

# POPULAR *December* SCIENCE 15¢

MONTHLY  
Mechanics & Handicraft



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# Gus Takes a Holiday

By  
MARTIN BUNN



EVER since the World's Fair opened, Gus Wilson had been saying that he was going to take a day off and get a preview of what the world is going to be like tomorrow. But the Model Garage was even busier than usual all summer, so Gus kept putting off his holiday.

Autumn was well under way when his partner Joe Clark, who had been to the Fair a half dozen times, built a fire under Gus with the observation that if he didn't get a move on he'd find the big show closed and boarded up when he finally got to it. Only then did Gus break down and say that he'd go the following day.

So the next morning he left home in his car at about his usual time, headed for the Fair. First, however, he took a look-in at the Model Garage.

"Just wanted to make sure that everything's going along all right," he told Joe

with a slightly sheepish grin on his face. "On your way, Gus!" his partner said coldly. "Beat it! Get the heck out of here! There's a lot worth looking at over there at the Fair, and you're wasting time."

Gus grinned, and started filling his gas tank at the pump. Before he had finished, a business coupe stopped beside him, and when he looked up he saw that it was driven by Harry Meyers, a drug salesman who always stops at the Model Garage for servicing when he is in town.

"Good morning!" Gus said. "Joe will take care of you in just a moment. I'm taking the day off. Going to the Fair."

"Swell!" Meyers approved. "But, say—have you got just a minute to spare? I'm having trouble with my car, and I've got a busy day ahead of me."

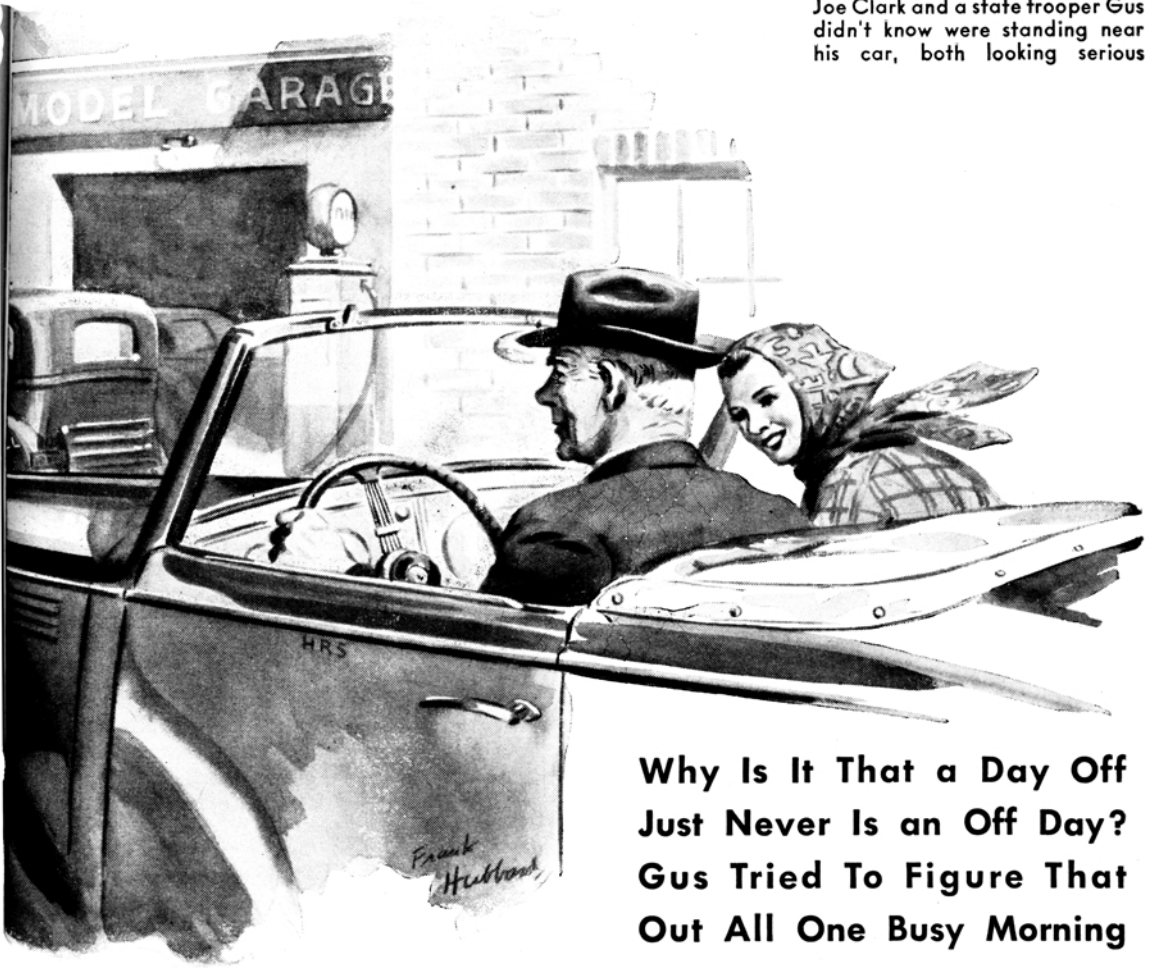
Gus hesitated. "What kind of trouble?" he asked.

"Starting trouble. And I can't understand it—never had any before, with this bus. I had to stop and get some gas at a filling station about five miles down the



"Try her again," Gus said. This time it started

Joe Clark and a state trooper Gus didn't know were standing near his car, both looking serious



## Why Is It That a Day Off Just Never Is an Off Day? Gus Tried To Figure That Out All One Busy Morning

road—couldn't make it to your place. When I tried to start—nothing stirring! The two fellows at the filling station took a look at the wiring, but couldn't find anything wrong. Then a grocery boy came along in a delivery wagon, and I got him to push me until I could get started again."

"Switch off your engine," Gus said. "All right. Now try to start it again."

Meyers stepped on his starter. Nothing happened.

"Humph!" Gus grunted. "Did those fellows at the filling station do anything to your car except fill your gas tank?"

"They checked the oil and water, the way they always do, but I didn't need either."

Gus raised the side of the hood nearest to him. "Try her again."

Meyers stepped on the starter again. Nothing happened, except that under the hood, somewhere on the side of the engine away from him, Gus saw a spark flash.

"Wait a minute," he said. He closed his side of the hood, walked around the car, and raised the other side. "Now again."

Again Meyers stepped on the starter. And again the spark flashed. This time Gus saw where and why it flashed. The bayonet-type oil-gauge rod, instead of having been returned to its proper position after the oil had been checked, had been left lying across the starter, with one end resting against an exposed starter-switch terminal. Whenever the circuit was closed by the starter pedal being pressed down, the exposed terminal became "live," causing the spark Gus had noticed, and grounding out the starter.

Gus pushed the oil-gauge rod back into its place without saying anything. "Once more," he then told Meyers. This time the engine took off perfectly.

"You're all right now," Gus said. "No damage done."

Meyers wanted to know the cause of the trouble, so Gus had to tell him.

"Well," he concluded, "now you're fixed up, I'm off for the . . . 'Morning, Doc!'"

"Good morning, Gus," Dr. Marvin said, getting out of his car. "I didn't expect to see you here. You said that you were going

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to take a look in at the Fair today."

"So I am," Gus told him. "I'm just starting. What's the matter, Doc? You look sort of worried."

"Well," the doctor said, "I don't want to bother you about it on your day off, but these brakes of mine still are a long way from being right. They worked well enough for a while after you fixed them yesterday afternoon, but this morning they're so bad again that I'm afraid to drive with them."

"There's something darned queer about those brakes," Gus said, "and I'm going to find out what it is. I thought I had it licked the first time you came in about them."

"I didn't have any more trouble for about a week," Dr. Marvin said.

"And then you had some more. Air in the lines again. Then the same thing again yesterday. Well, I'm going to find that trouble right now! You take my bus to make your calls this morning, Doc. By the time you get back from them I'll have your brakes fixed or I'll have blown out a couple of little gray cells trying!"

Dr. Marvin protested to no avail.

"I'll have plenty of time at the Fair," said Gus. "Every one tells me that the evening is

the best time to enjoy yourself over there."

Finally Dr. Marvin drove off in Gus's car, and Gus drove the doctor's car into the shop. While he was changing into overalls, Joe Clark came in. "Might have known it!" he exclaimed disgustedly. "By jiggers, you're the most provoking man I ever knew. I'll..."

"Don't stand there gassing, Joe," Gus told him. "I want to get these brakes fixed, and then be on my way."

Joe shrugged his shoulders helplessly and went back into the office. "Come on, Harry," Gus said to the grease monkey. "We're going to take this hydraulic system apart."

They took the system apart, but Gus couldn't find anything the matter with it. The cylinders and cups were in perfect condition, and there were no leaks. So they reassembled it, and found that the brakes worked perfectly.

"Which," Gus said, "means nothing at all. Each time I've worked on them, those brakes have seemed in perfect condition when I finished, but they went bad again. I'm going to take this bus out and drive it for a while and see what happens."

Gus was back within a half hour, and as soon as he drove into the shop Harry saw that he was good and sore. "Same damn thing over again!" he snapped as he got out. "Air in the lines, so the brakes can't release properly. By gosh, it's got me stumped!"

He took his pipe out of his pocket, and walked around the rear end of the car toward his workbench, in search of his tobacco. "What's this?" he said stopping. "The tail light is burning. I'll have to check that stop-light switch."

He raised the hood, and with a quick glance located the switch, mounted on the master cylinder of the hydraulic system. Harry, always anxious to be helpful, reached in to make certain that it was fastened securely in its place, and jerked his hand away with a yell of "Ouch!"

"What's the matter with you?" Gus said unsympathetically.

"I burnt my fingers!" Harry moaned. "Say, that blamed switch is red-hot!"

"Hot?" said Gus. He touched a forefinger to his tongue, and then to the switch. "So it is—and the cylinder is hot, too." He took off the cylinder's filler cap, peered in and saw that the brake fluid was bubbling. "First time I've ever seen that happen."

He took the switch off, checked it carefully, and found that sometimes it shorted.

"So that's the answer," he said. "See what's been happening, Harry? Sometimes that switch would short, and get so hot that it would heat up the metal around it so much that the fluid would boil. The boiling oil periodically (Continued on page 243)

## Gus Takes a Holiday

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put bubbles into the lines. I'm going to get washed up. When Dr. Marvin comes in, you tell him about it."

Ten minutes later, Gus was cleaned up again and getting into his car, when an easy-to-look-at young woman drove a snappy little roadster up to the shop door.

"You're Mr. Wilson, aren't you?" she said. "My name is Ruth Smith—I'm visiting Peggy Simpson. I'm having an awful time with my car, and I've just got to drive to Hartford this afternoon."

"Well, now, Miss Smith," Gus said, "I'd certainly like to be able to help you—especially as you're a friend of Peggy's. But, honestly, I can't do anything with your car today. I've been trying to get away from here ever since eight o'clock this morning."

"Oh, that's terrible!" Miss Smith said, in a tone which made Gus feel like a heartless brute. "I drove down to the city this morning, and it has taken me over two hours to get back here. Every few miles my car just stops. I've had it in three garages."

"Well," Gus weakened, "I'll take a quick look. But I've got to hurry. Let's see. Suppose we take a little ride and test her out." Miss Smith moved over so that he could drive. He drove up the road for a mile. The car was running perfectly. Then he turned back. They came to a place where the road had been torn up, and Gus slowed down going over the rough spot. When he stepped on the accelerator pedal the engine suddenly went dead.

"There!" Miss Smith said triumphantly. "That's just what it did all morning."

Gus got out, raised the hood, and made an examination that disclosed nothing. Leaving the hood raised, he stretched his bulky length on the fender, grasping the nearest radiator brace rod to steady himself. "Now you drive along slow," he directed, "and I'll see what I can see."

They came to another rough spot on the road. The driver slowed down to take the bumps, then stepped on the gas again. Once more the engine went dead.

"Hold on, I've got it," called out Gus. "Well I'll be . . . !"

The car came to a halt at the side of the road. Gus climbed back to earth. "I've heard of fuses blowing out, and tires blowing out, but here's a 'blow-out' that's new to me. Know anything about cars, Miss Smith?"

"A little."

"Well, look." She got out and obeyed.

(Continued on page 245)



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# Gus Takes a Holiday

(Continued from page 243)

"See this wire? That's the lead to the coil there that makes the spark in your spark plugs. That wire is an old one that the insulation has rotted on. It's much too long, too. See where it's cracked here, near the coil terminal? The wire's broken under that crack. When you hit those bumps back there, they made the whole wire bend downward, and the wind from the fan held it down. That broke the connection, shutting off the motor. When the car stopped, the fan stopped blowing on the wire. It sprang back up like it is now restoring the connection. Let's get going, and I'll be on my way to the Fair!"

"Oh, that will be wonderful!" Miss Smith said. "Be sure to see—"

She talked about the Fair until they got back to the garage. When they drove up, Gus was surprised to see that Joe Clark and a state trooper he didn't know were standing near his car, both looking serious. "Here he is now!" Joe said.

"You're wanted down at the substation, Mr. Wilson," the trooper said. "Right away! Let's go!" He got on his motor cycle. "Follow me—and keep close!"

"What the heck's all this about?" Gus demanded.

"Orders!" said the trooper. "Hurry up!"

"Harry!" Gus called. Harry came out. "See this wire leading to the ignition coil. It's broken. Fix it up for this young lady. Now, Joe . . ."

The engine of the trooper's motor cycle roared.

"You'd better go, Gus," Joe said. "I guess it's something important."

Gus got into his car, and followed the trooper. As soon as they were on the road, his escort speeded up to forty-five and opened his siren all the way. They sped through the center of town, then down the road to the State Police substation.

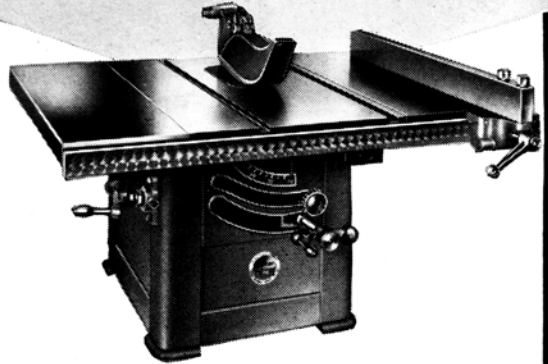
As they pulled up at the door, Gus saw Trooper Jerry Corcoran come out, a wide grin on his brown face. Gus's escort was grinning, too.

"We've had a serious complaint against you, Gus," Jerry said. "From a fellow named Joe Clark. He called up and reported that you have been loitering around his garage all morning, and asked us to see that you left town. If you know what's good for you, you'll keep right on going—all the way to the World's Fair!"

"Well," Gus said, "if that's the way the authorities feel about it, I guess maybe I will!"

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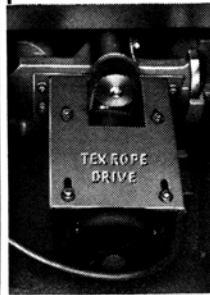
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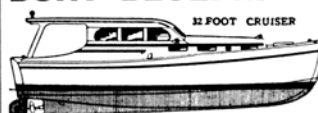
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