

**"MYSTERIOUS" MECHANICAL TROUBLES.**

Some men can scent trouble in a machine almost at first sight, locating it and ascertaining its nature by a sort of instinct; but these are comparatively few. Competent engineers and mechanics, having years of experience, often, when trouble is encountered, find it necessary to send for an 'expert' to find out what and where it is. In many instances, says a writer in Machinery (New York), the reason why engineers are unable to locate simple mechanical defects is because they jump at the conclusion that something complex and mysterious is the matter. He goes on:

"As every mechanic knows, the disarrangement of some small part will often render a piece of mechanism inoperative or greatly impair its efficiency; but as a rule the seat of the trouble can be located by a careful and systematic inspection. Such inspection, however, is often not made because of a sort of superstitious belief that any trouble which is unusual must be the result of something mysterious, and this belief is always augmented when attempts are made to locate the defect by haphazard methods. It is a common experience of men sent out by manufacturers to locate and remedy trouble in machinery to find simple causes—so simple sometimes as to make the call for help ridiculous."

In one instance cited by the writer, the chief engineer of a large plant discovered, upon starting an air compressor which had been idle for some time, that it would compress to only twenty pounds, which was sixty pounds below the required pressure. After a few futile attempts had been made to remedy the trouble, the manufacturer was notified by wire to send an 'expert.' When he arrived, he applied a thimbleful of oil to a rusted valve and the pressure at once jumped to eighty pounds, much to the discomfort of the chief engineer. In another case there was trouble with a new set of poppet valves that had been carefully made—too carefully, in fact, for the flutings that would have allowed the air to escape while they were closing, had been omitted, and hence they would not work perfectly. Says the writer:

"In this particular instance a little elementary knowledge of physics was a greater help in discovering the trouble than practical mechanical training, and the incident teaches the value of acquiring knowledge other than that necessary to hold a position, for such knowledge is often the key to the door of opportunity. Of course the causes of defect in mechanism are not always so easily located, nor of such a simple nature as those mentioned

in the foregoing, but experience teaches that work of this kind may be greatly facilitated by a careful and systematic inspection, after having observed any abnormal action."

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