

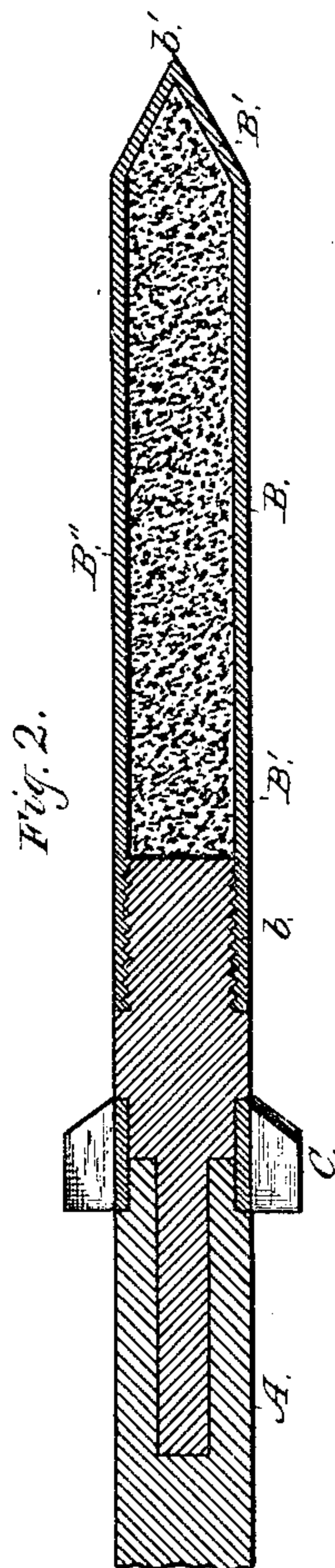
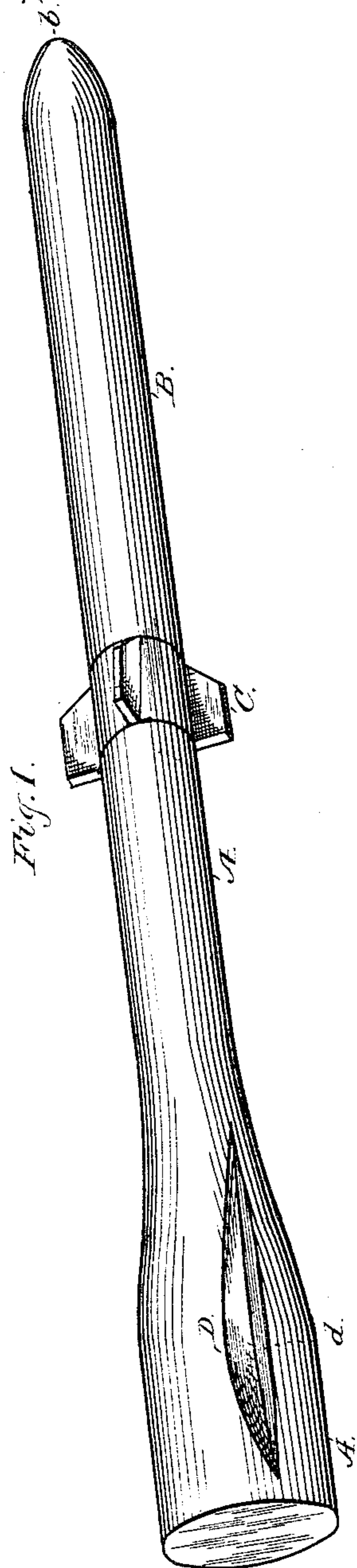
(No Model.)

D. M. MEFFORD.

DYNAMITE SHELL.

No. 279,964.

Patented June 26, 1883.



WITNESSES

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DAVID M. MEEFFORD, OF TOLEDO, OHIO.

DYNAMITE-SHELL.

SPECIFICATION forming part of Letters Patent No. 279,964, dated June 26, 1883.

Application filed March 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, DAVID M. MEEFFORD, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have
5 invented certain new and useful Improvements in Projectiles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use
10 the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The object of this invention is to produce a
15 shell as a projectile charged with a detonating compound at its forward end, to be exploded by concussion against any body that suddenly arrests its flight, and is projected from a smooth-bore gun by the force of the expansion of ap-
20 plied steam or compressed air, as set forth in an application filed by me in the United States Patent Office of March 15, 1882, and is intended as an improvement upon the projectile described in Patent No. 252,489, dated Janu-
25 ary 17, 1882.

In the drawings, Figure 1 represents a side view of the projectile, and Fig. 2 is a sectional view of the forward end of the same.

A represents the rear half of the length of
30 the projectile or shell, and is of wood, having the base or rear end, A', of such a diameter as will easily slide into the bore of the gun without much friction, but of so close a fit within the bore that in its passage out of the gun it
35 will not sensibly vary its point-blank direction. At the base of the body A there may be a packing of fibrous material attached, which may contain a lubricating substance to lessen friction in the bore of the gun.

40 At a little distance from the base A' the wooden body A begins to decrease in diameter, so that at about one-fourth part of its length, more or less, it is reduced nearly one-half the diameter that it has at base A', when
45 that diameter is maintained to near the center of the length of the projectile. This projectile has no projections upon its periphery at the base, but is a perfect circle in form to fit the smooth bore of the gun.

50 B is the hollow metal shell, of the same diameter at its rear end as the forward part of

the wood body A, and is secured thereto by an internal screw-thread, *b*, that screws onto a screw-tap on the body A, or to an intermediate part that is fast to body A. Other means
55 of attaching the shell B to the body A than by screw-threads may be used, as the particular means of attaching the parts together is of no consequence in this invention. The shell B holds its diameter from its connection with
60 body A to near its forward end, when it curves or angles off and terminates in point *b'*.

B' is the filling or charge of dynamite or other explosive material that is fired by concussion, which may be in the shell B'; or a metal
65 or other cartridge, B'', that closely fits into the interior of the shell B' and filled with the explosive material, may be used, and in most cases would be preferable, as such cartridges are or can be an article that is for sale.
70

C C are two or more radial projecting guide-
wings secured in the body A or to an intermediate part, and projecting from opposite sides of the body A, so that their outer diameters
75 will exactly fit the bore of the gun without much friction. These wings may be cast upon a metal sleeve that is secured to the point where the shell B is attached to body A.

In order to cause the projectile to rotate about its axis in its flight after it leaves the
80 gun, long grooves or gashes D are cut in the body A, near its rear end, having one side of the groove *d* upright, or on nearly radial lines from the center of the base, and slightly inclined in its longitudinal direction from the
85 axial line of the projectile, while the other side of the groove or gash is at or nearly at right angles to the side *d*, and, being so constructed, when quickly forced through the air, a rotation of the projectile is produced.
90

The forward ends of wings C may be inclined or beveled in the same direction with the line *d* of the groove D; or the wing C may be in an inclined direction to the axial line of the projectile, which will have the effect to
95 assist in the rotation of the shell. In some cases the wings C, so inclined or beveled, may alone cause the rotation of the projectile.

The reason why steam or compressed air is used for giving motion to the projectile is
100 that such force is yielding or elastic and slower to overcome the inertia of rest in the shell than

common gunpowder, hence would not explode the dynamite while the shell was in the gun, as would gunpowder, as that acts with a concussive force itself in burning, and would be
5 very apt to explode the dynamite while the shell was in the gun, thus endangering everything about the vicinity, while if the explosive force of steam or compressed air is used no
10 danger of exploding the charge of dynamite in the shell while in the gun will be apprehended.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

An elongated shell projectile having body 15 A, provided with grooves D and guide-wings C, and shell B, charged with dynamite B', substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID M. MEFFORD.

Witnesses:

NEWTON CRAWFORD,
J. MASON GOSZLER.