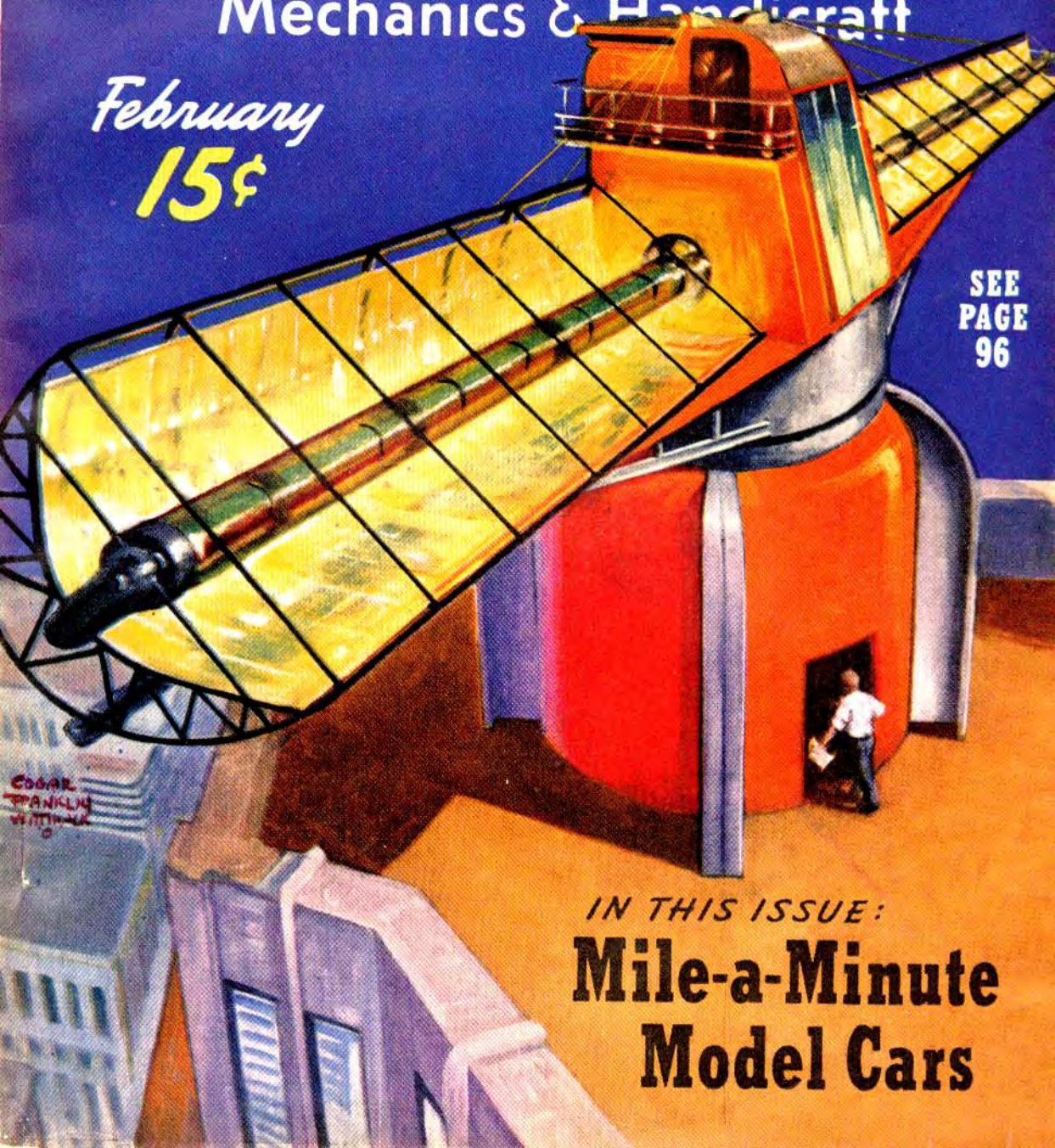


# POPULAR SCIENCE

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Mechanics & Handicraft

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Model Cars**

COGAR  
FRANKLIN  
WINTHROP

"When he touched the door, he got a shock that made him hop!"



## Gus Shockproofs a Car

JOE CLARK came out of the Model Garage office and into the shop looking worried. "What's biting you?" Gus Wilson demanded after he had taken a look at his partner's face. "Are we headed for bankruptcy, or is it just something that you ate for breakfast?"

Joe refused to smile. "I'm worried about those tires I sold Vernon Hopkins yesterday," he admitted. "You know how he is—a careful driver, and a little bit of a grouch. He came in while we were having that sleet storm, and said he thought he'd better put on new tires. I wanted to make a sale, of course, but I found his rubber in pretty good shape and told him so. 'Pretty good isn't good enough,' he said. 'I'll put on new tires now and keep the old ones until spring, and wear them out then.'

"That was all right with me, so I sold him a set and had Harry put them on for him. He was on his way down to the city and didn't want to lug the old ones with him, so he asked me to keep them for him.

"He came back late in the afternoon, while you were out, and he certainly was burning up. He said that after we'd put on his new tires he'd gone down to the city and picked up his wife, and that when she'd put her hand on the door handle to get in she'd got an electric shock that had almost

knocked her down. I told him that I didn't see how the new tires could have been to blame for it, but he insisted that they must have been the cause—that he'd never had any trouble with static before, but that ever since we'd put on the new rubber the body of his car had been so full of static that several people who had touched it had received severe shocks.

"To prove to him that it couldn't be the fault of the tires, I had Harry put his old ones back on the car. Then I went out in it alone for a couple of miles, and, when I got back, I told him to put his hand on the body—thinking, of course, that he'd get a shock. But he said he didn't feel anything. So I asked him to drive for a while, and then I tried it. I didn't get any shock, either, so I had to admit that after all the new tires might have something to do with his trouble.

"I got him to let me put the new tires back on, and then I went out and drove his bus around the block a few times. When I got back here he was waiting for me outside, and before I could get out of the car he had started to open the other door to get in. When he touched it he got a shock that made him hop—and that made him so darned mad he swore he'd never give us another dollar's worth of business unless I took those tires off and gave him back his money.

After a lot of arguing back and forth, I managed to get him to agree to leave the new tires on and bring the car in today so that you could have a look at it."

Vernon Hopkins drove into the shop a little later. The expression on his thin face showed that he still was well charged with bad temper, so Gus judged that his car still was well charged with static—and when he touched it he took a wallop which showed him that he had judged correctly.

Hopkins was talking loud and fast as he got out. "Shucks, man," Gus told him with his disarming grin, "there's no sense in getting yourself all steamed up about a little static. All we've got to do is give it an easy chance to get out. I'll have you fixed up in three minutes. Take it easy!"

He went over to his workbench and got a carpenter's pencil with a soft, thick lead. With it he drew a half-dozen lines on the inside of each tire, starting at the rim and running across the wall of the tire to its tread. Then he took a little ride. After driving for a mile or so he returned to the garage.

"Touch your hand to the body of the car now," he said. "If you get a shock, Joe'll give you your money back and I'll add a five-spot to it for your trouble. That's fair enough, isn't it?"

Hopkins grunted and touched a finger gingerly to the car body. Then he put the palm of his hand against it, and smiled for the first time that day. "You've killed it," he admitted. "But how, I'd like to know. Just making marks on the tires doesn't make sense to me, but it seems to work."

Gus laughed. "When I was a grease monkey," he said, "we used to think it was a swell joke to take a soft lead pencil and draw a line from the top of a spark plug down the porcelain onto the head. That made the plug foul out and the engine stall, and the owner couldn't find out why. I figured that if a lead-pencil line on a spark plug would carry that much juice, a lead-pencil line on your new tires would ground out the static generated by them."

Gus then used a disk of waterproof graphite to replace the pencil lines with heavier marks which wouldn't wash off. "That'll kill your static devil for good," he assured Hopkins, "and I'll guarantee that he'll never bother you again."

Joe Clark, who diplomatically had kept well out of the irate customer's way, stuck his head in at the shop door after

he had driven off. "What did you do to smooth him down?" he wanted to know.

"Oh, I just drew a few straight lines—in the right places," Gus told him. "You can stop worrying, Joe. You won't have to punch the refund key on your cash register for that sale. . . . I'm going down town and get my lunch."

When he got back he found a scratchless and speckless small sedan in the shop, and a formidable-looking stout lady sitting in its back seat. As soon as she saw him she lowered a window and demanded shrilly: "You the mechanic here? Your boss said you'd be back at one o'clock, and here it is almost half past. Well, now you're here, do something! I'm sick and tired of wasting time."

"All right, ma'am," Gus said meekly. "But what is it that you want me to do?"

"Don't ask me!" she snapped. "I don't drive this thing." She poked a scornful forefinger at a harried-looking man who was coming out of the office. "Ask Mr. Coville—*him!*"

Coville waited for Gus to come over to him at the office door—obviously he wanted to stay as far away from the car and its occupant as he could. "I'm having bad trouble with my radiator," he said in a cautious voice, "and my wife is all upset about it. I'm hoping that maybe you can help me out."

"I'll be glad to. That's my job," Gus told him. "But while I'm doing it, wouldn't your wife be more comfortable in the

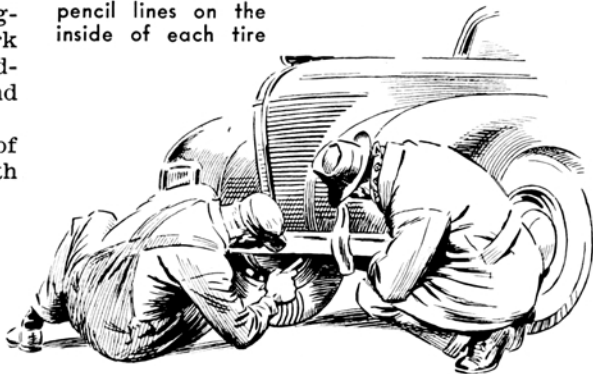
office? It's much warmer in there."

The new customer looked more harried than ever. "Yes, she would," he almost whispered. "And I'd be a lot more comfortable if she'd go in there. But she won't. I don't know much about cars, and she knows that I don't. She wants to sit there where

## A Customer's Car with a Bad Case of "Static" Has Gus Hopping for Awhile, But He Cures It with a Lead Pencil

By MARTIN BUNN

He drew a half dozen pencil lines on the inside of each tire



she can hear every word you say, so she'll have a good chance to bawl me out if I've pulled a boner. You know how it is."

Gus grinned. "No, I wouldn't know—I'm a bachelor," he said. "But I'm a pretty good guesser. Tell me what's the matter, and if the bull is on you, I'll cover you up."

The other looked relieved. "Well," he explained, "I was driving along about forty miles an hour a ways back when I heard a noise somewhere up front—sounded like some one had hit the hood with a pebble. I didn't think anything much of it, but before we had gone a half mile, I saw the hand of the heat indicator jump right up into the red. Just then I saw a garage sign a little way down the road, so I drove in there.

"When I told the mechanic about the heat indicator, and about the noise I'd heard, he said that probably my fan belt had snapped. But when he opened the hood he found that the belt was all right, although the motor was very hot. Then he said that the fan belt must be slipping, and he tightened it. He poured some water into the radiator, but it ran right out, and he said that it was coming out of the overflow pipe which showed that the radiator was full, and that with the fan belt tightened the motor soon would cool off.

"I started off again, but the heat-indicator hand didn't go down to where it belonged, and before I'd driven a quarter of a mile the motor was so hot that it was smoking. I stopped and waited for it to cool off, but after a half hour the heat-indicator hand still was up in the red. All the time we had been standing there the wife had been bawling me out, and I was so darned tired of listening to her that I decided I'd make it to the next garage even if I burned up the motor. Luckily it was all downhill to your place, so I shut the motor off and coasted. We've been here pretty near an hour, but she's still hot—the motor, I mean."

"I'll have a look," Gus told him. When he raised the hood and examined the radiator he whistled. "Probably bone-dry!" he said. The hose connections seemed tight. When he checked the oil he found it free from water, so the trouble couldn't be the result of a leaky water jacket. Suddenly he reached deep under the hood, lifted something out,

glanced at it keenly, slipped it into his pocket, fussed around the bottom of the radiator for a few seconds, and then straightened up and winked at the worried car owner.

"I've found your trouble, Mr. Coville," he said loudly, for the benefit of the lady on the back seat. "It was quite unavoidable, and the sort of accident that happens only once in a hundred years. No wonder you couldn't locate it. Fortunately there is no damage done, and I'll have you fixed up in a jiffy."

He brought a hose over to the car. "Start the engine, please," he asked. The radiator took a lot of water. "Now you'll be all right," he said when it was filled. "Leave your engine idling for a few minutes, and you'll soon see that she's normal again. If you'll step into the office. . . ."

Coville gave his wife a triumphant glance and followed him. "What was it?" he asked when they were out of earshot of the lady in the back seat. "I saw you wink at me."

Gus laughed as he took a small pebble out of his jumper pocket. "When I found this it was the tip-off," he said. "It was a pebble that made the noise you heard, and caused all your trouble. It flew up from the pavement past your crankcase; probably hit your fan. The fan was turning pretty fast, and it threw it against the radiator drain cock, which is of the screw type, with so much force that it spun the cock wide open. Naturally, all the water ran out of your radiator in a few seconds, and your engine heated up like nobody's business."

"I'm downright relieved," Coville said. "I thought it was going to be another of those things that I never hear the end of. But say—why didn't the mechanic at the first garage I stopped in spot the trouble? He told me that the radiator was full."

"Well, things like that are bound to happen now and then," Gus said tolerantly. "He jumped at conclusions, which always is dangerous in this business. When he put water in your radiator and it ran right out again he took it for granted that it was running out through the overflow pipe. But it really was running right through the radiator and out at the drain cock."

"Well, I'm certainly relieved," Coville said. "I'm a new customer but you can bet I'm going to be (Continued on page 244)

## GUS SAYS:

Here's a good tire policy to stick to: Put tires with the most tread on the rear for winter driving. Avoid, if possible, uneven wear on the two front or two rear tires. Never drive on any tire that you are the least suspicious of. Check the pressure often.



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## Gus Shockproofs a Car

(Continued from page 144)

a steady one. Very much obliged to you."

Joe Kent, an out-of-town salesman who waits, whenever he can, until he gets to the Model Garage to have his repair work done, was the next caller. "I don't know what's the matter with this bus of mine," he complained. "It's running all right, but it burns up almost as much oil as it does gasoline. I've lost almost two quarts in a hundred-mile run today.

"I've got a few calls to make in town, and I'd better make them now," Kent said. "I'll come back when I've finished. But I wish you'd take a look at my windshield wiper right now. It isn't working well, and it's starting to rain."

Gus looked the wiper over and then disconnected the vacuum line at the manifold. Then he grinned. "Guess I brought down two birds with one shot," he said. "Your vacuum line is filled with oil—that's why your wiper doesn't work right, and also why you are using so much oil. The diaphragm of the booster pump that makes the wiper work at a uniform rate of speed is broken, and the oil is being drawn right into the intake manifold. I'll connect your wiper direct to the manifold now, so it will work all right for this afternoon. When you bring the car back I'll put a new diaphragm in the booster pump, and your oil trouble will be over."

After Kent had driven away Joe Clark came into the shop to collect time and material slips. He frowned as he glanced over the sheaf of them that Gus handed him. "All little picayune jobs," he grumbled. "Well, that's the way in the garage business—just one darn thing after another."

"Sure," Gus said. "That's why I like it."

## POPULAR SCIENCE Question Bee

ALL RIGHT, let's see how well you came out in the Question Bee on page 140. The letters in the list below indicate the correct answers to the numbered questions. Check your results with the list and give yourself five points for every one you had right. A total score of 75 to 85 is good, and 90 or better is excellent.

- |      |      |       |       |       |
|------|------|-------|-------|-------|
| 1. c | 5. d | 9. b  | 13. c | 17. a |
| 2. b | 6. a | 10. b | 14. c | 18. c |
| 3. b | 7. c | 11. c | 15. c | 19. b |
| 4. d | 8. d | 12. b | 16. d | 20. b |