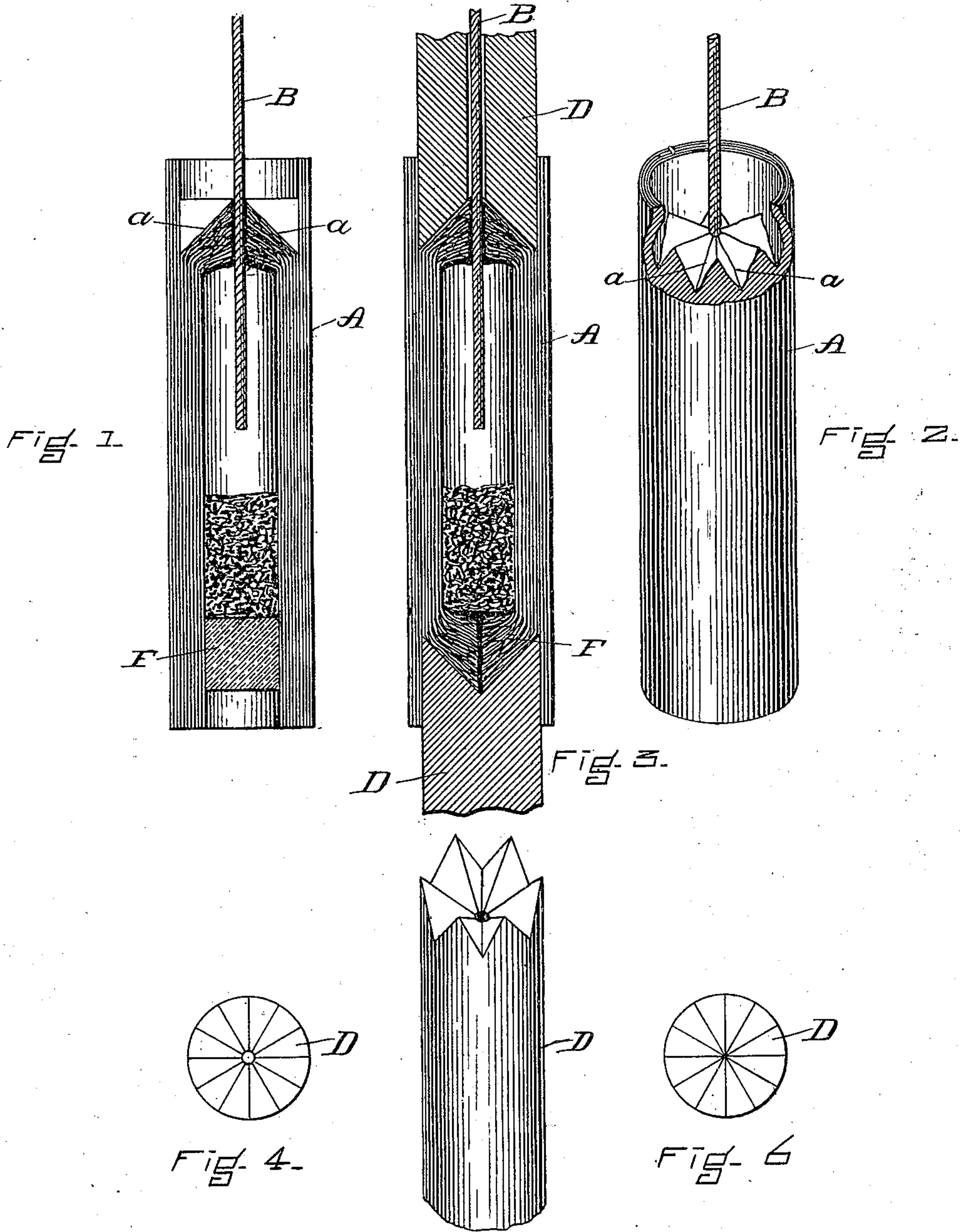


(No Model.)

E. S. HUNT.
FIRE CRACKER.

No. 547,921.

Patented Oct. 15, 1895.



WITNESSES.

A. D. Towner.
John R. Snow.

FIG. 5.

INVENTOR.

Edmund S. Hunt
J. E. Maynard
Atty.

UNITED STATES PATENT OFFICE

EDMUND S. HUNT, OF WEYMOUTH, MASSACHUSETTS.

FIRE-CRACKER.

SPECIFICATION forming part of Letters Patent No. 547,921, dated October 15, 1895.

Application filed March 24, 1893. Serial No. 467,399. (No model.)

To all whom it may concern:

Be it known that I, EDMUND S. HUNT, of Weymouth, in the county of Norfolk and State of Massachusetts, have invented an Improved Fire-Cracker, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a lengthwise section of one of my improved fire-crackers. Fig. 2 is a perspective view of the same with a portion broken away. Fig. 3 is a lengthwise section illustrating the rosette-crimpers applied at both ends of the tube and showing the crimpers in action. Fig. 4 is an end view of a crimper for securing the fuse in place, and Fig. 5 a perspective view of that crimper; Fig. 6, a plan of the crimper for forming the plug.

My invention relates to closing the paper case or tube about the fuse or igniting device; and it consists in a fire-cracker in which the fuse is held in place by a portion of the tube forced in and down to form ridges, which extend toward the fuse and cause the portion bent into form a rosette, with the fuse projecting from its center, as will be plain from the drawings, which show a rosette formed by crimping in the inner portion of the tube A along six radial lines *a*, these lines slanting upward and meeting at their inner ends about the fuse B. The tool D for forming this rosette is best made as shown in Figs. 4 and 5 and also at the upper end of Fig. 3; but of course the grooves, deepest at the outer ends and tapering to nothing where they meet about the fuse B, as indicated by the lines *a*, may be formed singly or two or more at one stroke of a proper tool, for my invention is the fuse held firmly by a rosette formed by forcing a portion of the tube inwardly and downwardly to form radial tapering grooves deepest at their outer ends. It is these tapering grooves lying radially about the fuse which crowd the rosette close against the fuse

and give the necessary hold of the rosette upon the fuse. In practice I slightly moisten the end of the case, so as to get the paper in proper temper, and put a large drop of cement, preferably fish glue, on the inner surface of the tube near its end, (a single stroke of a small brush on the inside of the tube will answer,) and then force the tube onto the tool D, or vice versa, as indicated in Fig. 3, the fuse extending through the tool D into the tube. The cement is thus spread, as indicated by the heavy black lines in Figs. 1 and 3, and aids the rosette in holding the fuse firmly.

The plug F may be of clay, as shown in Fig. 1, or may be a rosette, but without a fuse through it, unless a fuse at each end be desired. The plug F of Fig. 3 is a solid rosette, as will be clear without description and as fully shown in my Patent No. 438,268, dated October 14, 1890.

I prefer to leave a substantial portion of the tube extending up above the rosette, as shown in the drawings, as the fuse may be laid in the chamber thus formed, and thereby be kept from injury in packing and transportation.

What I claim as my invention is—

1. Tube A, and fuse B, combined by means of the rosette formed of portions of the tube crimped in by radial tapering grooves; substantially as set forth.

2. Tube A with its outer portion cylindrical at and near the fuse end but with its inner portion at that end forced in to form a rosette as described, combined with fuse B extending through and held by that rosette; substantially as and for the purposes specified.

EDMD. S. HUNT.

Witnesses:

JONATHAN CILLEY,
JOHN R. SNOW.