

No. 835,463.

PATENTED NOV. 6, 1906.

A. G. OLBERDING.

BRAKE SHOE.

APPLICATION FILED SEPT. 25, 1905.

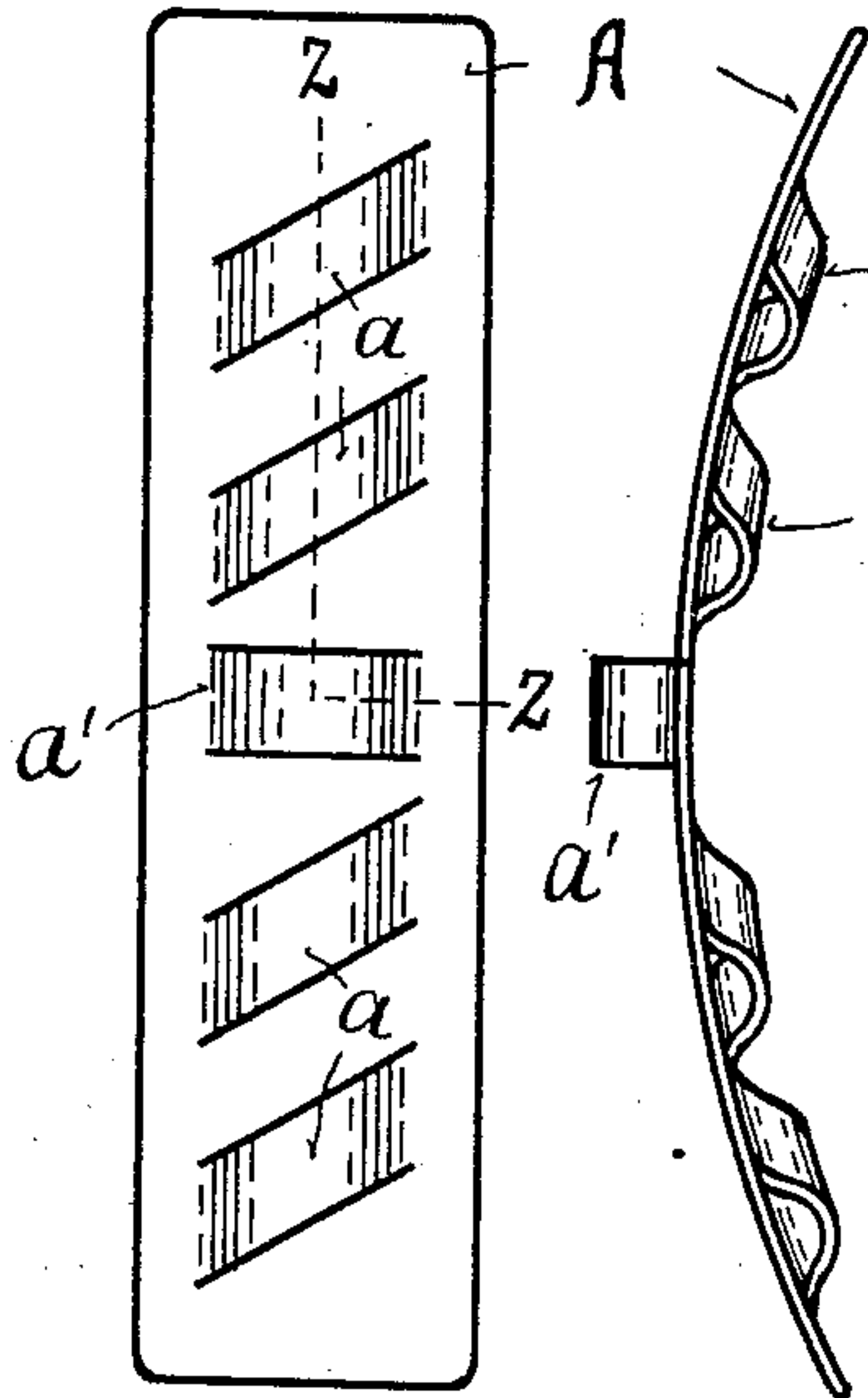


Fig. 1.

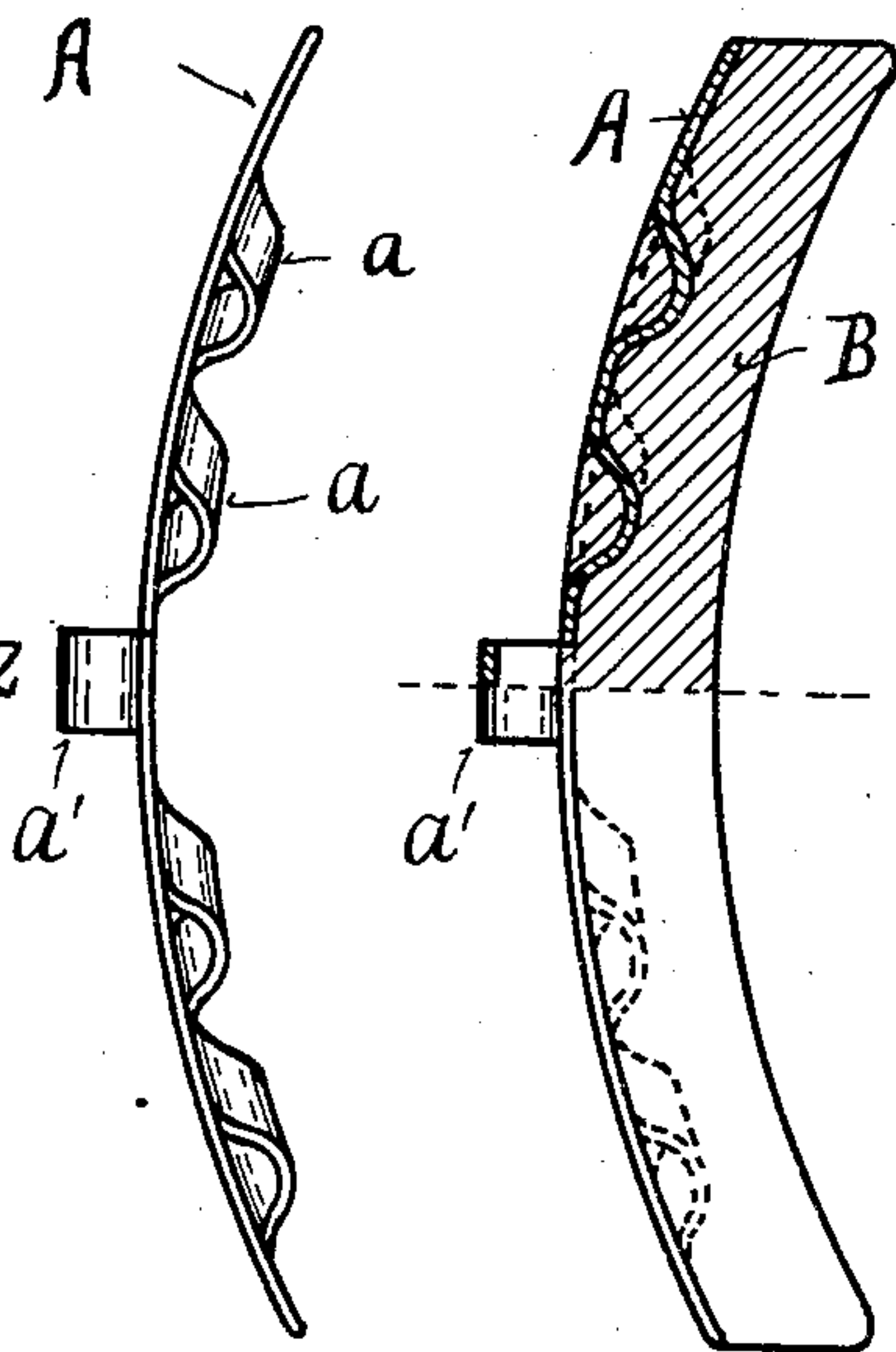


Fig. 2.

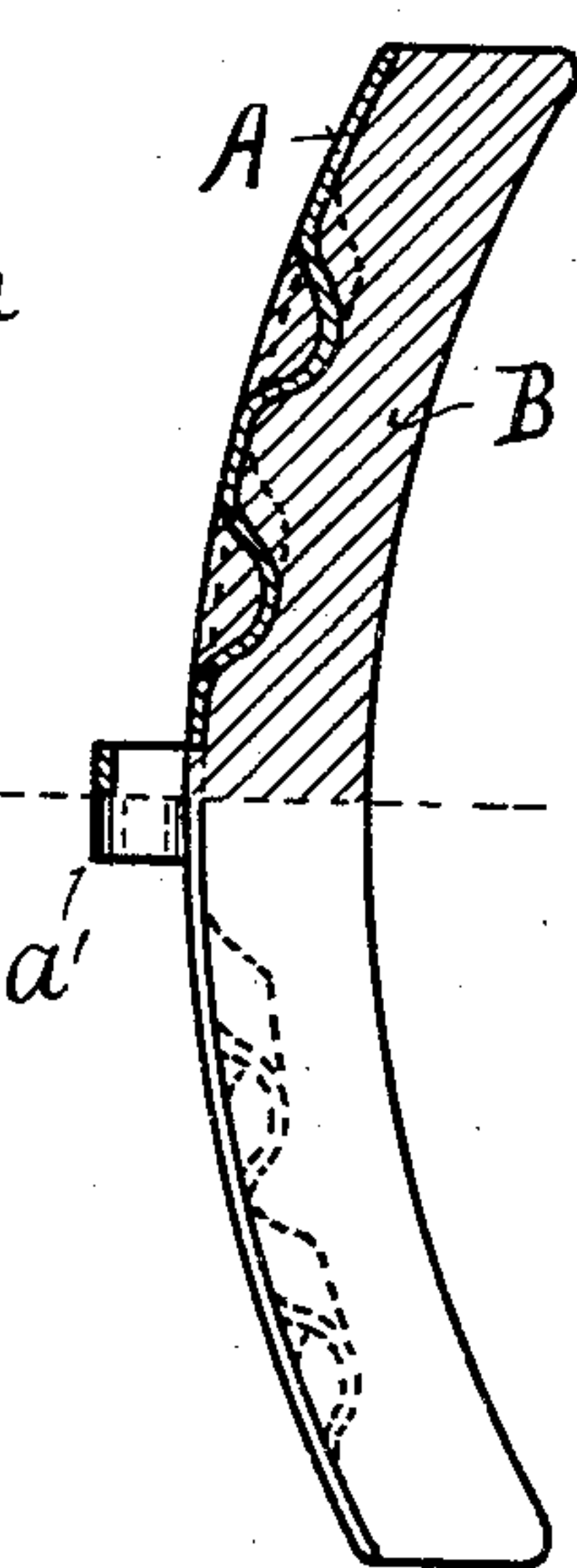


Fig. 3.

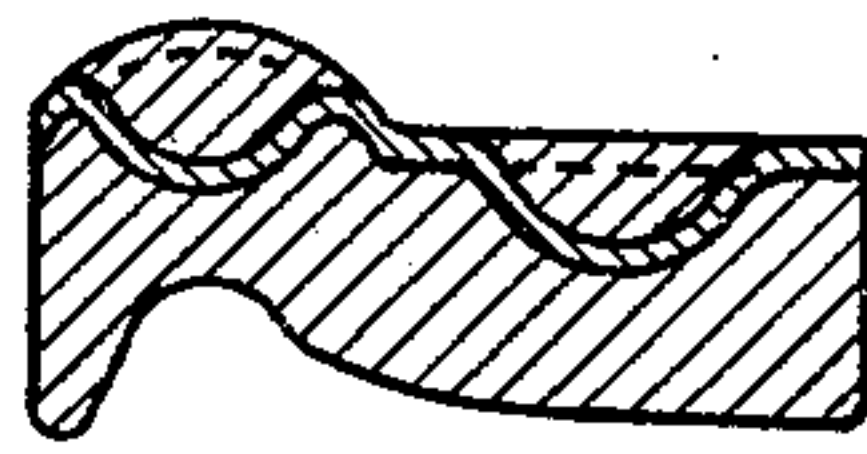


Fig. 7.

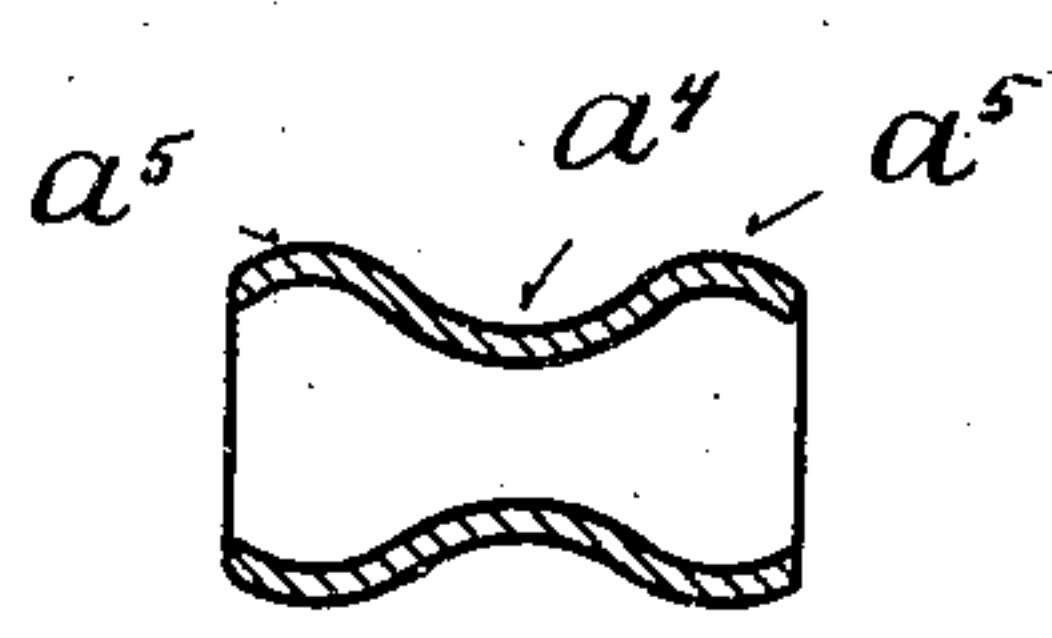


Fig. 8.

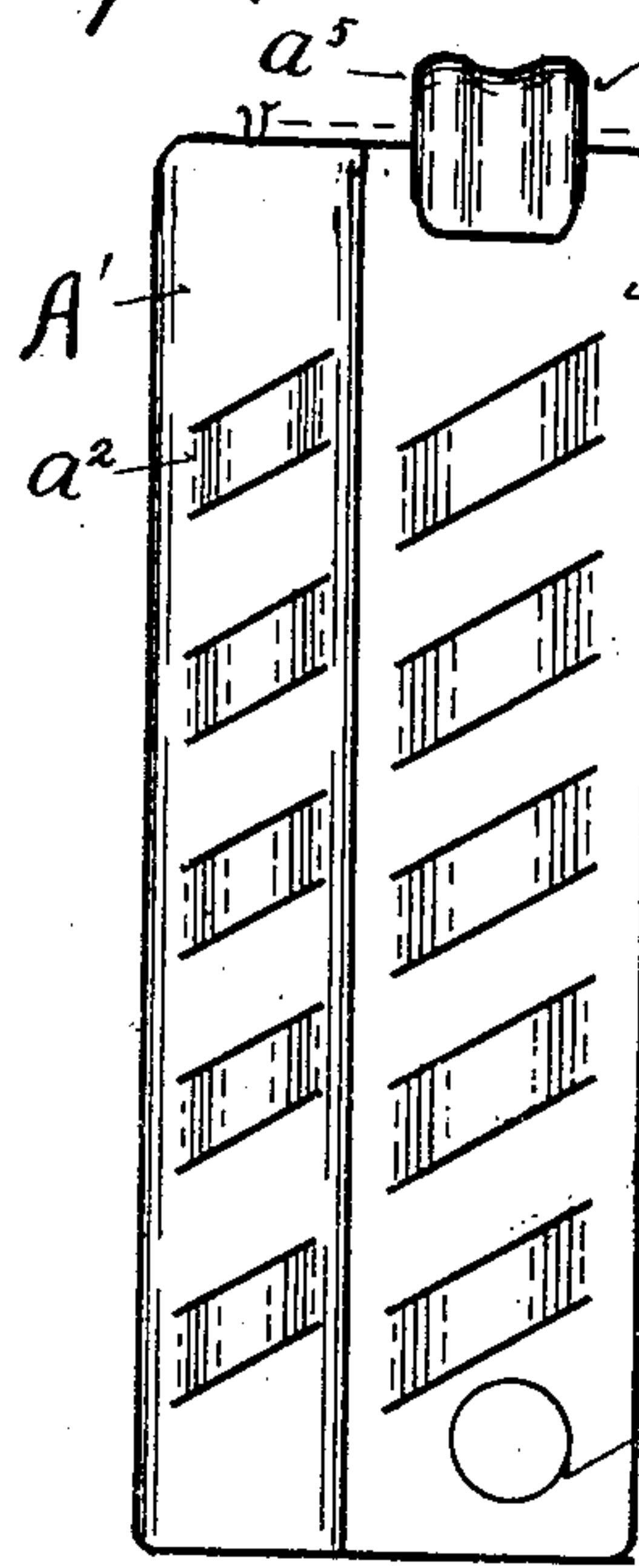


Fig. 4.

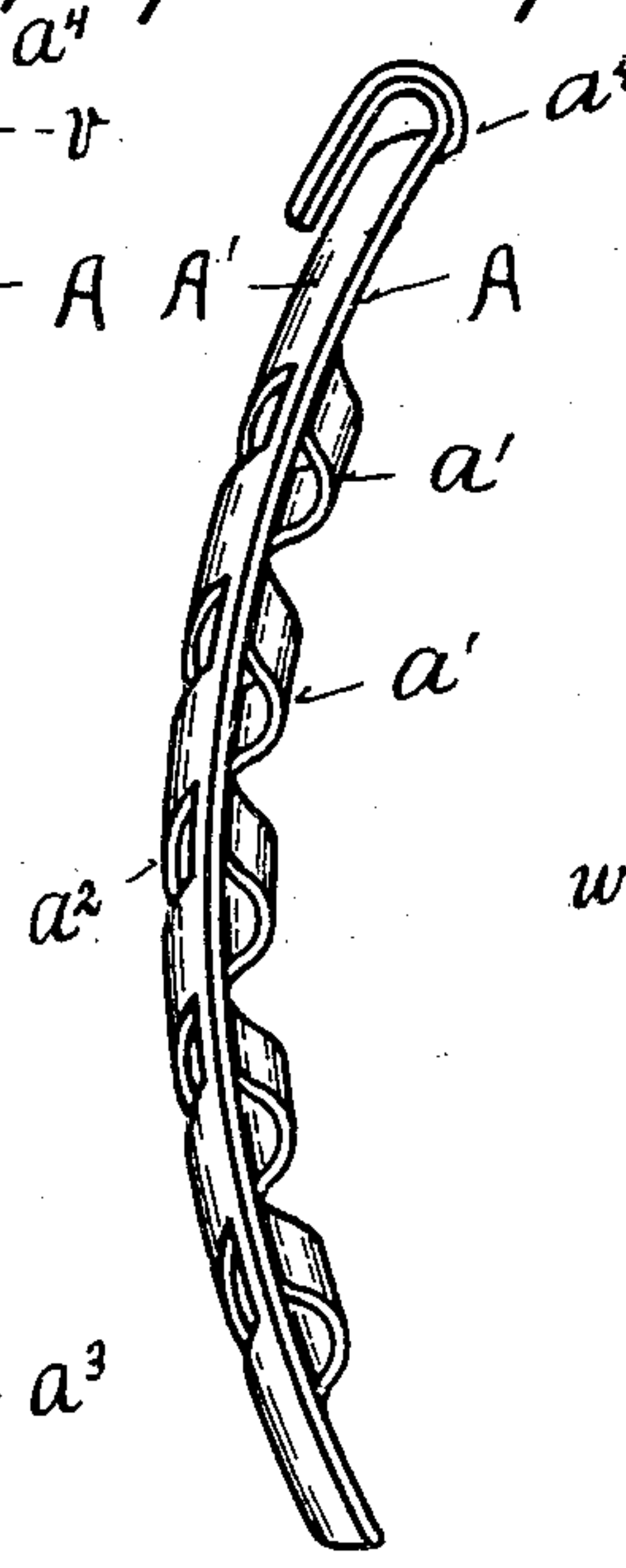


Fig. 5.

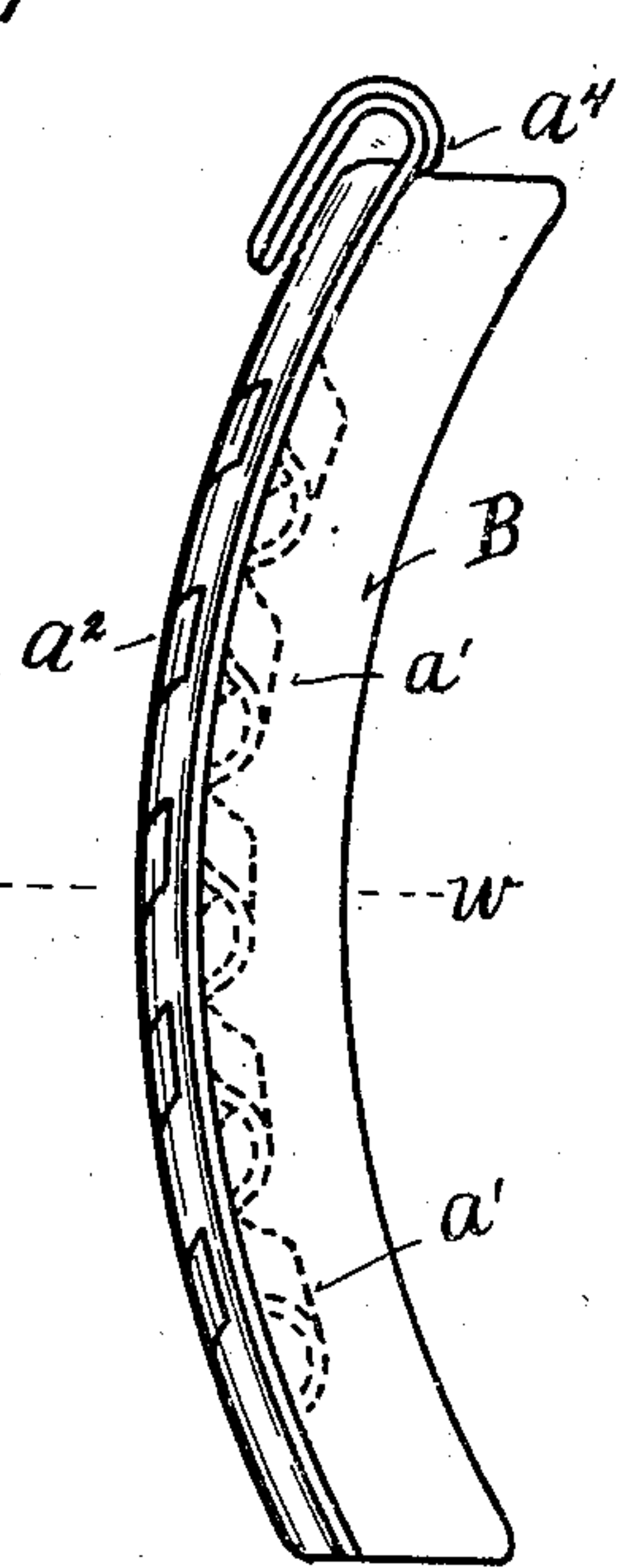


Fig. 6.

Witnesses
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BRAKE-SHOE.

No. 835,463.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed September 25, 1905. Serial No. 279,933.

To all whom it may concern:

Be it known that I, ANTHONY G. OLBERDING, a citizen of the United States of America, and a resident of Cincinnati, county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

My invention relates to brake-shoes having a cast-metal body and a steel back.

The object of my invention is a brake-shoe having a steel back, which affords a gripping-surface to the cast metal, such that the joint between the two metals is proof against both tensile and lateral strains and which is provided with a strong and economical means of securing it to the brake-head. This object is attained by the means described in the specification and illustrated in the drawings, in which—

Figure 1 is a top plan view of a brake-shoe embodying my invention. Fig. 2 is a detail side elevation of the back. Fig. 3 is a longitudinal sectional elevation upon line *z z*, Fig. 1. Fig. 4 is a plan view of the flanged brake-shoe embodying my invention. Fig. 5 is a detail side elevation of the back used in the form of shoe illustrated in Fig. 4. Fig. 6 is a side elevation of the shoe illustrated in Fig. 4. Fig. 7 is a sectional view upon line *ww* of Fig. 6. Fig. 8 is a sectional view on line *vv* of Fig. 4.

Referring to the parts, back *A* has projecting down from it and formed integral with it a series of diagonal U-shaped straps *a*, which are formed by making a series of diagonal parallel slits in the back and by swaging the strap so formed downward into a U-shape. In the center of the back shown in Fig. 1 a couple of transverse slits are formed and a transverse U-shaped strap *a'* is struck upward from the back to form a lug for attaching the brake-shoe to the brake-head. After the back has been so formed it is inserted in the top of a mold, and the cast metal to form the body *B* is allowed to flow into the mold and around the straps *a* to the level of the

back, but not to cover the outer surface thereof. The perforations in the back formed by the straps coming at close intervals afford a most efficient means for the escape of the gases which are caused when a heated metal strikes a cold, and thus prevent holes being formed at the joint between the cast metal and the steel.

The cast metal flowing over the U-shaped strap forms a most secure means of holding the two together. The advantage of making the straps diagonal is this: In rolling steel it is generally rolled lengthwise, and it is found that a diagonal strap affords much greater resistance to strains than a transverse or a longitudinal strap, since it crosses the grain which seems to be formed in the steel in the process of rolling. Each strap being diagonal forms a much greater resistance to a transverse strain than would simply a transverse strap, since the distance over which a strain is distributed is greater in the diagonal strap than in a transverse.

Lug *a'*, being formed integral with the back *A*, is strong and is economically produced.

In the forms illustrated in Figs. 4-7 the shoe has a flange, and the diagonal straps *a* are formed in the flange *A'* of the back as well as in the tread *A*. In this form of shoe the usual hole *a³* is left in the back and through the body of the shoe to receive the bolt for attaching to the head. At the opposite end of the back from the hole *a³* a lug is left projecting, which is turned over into a hook *a⁴*, the edges *a⁵* of this hook *a⁴* being turned over or crimped. This crimping reinforces the hook and renders it strong and durable.

What I claim is—

1. A brake-shoe consisting of a steel back having a series of diagonal U-shaped straps struck down therefrom and a cast-metal body joined to the back by the metal passing over and around the straps.

2. A brake-shoe consisting of a steel back having a series of diagonal U-shaped straps struck downward from the tread and the

flange thereof, and a cast-metal body secured to the back by the metal passing over and surrounding the straps.

- 5 3. A brake-shoe consisting of a steel back having a hook at one end formed by leaving an integral lug projecting from one end thereof which lug is curved over and crimped along

its edges, a cast-metal body and means of securing the back and the body together.

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