

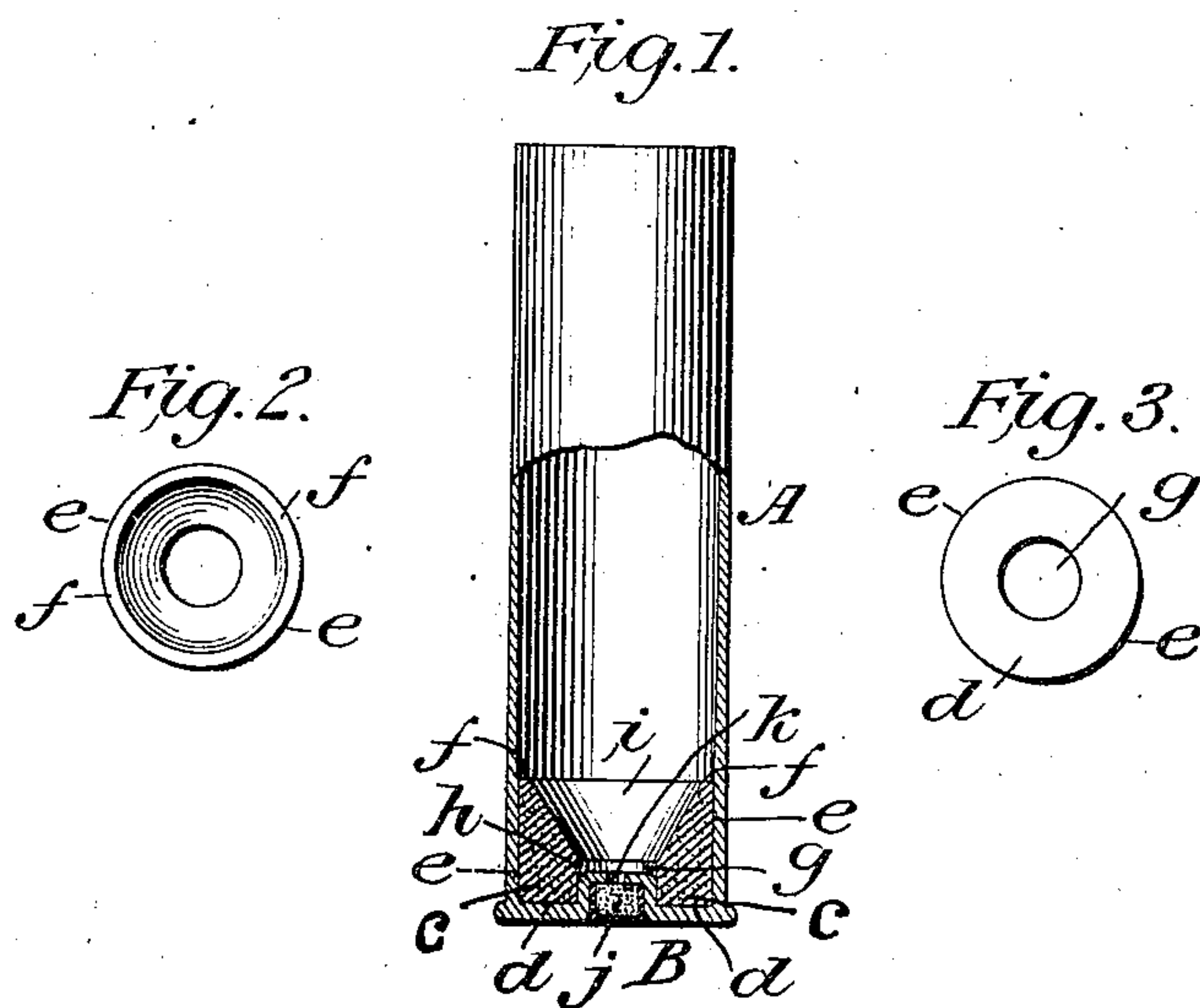
No. 707,681.

Patented Aug. 26, 1902.

A. T. DUNCAN.
SHELL BASE FOR CARTRIDGES.

(Application filed Apr. 26, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

ARTHUR THOMPSON DUNCAN, OF CLINTON, MISSOURI.

SHELL-BASE FOR CARTRIDGES.

SPECIFICATION forming part of Letters Patent No. 707,681, dated August 26, 1902.

Application filed April 26, 1901. Serial No. 57,638. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR THOMPSON DUNCAN, a citizen of the United States of America, residing at the city of Clinton, in the county of Henry and State of Missouri, have invented a new and useful shell-base to be used in metal shells for shotguns, rifles, and other sporting and military firearms for the purpose of securing the instantaneous ignition and complete combustion of the entire charge of nitro or other powders with which the shells may be loaded, of which the following is a specification

Metal shells for firearms as manufactured and used heretofore are of such form and construction upon the inside at the powder-chamber as to prevent the fire and percussion from the exploded primer from instantly igniting and exploding the entire charge of nitro or other powders with which the shells may be loaded by reason of the fact that the primer-seat and the percussion-hole extend above and beyond the base of the shell on the inside in a manner to direct the flame from the exploded primer to the forward portion of the charge of powder, thus igniting and exploding a sufficient quantity of the same to discharge the shot or projectile from the gun before the remaining portion of the powder in the base of the shell back of the line of the primer-fire becomes ignited, thus diminishing the force and effect of the charge.

The object of my invention is to provide a practical, durable, efficient, and inexpensive means for confining the charge of powder in metal shells without adding materially to the weight of the shell in such form and position with relation to the flame from the exploded primer as to insure the instantaneous ignition and complete combustion of the entire charge of nitro or other powders with which the shells may be loaded.

The form and position that the charge of powder will be made to occupy in the shell by the use of my invention and which is best adapted to bring about the desired results is that alike or similar to the form of an inverted cone with the small end or portion of the bulk of powder resting on the primer-chamber, so that the quantity of powder coming directly into contact with the flame from the exploded primer will be no greater than

will be instantly and completely ignited and so that the ignition thus produced and started will spread by reason of the unexploded particles of powder being always in advance of the flame from the exploded particles in an ever-increasing volume until the whole quantity of powder is thus ignited, making the combustion instantaneous and complete. I attain this object by means of the device hereinbefore named, which is a solid compact circular body made of compressed paper or other suitably light and durable material, and in this instance it is made of paper and may have the surface which is exposed to the powder lined with thin metal and having an outside form and circumference corresponding to the inside form and circumference of that part of a particular size metal shell which the corresponding size device will engage when seated therein ready for use.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation, partly in section, of a metal shell, showing the form of the device and the position it will occupy when seated in the shell ready for use. Fig. 2 is a top view, and Fig. 3 is a bottom view, of the device.

A is the body, and B is the base, of the shell, and C C is the device, having an outside form at the base *dd* and the circumference *ee* corresponding to the inside form and circumference of the shell at these same points and being of a size to fit sufficiently tight in the shell at the circumference *ee*, so as to require a reasonable amount of force to be driven down into position until it rests firmly against the base of the shell at *dd*, the adhesion of the surfaces at *ee* thus produced being sufficient to retain the device permanently in position, and having a length at the circumference *ee* equal to about two-thirds of its diameter or sufficient to extend a suitable distance above the base, as from *dd* to *ff*, and having the hole *g* through the center, into which the primer-seat *h* extends and fits tightly, and having a concave face or inner surface *i*, extending from the top edge of the hole *g* a slight distance above the top of the primer-seat *h* in an outward and upward direction, terminating at the top with the narrow flat edge or rim *ff*, and thus forming a

funnel-shaped depression, communicating at the bottom with the primer-chamber *j* through the percussion-hole *k*. The bore of the shell tapers and diminishes toward its breech, as shown in Fig. 1, and as the base *e* is forced in the shell the base becomes compressed diametrically and tightly fitted frictionally therein, but yet so that the base may be extracted when the same becomes burned and worn after repeated use and another placed in the breech of the shell in lieu thereof.

I am aware that prior to my invention paper shells have been made with various-shaped bases for the purpose of facilitating the combustion of the charge of powder. Therefore I do not claim as my invention any paper or metal shell; but

What I do claim, and wish to secure by Letters Patent, is—

As a new article of manufacture, a remov-

able base for a cartridge-shell, said base being made of paper or other light material, of cylindrical form, with unobstructed peripheral surface, whereby it is adapted to be readily fitted in and removed from the breech of a cartridge-shell, said base having a funnel-shaped powder-receiving cavity on one side and a central bore communicating with said cavity, said bore being adapted to receive the primer-chamber in the base of the cartridge-shell, the surface of the base which is exposed to the powder being lined with thin metal, substantially as described.

In testimony that the above and foregoing is my own I hereto affix my signature in the presence of two witnesses.

ARTHUR THOMPSON DUNCAN.

Witnesses:

CHARLES VAN WILLIAMS,
MARTIN M. BENNETT.