



### Battling Bindweed

**S**OYBEANS, newest major addition to American farm crops, have been enlisted for the war on weeds by Prof. A. L. Bakke of Iowa State College, Ames, Iowa. The enemy under attack is the European bindweed, alias Creeping Jenny, one of the worst pests with which Midwestern and Western farmers have to contend. It is a species of wild morning-glory that forms dense tangles on the ground and strangles almost any crop that the farmer tries to grow. Bindweed in the field constitutes valid reason for refusal of a loan, in many communities.

Prof. Bakke's method of attack is not a blitzkrieg but a siege. It takes five years, but at the end of that time the enemy is completely wiped out.

First step in the siege operations is ordinary fall plowing. Then, in early spring, the soil is worked with a duck-foot cultivator, and in June comes a second plowing, burying the bindweed shoots under six or eight inches of soil. After this, the field is leveled off and the soybeans drilled in, thick and solid. Before the buried bindweed shoots can work their way to the surface the beans are up and growing, and they keep the lead all season, never letting the sun get down to the struggling weeds.

Bindweed roots tremendously deep—

## ● RADIO ●

Dr. Willis Haviland Carrier, of the Carrier Corp., known as the "Father of Air Conditioning," will tell how air conditioning is helping to solve one of the nation's most pressing problems—need for iron and steel—as guest scientist with Watson Davis, director of Science Service, on "Adventures in Science," over the coast to coast network of the Columbia Broadcasting System, Thursday, March 27, 3:45 p.m. EST, 2:45 CST, 1:45 MST, 12:45 PST. Listen in on your local station. Listen in each Thursday.

sometimes 15 or 20 feet into the soil, with great reserve stocks of food in thick tubers. So the treatment has to be kept up until the weed's reserves are all gone—usually a matter of five years. However,

the soybeans pay their own way and something over, so that the farmer does not lose money while he is conducting his siege operations.

*Science News Letter, March 22, 1941*

### INVENTION

## Improved Submachine Gun, Anti-Aircraft Weapon Patent

### Ordinary Machine-Gun or Rifle Cartridges Can Be Fired in Simultaneous Volley from Parallel Barrels

**A** NEW submachine gun, firing pistol cartridges like those used in the familiar "Tommy gun" but differing from it in many other respects, is among the crop of recently invented weapons registered at the U. S. Patent Office (*U. S. Patent 2,231,978*).

The cartridges are fed upwards from a box magazine situated beneath the weapon, instead of from a circular drum as in the "Tommy gun." These magazines are quickly interchangeable. Immediately to the rear of the magazine is an empty box, into which spent cartridge cases are ejected, instead of being thrown out into the open. This facilitates collection of empties for reloading.

The inventor, Harold Wesson of Springfield, Mass., calls attention to the cylindrical shape of almost all of the major parts of the weapon. This means that they can be produced by lathe turning, thus greatly speeding up possible rate of production. Rights in the invention have been assigned to the well-known arms firm of Smith and Wesson, Inc.

An anti-aircraft weapon using ordinary machine-gun or rifle cartridges but firing them in a simultaneous volley from a large number of parallel barrels instead of in the rapid successive fire of the conventional machine gun, is the subject of patent 2,231,879, granted to Frederick J. Brightman of Honolulu.

As illustrated in his patent application, the weapon consists of 36 barrels arranged in a circular bundle, but other numbers and arrangements are possible. Cartridges are fastened to a base plate, which is slipped into place and locked, and then all firing pins are driven forward simultaneously by suitable mechanism. The bullets thus speed on their way like a magnified shotgun charge,

so that if any hits at all are scored there are likely to be a good many of them.

This weapon is reminiscent of one of the earliest forms of machine guns, the mitrailleuse, used by the French against the Prussians in the War of 1870. For use against ground troops, however, sweeping fire was found more effective, so that the successive-shot types of machine gun, developed by many inventors, eclipsed the mitrailleuse.

*Science News Letter, March 22, 1941*

### ASTRONOMY

## New Invention Helps In Finding Constellations

**F**INDING the constellations is easy with a new invention. You turn a drum to the group you want to find, and set an index to a number there indicated. Then a small pointer shows you just where it is. It really operates like a miniature equatorial telescope. (*Patent 2,231,071, Thomas T. Harvey, Denver, Colo.*)

*Science News Letter, March 22, 1941*

## ESSAYS ON THE NEW VORTEX ATOM

by Carl F. Krafft

The author contends that much confusion has resulted from the failure of physicists to clearly specify whether their atomic models are supposed to represent physical reality, or merely symbols or analogies. Sir Arthur Eddington tells us that the physicist has not yet found the real atom. There are many reasons why the nucleated atom with its peripheral electrons cannot possibly represent physical reality, but thus far not a single reason has been presented why the new vortex atom cannot represent physical reality.

Free upon request

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