(No Model.)

J. S. EWBANK & A. E. EVERDELL.

ACCELERATING CARTRIDGE.

No. 385,603. Patented July 3, 1888.

Fig. 1.

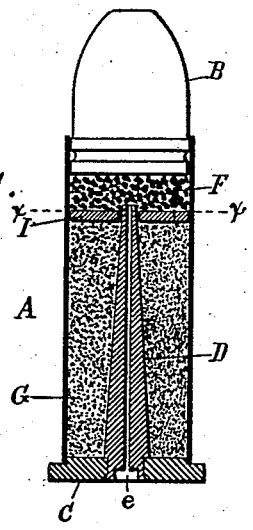
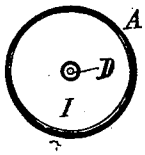


Fig. 2.



WITNESSES:
William C. Johnson
Chas. Wahlers.

INVENTOR:
James S. Ewbank.
Alfred E. Everdell.
BY Francis C. Bowen
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES S. EWBANK AND ALFRED E. EVERDELL, OF NEW YORK, N. Y.

ACCELERATING-CARTRIDGE.

SPECIFICATION forming part of Letters Patent No. 385,603, dated July 3, 1888.

Application filed September 3, 1887. Serial No. 248,709. (No model.)

To all whom it may concern:

Be it known that we, JAMES S. EWBANK and ALFRED E. EVERDELL, citizens of the United States, and residents of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Accelerating-Cartridges, of which the following is a specification.

Our invention relates especially to that class of accelerating-cartridges in which two charges are used, one of slow-burning powder for producing the initial motion of the projectile, and the other of quick-burning powder for producing the final motion thereof; and it consists of the novel features of construction hereinafter described for promoting the efficiency of the wad serving to divide said two charges.

In the accompanying drawings, Figure 1 represents a longitudinal central section of a cartridge embodying our invention. Fig. 2 represents a cross section thereof, taken in line *x x*, Fig. 1.

Similar letters of reference indicate similar parts.

The letter A indicates the usual cylindrical cartridge-shell, having the projectile B fitted into one end thereof, and having at the other end the base C, provided with a flash-orifice, *c*. Within the shell A is a central tube, D, which is firmly attached to the base C at one end, where it communicates with the flash-orifice *c*, and which thence extends forward to a point near the projectile B, where it communicates with the charge of slow-burning powder, F, both ends of tube being left open.

Into the shell A is fitted a wad, I, which has a suitable hole for the passage of the central tube, D, and which is a medium for separating said charge F of slow-burning powder from a charge, G, of quick-burning powder, the slow-burning powder being in the space between said wad and the base of the projectile B, while the quick-burning powder is in the space between the wad and the base C of the shell around the central tube. Said wad I is made of paper or other combustible material and is left solid, except as to its central hole.

When our cartridge is applied to use, the charge F of slow-burning powder is first exploded by the flash issuing from the central tube, D, with the effect of starting the projectile B from the shell A. The charge G of quick-burning powder is then immediately exploded by the flash from the first-named charge, destroying the wad I, with the effect of completing the motion of the projectile, the wad being expelled, together with the latter.

One of the conditions necessary to the successful operation of an accelerating-cartridge is that the first charge of powder shall be entirely spent before the second charge is permitted to ignite, inasmuch as both charges would otherwise be exploded almost simultaneously, and in order to insure this condition the central tube, D, is made to taper outwardly, or toward the free end, as shown in Fig. 1, so that the diameter of said tube gradually increases in a rearward direction, and by the natural tendency of the charge F of slow-burning powder, when exploded to force the wad I inward or rearward upon the tube, said wad is caused to firmly hug or embrace the tube, and thereby effectually prevent the passage of fire or gases to the charge G of quick-burning powder through the hole of the wad, or between it and the tube, said last-named charge thus remaining intact until the wad is consumed.

What we claim as new, and desire to secure by Letters Patent, is—

In an accelerating-cartridge, the combination of a central flash-tube, D, tapering in an outward direction, a wad, I, fitted into the cartridge-shell upon said tube, a charge, F, of slow-burning powder in front of said wad, and a charge, G, of quick-burning powder in rear of the wad, substantially as and for the purpose described.

Signed at New York, in the county of New York and State of New York.

JAMES S. EWBANK.
ALFRED E. EVERDELL.

Witnesses:
FRANCIS C. BOWEN,
E. R. BROWN.