



Vol. VI. Whole No. 68

DECEMBER, 1918

Number 8

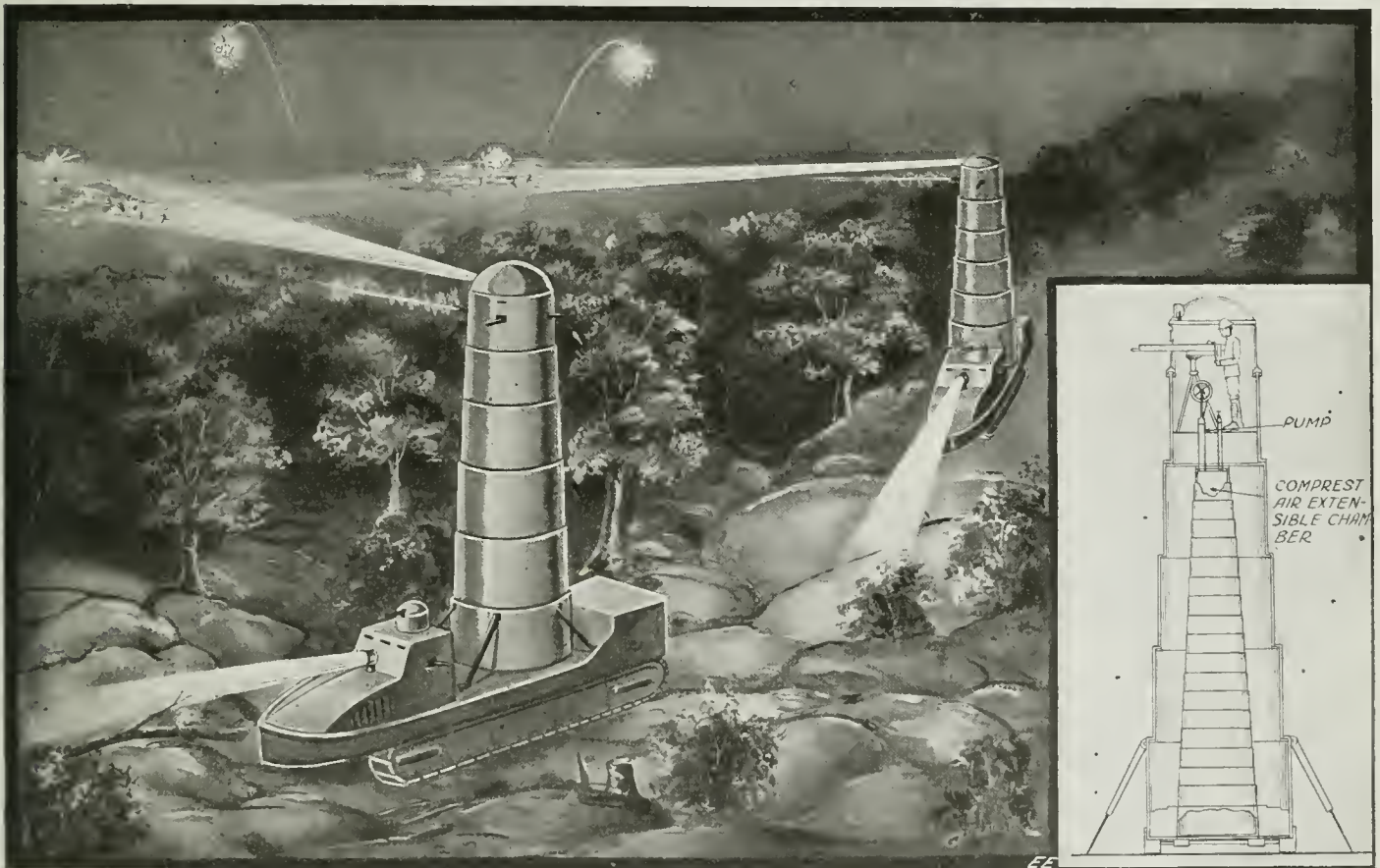
## At Last the Super-Tank!

**H**ERE at last we have the super-tank. It was recently thought out and patented by one Anton Krzan of Chicago. This military device has considerable possibilities, and its field of activities is a wide one. It may

Of course, this armored tower could be well camouflaged so as to be hardly discernible even a few hundred yards away.

The inventor describes one way of elevating the steel tower, whenever so desired, by the use of compressed air. He states that

other methods at once become available for elevating the tank as often as required. One of these is to connect it mechanically with the automobile engine thru suitable clutch mechanism and gearing. Another method is to have a separate gasoline engine unit,



Copyright, 1918, by E. P. Co.

At Last the Super-Tank! A Yankee Genius Has Developed This Telescopic Armored Tank for Use in Ferreting Out the Enemy, Making Observations, and Breaking Up Airplane Attacks Close to the Ground. Equipt with Wireless Telephone, Searchlights, Machine Guns, and a High Speed Tractor Chassis, These Fighting Giants Should Prove Quite Formidable.

be mounted on a powerful automobile truck or chassis, so as to be kept rolling over the country at high speed, and the while hurling forth streams of machine gun bullets, not to mention liquid fire and gas. This armored telescopic tank may carry searchlights for use at night. It can also be used as an observation post for the Signal Corps.

one man can elevate the tower section by simply turning the handle on a small air pump which compresses air at atmospheric pressure and forces it into a flexible chamber, which, as more and more air is pumped into it, naturally causes the tower sections to rise correspondingly. Where the super-tank is mounted on an automobile chassis, several

just to raise the tower section of the tank—and still another way is to have an electric motor inside the tower base, the motor receiving electric current to operate it from a storage battery charged from the automobile engine. A further scheme for such a power plant would be that involving the use of the automobile engine to drive a



### NEW YORK'S NOVEL \$6,000,000,000 LIBERTY LOAN SIGN.

One of the most spectacular features of the Fourth Liberty Loan campaign was the manner in which the big Wrigley Gum Electric Sign in Longacre Square was adapted to accommodate an enormous scale giving the total figures subscribed each day.

This sign, the largest electric sign in the world, occupies the roof of a building on the west side of Broadway from 43rd to 44th Street. The sign is 200 feet long by 50 feet high, and is an artistic design, comprising more than 15,000 electric globes.

Mr. Wrigley donated the sign for the use of the Liberty Loan during the campaign and the concern who built the design designed and donated the Electric Scale which recorded the total subscriptions until the six billion was reached.

The scale occupied the center of the sign and is 66 feet in length. In fact, it is a small section of an enormous dial, which if completed

would be 132 feet in diameter. The arrow is 14 feet long, and the letters "BUY LIBERTY BONDS" are 5 feet high. The arrow was set electrically several times

during the day, according to figures received on the long distance phone from Washington, and busy New Yorkers found it of great convenience to watch the progress of the subscriptions to the Fourth Liberty

caught the eye of a little girl, who walked thru Longacre Square the other day with her mother—in excited tones she turned to her mother and said: Oh, Mamma, look! Mr. Wrigley has donated over a billion dollars for Liberty Bonds." Photo courtesy O. J. Gude Co.



Spectacular Electric Sign One Block Long Which Kept Track of the "Fourth Liberty Loan" for New Yorkers. The Illuminated Needle Moved Slowly Across the Dial as the Loan Progressed.

Loan by simply glancing at this huge sign.

There was a sign at the bottom of the big display stating that the space was donated by Wm. Wrigley, Jr., Company, and this

mirror. During the past year the writer has had frequent opportunities to verify this observation and to apply it in producing thick deposits of silver on glass.

dynamo, and the dynamo to operate the electric motor. This corresponds to the steam-electric drive now fitted to many of our new ships, and there is also at the present time an automobile on the market having this form of drive. One of its principal features and characteristics is greater flexibility owing to the wide range of speed available wherever an electric motor is used. This cannot be said of any steam or gasoline engine power unit, where the power is taken direct thru gears, or other more or less jerky mechanical means.

Not only does this super-tank have a steel tower, but it can be raised and lowered as it speeds along, and the tower may be rotated as desired. For this purpose the upper section containing the machine gun or other ordnance is mounted on roller bearings, so as to turn easily and quickly. A portable wireless outfit may also be carried in this tank, which often times would be of invaluable assistance in carrying out difficult maneuvers and battle formations, owing to the fact that the observer is elevated above the ground and thus has a clear view of the enemy lines. At first thought it might seem that considerable power might be required to raise a telescopic steel tower such as this, especially when it might be expedient to raise and lower it quickly for the purpose of keeping the enemy gunners guessing, if they should happen to get a "bead" on the moving, highly camouflaged super-tank. But such is not necessarily the case, for the telescopic steel mast can be properly arranged with suitable balance weights in the same manner that our apartment house and office building elevators are, so that very little power would

be required to raise the tower to its full height in the fraction of a minute. The balancing weight connected to these sections would be nearly equal to the weight of the sections themselves, so that when the clutches are released to collapse the tower, the weights will weigh just sufficient to allow the tower section to overbalance them and descend.

### ARMY ENGINEERS' CORPS A GIANT OF EFFICIENCY.

The wartime organization of the Army Engineer Corps was revealed for the first time on June 27, by Major General William M. Black, chief of the corps, in an address before the American Institute of Electrical Engineers. General Black outlined the extent to which modern warfare is an engineering problem and illustrated his address with screen views of the activities of the engineers in France.

General Black said the present corps organization is composed of 8,000 commissioned and 200,000 enlisted personnel. New units created, he said, most of which are now in France, included: Five corps regiments, consisting of sapper, searchlight and sound-ranging troops; 43 sapper regiments and trains; 2 mounted battalions and trains, 5 pontoon trains, 4 inland waterway companies, 40 railway regiments and battalions for construction and operation of standard and light railways, 1 railway transportation corps, 1 highway regiment, 1 gas and flame regiment, 1 gas training service, 5 forestry and auxiliary forestry regiments, 1 surveying and printing battalion, 1 military mapping service, 2 supply and shop regiments, 1 water

supply regiment, 1 quarry regiment, 1 mining regiment, 1 electrical and mechanical regiment, 2 crane operating companies, 1 camouflage battalion, 18 truck and auto companies and 44 depot detachments.

General Black, who accompanied Secretary Baker to France and personally inspected army engineering projects there, said the majority of these units were serving with American troops, although some were attached to the French and British armies. He pointed out that 20,000,000 square feet of floor space are required to store 90 days' supplies for 1,000,000 soldiers and double that amount of open space. At one port of debarkation, he said, 375,000 square feet of wharf space had been provided to accommodate incoming troops and supplies, and he estimated that the transportation services which had to be constructed and maintained must be able to handle to the front 25 pounds per man per day.

### RADIUM IN MEXICO.

A concession has been granted by the secretary of industry and commerce in Mexico for the exploitation of a deposit of gold, uranium and radium at Guadalupe, in the mountains of the state of Chihuahua. All the machinery necessary for thoro and extensive operation will be introduced. The government will receive 5 per cent of the gross output in return for the permission granted. This is the only deposit of these minerals so far discovered in the republic.

Almost automatic in its operations is a new cabinet for quickly developing X-ray photographs for dentists' use.

### NONSILVERABLE CONTAINERS FOR SILVERING MIRRORS.

In the ordinary process of silvering glass mirrors by chemical decomposition (e. g., Brashear's method) the metal is deposited upon the glass container. In this manner a great deal of silver which might have added to the thickness of the mirror is lost. This is an important item when silvering mirrors 25 cm. or more in diameter, says Wm. W. Coblentz in *Science*.

The object of this note is to call attention to the usefulness of ordinary, "granite ware," enamelled iron pans, which do not attract the silver and hence increase the supply of material available for deposition on the