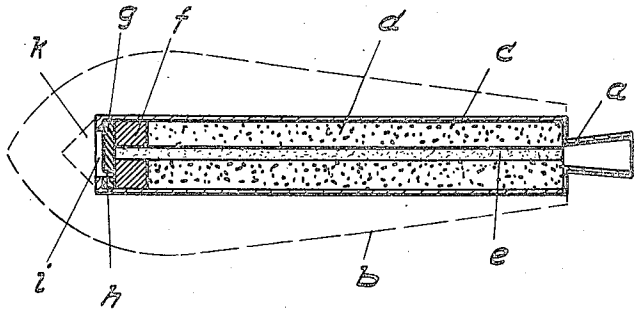
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METHOD OF PRODUCING ROCKETS, ESPECIALLY FOR AERONAUTIC PURPOSES

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METHOD OF PRODUCING ROCKETS, ESPECIALLY FOR AERONAUTIC PURPOSES

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Powder rockets, especially for aeronautic purposes were hitherto produced in such a manner that the driving charge is pressed in solid form, or in some instances provided with a bore the so-called "core", into a case of cardboard, copper, steel or the like. As the propelling efficiency of a rocket is dependent chiefly upon the quantity of gas flowing out per second, which is equal to the size of the actual burning surface, the "core", which may be cylindrically stepped or conical and the like, has a considerably greater driving force than a solid pressed rocket. The degree of efficiency, even of the best constructed core rocket only presents a portion of its maximum value, because on the one hand the free space of the core is lost for the charge and, because on the other hand the burning of the greater part of the charge occurs too suddenly and of the remainder too slowly (choking).

The object of this invention is, to overcome this objection, and the invention consists in that the powder of the charge proper is pressed in under high pressure and the core likewise filled at the same time or subsequently with powder pressed in with a lighter uniform or irregular pressure. By the filling of the core in similar or dissimilar density the burning surface and consequently the outflow speed of the driving gases per second can be regulated so that the degree of efficiency of the rocket can be considerably increased. Further it is possible according to the invention to construct rockets of much greater size and considerably greater length, as with such rockets with unfilled cores, on the one hand explosions occur owing to too large burning surface, or the outlet aperture of the rocket must be abnormally wide, and on the other hand too low propelling force occurs in the case of too great choking.

A rocket constructed according to the invention is illustrated by way of example in the only figure of the accompanying drawing, which shows a rocket *a*, inserted in a flying body *b* indicated in dot-dash lines. This rocket consists of a case *c*, a tightly pressed in powder charge *d* and a core *e*. On the lower end of the charge a retarding means *f* is inserted, on which the closing cover *g* rests. This closing cover has a bore *h*, leading to a recoil charge *i*.

According to the method forming the subject matter of the invention the case *c*, after the insertion of the retarding charge *f*, is tightly packed with propelling powder and the core produced at the same time or subsequently, and filled with powder at the same time or subsequently, the powder charge of the core, in order to cause a more or less rapid combustion of the rocket, being partly compressed more strongly. It is presumed for example that the rocket should burn slowly at the commencement and in its middle portion; consequently the powder charge of the core is compressed under higher pressure at these points. The same may naturally also be done at other points. In order to fully utilize the flying force of the rocket, the core powder is pressed in with pressure continually decreasing towards the bottom end of the rocket, so that a continual increasing of the burning surface and consequently of the quantity of gas flowing out per second is obtained and the compression phenomena of the gases occurring in the burned out portion of the casing are counter-acted. By the arrangement of the retarding means *f* the complete utilization of the acceleration is rendered possible for the rocket. After the retarding means *f* has burned, the recoil charge *i* is ignited explosion like through the bore *h* of the closing cover *g*, this explosion acting in the free space *k* of the flying body *b* and ejecting the rocket case.

I claim:

1. A method of producing rockets, especially for aeronautic purposes, consisting in pressing the powder of the charge proper under high pressure into the casing so that a central channel called "core" is formed in the charge, and in simultaneously filling the core with powder at a lower uniform pressure.

2. A method of producing rockets, especially for aeronautic purposes, consisting in pressing the powder of the charge proper under high pressure into the casing so that a central channel called "core" is formed in

the charge, and in subsequently filling the core with powder at a lower uniform pressure.

3. A method of producing rockets, especially for aeronautic purposes, consisting in pressing the powder of the charge proper under high pressure into the casing so that a central channel called "core" is formed in the charge, and in simultaneously filling the core with powder at a lower irregular pressure.

4. A method of producing rockets, especially for aeronautic purposes, consisting in pressing the powder of the charge proper under high pressure into the casing so that a central channel called "core" is formed in the charge, and in filling the core with powder under pressure gradually increasing towards the bottom end of the rocket.

In testimony whereof I affix my signature.

REINHOLD TILING.