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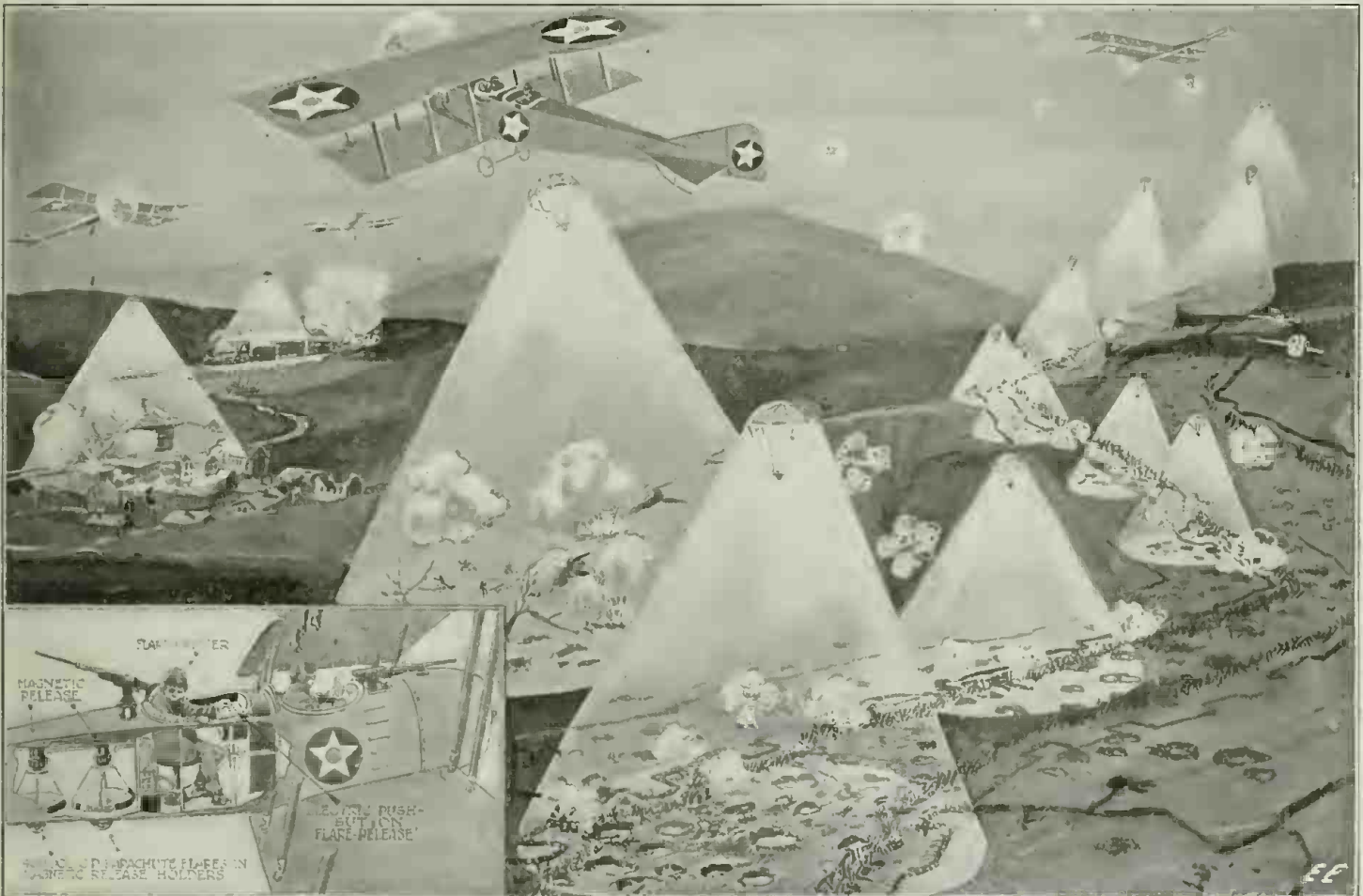
OUR NEW 400,000 C. P. AEROPLANE FLARES

FOR carrying out night operations under war-time conditions the Teutons, as well as the Allied air forces have often resorted to the use of "flares" as they are called. These are usually dropt from airplanes or dirigible balloons and, suspended from para-

An airplane flare with a brilliancy equalling that of 400,000 candles has been perfected, says our official report from Washington. When hanging from its parachute over a German munition plant it lights up an area so brightly that an airman, thousands of feet in the air, can

lights in any building that might possibly be used as a target. Therefore, the airman must be able to supply his own means of locating the object of this attack.

When orders are received to bomb, say a particular railroad center, the aviator proceeds very much in the same manner



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Uncle Sam's War Experts Have Recently Evolved Something Entirely New in "Flares." This Design Permits of Launching the "Flares" from Aeroplanes, and the Powerful, Prolonged Illumination They Provide Will Make the Visit of our Nocturnal Aerial Bombers One of Extreme Anxiety to the Inhabitants of German Towns and Cities. Each "Flare" develops 400,000 Candle-Power and Lights up an Area One and One-Half Miles in Diameter.

chutes, they give an intense illumination over considerable areas.

Uncle Sam's ordnance experts have something new to spring on the "All Highest" shortly—a new "flare" light that will give 400,000 candle-power, and light up a circular area one and one-half miles in diameter!

select any building he is directed to make a target for his aerial bomb, and, it may be added, American aviators are becoming so expert in bombing that they can usually hit the target at which they shoot.

In every European city within the zone of aerial raiding operations, the rule is rigidly enforced against the burning of

as does the captain of a vessel. The cities and their environs are charted and the night-flyer proceeds by compass, due allowance, of course, being made for atmospheric conditions. He is also frequently aided by prominent markings, such as the reflection of moonlight from a river.

Having reached the particular district

sought, he must locate the particular object of his attack from his position, which may be 5,000 or 10,000 feet, or even higher, above the earth. Equipt with the airplane

is equal to that of a battery of from 150 to 175 street arc lamps, or of from 15,000 to 17,500 ordinary incandescent lamp bulbs such as are used in the home!

rounding conditions. If the enemy is aware of his presence and is preparing for attack, he must keep up and out of range of anti-aircraft guns. An idea of the effective light thrown on the ground by this flare may be gained from the fact that, when suspended at a height of from 1,500 to 2,000 feet, it will clearly light a circular area one and one-half miles in diameter.



Photo © by French Pictorial Service

Just What a Night "Flare" Can Do Is Readily Imagined by Looking at This Photo of a British "Heavy" and Its Crew Lighted up by a German Star Shell. Note the Camouflage on the Barrel and also the Captured "Boches" Working at the Left.

flare, the aviator pulls a lever and releases it. In other cases the "flares" are held in an electro-magnetic device, so that all the "flare officer" has to do is to push the proper button. The button closes the battery circuit thru the particular release magnet; the magnet trips the frame finger holding the parachute and attached flare "powder capsule".

As it drops, the resistance offered by the air sets the fuse mechanism in operation. The result is the emission of a powerful light of from 300,000 to 400,000 candlepower, which completely illuminates the terrain below. The amount of light given

As soon as the flare gets into operation, a huge parachute made of the best quality of silk opens and holds the brilliant light in suspension in the air for a sufficient time to allow the aviator to select his objective or target. Having located the factory, railroad depot, ammunition dump, hangars, munition plant, or whatever the target may be, the aviator drops the bomb and proceeds on his way. His aim is certain to be most deadly with such perfect illumination as is provided by this newly perfected "flare" light.

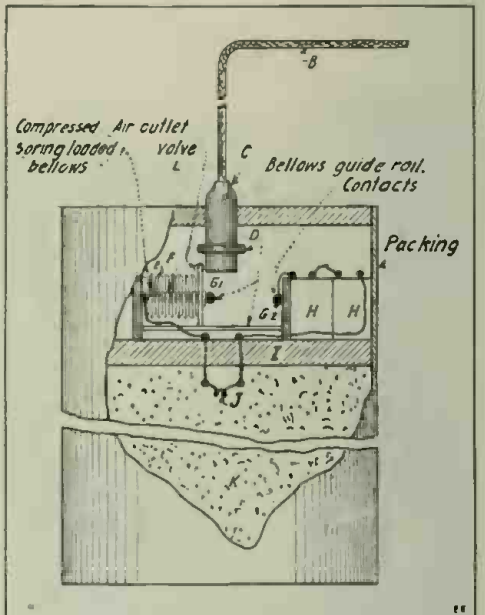
The height at which an aviator flies when attacking depends, of course, on sur-

BELGIANS USE NEW ELECTRIC TRENCH MORTAR.

A new development in mortars on the Belgian frontier, makes use of electricity as the prime agent of operation. Its purpose is to clear the barbed wire entanglements in the line of advance. A very novel method of timing the explosion is employed.

It can be used in close quarters where there is not ample time for loading into the mortar, by grasping the shell by the wire and swinging it over the head, then throwing it into the enemy trench. When put to the latter use it functions the same as when fired from the trench mortar. The pin is pulled when the shell is lifted and swung by the wire; the action is explained by the accompanying diagram.

The shell shown here is one of the units that is placed into a metallic container and fired with its rear end forward. It is aimed



The Belgian Electric Trench Bomb Used for Destroying Barbed Wire Fences, Etc. It Can Also Be Used as a "Hand Grenade."

at the barbed wire enclosure and when fired it turns while in mid-air, thus leaving the wire B to trail behind and catch in the barbed wire. When caught the sub-shell A is pulled from the large shell containing the other subshells, and a sudden pull causes C to pull out until collar D prevents further outward motion. The spring loaded bellows E wherein F is the spring is now released from its compressed position and slowly moves toward contact G², guided by rail M. The speed of the opening of the bellows is regulated by the air inlet valve L, and takes about two seconds to close contacts G¹ and G². H represents the flash-light batteries and when contact by the bellows is made, the filament or very thin wire J is made incandescent and the powder charge K ignited. A violent explosion occurs due to the charge B being under heavy pressure by packing I, and the barbed wire is broken and supporting posts shattered. Thus a clear road is made for the Dough-boys to "go over the top."

The same operation follows the pulling of the wire when it is desired to use the shell as a hand grenade, and it proves to be a very effective two-in-one article.



Photo © by Underwood & Underwood

Special Form of Belgian Trench Mortar Firing Electric Bombs Used in Destroying Barbed Wire Fences. The Wires Catch on the Fence and Detonate the Bomb by an Electrical Device.