

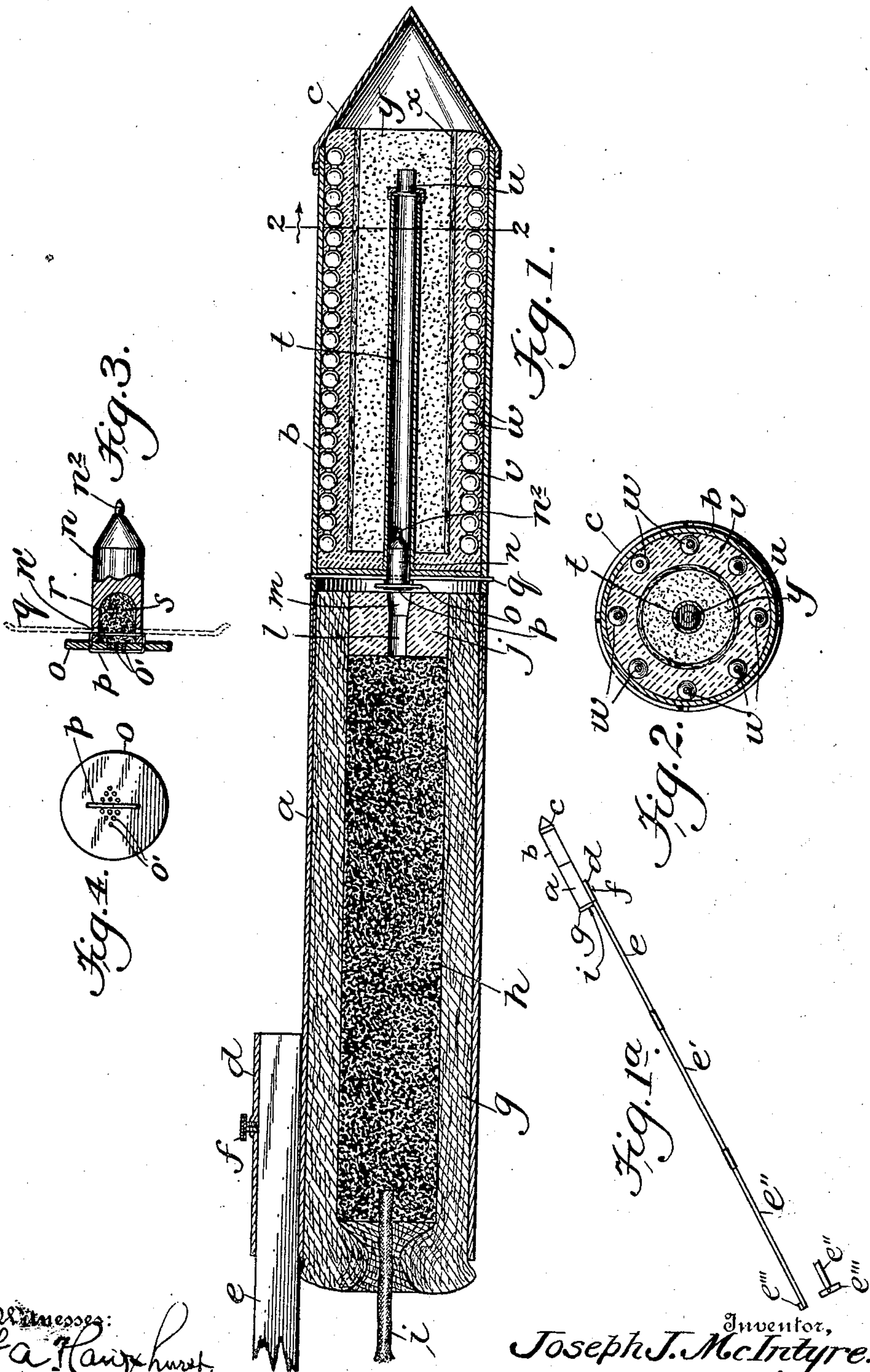
No. 695,578.

Patented Mar. 18, 1902.

J. J. MCINTYRE.  
PROJECTILE.

(Application filed Oct. 19, 1900.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JOSEPH JOHN MCINTYRE, OF BROOKLYN, NEW YORK.

## PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 695,578, dated March 18, 1902.

Application filed October 19, 1900. Serial No. 33,662. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH JOHN MCINTYRE, a citizen of the United States, residing at Brooklyn borough, county of Kings, New York city, and State of New York, have invented a new and useful Projectile, of which the following is a specification.

My invention relates to an improvement in projectiles; and the purpose of the invention is to provide a projectile of the rocket type so constructed that an explosion may take place in the air at a given time or whereby the explosion may be brought about by impact, no matter whether object engaged is of a solid or yielding nature or a fluid.

Another purpose of the invention is to so charge the projectile with balls or shots that the greater possible number may be securely held in position for the most effective service, and, furthermore, to connect sundry of the balls or shot in a chain or in bar arrangement, so that they may be conveniently handled and distributed in the shell of the projectile, and also to so construct the projectile that the highest explosive may be safely handled in charging the projectile, although an explosive of low power may be used with equally perfect success.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal central section through the projectile. Fig. 1<sup>a</sup> is a side elevation of the complete device drawn on a small scale. Fig. 2 is a transverse section taken substantially on the line 2-2 of Fig. 1. Fig. 3 is a sectional plan view of a hammer-plug adapted to engage a detonating cap. Fig. 4 is a view of the base of the plug.

Under the construction shown in Fig. 1 the body of the projectile consists of two cylindrical shells *a* and *b*, connected by a slip-joint or in any other approved manner. A conical cap *c* is placed at the forward end of the outer shell *b*, and upon one side of the rear shell *a* a sleeve or pocket *d* is formed, in which an end of a stick is secured by a set-screw *f* or its equivalent. This stick is shown in three sections *e*, *e'*, *e''*, which sections may be telescopically or detachably connected, and a rudder *e'''* is preferably placed at the free

end of the stick, consisting usually of a transversely-affixed bar, as shown in Fig. 1<sup>a</sup>.

The rear shell *a* is provided with an inner jacket or lining *g*, of plaster or like material, and in the chamber formed by this jacket or lining a charge *h* of powder is placed. The jacket is formed with a head at its outer end, as shown in Fig. 1, which head is usually made to extend beyond the rear end of the rear shell *a*, as is also shown in Fig. 1. This head, however, has an opening therein adapted to receive a fuse *i*, placed in communication with the charge *h*.

The forward end of the powder-chamber is closed by a plug *j*, which may be of plaster, and in this plug a channel *l* is produced, which extends from the inner to the outer face of the plug. This channel *l* is adapted to direct the force of the exploded powder to a hammer-plug *n*, (shown in Fig. 3,) and therefore the outer end *m* of the channel *l* is enlarged, so that said force may expand before acting upon the hammer-plug. The hammer-plug is provided with a cylindrical body having a chamber *r* at its base, in which chamber an explosive *s* is packed. The forward end of the hammer-block is conical and terminates in a needle *n'*, and at the chambered portion of the hammer-plug diametrically-located apertures *n'* are made, and a thread, cord, or light wire *q* is passed through the apertures and through the outer shell *b*, and light cords *p* connect the plug *n* and a disk *o*, temporarily securing the disk to the base of the hammer-plug *n*. This disk may be made of paste-board or like material and is adapted to prevent the plug *n* from traveling in a tube *t* until the proper time shall arrive, assisted by the wire *q*. The tube *t* is centrally and longitudinally placed and secured in the forward shell *b*, and the body of the hammer-plug *n* is introduced in the rear end of the tube, as shown in Fig. 1. The disk is provided with a number of apertures *o'*, so that the charge in the plug *n* may be exploded when the charge *h* is ignited. The disk *o* lies in a space between the opposing closed ends of the shells *a* and *b*, as shown in Fig. 1.

A plaster jacket or lining *v* is placed within the forward shell *b*, and this jacket or lining extends around the rear end of the tube *t*



and forms a head for the rear end portion of the forward shell. The jacket or lining *v* surrounds series of balls *w*, which lie as near as possible to the sides of the shell *b*. In order that numbers of the balls may be held together and in order that they may be regularly, compactly, and conveniently placed, certain numbers of the balls are connected, and in this manner a series of ball-sticks are obtained, and when the projectile is exploded the balls separate and scatter, doing considerable damage to objects throughout a wide range.

The chamber formed by the jacket *v* is filled with a charge of dynamite, nitroglycerin, permanganate of mercury, or like explosive, and said explosive extends beyond the forward end of the tube *t*, which end of the tube is closed by a detonating cap *u*.

In operation when the charge in the shell *a* is exploded the hammer-plug *n* is driven forward in the tube *t*, and when the firing-pin *n*<sup>2</sup> of the plug strikes the cap *u* the charge *y* in the shell *b* will immediately explode also, shattering the parts of the projectile and discharging the balls or bullets formerly contained therein. In order that the charge *y* may be safely introduced into the shell *a*, a tube *x* of a soft material is employed to line the chamber to be filled, and this tube directly receives the charge.

It is obvious that the projectile meets all required conditions and that it can be sent forward in rocket form or fired from a mortar or it can be thrown by hand.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In projectiles, a shell, an inner jacket or lining for the shell, constructed of a plastic material, an incased explosive located within the jacket, solid ammunition in the form of a chain of balls supported in the said plastic lining, a tube extending from the base of the shell within the explosive material, terminating in a detonating cap at its forward end, loaded hammer-plug adapted to travel in

the tube, a disk of a material such as paste-board secured to the hammer-plug, a needle at the forward end of the plug, wires temporarily securing the disk to the shell, and means for exploding the charge in the hammer-plug, as specified. 50

2. In projectiles, the combination, with a rear section comprising a shell having means for attachment to a stick, a plastic lining located within the shell, an explosive material contained within the plastic material, a fuse extending from the rear end of the shell, which fuse is in communication with the explosive material, and a plug at the forward end of the shell, which plug is provided with an opening extending through the same and communicating with the chamber in which the explosive material is placed, of a second section also comprising a shell, and a connection between the shells of the first and second sections, a plastic jacket or lining located within the shell of the second section, chains of connected solid ammunition located within the plastic lining or jacket, an explosive material located within the plastic jacket or lining, a tube extending from the rear end of the second section, partially through the explosive material therein and terminating at its forward end in a detonating cap, a hammer-plug having a needle at its forward end, which hammer-plug extends normally within the tube of the second section at the base of said section, the rear end of the hammer-plug being over an opening in the end plug of the first section, and means, substantially as described, for temporarily holding the hammer-plug in its normal position, as and for the purpose set forth. 60 65 70 75 80

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 15th day of October, 1900. 85

JOSEPH JOHN MCINTYRE.

Witnesses:

CLEMENT R. MURPHY,  
CARL MITTENZWEIG.