

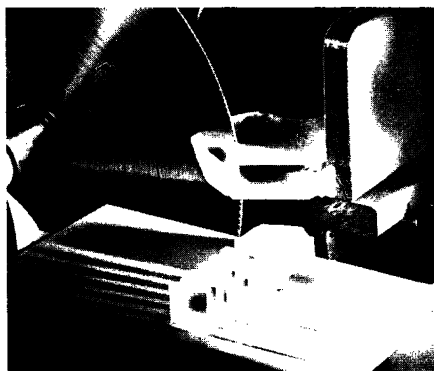
## New Machines And Gadgets

### Novel Things for Wartime Living

A cigaret case and lighter combined is the subject of a recent patent. A zig-zag spring in the flat case keeps the cigarettes always near the top. When the case is opened, the topmost cigarette is tilted up so that one end is accessible to the mouth of the smoker. The other end is held adjacent to the lighter. The cigarette can also be removed with the fingers without lighting if desired.

Silicate adhesives are found superior to other adhesives in making cartons in that they penetrate just enough to give a good hold but not enough to make the board soggy and weak. Also they can be made in a number of grades suitable for different materials. They are made from sodium silicate of which there is at present an adequate supply.

Airplane instrument lights are regulated in brightness by two thin polarizing disks placed between the bulb and the lens. One is fixed; the other can be rotated by turning. When the polarizing disks are crossed, the light is almost completely extinguished. This saves weight, space and a lot of wiring when electrical resistances are used to dim the lights. It is very important to dim the lights at night so that the pilot will not be blinded as he shifts his eyes from the darkness outside to the panel board inside.



The saw in the illustration is slicing a four-inch quartz crystal like a loaf of bread. The slices are used in broadcasting equipment to keep the station accurately on its assigned frequency. Quartz is harder than glass, yet the saw penetrates smoothly and easily because its rim is studded with diamonds—small rough ones not suitable for gems. Many square inches of hard crystals can be sawed before the diamonds must be renewed.

When typewriters again become generally available, don't be surprised if you see some with their frames built of synthetic plastic material instead of metal. Such a typewriter, of German make, was recently shown in an "Ersatz Fair" held in Zurich, Switzerland. It is said to be considerably lighter than a metal-framed machine of the same size, but strong and durable enough for all practical purposes.

Handy matches for the cigarette is a problem still engaging the attention of inventors. One inventor stuck the matches on the package, another stuck

a match on each cigarette. But now comes the simplest of all. The package is simply provided with a pocket in which an ordinary book of matches can be carried. This invention has been patented.

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 110. Science News Letter, June 27, 1942

#### AERONAUTICS

### Auxiliary Turbines for Rocket Aircraft Patented

ROCKET-PROPELLED airplanes of the future will use turbine-driven propellers to push themselves up through the atmosphere as far as it is dense enough to give the propellers some "grip." Once far up in the thin-aired stratosphere, these auxiliary flying means will be cut loose and permitted to float back to earth on parachutes, while the aircraft roars meteor-like on its high-speed way, pushed by the direct blast of the rocket jets.

This flight of the future is envisioned by Dr. Robert H. Goddard of Roswell, N. M., in an invention on which he has just received U. S. patent 2,286,908.

The auxiliary turbines, turning propellers, are desirable on rocket craft, Dr. Goddard explains, because at slow speeds in our lower, dense atmosphere rocket propulsion is inefficient and wasteful of fuel. At these levels propellers work better. The scientist-inventor proposes to drive his turbines with the rocket blast itself, which would work very much as steam does in the more conventional type of turbine.

Science News Letter, June 27, 1942

Policemen and postmen in Washington, D. C., are walking their beats on *reclaimed rubber* heels these days, to test quality and durability of the experimental substance.

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