

No. 629,552.

Patented July 25, 1899.

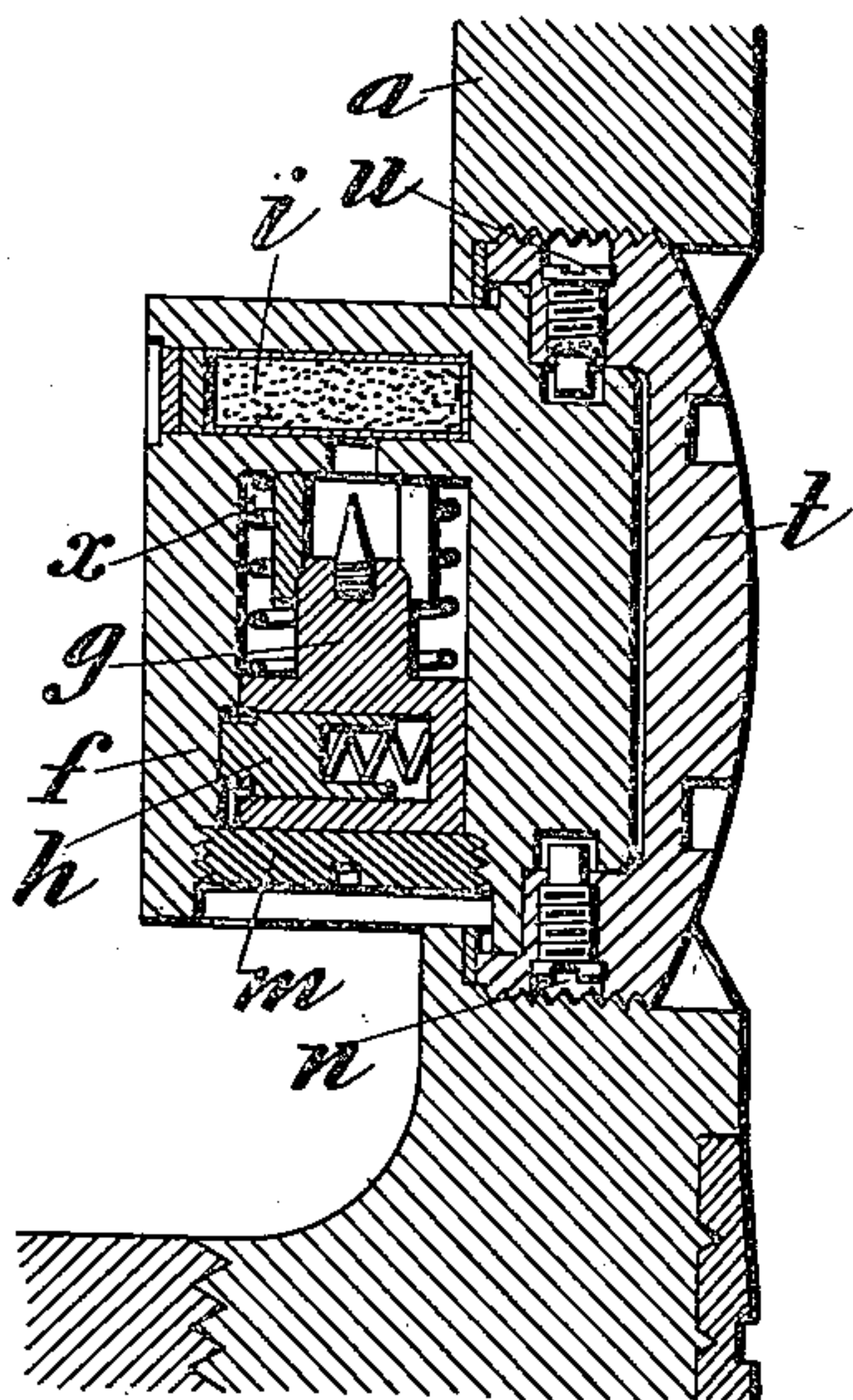
A. T. DAWSON & G. T. BUCKHAM.

SHELL FUSE.

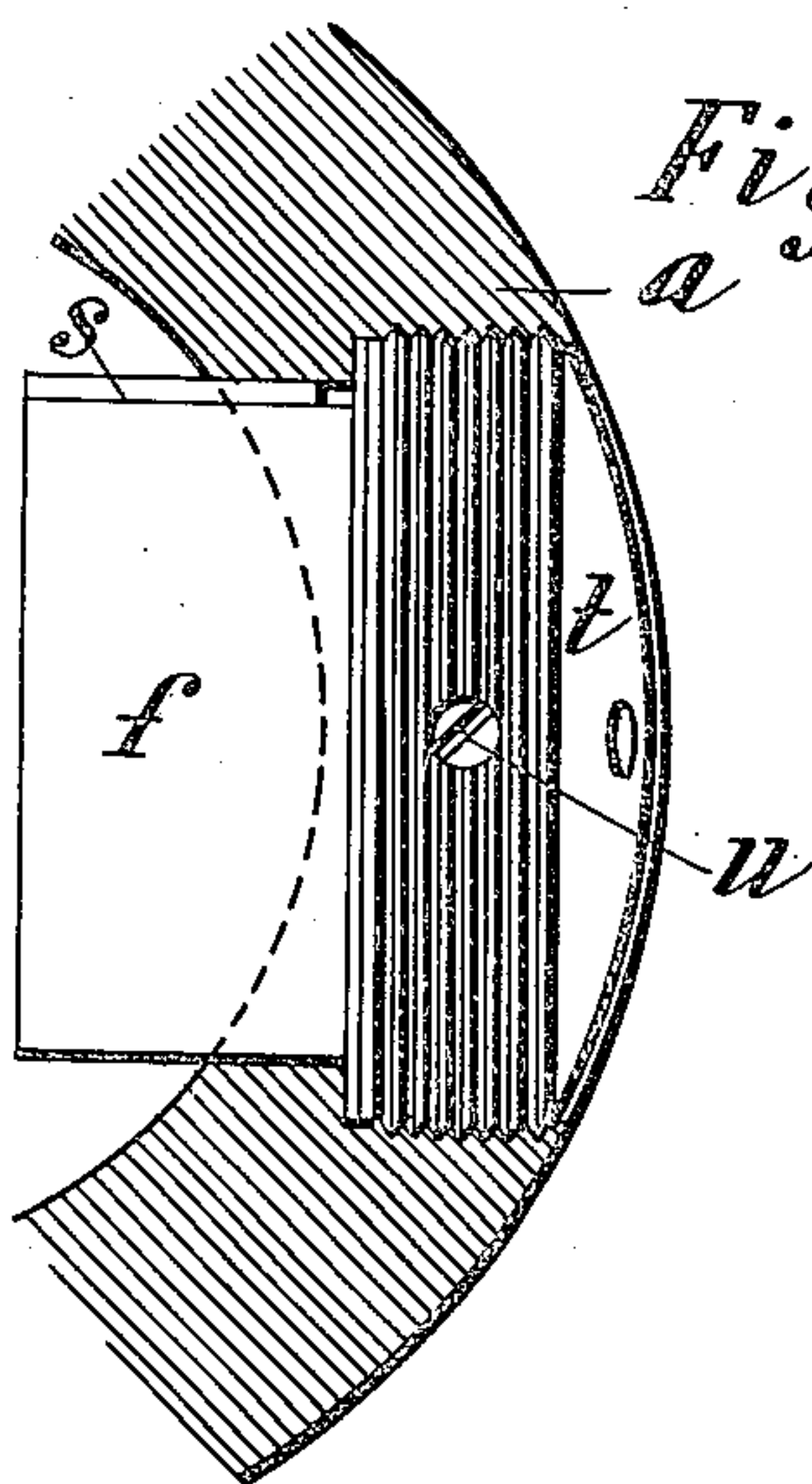
(No Model.)

(Application filed Apr. 10, 1899.)

*Fig. 1.*



*Fig. 2.*



Witnesses

*H. B. Torrey*

*Bruce S. Elliott*

Inventors

*Arthur S. Dawson*  
*George S. Buckham*

*By James L. Norris*  
*Attorney*



# UNITED STATES PATENT OFFICE.

ARTHUR TREVOR DAWSON AND GEORGE THOMAS BUCKHAM, OF LONDON, ENGLAND, ASSIGNORS TO THE VICKERS, SONS & MAXIM, LIMITED, OF SHEFFIELD, ENGLAND.

## SHELL-FUSE.

SPECIFICATION forming part of Letters Patent No. 629,552, dated July 25, 1899.

Application filed April 10, 1899. Serial No. 712,456. (No model.)

*To all whom it may concern:*

Be it known that we, ARTHUR TREVOR DAWSON and GEORGE THOMAS BUCKHAM, citizens of England, residing at No. 28 Victoria street, Westminster, London, England, have invented a certain new and useful Improvement in Percussion-Fuses for Shells, (for which we have applied for a patent in Great Britain, dated March 4, 1899, No. 4,798,) of which the following is a specification.

In the specification accompanying an application for United States patent, dated December 19, 1898, Serial No. 699,714, was described a percussion-fuse adapted to be fixed in the side of a shell instead of being fixed in the head, which has to be of strong hard metal integral with the body of the shell, and instead of being fixed in the bottom, where it would be liable to premature explosion.

The present invention has for its object to provide a new and improved percussion-fuse, which object is accomplished in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of a portion of a shell having our invention applied thereto; and Fig. 2 is a transverse sectional view of the same, the plane of section being directly in front of the screw-cap which holds the fuse-case in position.

In the drawings the letter *f* indicates the body of the fuse, which is generally of cylindrical form to fit into a round hole in the side of the shell *a*; but it has on one side a key *s*, entering a notch at the side of the round hole, this key insuring that the fuse is in right position in the shell. The outer part of the hole in the shell is screw-threaded to receive a screw-cap *t*, which has two screws *u*, engaged in a groove in the periphery of the back part of the fuse. The fuse is bored to receive a pellet *g*, of piston form, having a firing-pin in front. This pellet is pressed back by a spring and locked in its rear position by a transverse spring-bolt *h*, the end of which is engaged in a slot at the side of the

fuse-bore and loosely bears against the shoulder at the end of the slot, being held in this position by a spring. The front part of the pellet is grasped by a piece of split elastic tube *x*, which bears against the bottom of the bore and serves as an additional precaution against accidental advance of the pellet. After insertion of the pellet and its accessories the bore is closed by a screw-cap *m*. In front of the bore, communicating with it by a hole, is a chamber containing a small cartridge *i* of detonating composition.

When the shell is fired, the piece of tube *x*, owing to its inertia, retreats relatively to the fuse, and as the shell is rotated by the rifling the bolt *h*, owing to centrifugal force, moves outward, the pellet *g* being thus left free. When the flight of the shell is arrested, the pellet, owing to its momentum, flies forward, and its firing-pin penetrating the cartridge *i* fires the detonator, which in its turn fires the charge of the shell.

Having thus described the nature of this invention and the best means we know of carrying the same into practical effect, we claim—

The combination with a shell having a hole in its side, of a percussion-fuse inserted into the hole, a cap secured in the latter to hold the fuse in place, a detonator firing-pellet arranged in the fuse and thrown forward by its momentum when the flight of the shell is arrested, a detonating cartridge arranged in the fuse in front of the pellet, a spring arranged to resist the forward movement of the pellet toward said cartridge, a split tube gripping the front part of the pellet, for holding the latter back, and a spring-bolt for locking the pellet back, substantially as and for the purposes described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

ARTHUR TREVOR DAWSON.  
GEORGE THOMAS BUCKHAM.

Witnesses:

HENRY KING,  
FREDERICK DEARLOVE.