IN THE AUTOMOBILE WORLD

HINTS FOR THE MOTORIST
by ALBERT L. CLOUGH

The Air Cleaner

Keeping Grit Out Of The Engine's "Vitals"

THIS SEASON, for the first time, passenger cars fitted with meet for removing dust from the carburetor-air are being offered. Air cleaners have been in universal use on tractors almost since the beginning of their manufacture, as they have been found to be practically a necessity and they have been used to some extent on trucks. While the passenger car and even the truck are exposed to very little dust-laden air, as compared with the tractor, which operates almost constantly in a cloud of dust, there is enough grit floating in the air their carburetors "breathe" to act detrimentally, especially when unimproved, loose-surfaced roads and winds are encountered. Attention was first called to the dust that entered motor car engines by the disclosure, through chemical analysis of large proportions of silica (sand) in their carbon deposits, which could be accounted for only as being drawn in with the air. The filtration of long-used engine oil also discloses considerable amounts of fine sand, if the car has been much driven in dusty air. Sand is, of course, an active abrasive or cutting material like emery and its presence in the oil results in excessive wear of bearings, cylinders and pistons. On tractors, the practice is to wash the dust out of the carburetor air, by passing it through water, but the application of this method on passenger cars seems hardly warranted. Instead, by suitable provisions at the intake, the air may be made to deposit most of its dust before entering the carburetor in a compartment from which it can readily be cleaned out. Giving the air a whirling movement, which causes the separation of dust particles, by centrifugal action, into a cleanable receiver is one method that is being tried. Every known expedient for the prolongation of engine life is being resorted to by engineers and air cleaning is one of these, along with more liberal bearing surfaces, better lubrication systems and superior materials.

CAR STARTS JERKILY

W. J. W. writes: Whenever I start my ——— car there is a sort of jerk as though the whole rear end were loose. I took down the universal joint, and since putting it back there is a pronounced grinding or humming. What do you think the causes of these troubles are, and how can they be remedied?

Answer: We cannot give you anything very definite in way of reply, but we should suspect either that the clutch worked very harshly, or that there was considerable lost motion somewhere in the transmission line between the engine and the driving wheel. When this latter condition prevails there is almost certain to be a severe jerk in starting the car from rest. Lost motion may be in the universal joints, the transmission, main driving gears or rear wheel mountings. We suggest that you assure yourself that your clutch is working gently, and that you look for lost motion in the different elements of the transmission line, correcting such as exists. As to the grinding sound, this most commonly arises from incorrect meshing of the final drive gears, but we do not see how this could have been disarranged by any work that you did on the car in connection with removing the universal joint. You had better verify the mesh, however; make sure that all parts are well lubricated, and that all holding devices are tight.

NOISY VALVE

A. E. M. writes: Ever since I received my car one valve has given trouble by making a loud tapping sound. I have made every adjustment that I can think of, but this one valve still remains noisy. My garage mechanic claims that this sound is caused by either a sharp or a defective cam, and the only remedy is a new camshaft. Do you think this is the case, or can you suggest some other possible explanation?

Answer: It may be that there is a cam with a defective outline, but this is unusual as great care is taken in machining these shafts. You will, of course, have to remove the shaft in order to ascertain whether there is anything wrong about it, unless possibly you can get a look at it from underneath. Other possibilities which perhaps you have already considered are the following: play in the camshaft bearing next to the noisy valve; looseness of the cam-follower in its guide; a badly formed end or loose roller in connection with this cam-follower; looseness of the valve in question, in its guide; looseness of the clamp which secures the cam-follower unit in the crankcase; lack of trueness of the end of the valve stem or the cam-follower.

Repairs By Welding Processes

It Is The Silent Accountant Of Service Rendered

WHEN MOTOR PARTS BREAK or even when they wear out the acetylene welder should not be ignored as a possible help in time of trouble. The capabilities of his art are very remarkable and not fully realized by motorists who have not given the subject attention, but of course it has very definite limitations. If a part fails, which is expensive to replace or which can only be obtained after a long delay, its repair by welding is always worthy of consideration and any welder, who has his business future in mind, will honestly tell the motorist who shows him a broken part whether its repair by his methods will prove successful and a paying operation. Fixed, rather than moving parts are, in general, the most successfully welded. In many instances, parts which have worn so as to be uselessly small in certain dimensions can be built up, by the autogenous process, and then machined down to their original dimensions—costly replacements thus being avoided. In the production and application of the localized heat, required in the straightening of motor car parts, the oxyacetylene torch is most effective, but it should always be remembered that the heat-treated metal of axles and other vital structural parts is affected as to its strength and rigidity by heating. Before discarding an expensive broken part, let the welder have a look at it.

HYDROMETER READINGS

G. J. S. asks: How often is it advisable to take hydrometer of the liquid in the battery?

Answer: It is generally recommended that readings be taken from each cell each time the battery is filled with distilled water, or inspected to see whether it needs water. It is generally advised that this be done once each week in hot weather when a lot of driving is being done, and about once each three weeks in winter. In practice it is hardly necessary to take readings so frequently as this, although it is a good thing, undoubtedly. If there is anything seriously wrong with the battery the dimming of the lights during the starting operation, or some other failure of performance, usually warns the operator of the fact. If one has the time, it is undoubtedly well to test the battery often.

T. R. writes: My car was running all right until shortly ago I laid it up to have a few repairs made. Since then whenever I give the engine a little gas—the whole car shakes, but on a level road, with the gas nearly shut off, it runs all right. How can you explain this?

Answer: From your brief description of your trouble, we hardly feel that we can explain its cause. If the engine does not fire regularly because of some ignition defect, it will, of course, run very jerkily. If the engine supports are loose on the frame, or if anything about the power plant is badly out of balance, severe vibration is almost sure to occur. If, when you say the whole car shakes, you include the steering column, you may find that the trouble is with the steering gear; some lost motion in the parts, or bad alignment of the front wheels. If you could give us more details as to just how the car acts, we could answer you much more intelligently.

COASTING HILLS WITH A FORD

G. M. B. writes: When coasting my Ford down hill I shut off the ignition, leave the emergency brake way forward and use my foot brake. If the car goes too fast I engage low gear. Does the engine act as a brake both when in low gear and when in high? Sometimes when I put the ignition on again there is an explosion. Will this do any harm, and is the above a correct way to drive?

Answer: Your manner of driving is correct. When in low gear the engine is holding back powerfully and the brakes are greatly relieved of wear, but when in high gear the retarding force is very much less, although it is substantial in amount. The explosions you hear come from the ignition of unburned gas in the muffler, and ordinarily do no harm, but occasionally a muffler is burst from this cause. We advise you not to switch off your ignition, but to close the throttle fully, and retard the spark completely. This will not appreciably change the braking power of the engine, and will prevent muffler explosions.

Questions of general interest to the motorist will be answered by Mr. Clough in this column, space permitting. If an immediate answer is desired, enclose self-addressed, stamped envelope.

Concerning the Crankshaft.

When the crank shaft or connecting rod bearings are found to be worn a little more on the ends than in the middle, it may be taken as a sure sign that the crankshaft is not quite true.