THE BOYS**

Let the boy's opinion be your guide in buying the clothing in which he shall enjoy himself. Stiff collars and shirts that soil quickly and are uncomfortable to wear have no place in the boy's sport programme. Jerseys are the ideal garments and

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KNOWN FROM COAST TO COAST.

are the kind that stand the rough usage such a garment will get.

These Jerseys are made of pure wool worsted yarn in a vast combination of styles and colors to fit any sized boy. They will afford absolute comfort and freedom of movement. All boys who are real boys wear them—they are proving the hit of the season.

For sale by all good dealers. If your dealer does not handle them, send us his name and your order and we will supply same through him immediately.

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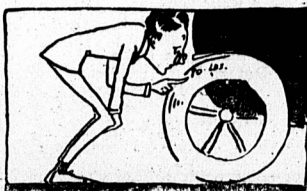
**KING COLE ORANGE PEKOE TEA**



**"A Cup of Rare Delight"**

FRAGRANT and full of flavor. The quality of KING COLE Orange Pekoe is well expressed in the phrase "The Extra in Choice Tea." Always ask for it by the full name KING COLE Orange Pekoe. Perfectly packed in bright lead foil and price marked on every package.

**INFLATION PRESSURE QUERY**



**C. H. writes:** The four-inch tires on my car are marked "inflate to 80 pounds pressure." Is it actually necessary to follow this advice?

**Answer:** Probably not. The recommended pressure for the size, under normal loading, is now considered to be nearer 65 than 80 pounds per square inch. However, it is for the tire manufacturers' interest to have his tires run very fully inflated and he therefore specifies a pressure that is safely high, knowing that his tires may be used greatly overloaded, in which case high inflation will go far toward preventing their discreditably early failure. He knows also that if he calls for 80 pounds pressure, they will generally be under a much lower pressure on account of neglect in pumping and air leaks.

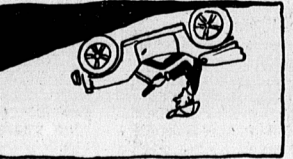
**S. writes:** I have been using gasoline with very fair satisfaction, but there is another brand sold here at several cents less per gallon. Several of my friends are using this with excellent results, but when I tried it in my car, it would hardly run at all, although I changed the carburetor adjustment. Is there anything which I can do to enable my engine to run on this fuel?

**Answer:** It is probable that your friends' car have more effective means for heating the mixture than yours has. Perhaps their cars are equipped with exhaust heating or "hot spot" intake manifolds, while yours may be heated only by the jacket water or perhaps may be exposed to the air and thus not heated at all. This cheaper gasoline is presumably less volatile than that which you regularly use and thus requires a higher intake temperature to vaporize it properly. Perhaps you can obtain a heated manifold or arrange an exhaust heating jacket around yours. If you do so, you can probably make use of this cheaper fuel.

**HIGH SPEED ENGINE CHARACTERISTICS**

The question asked by correspondent D. B. F.: "What special constructive features characterize the modern high speed gasoline engine," may be of sufficient general interest to warrant its being answered in the form of an article. The most distinctive features of this type of engine are the extreme lightness of its moving parts and the special provisions made to secure free intake and exhaust. Such an engine is intended to operate at very high rates of rotation, in order that its power development, per unit of weight and of space occupied may be as great as possible. If an engine with massive pistons and connecting rods is forced up to high speed, not only do the moving parts create unbearable vibration but their movement absorbs much of the power developed and they are liable to wreck themselves under the stresses set up in them, due to their own inertia. High speed engine parts must be as light as possible and consequently pistons of thin section aluminum alloy or cast iron and connecting rods of alloy steel of very high strength and of the most advantageous cross section are used. Everything is done to secure moving parts combining the maximum of strength with the minimum of weight and to balance these parts so as to produce the least possible jar. Since, in order to run very fast an engine cylinder must be filled and emptied as many as twenty five times each second and unless a full charge of fresh gas is taken in and the exhaust gases fully expelled each cycle, maximum output is not realized. The valve openings and valve lifts are made as large as possible, the passages through which the gases must flow are made smooth, direct and liberal as can be and both inlet valves and exhaust valves are held open during a larger part of the cycle than in a low speed engine. Moreover, the high speed engine usually has special forced lubrication to insure the presence of oil between the working parts even when they are moving at terrific velocities. In a word, a high speed engine is one with parts so light and well counterbalanced that it will not shake itself to pieces and with intake and exhaust passages so liberal that it still "breathes deeply" even at extraordinary speeds.

**CHANGING FROM HIGH TO SECOND SPEED**



**B. F. asks:** Is there any remedy for the difficulty I have in changing from high gear to second speed on hard hills, which are too steep to

**COASTING HILLS WITH CLUTCH DISENGAGED**

**C. L. S. asks:** In driving down slight grades should I push out the clutch and let the engine run as slowly as it will or keep the clutch and gears in and close off the gas? The car will go much further before power is required by adopting the former practice.

**Answer:** The objection to holding out the clutch, while coasting, is the liability of wearing out the clutch bearings, which are not intended for long continued duty. This is especially true of the thrust-bearing, which is subjected to the full clutch-spring pressure and runs at a speed equal to the difference between engine and drive-shaft speeds. If these



bearings are of liberal design and always kept well lubricated, the resulting wear may not prove serious, but it is not considered good practice to run more than is necessary with clutch disengaged, although considerable fuel is saved, by so doing, as the engine runs slowly, even though the car is going fast and all costs are, as you say, greatly prolonged.

Questions of general interest to motorists will be answered in this

**Ford**

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NO car has a better starting and lighting system than that now available to purchasers of Ford Cars. It is a Ford product, built into the motor—

- a positive starter as reliable as the motor itself.
- a powerful lighting system, uniform under all engine speeds.


On the open models—Touring Cars and Runabouts—it is OPTIONAL EQUIPMENT.

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On all models the Ford Standard Magneto also provides ignition independent of the batteries.

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