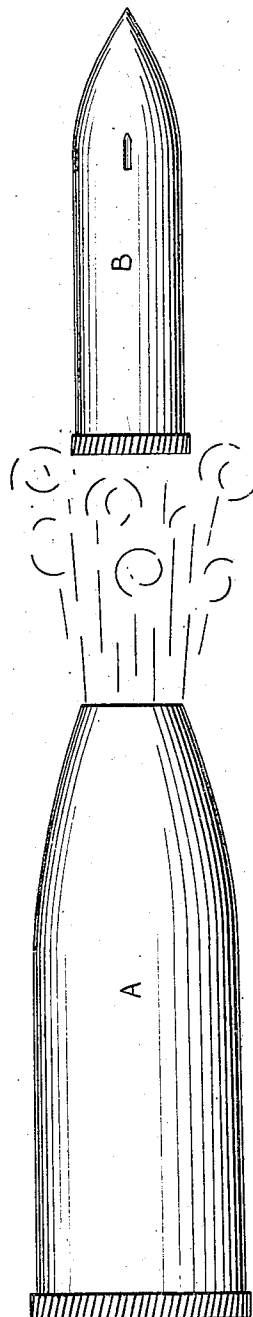
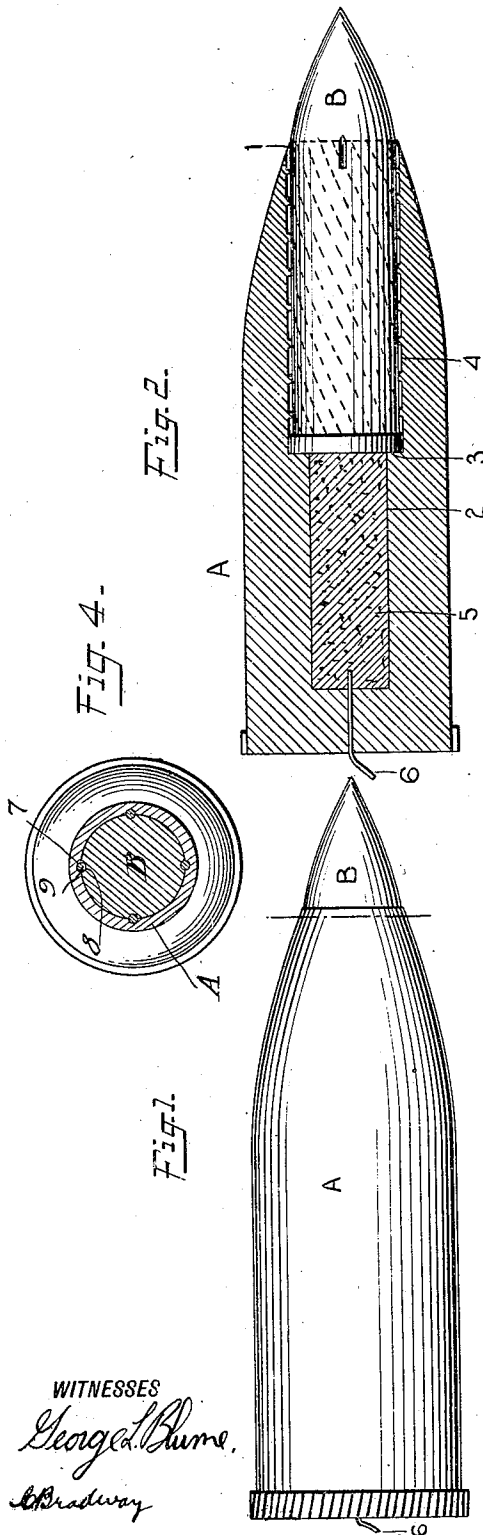


S. D. SIMMONS.
HIGH VELOCITY SHELL OR PROJECTILE.
APPLICATION FILED JULY 31, 1915.

1,185,353.

Patented May 30, 1916.



WITNESSES
George A. Bume.
W. Bradley

INVENTOR
Sheridan D. Simmons
BY *Mumford*
ATTORNEYS

UNITED STATES PATENT OFFICE.

SHERIDAN DANA SIMMONS, OF NEW YORK, N. Y., ASSIGNOR OF THREE-FOURTHS TO
HENRY AMLING, OF NEW YORK, N. Y.

HIGH-VELOCITY SHELL OR PROJECTILE.

1,185,353.

Specification of Letters Patent.

Patented May 30, 1916.

Application filed July 31, 1915. Serial No. 42,948.

To all whom it may concern:

Be it known that I, SHERIDAN D. SIMMONS, a citizen of the United States, and a resident of the city of New York, borough
5 of the Bronx, in the county of the Bronx and State of New York, have invented a new and Improved High-Velocity Shell or Projectile, of which the following is a full, clear, and exact description.

10 This invention relates to shells or projectiles and has for its principal object to provide a compound shell or projectile which comprises a body that has a rifled bore and a chamber, which latter is adapted
15 to contain an explosive for projecting a shell or projectile that is held in the rifled bore, the firing of the explosive being effected by a time fuse so that the shell or projectile as a whole can be fired out of a
20 gun of standard construction, and when the projectile has attained a predetermined point in its flight the explosive charge therein is automatically fired and projects the
25 smaller shell or projectile at a very high velocity which is the sum of the velocity of the body at the time of the explosion of the charge therein plus the velocity due to the explosion of the explosive charge in the shell
30 or projectile. Assuming that the weight of the main body and the inner projectable section are substantially the same and an appropriate explosive charge is placed in the shell, the projectable section can have its
35 velocity greatly increased. The momentum of the main shell body opposes the reactive force of the explosion so that the explosive force in the shell body is brought to bear on the smaller shell so as to greatly increase the velocity thereof.

40 For a more complete understanding of the invention reference is to be had to the following description taken in connection with the accompanying drawing, which illustrates one embodiment of the invention
45 and wherein similar characters of reference indicate corresponding parts in all the views, in which—

Figure 1 is a side view of the composite projectile or shell; Fig. 2 is a longitudinal
50 section; and Fig. 3 is a side view showing the small or inner projectile just after it has been fired out of the body of the projectile. Fig. 4 is a transverse sectional view on the line 4—4, Fig. 1.

Referring to the drawing, A designates 55 the body of a projectile or shell which is shaped and proportioned externally like a shell used in standard pieces of ordnance and which is projected in the usual manner. The body A has a longitudinal bore 1 extending from the tip toward the body, but
60 this bore is contracted at its rear end to form a chamber 2 and a shoulder 3, the portion of the bore in front of the shoulder 3 having rifle grooves 4. The chamber 2
65 is intended to hold a high explosive, and in the rifled portion of the bore is an inner section or secondary shell B which is adapted to be projected from the outer section
70 or body A of the shell when the explosive 5 is fired. This firing may be effected by a fuse 6 or any other suitable means which will operate after a lapse of a predetermined
75 interval of time. When the compound projectile or shell is fired from the gun the inner and outer sections A and B remain intact and form a unitary mass traveling
80 at the usual velocity, but after the lapse of a predetermined interval of time the explosive 5 is fired and projects the inner shell
85 or projectile B, which has its velocity materially increased. As far as the inner shell is concerned the body A of the shell can be likened to a stationary gun, and the inner
90 shell B is projected therefrom at a velocity depending on the charge and explosive force of the explosive 5, but as a matter of fact, the inner shell or projectile B possesses considerable velocity at the time the explosion
95 in the main shell takes place, so that the actual velocity will probably be something over three-fourths more than the velocity at the time of the explosion, assuming the
explosive charge to be large enough and the two sections A and B of the shell or
projectile to be of substantially equal weight.

It will be understood that instead of only using two shells or projectiles, one within the other, three or more may be employed
100 to be fired in succession.

As shown in Fig. 4, the shell sections A and B have registering recesses 7 and 8 for receiving pins 9 which are used for the purpose of holding the two sections together
105 until the expanding or exploding gases exert their full force, thereby giving the inner or high velocity section of the shell

the maximum power from the gases, thus causing a much higher velocity than would otherwise be the case.

From the foregoing description taken in connection with the accompanying drawing, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have described the principle of operation, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired as fall within the scope of the appended claim.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

A shell or projectile comprising an outer body section having a rifled bore and a chamber at the rear thereof, a charge of explosive in the chamber, an inner section forming a secondary projectile disposed within the bore, means for firing the charge in the said chamber while the projectile is in flight, and pins disposed in the forward end of the outer shell and engaging the inner shell for preventing turning of the latter except under the explosive force of the fired charge.

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

SHERIDAN DANA SIMMONS.

Witnesses:

LOUIS R. FELTER,
WILLIAM SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."