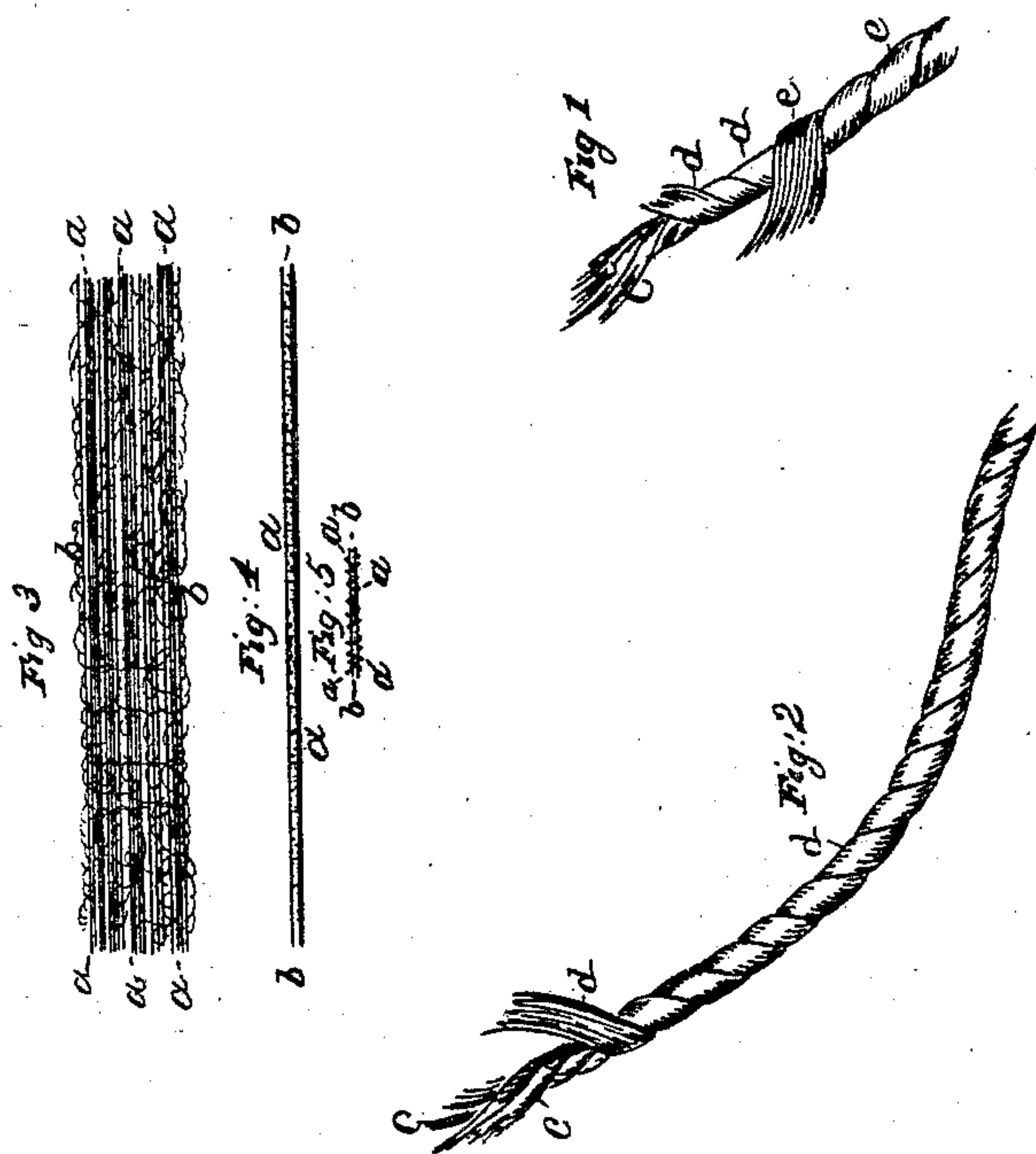


CHASE & TOY. Blasting Fuse.

No. 39,033.

Patented June 30, 1863.



WITNESSES
J. W. Crounch
Geo. Reed

INVENTOR
J. E. Chase & J. Toy
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attys

UNITED STATES PATENT OFFICE.

JOHN E. CHASE AND JOSEPH TOY, OF SIMSBURY, CONNECTICUT.

IMPROVEMENT IN TAPE-FUSES.

Specification forming part of Letters Patent No. 39,033, dated June 30, 1863.

To all whom it may concern:

Be it known that we, JOHN E. CHASE and JOSEPH TOY, both of Simsbury, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Tape-Fuses; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a piece of single tape-fuse constructed according to our invention. Fig. 2 represents the fuse before the tape is applied. Fig. 3 is a face view of the improved tape, the application of which to a fuse constitutes our invention. Fig. 4 is an edge-view of the same. Fig. 5 is a transverse section of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in the employment, in the manufacture of tape-fuse, of a new kind of tape composed of two warps or series of parallel yarns and an interposed thin lap of cotton or other fibrous material united by sizing.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

a a, Figs. 3, 4, and 5, represent the warp-yarns, and *b b* the lap of cotton or other fibrous material, which is arranged between them, to form the tape. This tape is manufactured by running off the two warps or two series of yarns to form them from two suitably-arranged rolls, delivering the lap *b* between them from a lapping or carding machine, running the whole through a sizing apparatus, and finish-

ing by running it over a drying-roll or by calendering.

c c, Figs. 1 and 2, are the yarns or strands which form the tube for the reception of the gunpowder, and *d d* are the covering-yarns, which are wound spirally round *c c* to keep them together. *e* is the tape wound spirally round the covering-yarns in the opposite direction to the yarns themselves, in the same manner as ordinary tape, the fuse being first run through the varnish composed of tar and other materials commonly used. Two or three coverings of tape may be applied to make what is known as "double" and "treble" tape-fuse, the fuse being again run through the varnish after each covering is applied.

The advantages of our improved tape consist in its making a more water-proof covering, which is owing partly to its absorbing more of the water-proof varnish than the woven tape and partly to its adhering better to the fuse by reason of the thinness of its edges, which allows them to lap more snugly without forming high ridges; and besides these advantages it is as strong and cheaper than woven tape.

What we claim as our invention, and desire to secure by Letters Patent, is—

The employment, as a covering for fuse, of tape composed of two warps and an interposed lap of cotton or other fibrous material, substantially as herein specified.

JOHN E. CHASE.
JOSEPH TOY.

Witnesses:

MOSES ENSIGN,
LUCY W. ENSIGN.