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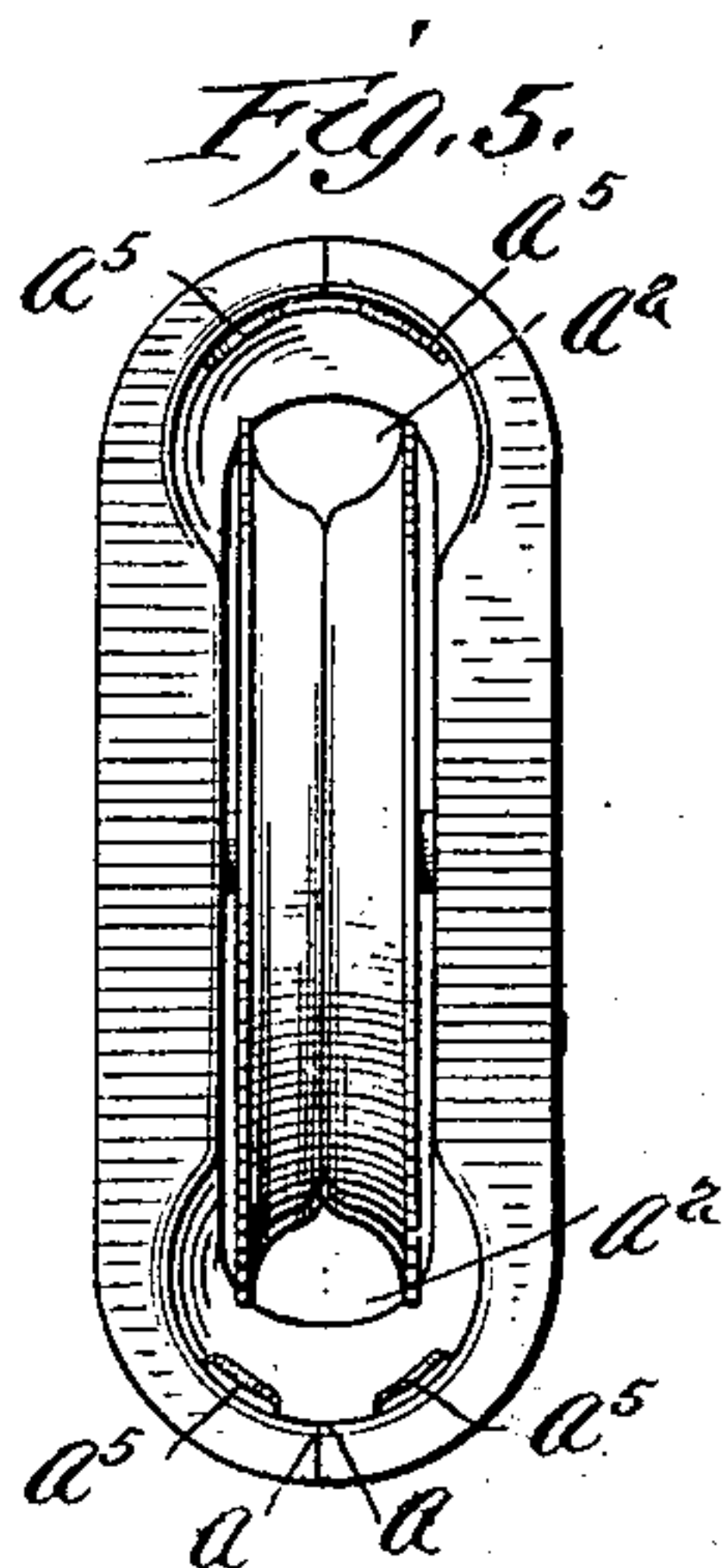
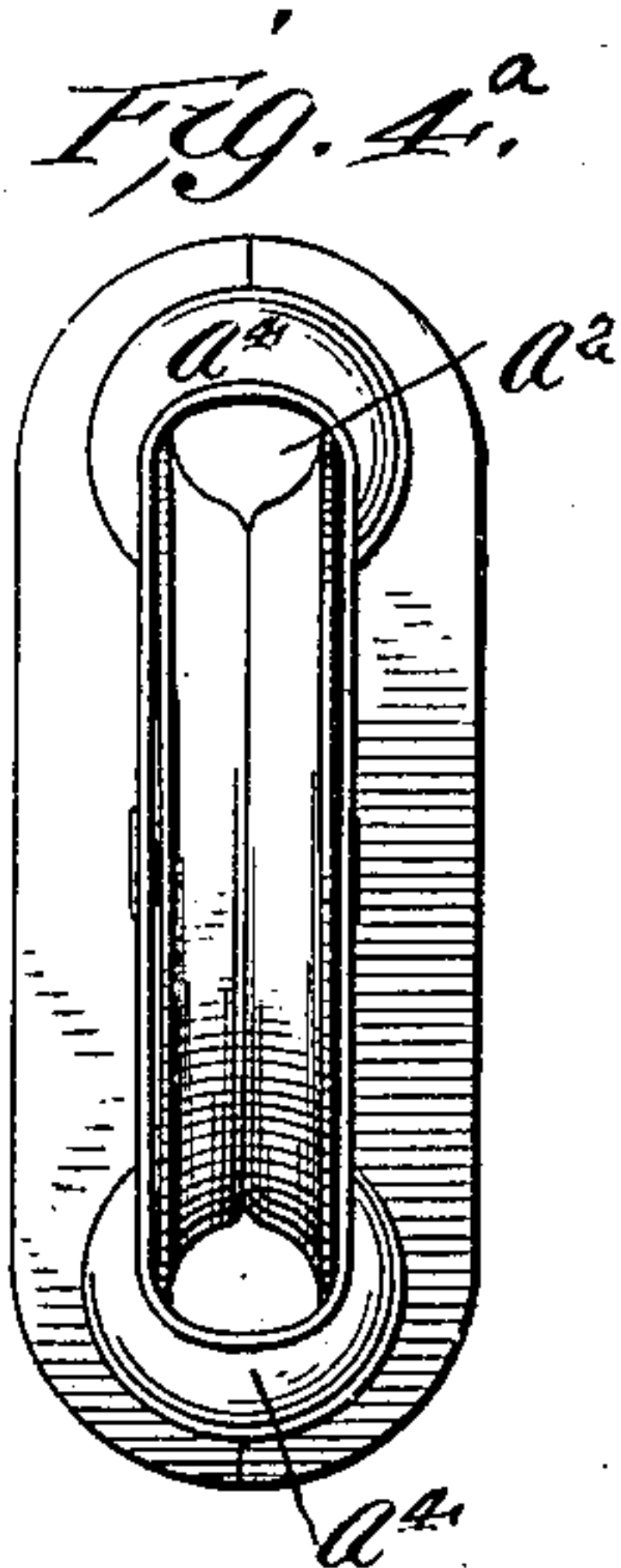
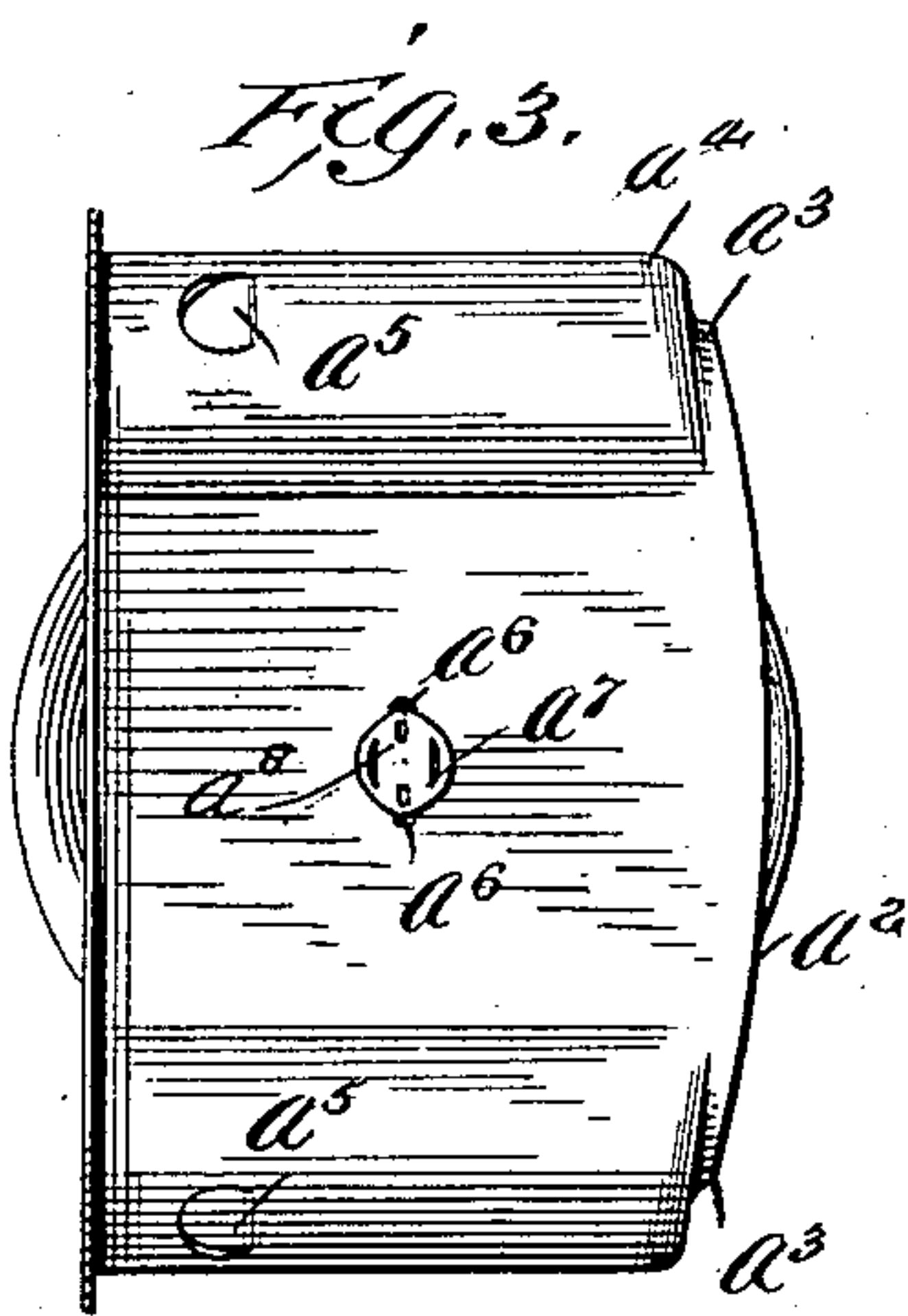
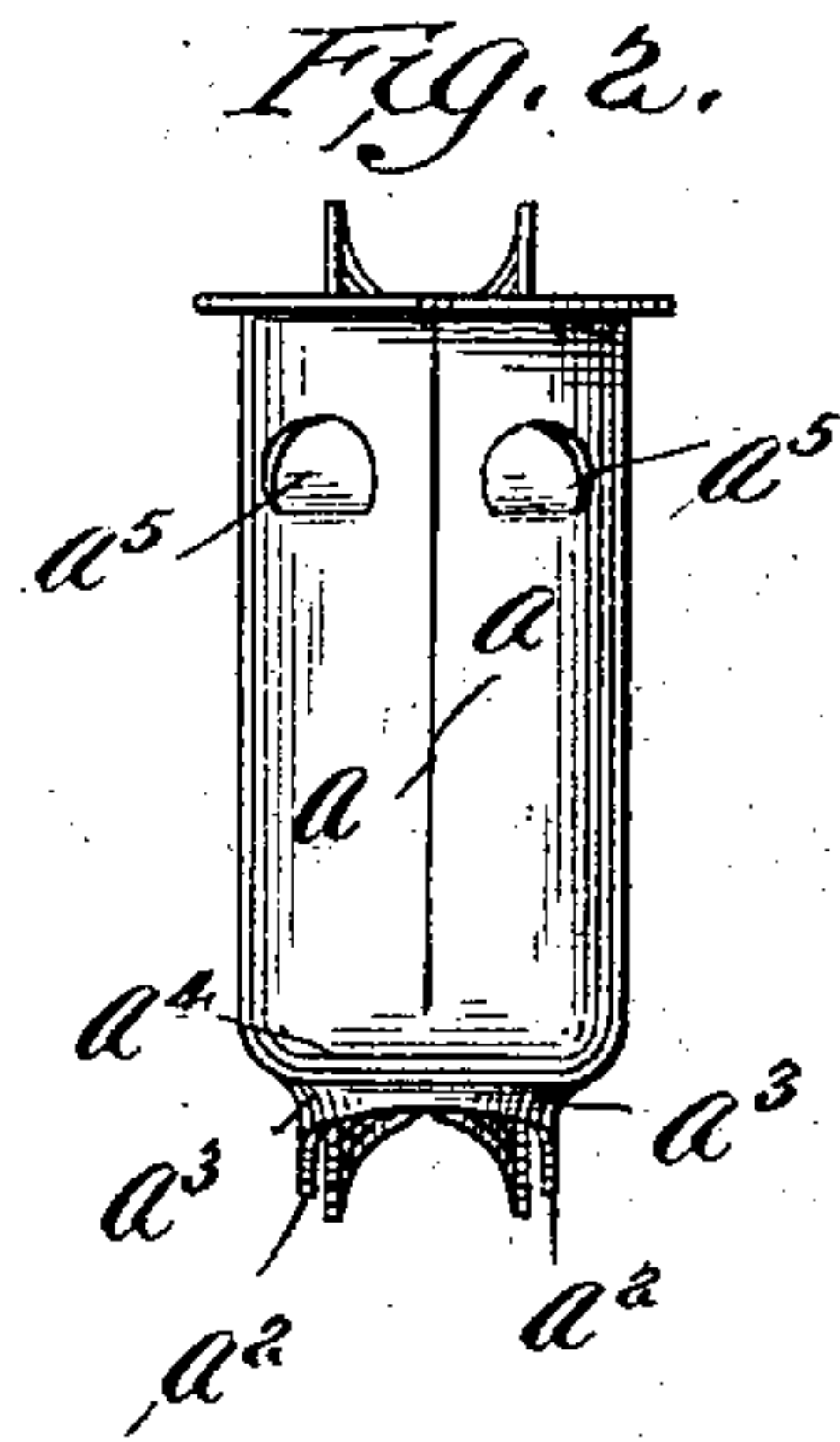
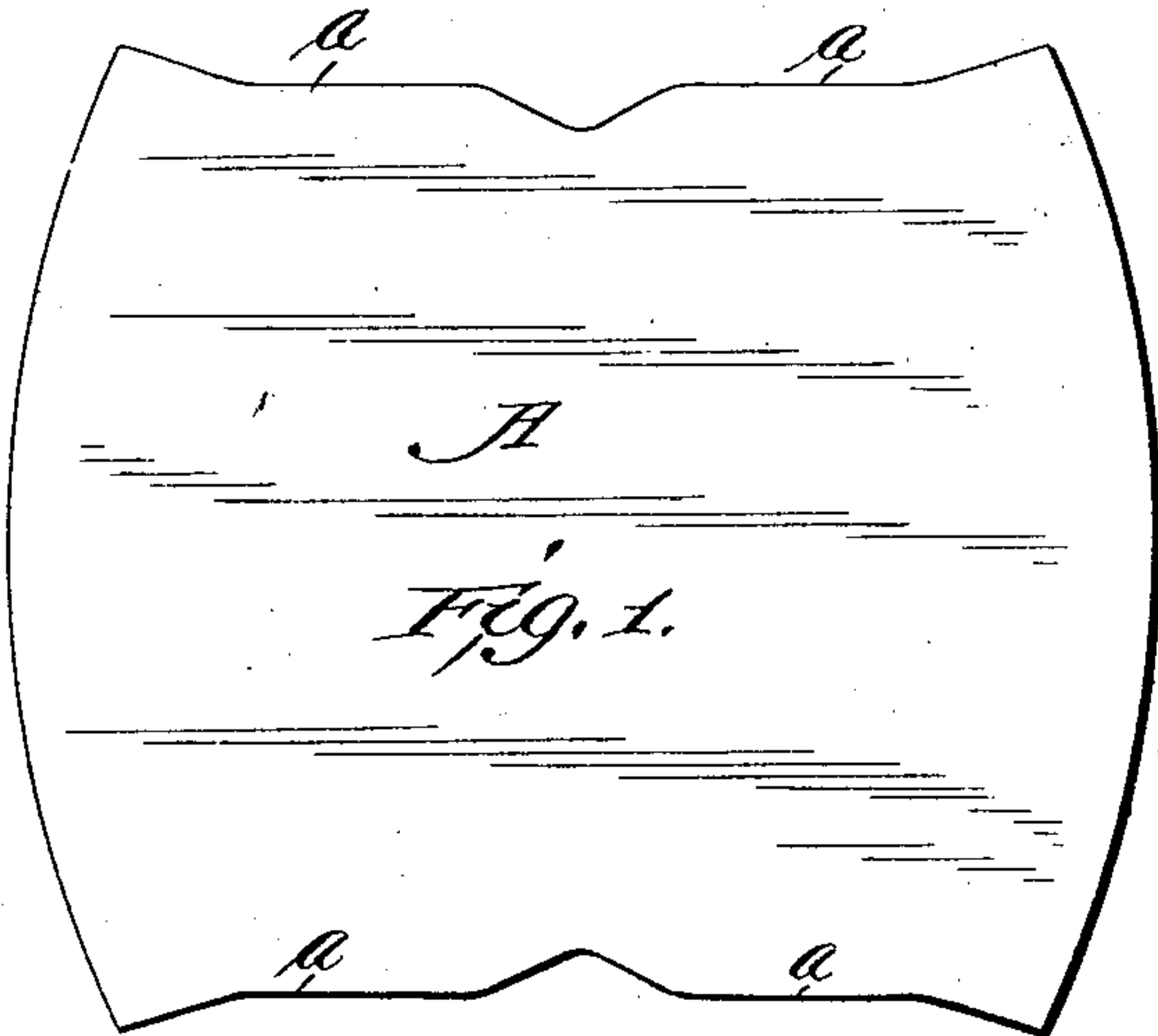
Patented Jan. 8, 1901.

W. R. FOX.
SASH CORD GUIDE.

(Application filed June 16, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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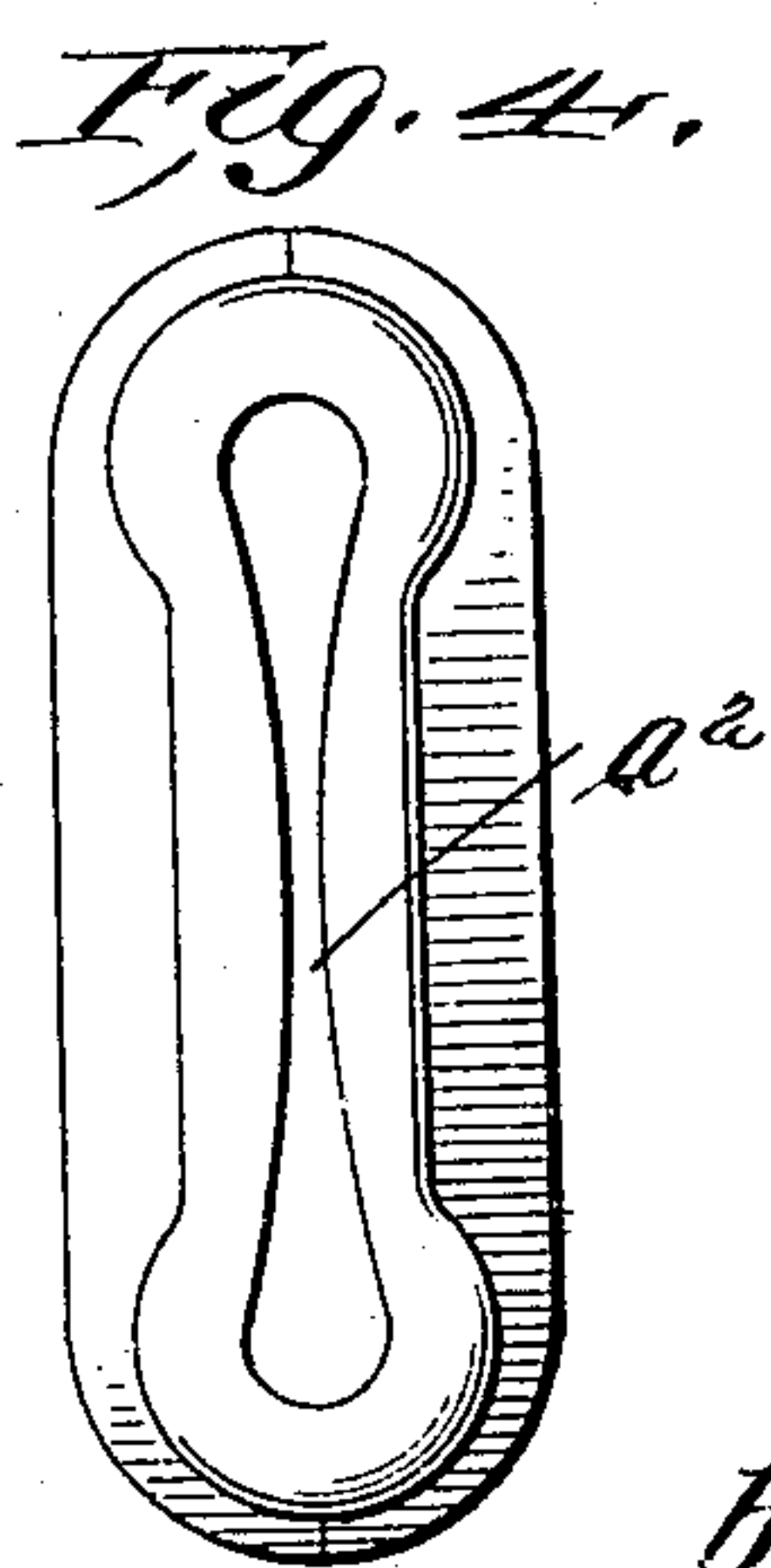
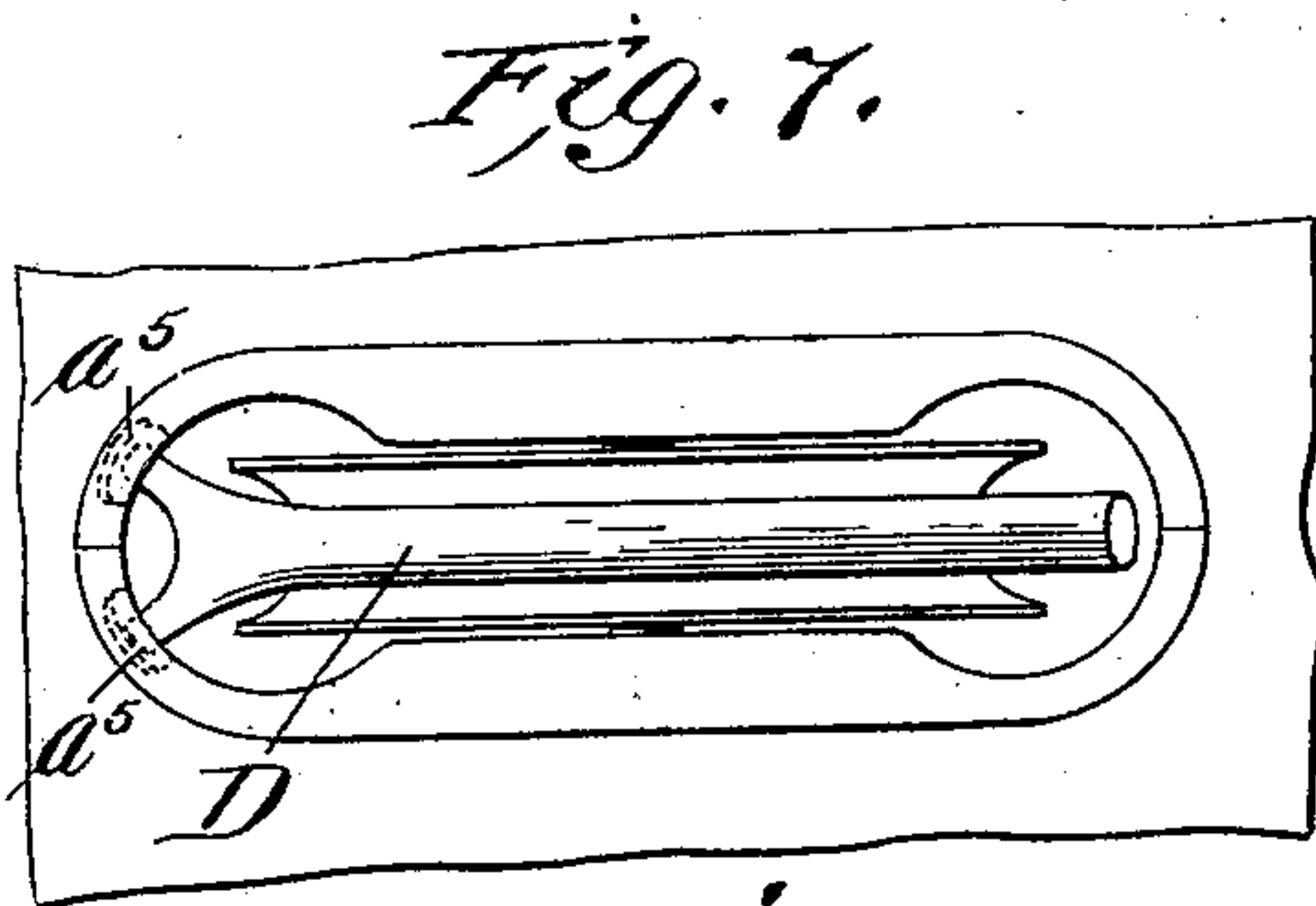
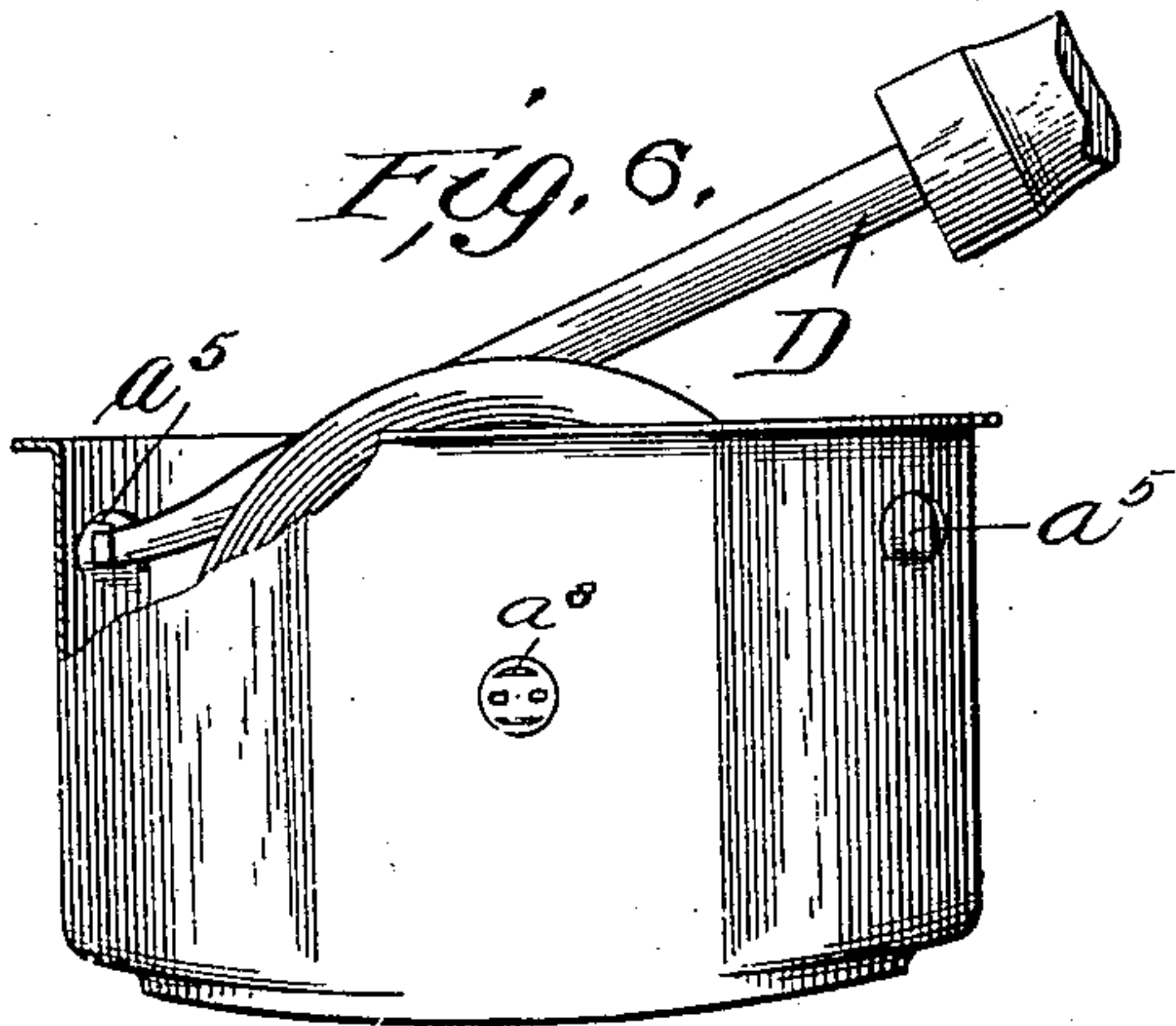
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

WILLIAM ROSS FOX, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE
FOX MACHINE COMPANY, OF SAME PLACE.

SASH-CORD GUIDE.

SPECIFICATION forming part of Letters Patent No. 665,777, dated January 8, 1901.

Application filed June 16, 1899. Serial No. 720,822. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ROSS FOX, a citizen of the United States, residing at Grand Rapids, Michigan, have invented certain new and useful Improvements in Sash - Cord Guides, of which the following is a specification.

My invention relates to improvements in sash-cord guides of that class which are constructed of sheet metal. In articles of this nature, which in order to be salable must be produced as cheaply as possible, it is extremely desirable that the parts be as few in number as possible and that all supplemental fastening means, such as rivets or the like, be dispensed with where practicable. In the present instance I have aimed to provide a guide which shall answer the above requirements; and to this end the invention consists, primarily, of a drawn sheet-metal shell formed of a single piece of metal having turned-over sides and cylindrical ends, portions of said ends being intact.

It also includes the details of construction hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the blank from which my improved shell is made. Fig. 2 is an end view of the completed article. Fig. 3 is a side view, and Fig. 4 a rear view, of the shell before it is corrugated. Fig. 4^a is a rear view of the completed shell, and Fig. 5 a face view. Figs. 6 and 7 are views illustrating the method of securing the shell in the window-frame.

In the drawings, A designates the blank from which the shell is made. This consists of a piece of sheet-steel cut or stamped to the shape shown. This blank is placed in a suitable press, which draws the sides upward and simultaneously curves them inwardly at the ends until the edges a abut, as shown in Figs. 2 and 5. The rear of the shell thus formed is punched out, as indicated at a^2 in Fig. 4, to form the opening through which the sash-cord passes to the pulley, and the edge of this opening is flanged outwardly, as indicated at a^3 , to cover the wheel and give further rigidity. The locking-ears a^5 are next cut at top and bottom, which after the shell is inserted in the window-casing may be forced

outward by a suitable tool—such as shown at D, Fig. 7—having a forked end, the prongs of which simultaneously force the ears outward into the wood to securely hold the shell in place. These, as will be observed, are semicircular cuts made one on each side of the division. It will be observed that in punching out the rear intact portions a^4 a^4 are left at each end, which, together with the flange or corrugation a^3 , serve to rigidly brace the upwardly-turned sides against spreading, even in the absence of any additional fastening means. The only additional fastening which is used is the rivet or axle upon which the pulley or wheel turns. This is preferably a round rivet, which after the pulley has been put in place is inserted through openings in the shell and through the pulley. It will be observed that two notches a^6 are cut in opposite sides of the openings, and the ends of the rivet a^7 are upset into these notches, thus holding the rivet against turning. It will also be observed that the rivet is further upset by semicircular indentations a^8 , which prevent the sides of the shell from spreading.

Having thus described my invention, what I claim is—

1. A drawn sheet-metal shell for a sash-cord guide formed of a single piece of metal having turned-over sides and cylindrical ends, portions of said ends being intact, substantially as described.

2. A drawn sheet-metal shell for a sash-cord guide formed of a single piece of metal having turned-over sides and enlarged abutting ends forming approximately semicylindrical ends of greater diameter than the space between the sides, portions of said ends being intact, substantially as described.

3. A shell for sash-cord guides comprising a single piece of sheet metal having overturned sides and ends and an opening in the back with the edges of the opening forced out parallel with the sides, substantially as described.

4. A shell for sash-cord guides comprising a single piece of sheet metal having overturned parallel sides and abutting ends, and integral tongues in said ends on each side of the line of junction adapted to be forced outwardly into the window-frame to prevent the

shell from spreading and holding the same in position, substantially as described.

5 5. A shell for a sash-cord guide comprising sides having abutting ends and integral tongues in said ends on each side of the line of junction adapted to be forced outwardly into the window-frame to prevent the shell from spreading and hold the same in position, substantially as described.

10 6. A drawn sheet-metal shell for sash-cord guides formed of a single piece of metal having turned-over sides and cylindrical ends, portions of said ends being intact, the rear portion of the shell between said intact portions being open, substantially as described.

7. A drawn sheet-metal shell for sash-cord guides comprising a single piece of sheet metal having forwardly-turned sides with curved abutting ends terminating in continuous face-flanges, an opening in the rear portion of the shell with the edges of the opening forced out parallel with the sides and concentric with the ends, and intact portions at each end of said opening, substantially as described.

In testimony whereof I affix my signature 25 in presence of two witnesses.

WILLIAM ROSS FOX.

Witnesses:

WILL. C. HOERTZ,
GEO. K. MCMULLEN.