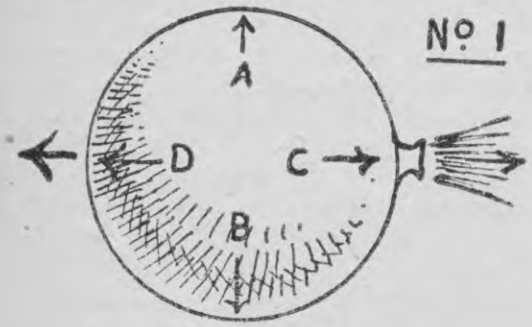
THE ROCKET BOMB

MUCH is heard in a general way only, of the use of Rocket Bombs. How often is heard the term, « rocket firing aircraft attacked targets in France ».

What are the principles involved in the use of rockets, in place of the usual types of missiles? Some impressions of elementary principles are given here for general information.

The idea of employing the rocket principle of propulsion is not new. The Chinese experimented in this sphere 650 years ago, and during the Great War experiments were carried out by



opposing belligerents, both achieving some progress. Before the cessation of hostilities, the principle had not been developed to the stage where it could be put to practical use.

In Germany, experiments were continued after the last war, the chief figure in this connection being Fritz Opel, whose rocket car attracted the attention of engineers, and since the outbreak of the present war strenuous efforts have been made on the part of all the chief combatants to develop and to improve on the use of the rocket principle.

The rocket is a self propelled projectile, which carries fuel for its propulsion within itself, and so the propulsion is continuous throughout the whole trajectory.

It differs, therefore, from the shell or normal mortar bomb, which receives an initial impulse only, so that the initial velocity is its greatest. The rocket has a low initial velocity, but this increases during flight.

The elementary principle is simple. Perhaps the simplest illustration is the toy balloon which, on being inflated and suddenly released so that the air is free to escape from it, is propelled a short distance.

While the air in the balloon cannot escape it exerts equal pressure in all directions in the interior of the balloon, at points A, B, C, and D, as shown in the first illustration. The pressure at A is opposed by that at B, resulting in no lateral motion, and in the same way the pressure at D is opposed by that at C, again resulting in no lateral motion.

But when the opening at C allows air to escape the pressure at C is released, resulting in excess pressure in the direction D. This, in conjunction with the impulse of the escaping gases striking the outside air, propels the balloon in the direction D. The energy used in the propulsion is the energy of the compressed air.

This principle of propulsion is used in the rocket, but the supply of fuel, from which is derived energy, is stored in the body of the projectile, since insufficient