

993,917.

This diagram illustrates a mechanical assembly, possibly a lamp or a specialized container, shown in a cross-sectional view. The device is elongated and tapers towards the top. The main body is labeled *b*. The top section is labeled *a*. Below the main body, there is a horizontal section labeled *c*. Underneath *c*, there is a complex internal structure featuring a coiled spring or spring mechanism, labeled *g*. The base of the device is labeled *f*. Other labels include *e*, *d*, *h*, and *i*, which point to various internal components and layers at the bottom of the device.

WITNESSES
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ARTILLERY-AMMUNITION.

993,917.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, KARL VÖLLER, engineer, a subject of the German Emperor, residing at 17 Jülicherstrasse, Dusseldorf, Germany, have invented certain new and useful Improvements in Artillery-Ammunition; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to artillery ammunition of the kind having a separable cartridge casing, in which the propulsive charge can be varied as may be necessary. In ammunition of this kind hitherto used the propulsive charge has been held in place by a cover of cardboard or similar material firmly jammed in the casing or glued therein. When it is required to change the propulsive charge in such ammunition the operation involved is very detailed. The cover, firmly pressed in the cartridge casing, must be removed by means of a loop fixed to it, considerable power being required, and after the propulsive charge has been changed the cover must be again pressed in the casing upon the charge. The edge of the cover is apt to become bent in this operation and the mass of propulsive powder becomes irregularly compressed, from which circumstance there may arise incomplete or irregular combustion of the powder.

It is the purpose of this invention to avoid mishaps of this kind. According to the invention the propulsive charge is compressed and firmly lodged in the cartridge casing with the aid of one or more springs, which when the propulsive charge is to be changed can be easily removed from and replaced in the casing after this has been withdrawn from the shot.

An example of the invention is shown in the accompanying drawing which is a sectional elevation of the ammunition.

The shot *b* carries at its forward end the detonator *a* and at its rear end the copper rifling band *c*. Against the latter abuts a cartridge casing *d* which is connected with the shot in such a manner that it is easily

detachable therefrom; this casing receives a propulsive charge *i* consisting of a mass of powder which may be varied. In order to hold this charge in place there is a spring *g* contained between two card-board disks *e, f*. The smaller disk *e*, which rests against the bottom of the shot, is connected with the larger disk *f* by means of some easily combustible material *h* surrounding the springs. There is no difficulty in changing the propulsive charge in this casing since when the casing has been removed from the shot, the spring and disks can easily be withdrawn from the casing and replaced therein. The spring being sufficiently long and of sufficient power is well adapted to hold in place the propulsive charge whatever its thickness within reasonable limits.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In artillery ammunition, the combination with a projectile and a detachable cartridge casing containing a variable propulsive charge, of a spring between the projectile and the propulsive charge.

2. In artillery ammunition the combination with a projectile and a detachable cartridge case containing a variable amount of propulsive charge, and two disks, one abutting the projectile and the other covering the propulsive charge, and a spring compressed between the said disks.

3. In artillery ammunition the combination with a projectile and a detachable cartridge case containing a variable amount of propulsive charge, of two disks, one abutting the projectile and the other covering the propulsive charge, a connection of combustible material between said disks, and a helical spring compressed between said disks.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

KARL VÖLLER. [L. s.]

Witnesses:

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