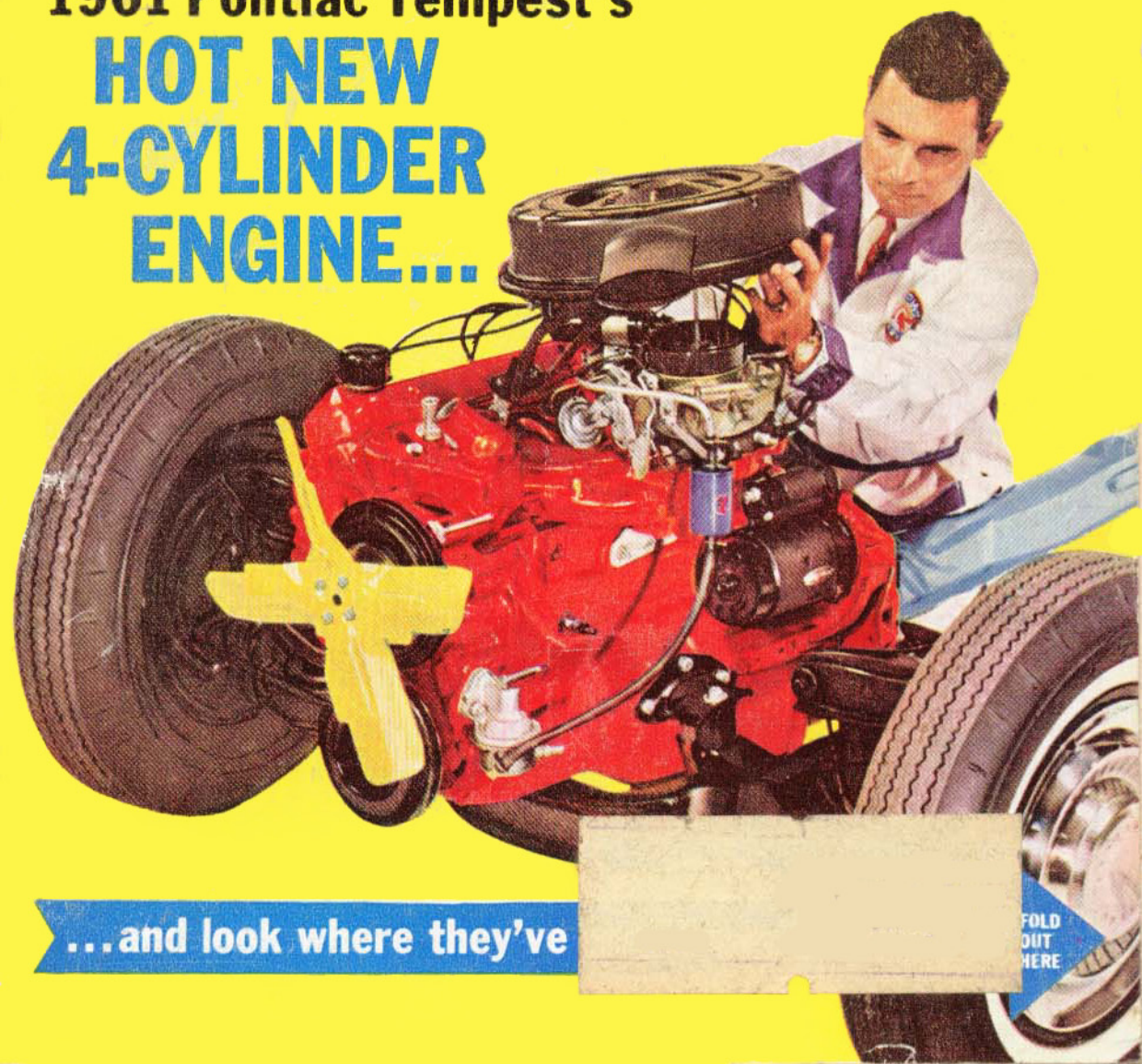


POPULAR SCIENCE

SEPTEMBER · 35c Monthly

1961 Pontiac Tempest's
**HOT NEW
4-CYLINDER
ENGINE...**



...and look where they've

FOLD
OUT
HERE

Gus Makes a Confession

By Martin Bunn

GUS WILSON crossed the torn-up street in front of the Model Garage and walked down to where a construction gang was laying a new storm sewer. The racket from a big crane, an air compressor, jack hammers, and a back hoe rooting ahead of the pipe crew was deafening.

Through the din, the sound of a missing engine caught his ear. As a musician can pinpoint a single sour note in a symphony orchestra, Gus identified the offender as the crane. He was surprised, because it looked new.

A young man climbed down from the cab and greeted him. It was Bill Wiggins, trouble-shooter for Wisniewski's Construction Equipment.

"You don't look very happy," Gus said.

"I'm not," Wiggins said. "We sold that crane to the contractor a few weeks ago. Ever since, it's been acting up and he threatens to turn it back and sue for damages. If he does, I lose my job."

Gus made sympathetic sounds. He knew the job was important to Wiggins. He'd been in trouble on and off during his teens, and the Model Garage owner had straightened him out and interested him in auto mechanics. Joe Wisniewski had hired Wiggins on Gus's recommendation. Now, if he lost the job, Gus feared his old irresponsibility might turn up again.

"Look at that," Wiggins said as the crane went into action. It was giving the operator a hard time. He was trying to swing a giant section of concrete culvert pipe into position over a ditch. Each time he started to lift and swing, the engine missed and sputtered, the cable twitched, the boom teetered, and he had to set his hand brake and wait for the machine to calm down.

Gus noted that the exhaust bark was too mild to indicate that the engine was pulling hard. And when it was hitting, the sound was smooth enough to suggest



Fry



*"You better get another crane in," Gus said to Wisniewski.
"This thing is dangerous."*

ski, forgetting he'd just fired Wiggins.

Wiggins clambered up on the crane. He jerked out the plug cables without bothering to cut the mag. Gus was behind him, checking and spacing gaps as the young man's fingers spun out old spark plugs and put in new ones. When they were all in place, Wiggins started to unscrew brass extension terminals from the old plugs.

"No time for that," Gus said. "Just connect them up."

The crane operator started to protest. Wiggins ignored him, finished the job. "Okay, hit the button," he said, jumping down.

With a roar the engine came to life.



The crane lifted a section of pipe, positioned it smoothly in the ditch.

"Sounds good," Joe Wisnewski said.

Gus nodded. He was unscrewing the brass extension terminal from one of the spark plugs Wiggins had removed. Its purpose was to hold the wires farther away from the engine block to prevent heat from damaging the insulation. Examining it closely, he knew what had been the trouble and that a fluke had fixed it. The first drops of rain began to fall.

A FEW hours later, Joe Wisnewski and Bill Wiggins, both soaked to the skin, came into the Model Garage.

"We just made it," Wisnewski said. "If we hadn't, that contractor would have sued me for my shirt."

"Maybe," Gus said. "Why did you put

these brass extensions on, Bill?" he asked, holding up one of the spark plugs that had been removed.

"The operator insisted on it," Wiggins said. "Told me he always used them on his old crane."

"Yes, but not with this type of plug," Gus said. "It's vented and needs a vented terminal."

"A vented spark plug?" Wiggins said, a puzzled look on his face. "Guess I haven't been doing my homework."

Wisnewski burst in. "The crane operator? Then it's the contractor's fault. I'll sue him for—for—" He calmed down. "What's a vented spark plug?"

Gus explained. Spark plugs on engines that idle a lot—as in a crane, police car, taxicab—often foul up because they don't get hot enough to burn away carbon that forms on the electrodes. A special plug, with an auxiliary spark gap inside, keeps the electrodes from losing heat. But the interior spark creates ozone, so the upper shank is hollow—vented—to let the ozone escape.

"If the ozone is trapped," Gus pointed out, "pressure builds up, making it hard for the spark to jump the gap. The result is misfire."

"Then this extension terminal trapped the ozone,"

Wiggins said. "It isn't bored through."

"That's right," Gus said. "A vented spark plug needs a vented terminal."

"Well, that's how we learn," Wisnewski said, smiling now. "Thanks, Gus. You saved our lives. Come on, Bill."

When they had gone, Stan Hicks eyed his boss suspiciously. "You were awfully smart about vented spark plugs."

Gus grinned. "I'll confess—but only to you, Stan. I didn't really spot the trouble till *after* we'd changed the plugs—without time to screw on the extensions. After I got back here, I confirmed it with this technical bulletin from the spark-plug people." He pulled some folded papers from his pocket. "While our friends were out in the rain, I was boning up."

Stan winked in mock conspiracy. "The secret's safe with me, Boss. Now what were you saying about a raise?"