

No. 777,030.

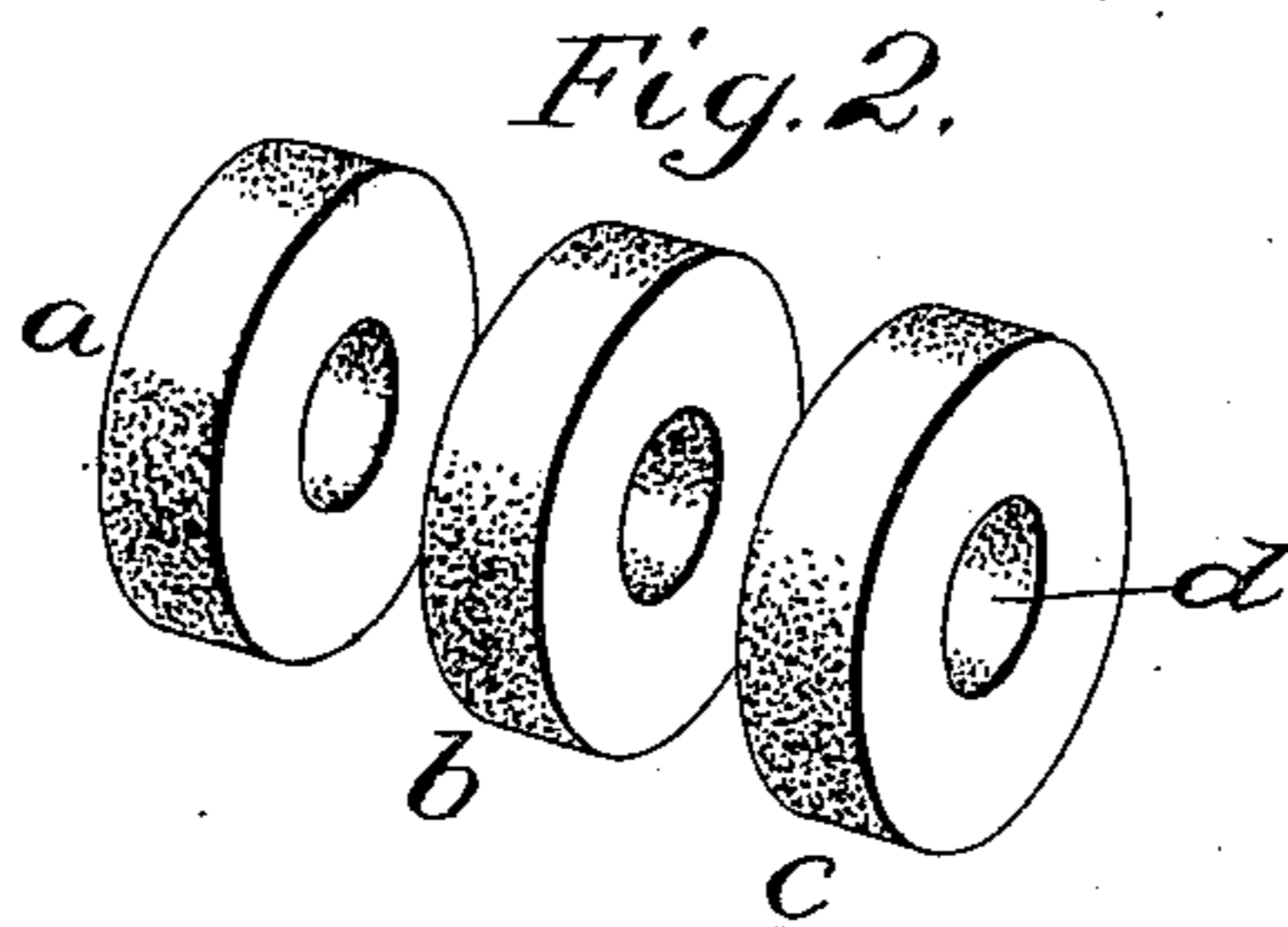
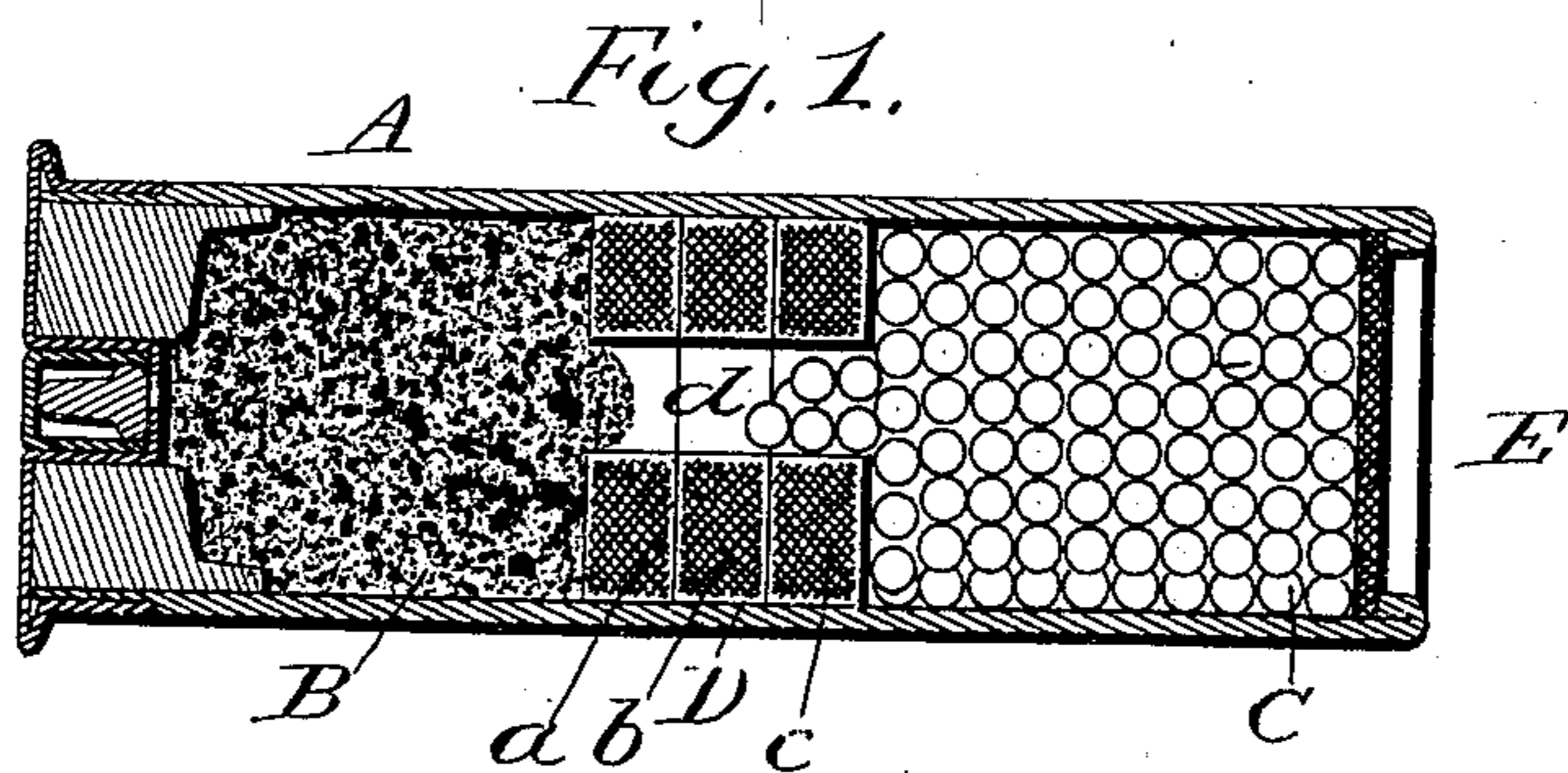
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C. LA DOW.

MEANS FOR GOVERNING THE FLIGHT OF MULTIMISSLILE PROJECTILES.

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NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

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MEANS FOR GOVERNING THE FLIGHT OF MULTIMISSLILE PROJECTILES.

SPECIFICATION forming part of Letters Patent No. 777,030, dated December 6, 1904.

Original application filed January 7, 1904, Serial No. 187,998. Divided and this application filed August 8, 1904. Serial No. 219,971. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LA DOW, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Means for Governing the Flight of Multimissile Projectiles, of which the following is a specification.

My invention relates to means for controlling the flight of separate missiles making up a projectile charge, with a view to causing the same to spread or scatter to a predetermined extent at given range.

The mode, art, or method which the present means or structure is designed to carry out is made the subject-matter of a separate application filed in my name under date of January 7, 1904, and designated by Serial No. 187,998, which art or method consequently is not claimed herein, the present application having been divided out of the original in compliance with the rules and requirements of the Patent Office.

My invention is illustrated in one of its many embodiments in the accompanying drawings, in which—

Figure 1 is a longitudinal central section of a cartridge loaded to produce a spreading of the projectile charge. Fig. 2 is a perspective view of the compound wad used when loading said shell and placed between the propelling or powder charge and the projectile or shot charge.

In said drawings, A indicates a cartridge-shell, which may be of any common and well-known form, but which is here represented as having a paper body and base or reinforcing portion with a spun metal head provided with a circumferential flange and a central cavity or pocket to receive a primer. This may be of any desired or usual form or construction, or, as above indicated, the shell may be of any well-known or customary form and make.

B indicates the powder or propelling charge; C, the shot or projectile charge, and D a wad or separating-body interposed between the propelling and projectile charges B and C, and comprising in the present instance three sepa-

rate wads *a b c*, each provided with a central perforation *d*.

E indicates a retaining wad or disk placed in front of the projectile charge C, and here represented as held in place by inturning or crimping the end of the shell A. This is optional, and, in fact, it is not even essential that the charge be put up in the form of a cartridge or fixed ammunition, since it is entirely practicable to load an ordinary gun or firearm with the propelling and projectile charges separated by a wad or medium of proper form to effect the result stated.

Wads *a b c* may vary in thickness and in the character of the material of which they are formed—as, for instance, cardboard, felt, or other material of which wads are commonly made. In practice it is found advisable to employ, at least for one or more of the wads, an elastic material, preferably felt. The thickness of the individual wads and the number used, whether but one or more than one, is a matter variable at the will of the gunner, but affecting more or less the result attained. This result remains the same in kind, but differs in degree with variations in the axial measurement of the wad as a whole taken in the direction of the length of the charge or of the gun from which the charge is fired. It is also affected in greater or less degree by the diameter of the central opening *d*.

With a charge made up in the manner described—that is to say, with a perforated wad or disk interposed between the propelling and projectile charges—the charge is found to scatter more at a given range than does a charge loaded in the ordinary way with a solid wad (one or more) between the propelling and projectile charges. It is also found that the charge spreads more evenly—that is to say, the shot are distributed more uniformly over the area of a circle of given diameter than under ordinary methods of loading. In other words, as a result of the use of the means herein set forth for loading the charge in the manner described I am enabled to give to the missiles the desired extent of spreading and to make the distribution of the shot uniform

over the covered area. The theory upon which I explain this action is that a portion of the gases incident to combustion or explosion of the propelling charge passes to the center of the projectile charge, and as the missiles escape from the muzzle of the gun said gases expand and effect a spreading, separation, or diffusion of the missiles, this spreading being determinable within limits by the length of the central passage d , or, in other words, the combined thickness of wads $a b c$ (or such of them as may be used) and by the diameter of the opening d . By varying these the degree or extent of spreading may be altered and controlled. Owing to the fact that considerable pressure is applied to the wads and to the projectile charge in forcing them to their proper positions, and since the wad or wads bear upon the powder at their circumference and for a distance inward therefrom, but do not bear upon it at the center, the powder charge is more compressed at or near the circumference than at the center, and as it is ignited at the center there is a progressive combustion of the powder, resulting in a complete utilization of the powder charge.

In the present instance and for purposes of illustration and explanation I have shown the invention as embodied in a shot-cartridge; but it is to be understood that it may be employed with any multimissile projectile charge, and this whether the charge have a shell or casing of its own or be simply contained within the barrel of a gun or other arm.

It has been proposed to construct a cartridge with a shell weakened or partially separated at about the rear end of the shot charge, so that on firing the gun the forward section of the shell should separate from the rear section and be carried forward with and serve as a jacket, binder, or casing for the projectile charge. The present invention is to be distinguished from such prior plan in that the projectile charge emerges from the gun under my plan of loading entirely free from or devoid of any wrapping, casing, jacket, or binder which might in any manner interfere with the prearranged and predetermined spreading of the shot or projectile charge.

Having thus described my invention, what I claim is—

1. A charge or load for guns and other weapons, comprising a propelling or powder charge, a multimissile projectile charge, and an interposed wad or separating medium provided with a central opening or passage, the projectile charge being free to leave the gun without an incasing jacket or wrapper of any kind.

2. A cartridge comprising a shell, a powder charge, a multimissile projectile charge, and a centrally-perforated wad interposed between the powder and the projectile charges

and affording a free and open passage from one to the other, the projectile charge being free to leave the gun without wrapper or binding of any kind.

3. In combination with a multimissile projectile charge and a powder charge for propelling the same, an interposed wad of yielding or compressible material having a central passage freely connecting the powder and projectile chambers and permitting direct escape of gases from the powder-chamber into the projectile charge, the projectile charge being free to leave the gun without wrapper or binding of any kind.

4. A cartridge comprising a shell, a powder charge, a multimissile projectile charge, and an intermediate wad provided with a central perforation, said wad being firmly pressed down upon the powder charge, whereby the outer portion of the powder charge is rendered relatively compact while the central portion is left relatively loose, the projectile charge being free to leave the gun without wrapper or binding of any kind.

5. A cartridge comprising a containing-shell, a homogeneous powder charge, a multimissile projectile charge, and an interposed wad, the powder charge being more closely compacted in the circumferential than in the axial portion, the projectile charge being free to leave the gun without wrapper or binding of any kind.

6. In combination with a propelling or powder charge, and a multimissile projectile charge, an interposed wad having a central opening or chamber, the projectile charge being free to move through the barrel of the gun without confining jacket or wrapper.

7. In combination with a propelling or powder charge, and a multimissile projectile charge, means for directing the gases or a portion thereof incident to combustion or explosion of the propelling charge to the rear of the projectile charge at its center or axis, while the projectile charge is unconfined except by the barrel of the gun.

8. In combination with a cartridge shell or casing adapted to maintain its integrity when the charge is fired therefrom, a propelling or powder charge, a multimissile projectile charge, and means interposed between said propelling and projectile charges for directing a portion of the gases of combustion or explosion to the rear of the projectile charge at its center or axis, the several parts of the charge being free to move out of the shell or casing without carrying any portion thereof with it.

9. In combination with a propelling or powder charge, and a multimissile projectile charge, an interposed wad or separator having a central opening or chamber and in immediate contact with the respective charges,

the projectile charge being free to leave the gun without wrapper or binding of any kind.

10. In combination with a shell adapted to maintain its integrity when a charge is fired therefrom, a powder or propelling charge, a multimissile projectile charge, and an interposed wad having a central perforation.

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

CHARLES LA DOW

Witnesses:

WILLIAM W. DODGE,
FANNIE WISE.