

POPULAR SCIENCE

January 35¢

MONTHLY

JANUARY						
S	M	T	W	T	F	S
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

FEBRUARY						
S	M	T	W	T	F	S
6	7	8	1	2	3	4
5	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

MARCH						
S	M	T	W	T	F	S
6	7	8	1	2	3	4
5	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

APRIL						
S	M	T	W	T	F	S
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Dispose of such fire hazards as Christmas trees, oil-soaked rags and other trash.



Overhaul tools you'll be using to repair lawns and start your flower gardens.



Hose down your car now. Those chemicals used on icy streets may cause rust.



Get indoor jobs, such as repairing the faucets that leak, done on a rainy day.



MAY						
S	M	T	W	T	F	S
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15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JUNE						
S	M	T	W	T	F	S
5	6	7	8	9	10	11
12	13	14	15	16	17	18
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JULY						
S	M	T	W	T	F	S
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24	25	26	27	28	29	30
31						

AUGUST						
S	M	T	W	T	F	S
7	8	9	10	11	12	13
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28	29	30	31			

Antifreeze can be removed now. Flush radiator out and put in rust inhibitor.



Point up cracks in masonry, fix damaged gutters and open those attic windows.



Driving in dust shortens engine life. Has your air filter been cleaned lately?



Batten down for big fall blows. Trim dead tree limbs, tighten loose shutters.



SEPTEMBER						
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OCTOBER						
S	M	T	W	T	F	S
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16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

NOVEMBER						
S	M	T	W	T	F	S
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

DECEMBER						
S	M	T	W	T	F	S
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Drain expansion tank, renew air filter and test the controls of heating system.



Renew defective weather stripping. Shut off and drain outside water lines.



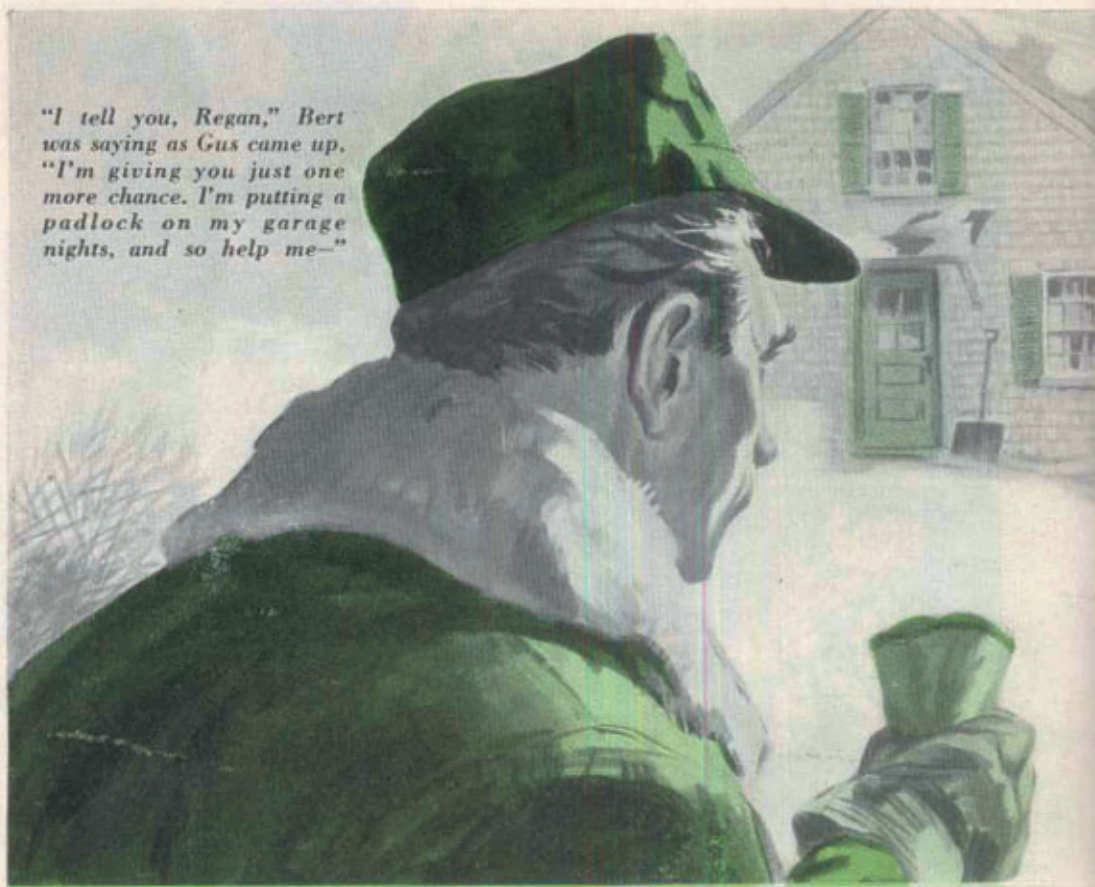
Are your tire chains ready to roll? Replace weak links and closing snaps.



To have a merry Christmas, test the tree lights, clean and oil train sets now.



"I tell you, Regan," Bert was saying as Gus came up, "I'm giving you just one more chance. I'm putting a padlock on my garage nights, and so help me—"



Gus Pursues The Little Green Men

... and solves the mystery of an exploding distributor cap by exploding an eerie rumor.

By Martin Bunn

WHEN Bert Hibbard first brought his 1949 sedan into the Model Garage, Gus Wilson figured that this would be one of the simplest jobs he had ever tackled. The way things turned out, Gus had a mystery on his hands, and half the people in town were talking about it and looking back over their shoulders. Some folks were quick to declare that Hibbard's distributor cap had been exploded by atomic radiation.

The car came in running rough and occasionally backfiring. Gus saw what was wrong as soon as he lifted the hood. The distributor cap was hanging loosely in the air, on the ends of the spark-plug wires and the center, high-tension wire from the coil. The two flat, spring-wire clips, which were supposed to hold the cap on firmly, were unsnapped. The cap was held in place by the stiff wires just



enough so that the motor was able to run raggedly.

Gus lifted the cap and inspected the inside with a light. Bouncing around loosely, it had taken a beating from the revolving rotor.

Off with the Old Cap—On with the New

"Sorry, Bert," he told Hibbard. "This is going to cost you a new distributor cap. This one's had it. I wonder how those spring clips came loose. Has anyone been working on the car?"

"No," Hibbard declared, scowling. "And what's more, it was running perfectly when I put it in the garage last night. I'm ready to bet that Mike Regan sneaked in during the night and worked that distributor cap loose. You know, Gus, he's the character who threw nails on my lawn and deliberately ruined my

power mower a couple of years back."

Gus knew all about the power mower. Mike Regan, a large and ordinarily well-liked and friendly man, lived next door to Hibbard. While building a new garage, he had dropped some nails on Hibbard's lawn. Mike claimed this was accidental. Hibbard claimed otherwise. The two had been in each other's hair ever since.

"Pshaw!" Gus exclaimed. "Now I don't think Mike would do a thing like that, even as a joke."

Gus Ponders a Mystery

Gus installed a new distributor cap and, while he was doing so, pondered on how those two spring clips could have come free during a night in Hibbard's garage. If the car had been all right when Bert put it away, and was running

this way when it started in the morning, someone must have tinkered with it.

Still, the two spring clips could have jumped loose of themselves. To make sure that they didn't do it again, Gus bent them slightly, so that they snapped strongly into the niches of the cap. The car now started easily, ran smoothly.

But a week later Hibbard called the garage again, and this time he really was put out.

"Gus," he yelled into the phone, "can you come right over? Regan's been up to his tricks again. This time he smashed my distributor cap. You should see it—smashed to smithereens. I've a mind to have Regan arrested."

When Gus got to Hibbard's house, he found Bert and Mike Regan standing outside the garage, engaged in heated argument.

"I tell you, Regan," Bert was saying as Gus came up, "I'm giving you just one more chance. I'm putting a padlock on my garage nights from now on, and so help me—"

"Why blame me," Regan yelled, "when things are blowing up all over the country? It's those atomic bombs they're setting off. Why, out West the car windows are all pock-marked, and some of them just exploding. Why, I heard of a man who saw pink snow right after that last bomb they set off."

"Morning, boys," Gus said genially, stepping out of his service car with his tool kit. "What's this I hear about that new distributor cap exploding? Sounds like a joke."

"Take a look for yourself, Gus," Hibbard said grimly.

Lifting the hood, Gus was astonished to see that the new distributor cap had literally been smashed to bits. The wire sockets hung in the air, still attached to the wires, but the rest of the cap was scattered about in pieces. This did, indeed, look like vandalism. Perhaps, Gus

thought, the distributor-shaft bearing is badly worn, wobbling the rotor around so that it broke the cap. This hardly seemed possible, but Gus made an inspection for side play. There was none.

Gus straightened up, took his pipe out of his pocket. While he slowly packed and lit it, his mind was busy. Could Mike Regan have done this, as Hibbard claimed? Or possibly Hibbard had aroused the antagonism of some mechanically minded youngster in town. Gus turned to meet Mike Regan's blue eyes squarely. Then he turned to Hibbard.

"I brought a new distributor cap," he said shortly. "Maybe you'd better padlock your garage after this, Bert."

The second new cap installed, Gus drove back to the Model Garage. Several times during the next few days he saw Bert Hibbard driving the car around town. Apparently it was running well and the padlock on the garage had finally ended the matter.

But Mike Regan hadn't been willing to let it drop there. He felt that he was under suspicion. He took great pains to explain to folks that he had been innocent. He declared that almost anybody's distributor cap might explode, even as car windows were being mysteriously pock-marked.

"Atomic radiation, my eye!" Stan Hicks, Gus's helper, exclaimed. "Somebody must have it in for Bert. It could be Mike Regan."

Exploding Cap Sets Off Town Talk

But Mike's talk went from mouth to mouth. Rumors flew. Folks dropped in at the Model Garage to question Gus about the mysteriously exploded distributor cap.

This was the situation when another distributor cap literally blew up on Bert Hibbard's car while it was sitting in his garage. This time the garage had been securely locked. When Gus got the news



"Slow down and I'll hop off here, Bob . . . Hey, Bob . . . !"

Gus Pursues the Little Green Men

[Continued from page 168]

he tossed his kit into the service car with a grim expression on his normally genial features.

"This settles it," he told Stan Hicks. "If that garage was locked, as Hibbard says it was, no one has been doing this. It's simply a mechanical problem. That I can handle."

This time Gus found Hibbard and Regan circling each other, perplexed, talking softly and warily.

"The garage," Regan reminded Hibbard, "was locked all night, until you opened it this morning to get out your car. Maybe you think I know how to pick locks, Bert?"

"Maybe," Hibbard said.

"It's those atomic-bomb explosions," Regan declared.

"Maybe," Gus cut in, "one of those flying saucers landed and one of those little green men from Mars did it."

No Flying Saucers for Model Garageman

Gus was all business now, his eyes alert beneath his heavy, graying brows. The distributor cap again was scattered about in bits. What was he to do now? Gus asked himself. One thing he wouldn't do was to blame the neighbors, atomic explosions or flying saucers. Perhaps that new rotor he had put in was too long—yet he knew it hadn't been.

Inspecting the broken pieces of distributor cap, Gus gathered the impression that they had been blown outward rather than smashed inward by an outside blow.

Internal combustion. . .

In a gasoline engine, this meant gas fumes, ignited by a spark, in a confined area. In the distributor there was a confined area, and as these explosions must have occurred just at the moment Hibbard tried to start his car, there would be a spark from the flash of the ignition points. The sound of the explosion might have been muffled by the grinding of the starter motor.

But how could gas get in the distributor? Could it get from the crank-

case, up through the distributor shaft? It was possible but not probable, in enough concentration to fire. Where else could gas fumes come from? What other opening was there into the distributor from a source of gas or gas fumes? How about the automatic vacuum spark control? Gus eased his back muscles as he thought about this.

"Stuck, Gus?" Hibbard queried anxiously.

"Maybe," Gus said thoughtfully.

The vacuum control, a diaphragm connected by tubing to the intake manifold, retarded the distributor timing under heavy load, and advanced it when the load eased up. Thus the manifold was a possible source of gas fumes. What if the diaphragm were punctured?

If conditions were right and fumes collected in the distributor, a spark from the points would blow the cap apart. But if conditions were not just right, if the fumes did not collect in the right proportions, it wouldn't happen. Gus snapped his fingers. This would account for several days elapsing between explosions. He began to tear down the vacuum spark-advance control unit.

Sure enough, the diaphragm was defective.

Bending Clips Caused Explosion

"It didn't blow the cap apart the first time," Gus explained to Hibbard, "because the spring clips flew off easily. But after I bent them and attached them firmly the cap exploded under pressure."

Gus's installation of a new vacuum control unit ended the mystery of the exploding distributor caps, even to the satisfaction of those who were inclined to see fiery saucers, pink snow and little green men. And the next Saturday morning, driving by Hibbard's place, Gus saw Bert holding the ladder for Mike Regan while he sawed at a dead limb on the big maple that hung over their adjoining lawns. END

NEXT MONTH: Gus encounters a stubborn miss.