

No. 631,580.

Patented Aug. 22, 1899.

G. E. NEUBERTH.
WHEEL FOR CASTERS, &c.

(Application filed Apr. 19, 1899.)

(No Model.)

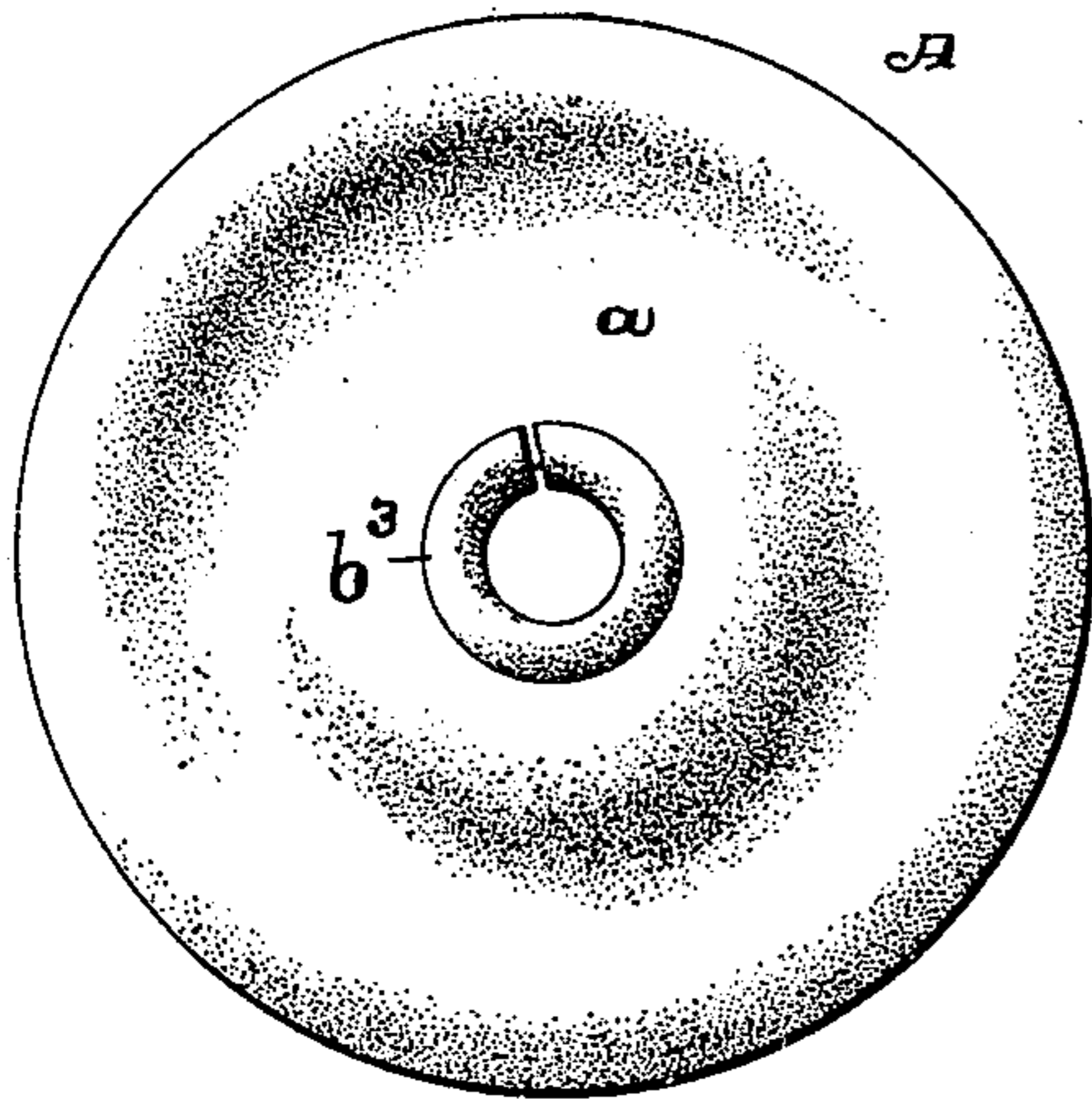


FIG. 1

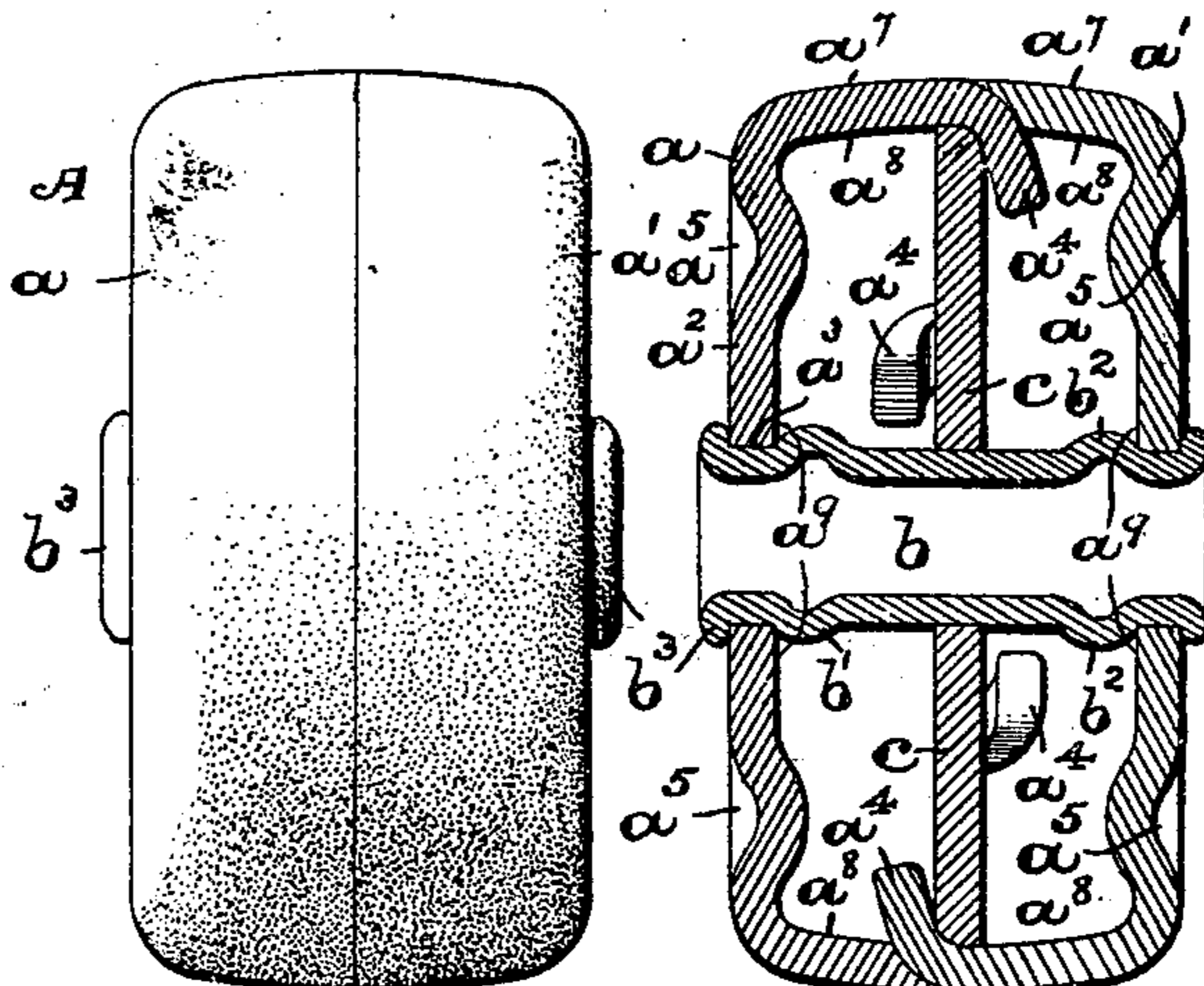


FIG. 2

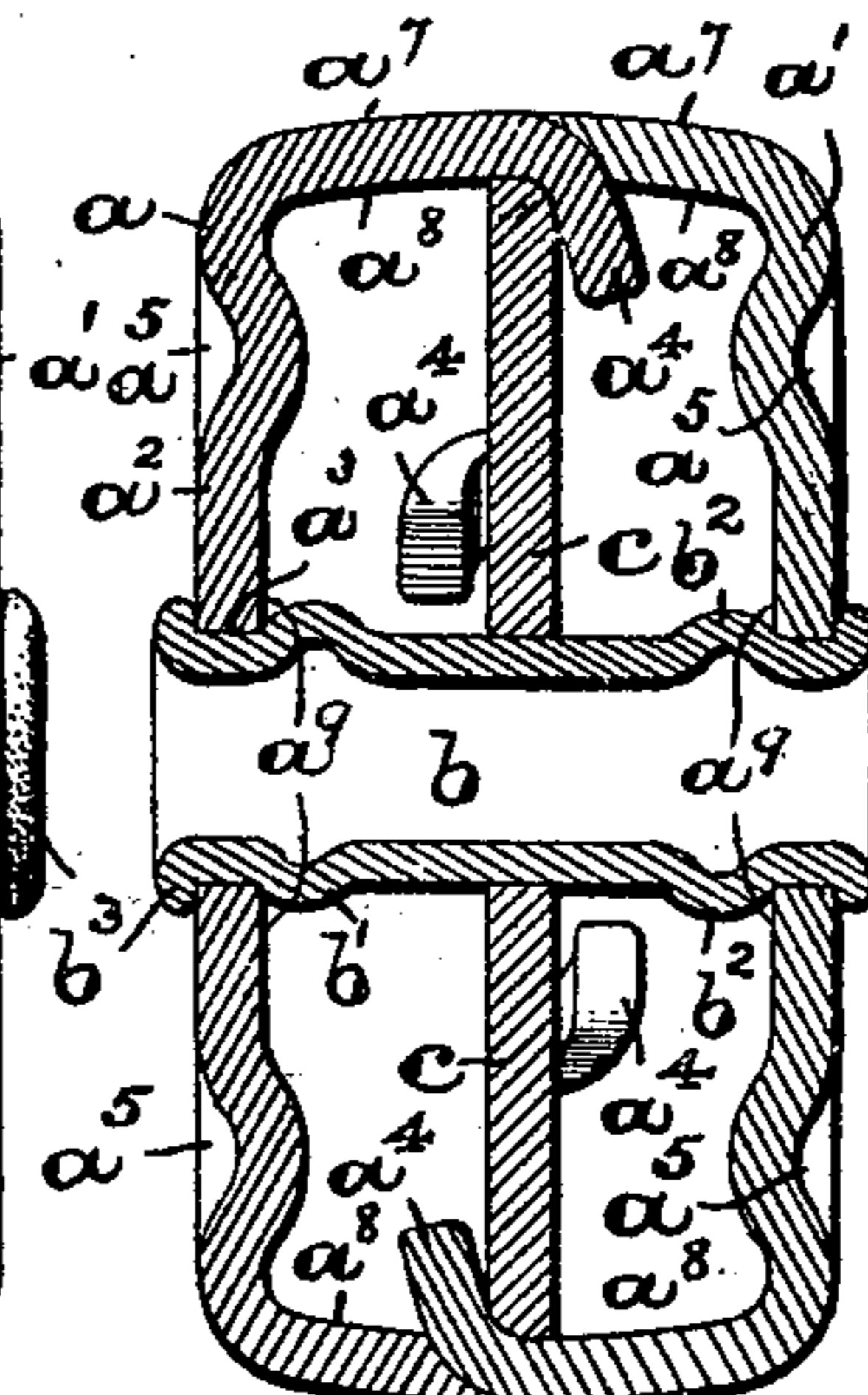


FIG. 3

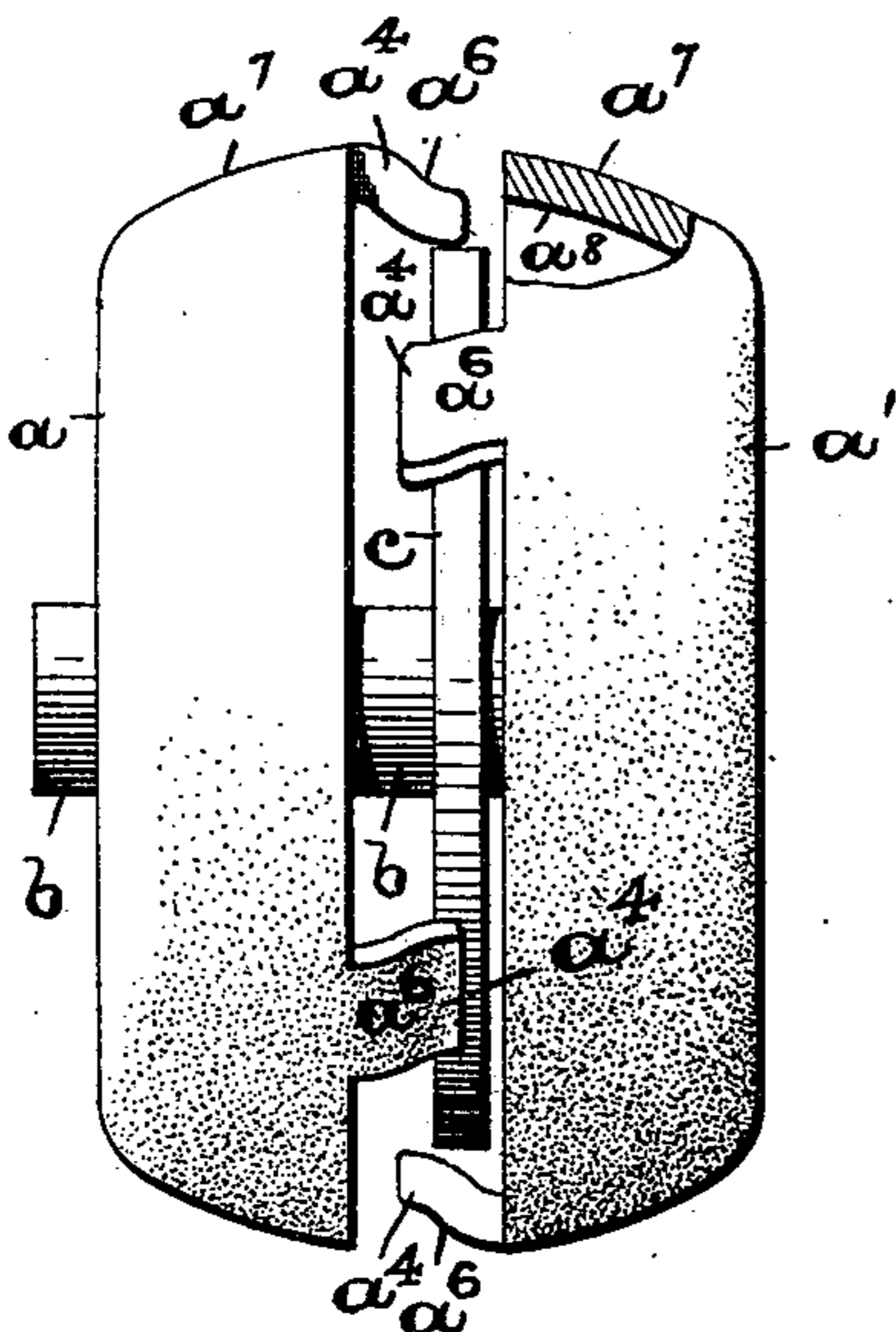


FIG. 4

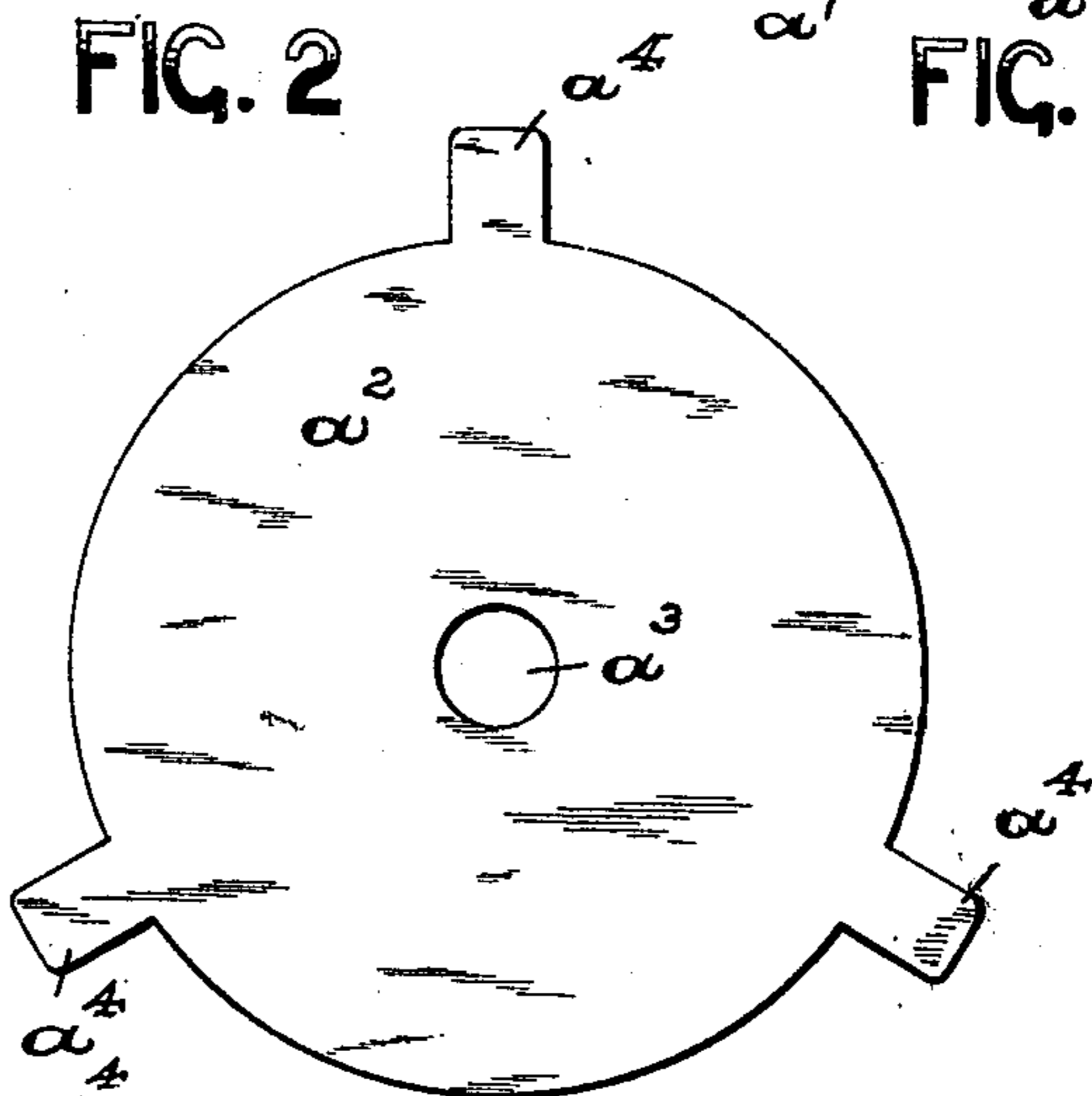


FIG. 5

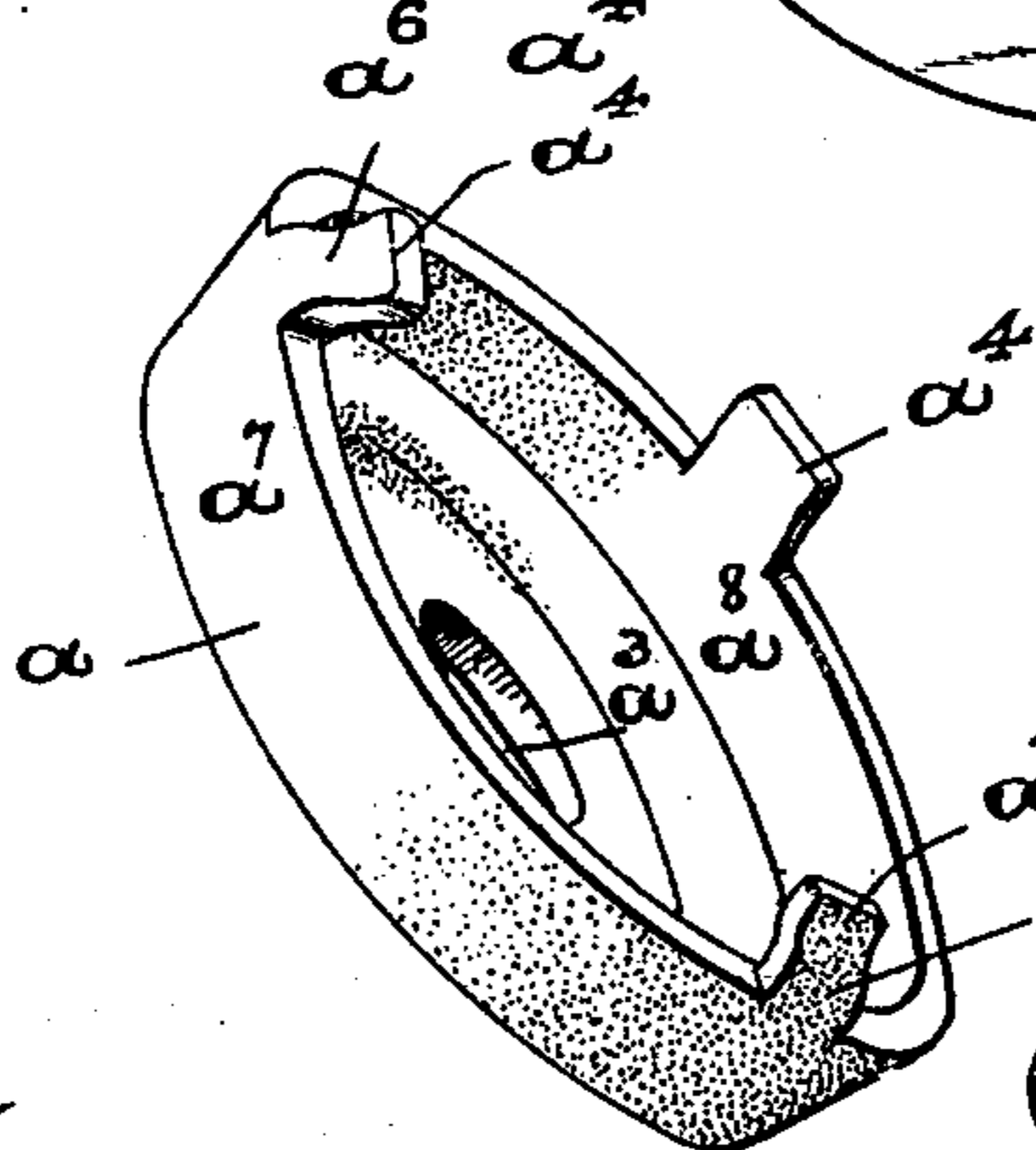


FIG. 6

WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE E. NEUBERTH, OF NEWARK, NEW JERSEY, ASSIGNOR TO HENRY ILL, OF SAME PLACE.

WHEEL FOR CASTERS, &c.

SPECIFICATION forming part of Letters Patent No. 631,580, dated August 22, 1899.

Application filed April 19, 1899. Serial No. 713,546. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. NEUBERTH, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Wheels or Rollers; and I do hereby 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 the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in the manufacture of hollow sheet-metal wheels or rollers which may be put to various uses, but are more especially adapted for use as casters for furniture and the like; and my present invention has reference more particularly to that class of hollow wheels or rollers which are made in separate sections or halves, stamped or struck up from sheet metal, and then operatively secured together by pressure in suitable dies or machinery.

The principal object of this invention is to rigidly secure together by pressure two roller or wheel sections to produce a complete wheel or roller without the use of solder or the necessity of lathework, as has heretofore been the custom.

A further object of my present invention is to provide a novel construction of caster or other wheel or roller, comprising a pair of sections to be secured together by means of pressure, and to provide a simply-constructed and strong roller or wheel, whereby it can be made in less time than heretofore and, in consequence, at a greatly-reduced cost of manufacture.

The invention therefore consists in the novel construction of roller or wheel for the purposes hereinabove set forth; and, furthermore, the invention consists in such novel arrangements and combinations of parts, all of which will be hereinafter fully described and finally embodied in the clauses of the claim which form a part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which—

Figures 1 and 2 are a side and end view, respectively, of a wheel or roller made according to the principles of my invention. Fig. 3 is a vertical cross-section of the wheel or roller, illustrating the interlocked arrangement of the shells or sections comprising the main body of the wheel or roller; and Fig. 4 is an end representation of said shells or sections, a disk or plate, and a tubular spindle in their relative positions when the several parts are to be assembled and closed upon each other in dies to form a complete wheel or roller. Fig. 5 is a plan view of a blank of sheet metal from which the shells or sections represented in said Fig. 4 are formed, and Fig. 6 is a perspective view of one of the said shells or sections.

Similar letters of reference are employed in all of the said above-described views to indicate corresponding parts.

In said drawings, A indicates the complete wheel or roller, and a and a' are two sheet-metal sections or shells, each forming one-half of the wheel or roller and which are to be secured together by pressure, substantially as hereinafter set forth, to produce the complete wheel or roller in Figs. 1 and 2. Each shell or section a and a' is stamped up from sheets of metal, as indicated in Fig. 5, in the form of a circular disk or plate a^2 , with a central perforation or hole a^3 and radially-extending ears or lugs a^4 , which project from the circumferential edge of the disk, substantially as shown. I prefer to provide each disk or plate with three of such ears or lugs a^4 ; but of course it will be evident that I may use but two ears or lugs on each disk, or more than three of such lugs or ears may be employed, if desired. The disk a^2 is then forced into the cup or dish shape indicated in Figs. 3, 4, and 6, preferably by means of suitable dies, to form the two sections or shells a and a' , each shell being preferably formed with the annular and ornamental depressions a^5 , which also serve to strengthen the sides of said shells or sections, as will be clearly evident. The radially-arranged ears or lugs a^4 , hereinabove mentioned, are also slightly curved, as at a^6 . (See Figs. 4 and 6.) The external faces of each disk a and a' are slightly

curved, as at a^7 and a^8 , as clearly indicated in Figs. 3 and 4.

In Fig. 3 I have shown one arrangement of tubular spindle b , the same being preferably provided with annular enlargements or beads b^1 and b^2 , substantially as shown, and c indicates a circular disk or plate of sheet metal, having a central perforation for arranging said disk or plate upon said tubular spindle b , between said enlargements b^1 and b^2 , before the said enlargements are formed on said spindle. The diameter of said disk or plate c is just so much less than the inner maximum diameter of said shells or sections a and a' , (indicated in Fig. 4,) and before said shells are closed down, as indicated in Fig. 3, equal to a trifle more than the thickness of said lugs or ears a^4 , to permit the entrance of said lugs or ears in the annular space between the circumferential edge of the disk or plate c and the inner and curved surfaces a^8 of the said sections a and a' .

To firmly secure the several parts together in order to form a wheel or roller A , the several parts are assembled on the tubular spindle b in the manner indicated in said Fig. 4, the disk c having been previously arranged upon said spindle between the enlargements b^1 and b^2 . The cup-shaped sections or shells a and a' are then slipped over the respective ends of the tubular spindle, with the slightly and inwardly bent or curved ears or lugs a^4 of the sections a and a' arranged to extend in opposite directions over the circumferential edge of the disk c , substantially as illustrated in said Fig. 4. When these several parts have thus been assembled, they are placed between suitable dies and pressed together, whereby the lugs or ears a^4 on the respective shells or sections a and a' are forced in opposite directions directly over and beyond the circumferential edge of the disk c and against the tapering inner surfaces a^8 of said shells a and a' . At the same time, owing to the construction of the dies, which are provided with depressions into which the cup-shaped shells or sections a and a' are placed during the process of manufacture, will, owing to the fact that the diameters of said depressions in the dies are less than the maximum diameters of said shells or sections a and a' , cause said external faces of the sections or shells to be forced toward the center of the wheel or roller, or, in other words, the diameters of said shells will become reduced until the inner surfaces of the said sections or shells will bear firmly upon the circumferential edge of the disk c , which will act as a central web to the wheel or roller to greatly strengthen the same. During this operation the pressure upon said shells will have forced the lugs or ears a^4 of the respective shells or sections a and a' tightly down against the opposite flat faces of the disk c at right angles thereto, or approximately so, and as clearly indicated in Fig. 3. This will serve to firmly retain the

two shells or disks in position against each other, while the ears or lugs now arranged against the opposite sides of the disk c will fully prevent the separation or pulling apart of the two shells or sections a and a' no matter how great a weight the roller or wheel thus formed will have to support. During the operation of closing down the two shells or sections a and a' , so that their circumferential edges will bear against each other, the inner surfaces a^9 of the sides of said shells are tightly brought against the annular enlargements or beads b^1 and b^2 of the spindle b , whereby the collapse of the ends or faces of said shells or sections during the pressure between the dies is fully prevented. At the same time the projecting ends of the spindle b are upset to form the beads b^3 , as clearly illustrated in Figs. 1, 2, and 3, and a strong and serviceable wheel or roller is the result.

The roller or wheel is preferably made with the tubular spindle b ; but of course it will be understood that the two sections or shells a and a' can be tightly secured to the supporting disk or plate c without the employment of said spindle b , and a strong and serviceable roller or wheel can thus be made without such use of the spindle. It will thus be obvious that I do not limit my invention to the exact arrangements and combinations of the several parts herein described and illustrated in the accompanying drawings, for they may be varied without departing from the scope of my present invention. Hence I do not limit my invention to the arrangements and combinations of the several parts, nor do I confine myself to the exact details of the construction of the parts as herein described and illustrated in the drawings.

Having thus described my invention, what I claim is—

1. A wheel or roller composed of a pair of metal shells or sections, holding lugs or ears on the annular edges of said shells or sections, a separate holding device, arranged between said shells or sections, with which said lugs or ears are in locked or holding engagement, substantially as and for the purposes set forth.

2. A wheel or roller composed of a pair of metal shells or sections, holding ears or lugs on the annular edges of said shells or sections, and a circular disk or plate between said shells or sections, with the circumferential edge of which said ears or lugs are in locked or holding engagement, substantially as and for the purposes set forth.

3. A wheel or roller consisting, essentially, of a tubular spindle, a pair of metal shells or sections, a separate holding device on said spindle, and holding ears or lugs on the annular edges of said shells in locked or holding engagement with the said holding device, substantially as and for the purposes set forth.

4. A wheel or roller consisting, essentially, of a tubular spindle, a pair of metal shells or

sections, a circular disk on said spindle, and holding ears or lugs on the annular edges of said shells in locked or holding engagement with the circumferential edge of said disk, substantially as and for the purposes set forth.

5 5. A wheel or roller consisting, essentially, of a tubular spindle b , having annular beads or projections b' and b^2 , a pair of shells or sections arranged on said spindle and bearing
10 against said beads or projections, a clamping or holding means on the annular edges of said shells or sections, and a separate holding device on said spindle, with which said clamping or holding means is in locked or holding
15 engagement, substantially as and for the purposes set forth.

20 6. A wheel or roller consisting, essentially, of a tubular spindle b , having annular beads or projections b' and b^2 , a pair of shells or sections arranged on said spindle and bearing against said beads or projections, holding lugs or ears on the annular edges of said shells or

sections, and a separate holding device on said spindle, with which said lugs or ears are in locked or holding engagement, substantially as and for the purposes set forth. 25

7. A wheel or roller consisting, essentially, of a tubular spindle b , having annular beads or projections b' and b^2 , a pair of shells or sections arranged on said spindle and bearing
30 against said beads or projections, holding lugs or ears on the annular edges of said shells or sections, and a circular disk or plate on said spindle, with the circumferential edge of which said lugs or ears are in locked or hold-
35 ing engagement, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 17th day of April, 1899.

GEORGE E. NEUBERTH.

Witnesses:

FREDK. C. FRAENTZEL,
HENRY ILL.