

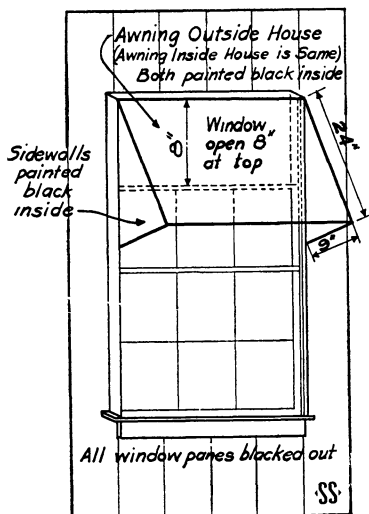
## New Machines And Gadgets

### Novel Things for Wartime Living

Razor blades can be sharpened without removing them from the holder by means of a device recently patented. It can be applied to razors of standard make, but requires that the cap or last clamping piece be replaced by one of special make. The latter has a thin sheet of sharpening material that lies between it and the blade. When the handle is slightly loosened, the sharpening material can be moved back and forth over the edges of the blade by means of a small handle that projects from the cap. Another recent patent accomplishes the same thing but requires special construction of both blade and handle.

A mechanic converted a screwdriver into a cotter-pin spreader. This expedited the job of spreading cotter-pins so that a hundred times as many could be handled in the same period of time as by conventional methods. Any mechanic can build such a cotter-pin spreader merely by heating the end of a screwdriver to redness, hammering it so as to produce a broader point and then grinding to shape. In use the round end of the spreader is inserted into the eye of the cotter-pin. A downward movement of the opposite wedged-shaped end will drive it between the legs of the cotter-pin whereupon a slight twist of the wrist in both directions spreads the pin and finishes the job.

From Hawaii comes a blackout window ventilator which anyone can make and install at home. It consists of a double awning, one outside, the other inside the window. This permits the window to be opened a few inches at the top. The awnings can be made of any black opaque material and being fixed, may be supported by a framework of wooden slats. All the window panes must also be blacked out. Residents of



Hawaii, after experimenting with various blackout methods since Pearl Harbor, have found this one the most effective for the ordinary home. They report that a person directly under the awning can detect a slight glow but it cannot be seen elsewhere from the outside.

Rubber heels have been developed which the manufacturer claims will save  $1\frac{1}{4}$  ounces of compounded rubber and one-fifth of an ounce of steel for each heel. A wooden core is used to attach the heel to the shoe in place of the usual steel inset washers. The new type can be made on standard rubber heel manufacturing machinery and attached by present shoe-making machines as well as by repairmen.

*If you want more information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, 1719 N St., N. W., Washington, D. C., and ask for Gadget Bulletin 115.*

*Science News Letter, August 1, 1942*

#### CHEMISTRY

### Chemically "Toughened" Wool Is Developed

CHEMICALLY "toughened" wool, indigestible to moths and resistant to soap alkalis, has been developed at the National Bureau of Standards by research associates of the Textile Foundation. The "toughening," however, is all inside the wool, for the fibers remain just as soft and pliable as ever.

Secret of the process, it is explained, lies in a rearrangement of sulfur atoms in the chemical composition of the wool substance. In natural wool, the sulfur tie-up is the first thing attacked by the digestive juices of the moths' stomachs, also by the soap alkalis. By making these sulfur structures more stable the whole wool molecule is made more resistant to any kind of chemical attack.

*Science News Letter, August 1, 1942*

#### ESSAYS ON THE NEW VORTEX ATOM

by Carl F. Krafft

A chain is no stronger than its weakest link, and a crystal cannot have a rigidity greater than that of the atoms which compose it. Atoms must therefore have crystalline rigidity. It is conceivable that skeletal structures formed of vortex-rings might possess considerable rigidity, but how any condition of crystalline rigidity could exist in the nucleated atom with its widely scattered electrons (not to mention the wave-atom) is beyond the understanding.

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