

H. F. KEIL.
BALL BEARING SHEAVE.
APPLICATION FILED AUG. 19, 1903.

NO MODEL.

Fig. 1.

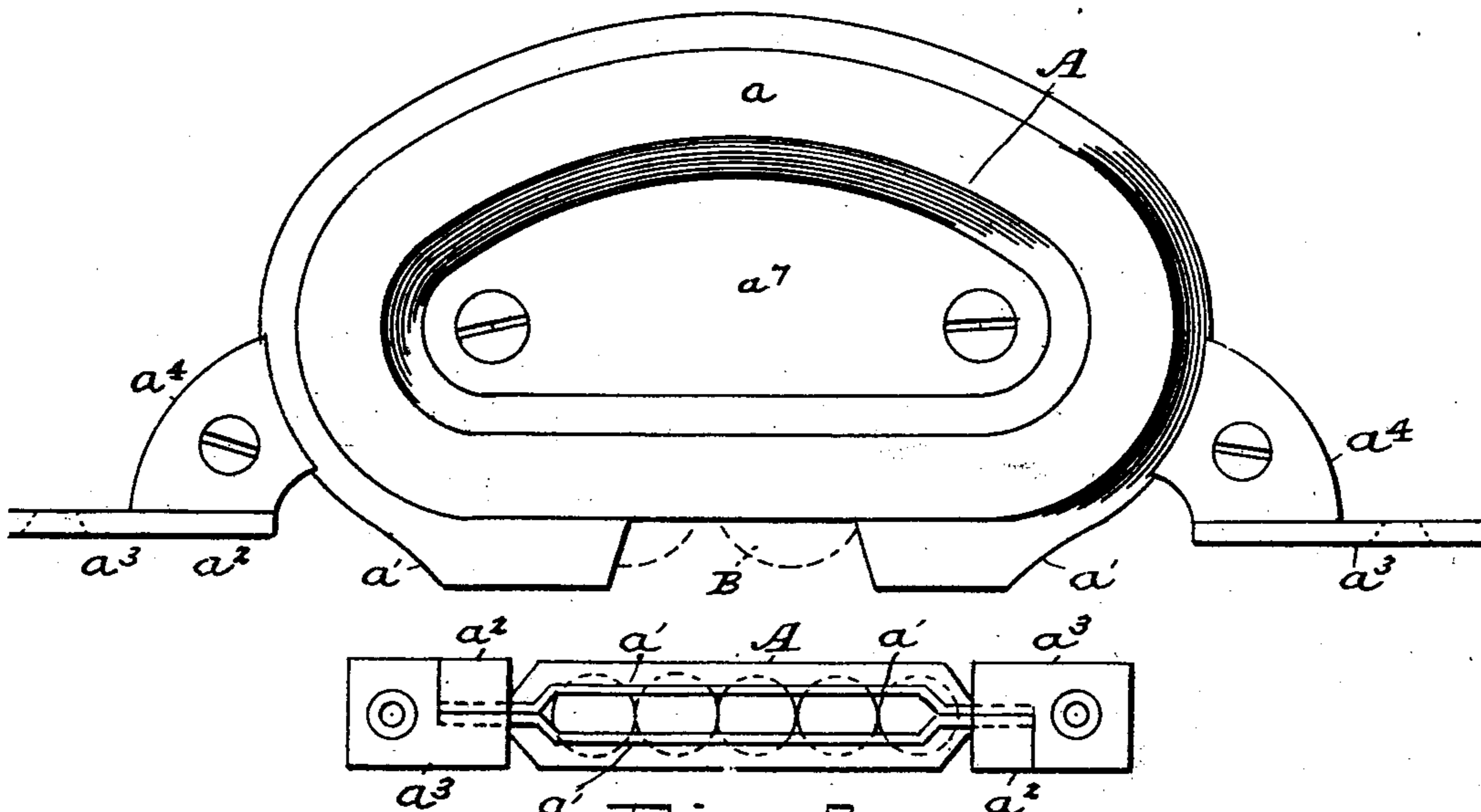


Fig. 2.

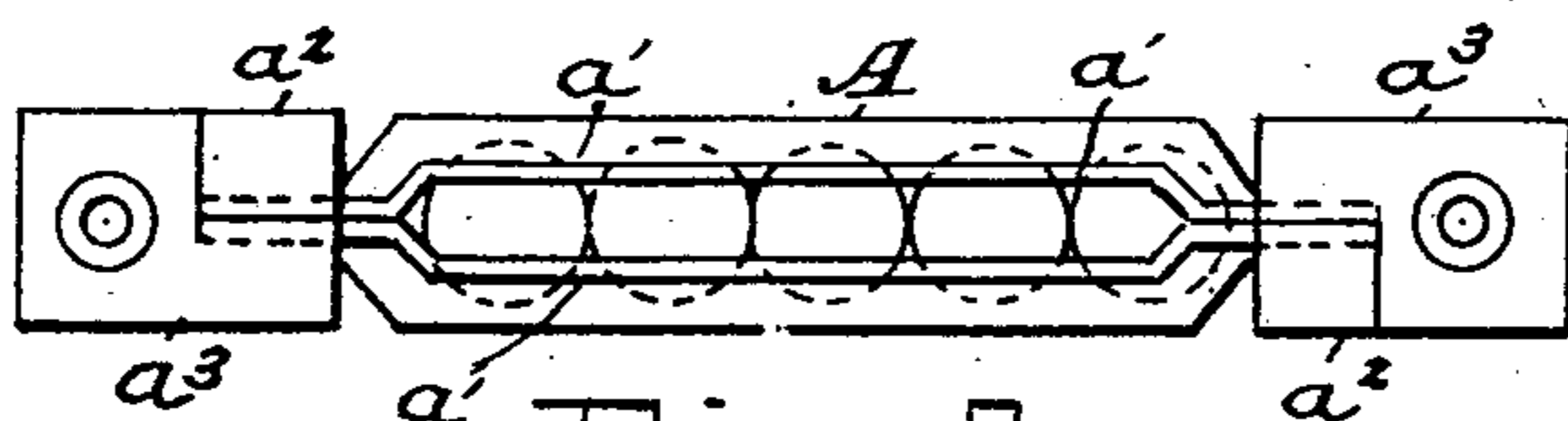


Fig. 3.

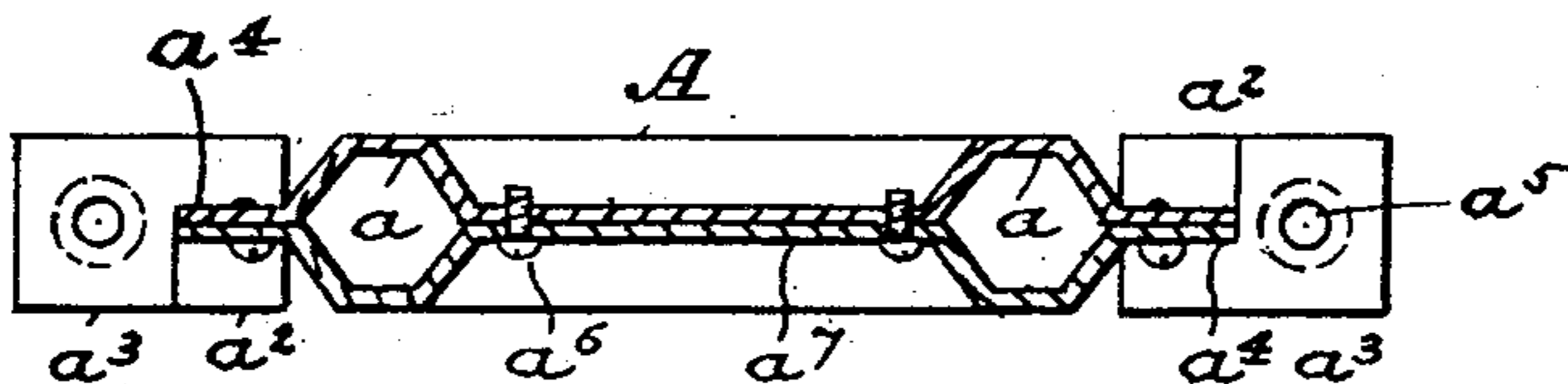


Fig. 5.

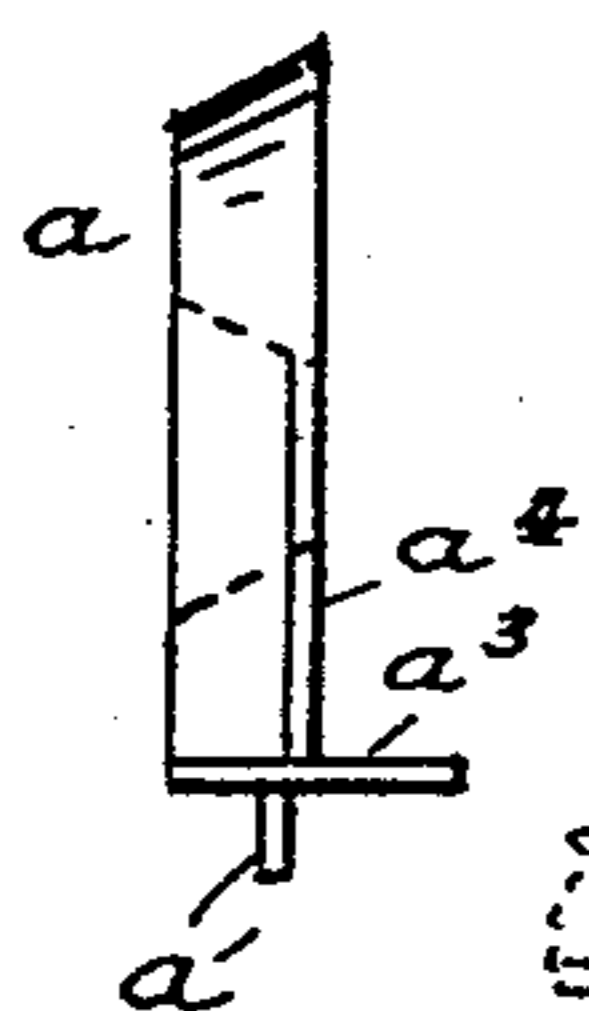


Fig. 4.

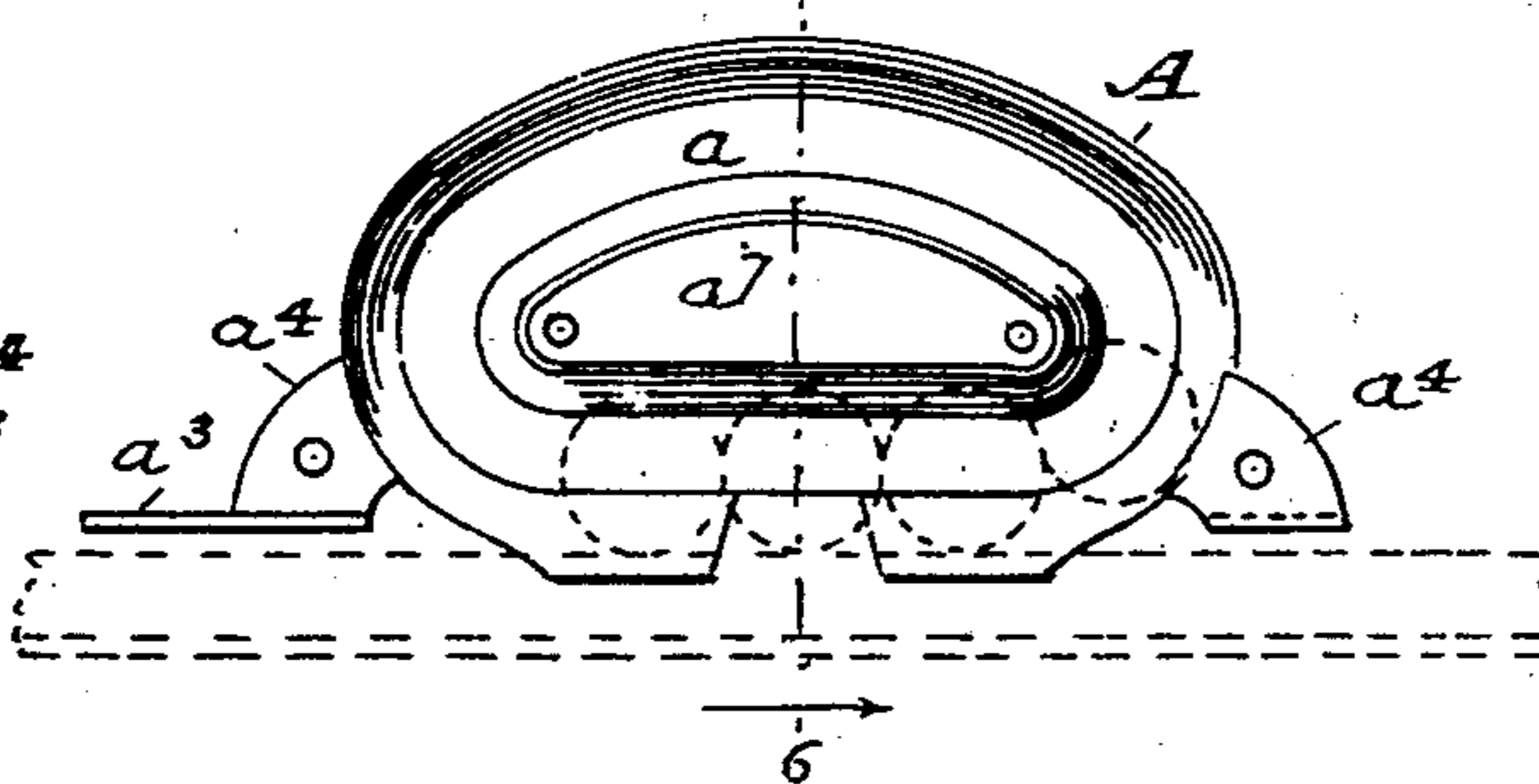


Fig. 6.



Inventor:

H. F. Keil.

Witnesses:

E. B. Bottom
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By

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UNITED STATES PATENT OFFICE.

HENRY FRANCIS KEIL, OF BRONXVILLE, NEW YORK.

BALL-BEARING SHEAVE.

SPECIFICATION forming part of Letters Patent No. 750,771, dated January 26, 1904.

Application filed August 19, 1903. Serial No. 170,072. (No model.)

To all whom it may concern:

Be it known that I, HENRY FRANCIS KEIL, a citizen of the United States of America, and a resident of Bronxville, in the county of Westchester and State of New York, have invented a certain new and useful Ball-Bearing Sheave, of which the following is a specification.

My invention relates to devices designed for use primarily for carrying sliding doors, and particularly to casings containing ball-bearings constructed and arranged to work on a track, the same being a continuation of my former application, Serial No. 149,864, filed March 27, 1903; and it has for its object the provision of an appliance of the kind set forth simple in construction, inexpensive to manufacture, and which operates smoothly and efficiently in practical use.

To attain the desired end, this my invention consists in the construction, arrangement, and operation of parts herein set forth.

In order to enable my invention to be fully understood by those skilled in the art to make and use the same, I will proceed to explain my invention by reference to the drawings which accompany and form a part of this specification, in which—

Figure 1 represents a front elevation of one side of a ball-bearing-sheave casing made according to my invention. Fig. 2 is a bottom view of the same, shown on a reduced scale. Fig. 3 is a horizontal section of my ball-bearing sheave. Fig. 4 is a front elevation of the interior face of the side portion forming one member of my casing shown in Fig. 1. Fig. 5 is a side elevation of my casing; and Fig. 6 is a central vertical section taken on the line 6, Fig. 4.

Like letters of reference indicate like parts in all the views.

Referring particularly to the drawings, A denotes my casing, consisting of two similar members, each member being provided with an endless angular raised rib, forming an interior groove, way, or track a , the lower portion of which lies in a practically horizontal position, and the part thereof extending upwardly is formed in a curved contour, being practically of a dome or semi-elliptical shape surrounding a web a^7 . By the construction

set forth above there are only two corners for the balls B to turn in their passage around the track.

Each member of the body of my casing is provided with a pair of depending vertical flanges a' and also with relatively horizontally-projecting bearing-plates a^2 a^3 , extending outwardly from the opposite sides of the same. The plate a^2 , which is ordinarily no longer than the casing, projects forwardly, and the plate a^3 , which is considerably longer than the casing, projects forwardly for a distance and then both forwardly and rearwardly in order that the wide plate a^3 of each member may register with and extend out to the line of the outer edge of the narrow plate a^2 of the other member, to which it is contiguous. Each wide plate a^3 is provided with an orifice a^5 , by means of which the casing may be rigidly secured to the door or other supporting-surface without danger of spreading apart the two members of the casing, as would necessarily be the case if the screws, &c., were to be inserted between any part of the shells of the said two members.

Intermediate each plate a^2 and a^3 and the angular grooved portion of each member of my casing is located a relatively vertical flange or web a^4 .

It is manifest that various omissions of some particulars could be made without materially affecting the essential features of my invention or the operation of the remaining parts, and I do not, therefore, wish to be limited to the specific structural details of the organization set forth. Obviously the elements of the structure described may be located at an angle to the plane in which they are shown. I accordingly use the words "horizontal," "vertical," and the like in relative sense.

In operation the balls B are inserted in the endless angular track a and the two members of my casing are rigidly secured together, as by screws or bolts a^6 , after which my ball-bearing sheave may be screwed to the lower edge of a door, whereupon the balls B will work on a track placed between the flanges a' , depending from each member of my casing.

My ball-bearing sheave runs very easily and smoothly, as the balls work on the track

below the casing and travel freely around the endless angular groove, having only two corners to turn.

Heavy doors may be handled with ease, the members of my sheave always being held rigidly in proper position, as the screws holding the same in place are passed through the solid plates a^3 .

As it is evident that many changes in the construction, form, proportion, and relative arrangement of parts might be resorted to without departing from the spirit and scope of my invention, I would have it understood that I do not restrict myself to the particular construction and arrangement of parts shown and described, but that such changes and equivalents may be substituted therefor, and that

What I claim as my invention is—

1. A ball-sheave comprising two similar members, each provided with an endless groove the lower portion of which lies in a practically horizontal position and the part thereof extending upwardly being of semi-elliptical shape, and each member being also provided with a horizontal wide and narrow plate projecting respectively outwardly from the two lower side portions of the same, the wide plates of each member partly inclosing and registering with and extending out to the line of the

outer edge of the narrow plates of the other member and being provided with orifices—and a vertical web intermediate the said plates and the endless groove, in combination with a series of balls to work in the said groove. 35

2. A ball-sheave comprising two similar members each provided with depending flanges and an angular endless groove, the lower portion of which lies in a practically horizontal position and the part thereof extending upwardly being of semi-elliptical shape, thus forming two corners only for the balls to turn, and each member being also provided with a horizontal plate projecting outwardly from one of the lower side portions of the sheave and widened at its extremity, and a vertical web located in the plane of the said groove and at right angles to the horizontal plate and intermediate the said plate and the endless groove, in combination with a series of balls to work in the said groove. 40 45 50

In testimony of the foregoing specification I do hereby sign the same in the city of New York, county and State of New York, this 18th day of June, A. D. 1903.

HENRY FRANCIS KEIL.

Witnesses:

F. A. WURZBACH,
H. BAUMANN.