

• New Ideas and Gadgets •

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⚙️ **ASTRO-COMPASS AND TRANSIT** is a do-it-yourselfer's answer to carpentry, bricklaying, irrigation, grading and many other home, farm and ranch problems. The instruction booklet included describes how to square corners of buildings, patios and porches, as well as other jobs previously impossible without the help of expensive equipment.

• Science News Letter, 82:112 August 18, 1962

⚙️ **TAPING MACHINE** is a time-saving device for industry that performs wrap-around taping jobs formerly done only by hand. It will tape any shaped object from $\frac{1}{8}$ to $1\frac{3}{8}$ inches in diameter in one second. Uses include securing electrical lead wires, packaging and price marking, closures for cellophane cover bags such as used on mops and toys. The machine can be set for the exact amount of tape required.

• Science News Letter, 82:112 August 18, 1962

⚙️ **PORTABLE ELECTRONIC PIANO**, built into its own suitcase and weighing 81 pounds, can be taken to pool or picnic site. The 64-note, all transistor piano is powered by battery or household current. A vibrato



control permits other tonalities ranging from Hawaiian guitar to vibraphone effects. Supplied with earphones, it can be used for practicing without disturbing others. (See photograph)

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⚙️ **SQUARE THROAT C-CLAMP** has a full four inches of clamping depth. These clamps can handle twice as many clamping jobs, thus cutting in half the number of clamps a shop needs. The drop-forged steel frame of the clamps is resistant to breakage.

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⚙️ **AUTO RUST HOLE REPAIR KIT** aids in repairing rust spots in a car body. The process is based on a plastic putty that becomes almost metal hard. Besides the putty the kit includes a spreader, chemical hardening agent, glaze coating, a piece of fiber glass screen for larger holes, and complete instructions.

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⚙️ **UNDERWATER CAMERA HOUSING** allows pictures to be taken, developed and seen in ten seconds while submerged. The pressure-proof housing has six external controls and a mechanism that rolls up the pictures so that each picture is displayed after it is taken. An automatic electric eye adjusts the aperture and shutter speed continuously while under water.

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Nature Ramblings



Grasshoppers

By WILLIAM E. SMALL

► THE SUMMER FIDDLERS are reaching the peak of their season, harvesting crops as they ripen and laying the seeds of next year's grasshopper hordes. The adult 'hoppers will soon die off, their cheerful songs and crackling whirs of flight ceasing with the fall frosts.

Short-horned grasshoppers, the family Acrididae, wreak much of the havoc blamed on locusts. This large family includes the most destructive grasshoppers of the West and Great Plains of North America. The long-horned grasshoppers, on the other hand, include the famed Mormon cricket and the popular katydids, noted for their song.

The grasshopper's song serves several purposes. By strumming the powerful hind legs across the hardened membrane of the wing, the male can keep in contact with the surrounding population, for the grasshopper likes to stay near others. He can call the female 'hopper to his side with the fiddling or warn others of danger's presence by ceasing his song. But the female remains silent at all times.

In the spring the new grass comes alive with tiny white grasshoppers with only a resemblance of the adult. Time passes and the creatures gain their familiar color, molting six times before gaining their wings of adulthood.

In parts of the world these insects build into huge hordes, leaving the dry barren stretches of their birthplace to ravage the grasses and crops farther and farther downwind, flying on multi-colored "cellophane" wings. As they build in numbers, the land in their



paths becomes stripped of all grass, trees, crops and sometimes even clothes and curtains. The Mormons saw this devastation, Asians see it often. It was even recorded in the Bible by peoples of ancient lands.

But the great grasshopper hordes of North America are no longer. They are controlled by chemicals and fires, modern agriculture methods and mechanical techniques. The eggs from this year's crop of "singing destruction" will emerge next spring in controlled and measurable numbers to play the songs of summer.

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