

opening parachutes after a specified time. (No. 2,165,954)

Process for making a pencil with multicolored lead which writes in different hues depending on wear. (No. 2,165,827)

Microphone system for recording telephone conversations. (No. 2,165,546)

Periscope mounting for cameras so that they can be snapped while held high overhead. (No. 2,165,512)

Cold storage locker room having a matrix of individual lockers each of which can be lifted by an overhead traveling crane. (No. 2,165,513)

New golfing aid to set tees at predetermined height by inserting tapered shanks of tees through different size holes in a small flat sheet laid on ground. (No. 2,165,479)

A shifting device for automobiles which makes possible curb-side parking in a space hardly larger than the length of the car. (No. 2,165,461)

Multiple engine mounting for airplanes in which two or more engines, through bevel gears, apply power to the same propeller. (No. 2,165,453)

Sanitary tooth cleaning element of sponge rubber with dentrifice included which is to be used once and thrown away. (No. 2,165,420)

Gear shift for bicycles in which the gears are changed by back pedalling. (No. 2,165,201)

Special flat type radio speaker mounting for placement on the roofs of automobiles. (No. 2,165,637)

New type thermoelectric rotary razor which burns off the whiskers. (No. 2,164,581)

Silk or rayon stocking of composition weave having resilient rubber fibers over the knee to prevent runs. (No. 2,165,012)

Chemical method of producing synthetically ascorbic acid, or vitamin C. (No. 2,165,151)

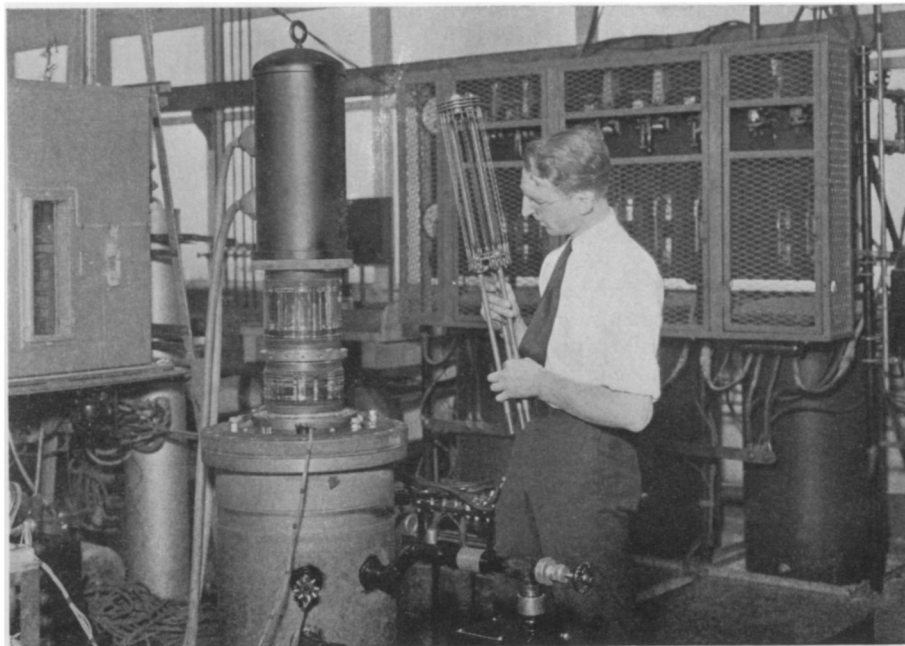
Safety electric mine lamp having an automatic circuit breaker to prevent explosions if the glass bulb is accidentally crushed in service. (No. 2,165,193)

A new means of protecting green logs and lumber from wood boring beetles by the use of diphenyl and triphenyl chemicals. (No. 2,164,328)

A transparent wound dressing provided with a nondrying adhesive made of chlorinated rubber and a plasticizer. (No. 2,164,360)

Dual training tables for instruction in the use of airplane navigating instruments. (No. 2,164,412)

For possible use of musicians, a lip exerciser consisting of a light flat spring



#### DEMOUNTABLE FILAMENT

*Held in the engineer's hands is the demountable filament assembly of the new giant radio tubes of station W2XAF.*

device to be inserted in the mouth and compressed with the lips. (No. 2,164,458)

A new type of rubber auto tire having two inner tubes side by side separately inflated, designed to give blowout protection. (No. 2,164,686)

Method of producing crepe effects in rayon threads by chemical treatment of the fibers before drying with a solution rendered insoluble by the drying process. (No. 2,164,479)

Controllable pitch propeller. (Nos. 2,164,489-90)

A composite fabric for wearing apparel consisting of two outer layers of pliable fabric between which is a soft packing of loose fibers for extra warmth. (No. 2,164,499)

New type of slot device for airplane wings to increase drag when needed for better control. (No. 2,164,531)

*Science News Letter, August 5, 1939*

#### RADIO

### America's Radio Big Bertha Gets Demountable Filaments

**U**NCLE SAM's radio Big Bertha—the 100 kilowatt transmitter of station W2XAF in Schenectady that sends its directed beam toward South America in competition with the radio programs of Europe's dictator nations—has radio tubes so large that they have 18 fila-

ments, each of which is demountable and replaceable.

When the station soon steps up its power from 40 to 100 kilowatts, two of these giant tubes, the first with demountable filaments, will take over the job now done by six tubes in the present power set-up.

Each tube, with its accessory units, stands higher than a man. They are not sealed permanently but are continually kept at a low vacuum by pumps.

"The impression has been gained," states C. H. Lang, manager of broadcasting for the General Electric Company, "that stations in various countries have tried to black out the signals of other stations, in order that their own signals could be heard. This is untrue and, as a matter of fact, the well-operated

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stations of the major countries of the world have meticulously maintained their stations on the frequencies assigned to them by international agreement.

"All realize that nothing but chaos would result from intentional interference."

The thing to do, in the battle of the ether waves, is to increase the power of the signals so that the station can be heard at all times with superior reception. The new demountable filament tubes of the new 100 kilowatt is the answer of engineering ingenuity.

*Science News Letter, August 5, 1939*

#### PHYSIOLOGY

### Use of Anti-Bleeding Vitamin K Extended

**P**ATIENTS suffering from more than one serious ailment in which there is danger of fatal bleeding can be saved by treatment with the anti-bleeding vitamin K. This increased usefulness of the vitamin appears in a recent report by Drs. R. L. Clark, Jr., C. F. Dixon, H. R. Butt and A. M. Snell, of the Mayo Clinic.

Liver disorder or injury, intestinal obstruction following operations for cancer or other conditions, chronic ulcerative colitis, and other severe intestinal disturbances are among the conditions in which the vitamin may be valuable in preventing or controlling bleeding. The vitamin, of course, has no effect on the ailments themselves, but only on the tendency to hemorrhage which may be a serious complication in such conditions.

The kind of ailments in which the vitamin is likely to be valuable can be determined from the facts now known about the vitamin's role in preventing bleeding and about its utilization in the body.

Vitamin K, the Mayo Clinic physicians state, is responsible for the normal maintenance of one of the most important of the coagulating constituents of the circulating blood—prothrombin. This substance apparently is formed in the liver with the aid of vitamin K, but the liver cannot get the vitamin unless there is bile of normal composition in the intestines and a normal absorptive surface in this part of the digestive tract. Disorders of the liver or of the intestines, or conditions which prevent passage of bile into the intestines or which make it impossible for the patient to eat vitamin K-containing foods may, either alone or in combination, cause a dangerous lowering of the prothrombin pro-

duction, with consequent tendency to hemorrhage.

The vitamin is apparently distributed widely enough in foods so that normal persons can get an adequate supply. For patients too sick to eat or unable to uti-

lize the vitamin from food a form of the vitamin from fish meal or alfalfa is now available for treatment and recent chemical discoveries suggest that the pure vitamin itself will also soon be available.

*Science News Letter, August 5, 1939*

#### ARCHAEOLOGY

## Athens' Ancient Market Place Yields Archaeological Treasure

### Contents of Royal Chamber Tomb Indicate Athens Was Not Unimportant in Fourteenth Century Before Christ

**T**HIS year's discoveries, among them a royal chamber tomb of the Mycenaean age, by field workers at the Agora, market-place of ancient Athens, are "of the greatest importance," according to Dr. T. Leslie Shear, field director of the work. Dr. Shear, professor of classical archaeology at Princeton University, recently returned from directing the ninth season of work at the Agora for the American School of Classical Studies at Athens.

In addition to the tomb, which contained interesting sacrificial offerings, findings of the Agora workers included a number of ancient graves and wells, important boundary stones, the great drain of the Agora, and decorative objects, pottery and coins. During the 18 weeks of work, 43,852 tons of earth were removed, and 8,789 coins were uncovered.

Sacrificial offerings in the royal chamber tomb, assigned to the fourteenth century B.C., indicate that Athens of this period was not a poor, unimportant settlement. Pottery, gold ornaments and ivory boxes left in the tomb indicate a wealth and artistry of craftsmanship hitherto unknown.

Prior to this discovery, scholars believed that Athens was of little importance during the time of King Erechtheus, since the city had played only a small part in the siege of Troy.

These offerings, including more than one hundred pear-shaped leaves and rosettes of thin gold, two ivory boxes, or pyxis, a bronze mirror and ivory hairpins, were found, with the empty grave in the burial chamber. Collapse of the roof soon after burial filled the chamber with rock, and caused the hurried removal of the body, possibly that of Erechtheus' queen, and some of the offerings.

The doorway to the chamber, at the end of a passageway, was sealed up with rocks at the time of burial, and had never been opened thereafter. Removal of the

body and of the offerings was effected by means of a trench dug directly over the grave.

In the eastern part of the chamber, which had been untouched since the burial, were found the broken fragments of six large vases, in the positions in which they had originally been placed. These pieces are fine examples of Mycenaean pottery, and led the archaeologists to assign the tomb to that period. Fragments of the vases were carefully gathered and the objects almost completely restored.

A second and larger ivory pyxis, only slightly damaged, was also found in the eastern portion of the chamber. This piece, according to Dr. Shear, is "a masterpiece of artistic design and craftsmanship," showing the talent of the artists of the Mycenaean period. On the lid of the box is a representation of deer and griffins, which shows "a mastery of technique which inspires the scene with life."

Additional importance is attached to the tomb, because "archaeologists now have for the first time a tomb of the members of the dynasty which occupied the 'strong house' of Erechtheus on the Acropolis which is referred to by Homer in the 'Odyssey.'"

"We obtained some fine neolithic vases from shallow wells on the slope of the Acropolis," Dr. Shear reported, "and with them were two human skulls of a very primitive type."

The surprising discovery of a cemetery of the sixth century B.C. in the southwest corner of the area was reported. It seems to have been a burying ground of a family with foreign affiliations, for the dedicatory offerings included some imported objects, such as Lydian perfume jars, Corinthian vases, and a scarab of blue glass pottery.

*Science News Letter, August 5, 1939*