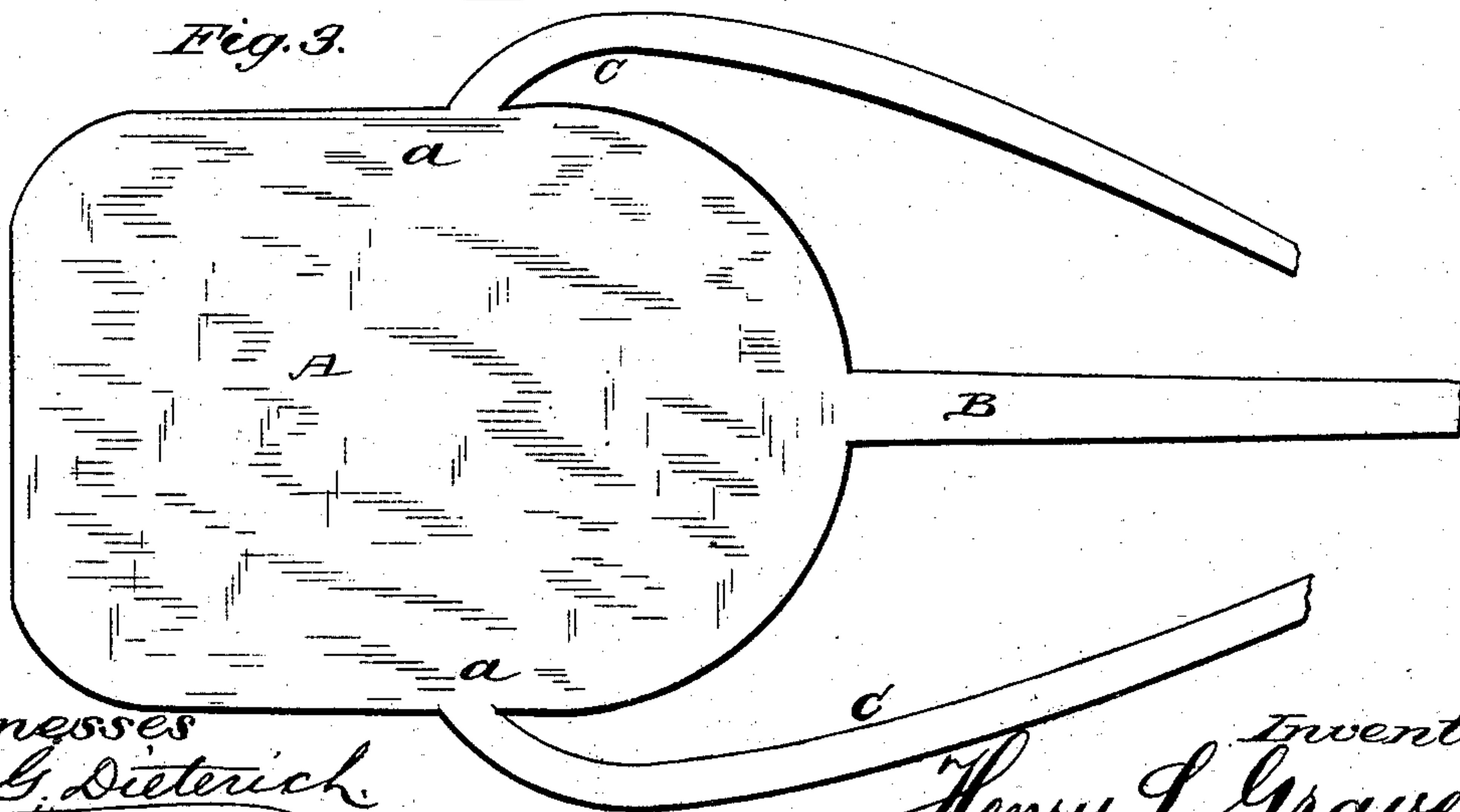
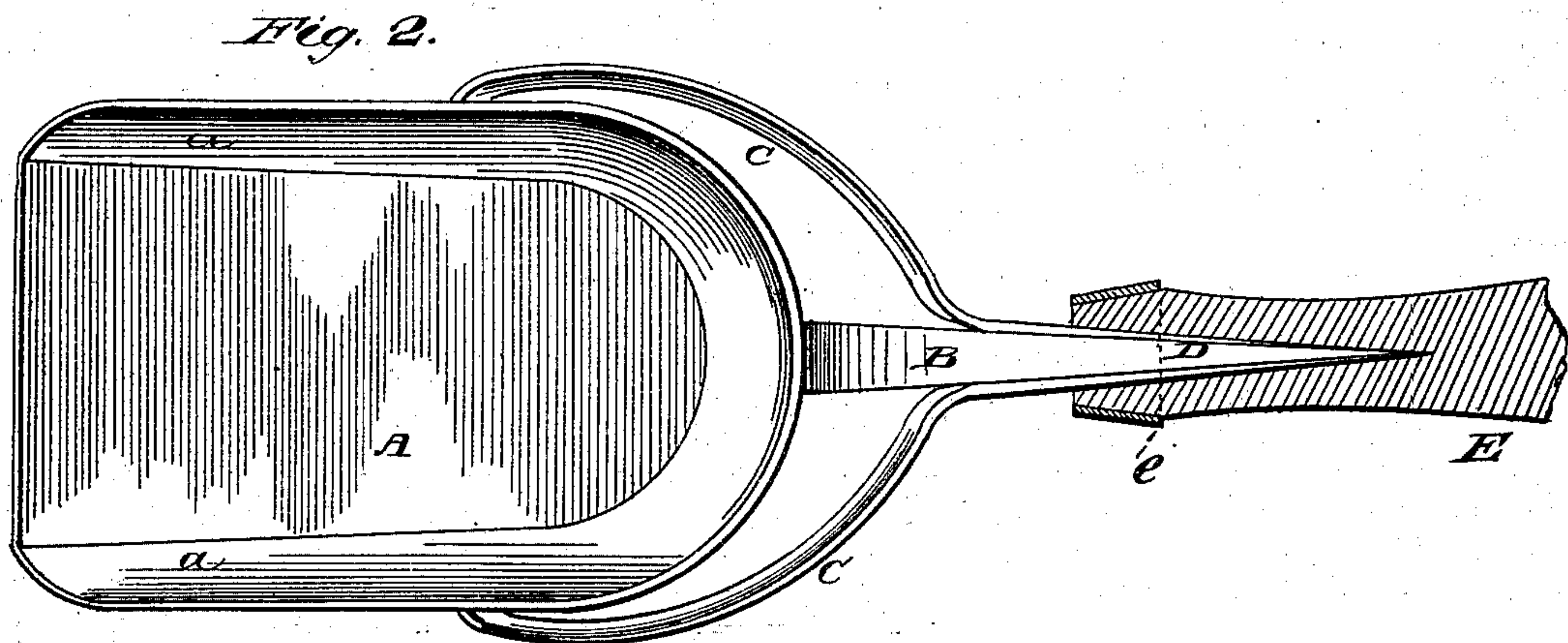
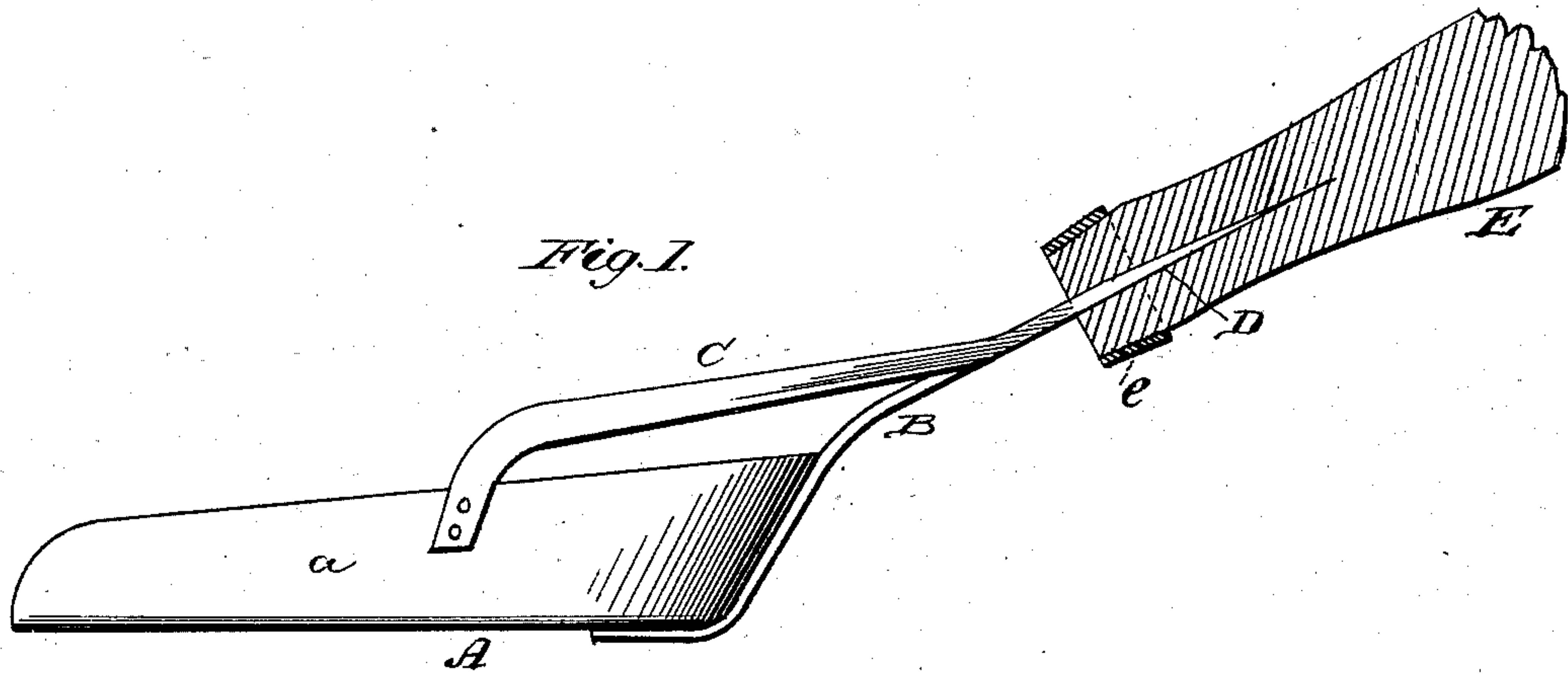


H. L. GRAVES.
Shovel.

No. 215,602.

Patented May 20, 1879.



Witnesses
Ad. G. Dieterich
August Peterson.

Inventor
Henry L. Graves.
by *Louis Bagger*
Attorney

UNITED STATES PATENT OFFICE.

HENRY L. GRAVES, OF SUMMIT, NEW JERSEY.

IMPROVEMENT IN SHOVELS.

Specification forming part of Letters Patent No. **215,602**, dated May 20, 1879; application filed February 24, 1879.

To all whom it may concern:

Be it known that I, HENRY L. GRAVES, of Summit, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Shovels; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view, partly in section, of a fire-shovel embodying my improvement. Fig. 2 is a top-plan view of the same, and Fig. 3 is a plan of a shovel-blank made in one piece with the supports or braces which constitute my improvement.

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

This improvement, while applicable to shovels of all kinds, relates more particularly to fire-shovels; and consists in providing the scoop of the shovel with a brace on each side, which connects with the shank, which braces are, with this shank, extended up into the handle, substantially as hereinafter more fully described.

In the drawings, A is the scoop of the shovel, made preferably of sheet-iron, and provided with a raised rim, *a*. B is the shank, which may be made either in one piece with the scoop in cutting out the shovel-blank, or it may be made separately and secured upon the scoop in any suitable manner.

C C are the side supports or braces, which, like the shank B, may be made in one piece with the shovel-blade and its flange, as shown in Fig. 3; or they may be made separately—preferably of band or strap iron—and secured at one end upon the shovel-rim, one on each side, by riveting or in any other suitable manner. In either case their opposite ends converge, and are welded with the central shank, B, into one common spike, D, which is driven into the wooden handle E, as shown in Figs. 1 and 2, in which figures a portion of the handle is broken away to show this construction.

A ring, *e*, is inserted upon the end of the handle to prevent splitting.

If preferred, the handle E, shank B, and arms or braces C C may all be made in one piece, of cast-iron, or stamped from sheet metal, and secured upon the shovel-scoop A,

in the manner described, by riveting or any other suitable means of fastening.

By this improvement, which adds but very little to the cost of manufacture, the shovel is prevented from breaking or bending at the shank, or the point where the handle is connected with the scoop, which is the weakest point. Many devices have been adopted for the purpose of strengthening this part of the shovel, such as corrugating it, or making it in the form of a cast-iron socket, into which the flanged rear end of the blade is inserted; but most of the methods heretofore adopted are objectionable, as either not solving the problem effectually or adding too much to the cost of manufacture.

By my improvement breakage of the shank is absolutely prevented, and a strong, durable, and efficient shovel is produced at a small cost of manufacture.

I am aware that shovels have been made having a rim with an outwardly-projecting flange, for the purpose of adding rigidity to the scoop and strengthening its connection with the handle; but this rim is not a brace in the sense described and claimed by me, because, while it makes the scoop stiff and rigid, it does not materially strengthen the point where the handle is connected to the scoop, which is the weakest part of the shovel.

It will be observed that my braces C C are set at an acute angle to the shank B, and not in a line or plane therewith; hence the scoop is capable of sustaining a greater weight or strain vertically than where these braces form merely a continuation or lateral enlargement of the shank.

Having thus described my improvement, I claim and desire to secure by Letters Patent of the United States—

As an article of manufacture, a shovel provided with side braces, C C, diverging from the shank B below the handle E, and connected to the rim *a* of the scoop A forward of the point where the shank is secured upon the scoop, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two subscribing witnesses.

HENRY L. GRAVES.

Witnesses:

J. P. YOUNG,
H. S. YERGER.