

## Those Knocks in the Chassis

Does your car chatter? Does it talk to you and protest against running over holes and bumps in the road? If it does, it is a sign that you should pay attention to, a hint that you should do away with the knocks and clicks and chattering which annoy you and everybody else within hearing as you run along. That is, if you find them, for there are some noises so obscure as to defy detection even by the expert.

Such was the car which developed a sharp click when it was started forward or backward, says H. Clifford Brokaw, principal West Side Y.M.C.A. Automobile School, of New York. It ran quite a long time before it was possible to discover just what and where it was. It was somewhere in the back end, but so hidden as to defy detection. The rear axle was of the floating type, the construction in which the driving shaft is connected to the hub of the wheel by a number of flutings on the shaft, into which corresponding projections of the flange fitted. These had become worn and allowed sufficient play to cause a noise.

By walking alongside of the rear wheel while the car was being started and stopped, it was decided that the sound came from the hub of the wheel. The hub cap was removed and by placing the finger on the hub flange and end of shaft at the same time the play was detected by the sense of feeling, though it was hardly visible to the eye. The trouble was overcome by having the shaft welded to the flange.

A few days later the owner happened to be at the agency and told what he had found.

"So glad you came," was the response, "for we have been looking for the same kind of a clink a long time ourselves and the service station mechanics have not been able to locate it. They thought it was in the brake, but upon examination could see no reason for a click."

I have seen cases where the wheel was keyed on, and where the keys had acquired sufficient play to cause a continuous knocking, especially when the machine was being driven at low speed. This sort of knocking is more likely to occur with the four-cylinder slow-speed engine than with the high-speed many-cylindered type.

A mysterious knock sometimes may be traced to the torque rod, which is loose at the forward end, or to worn torque tube bearings,

and in some cases the bolts fastening the torque rods to the rear axle become loosened or worn, causing a knock, especially when going over bumps or dropping into holes.

The brake rods become worn and set up a continuous clattering on rough roads and noise is accentuated if the tires are kept inflated at too high a pressure. As a matter of fact the car owner has the choice between the greatest life for his tires with accompanying rattles and discomforts, and riding at a sufficiently low pressure to subdue these noises and make life in a car worth living; of course, there will be an attendant higher wear of tires.

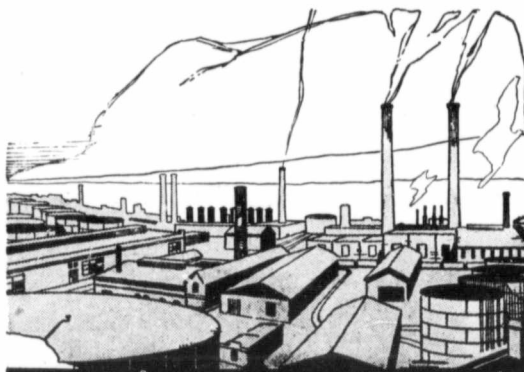
Worn spring shackle bolts will not ordinarily cause knocking or rattling, but when going over bumps or holes the rebound of the body is sufficient to make the looseness audible. It can be overcome by having a new bolt put in, and prevented by keeping the bolts well lubricated.

Worn steering knuckle pins and tie-rod bolts will be found responsible sometimes for knocks and rattles in the front end of the car. The remedy is obvious and the location of the noise is not hard to find.

In addition to these, we have rattles due to tools being thrown loosely into the tool box, and sometimes the body bolts become loosened. The lamps occasionally jolt loose and the license plate bracket is sometimes so loose that it is audible as well as visible.

There are other knocks due to broken gear teeth and other broken parts and sometimes these broken teeth, loose nuts, bolts or pins, in gear or differential case become wedged between the gear teeth and cause a knocking that is not hard to locate, albeit rather expensive to repair. And then there are the knocks and rattles from the hundred or more accessories which are attached to the chassis of many cars and which sooner or later develop defects and noise.

The up-to-date well-designed car in perfect shape is practically noiseless and if a knock or rattle develops it indicates that something is worn or out of adjustment and needs attention. The owner who takes care to have all parts properly lubricated and kept tight need fear none of these annoyances, and proper attention means lack of annoyance when out touring; while slovenly habits will advertise themselves to everyone along the road.



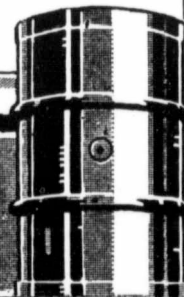
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