

No. 696,320.

Patented Mar. 25, 1902.

J. M. DODGE.
WHEEL OR PULLEY.
(Application filed Dec. 5, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

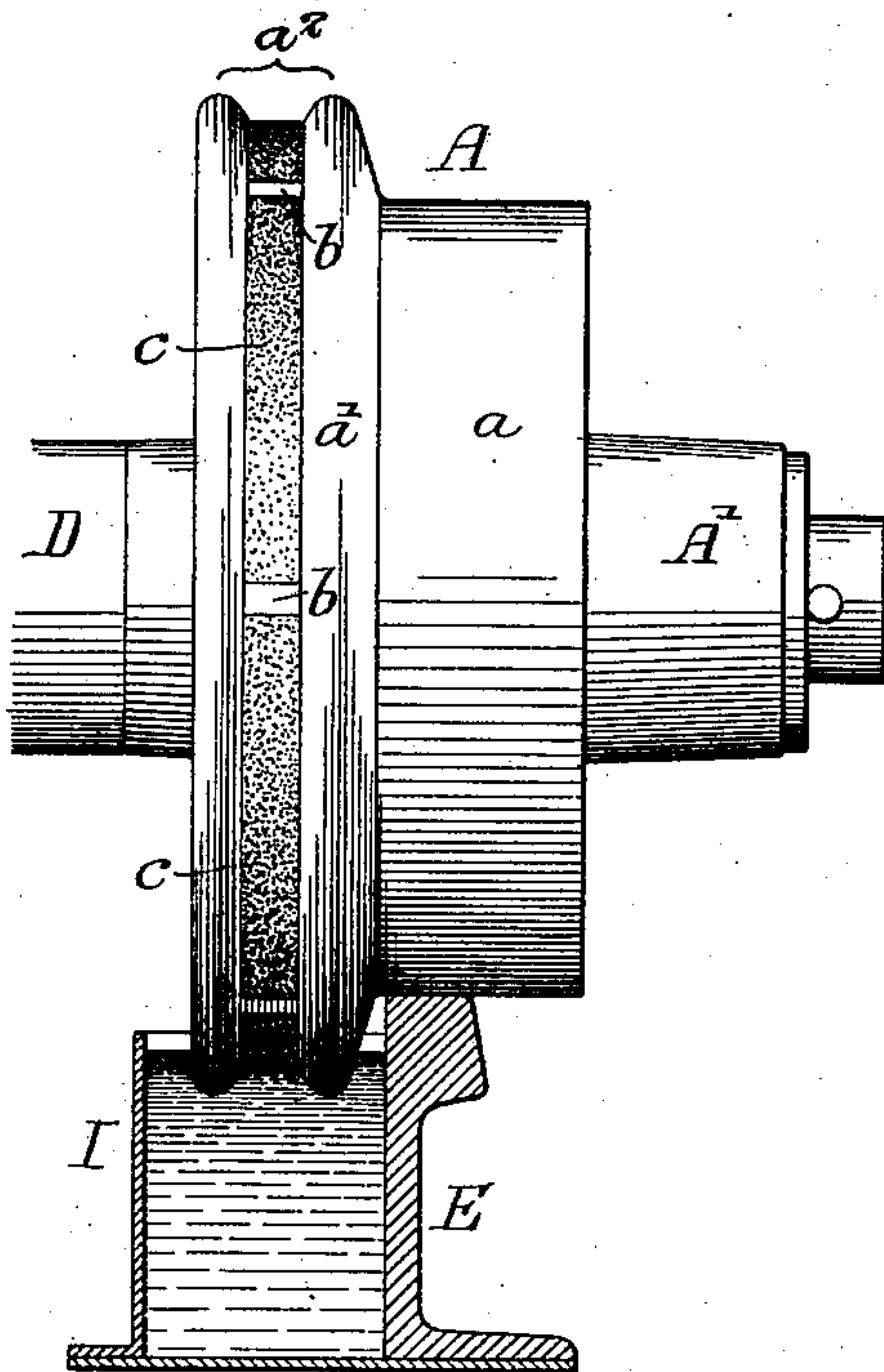


Fig. 2.

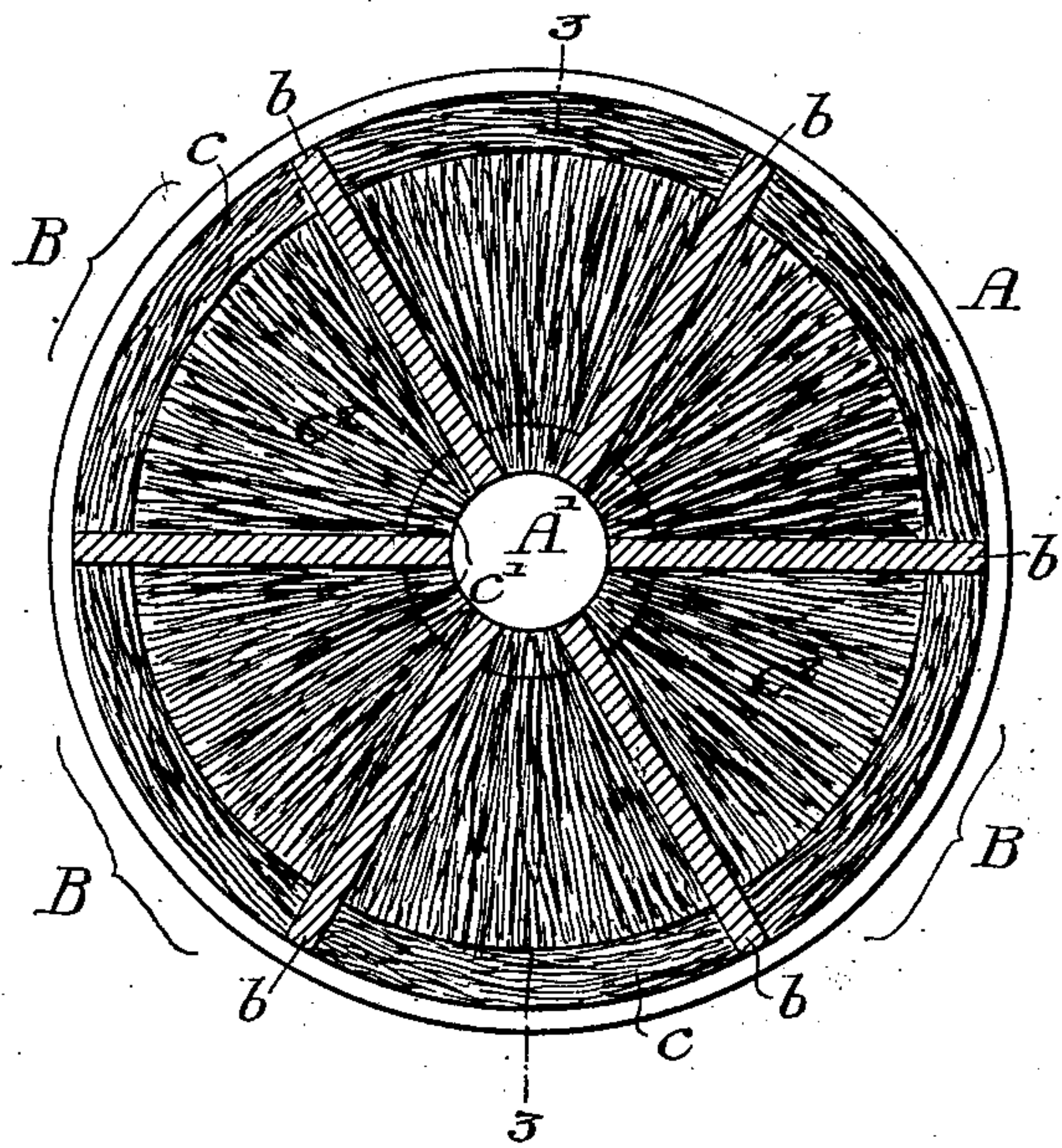


Fig. 3.

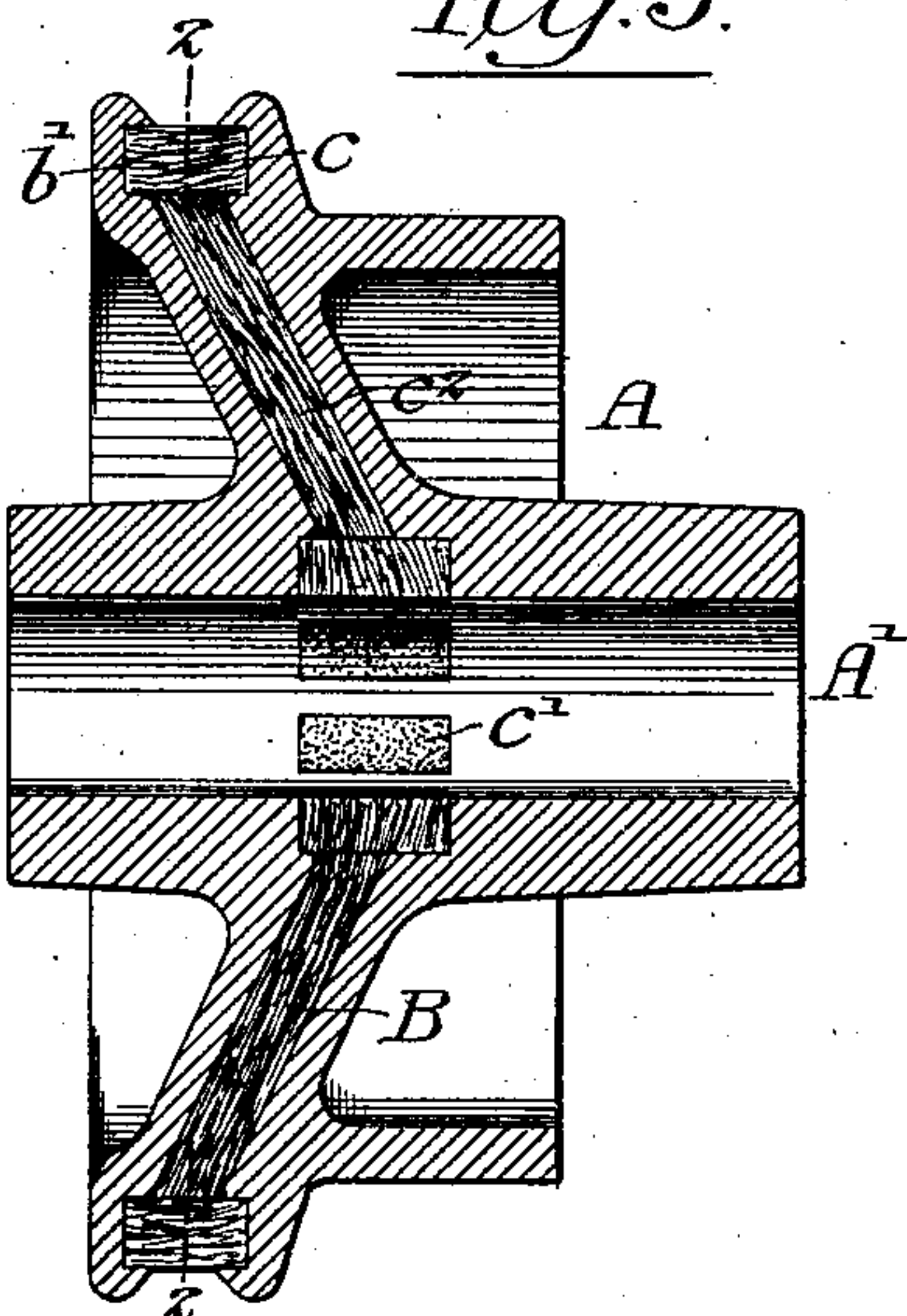
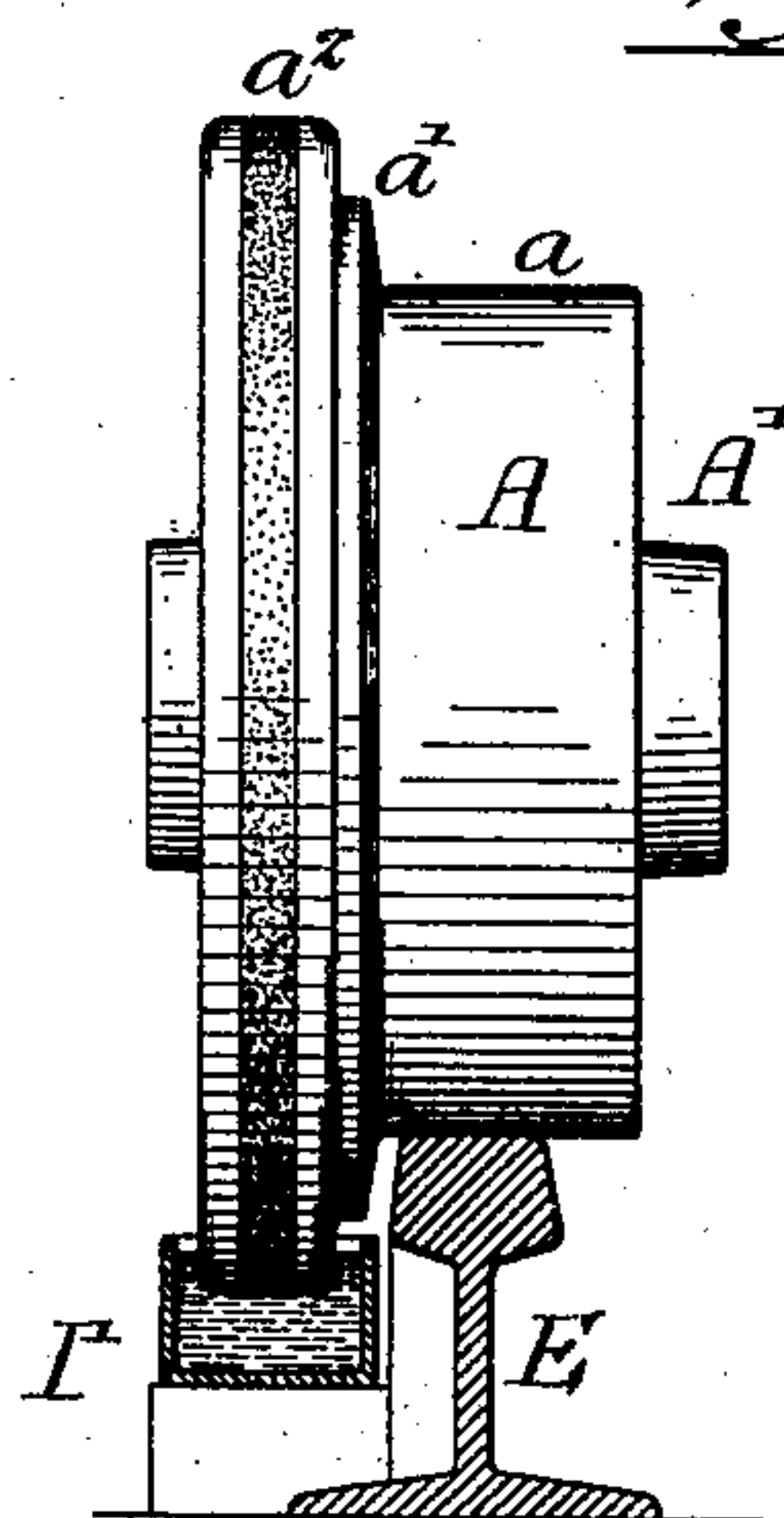


Fig. 4.



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2 Sheets—Sheet 2.

Fig. 5.

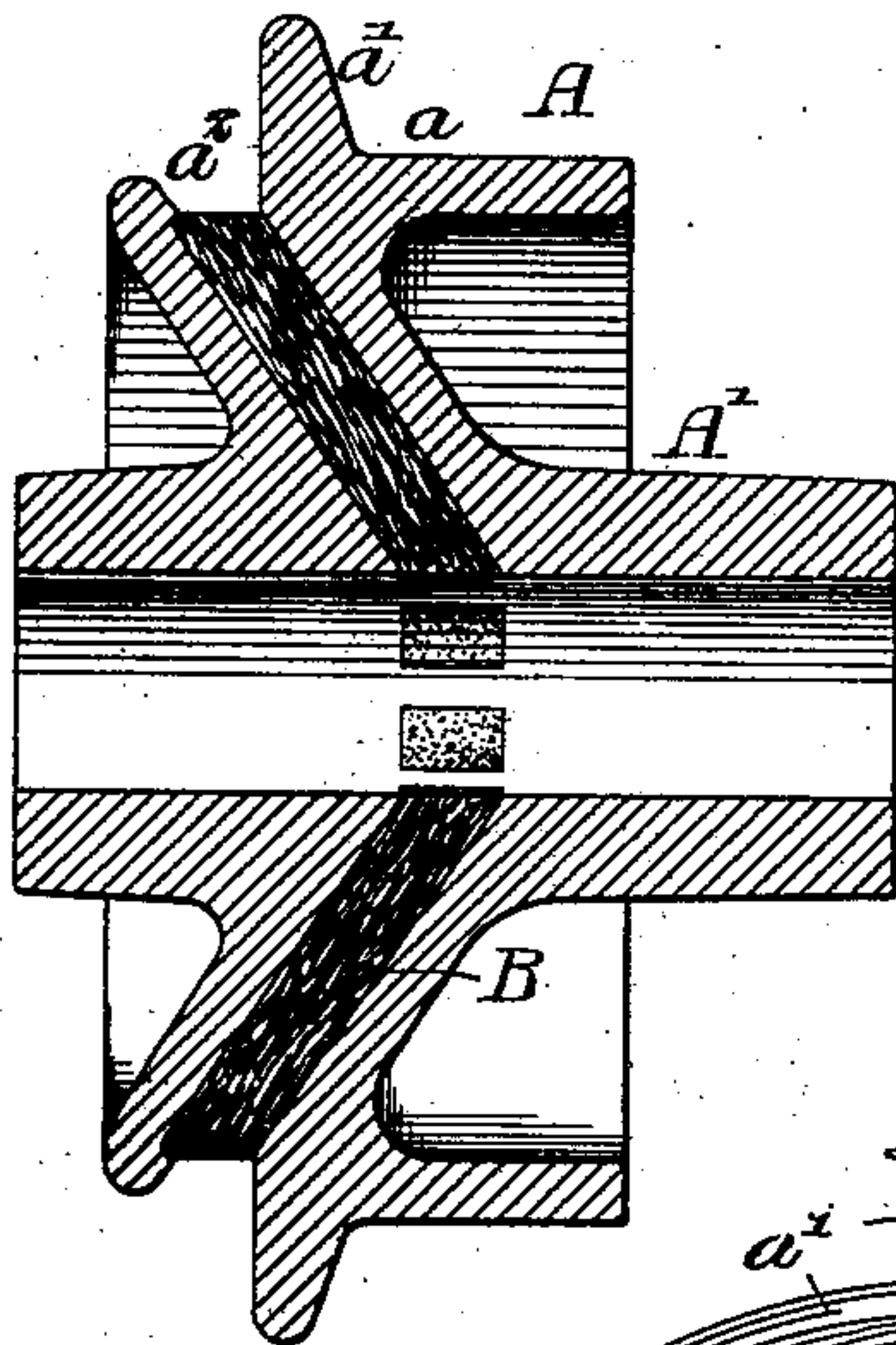


Fig. 6.

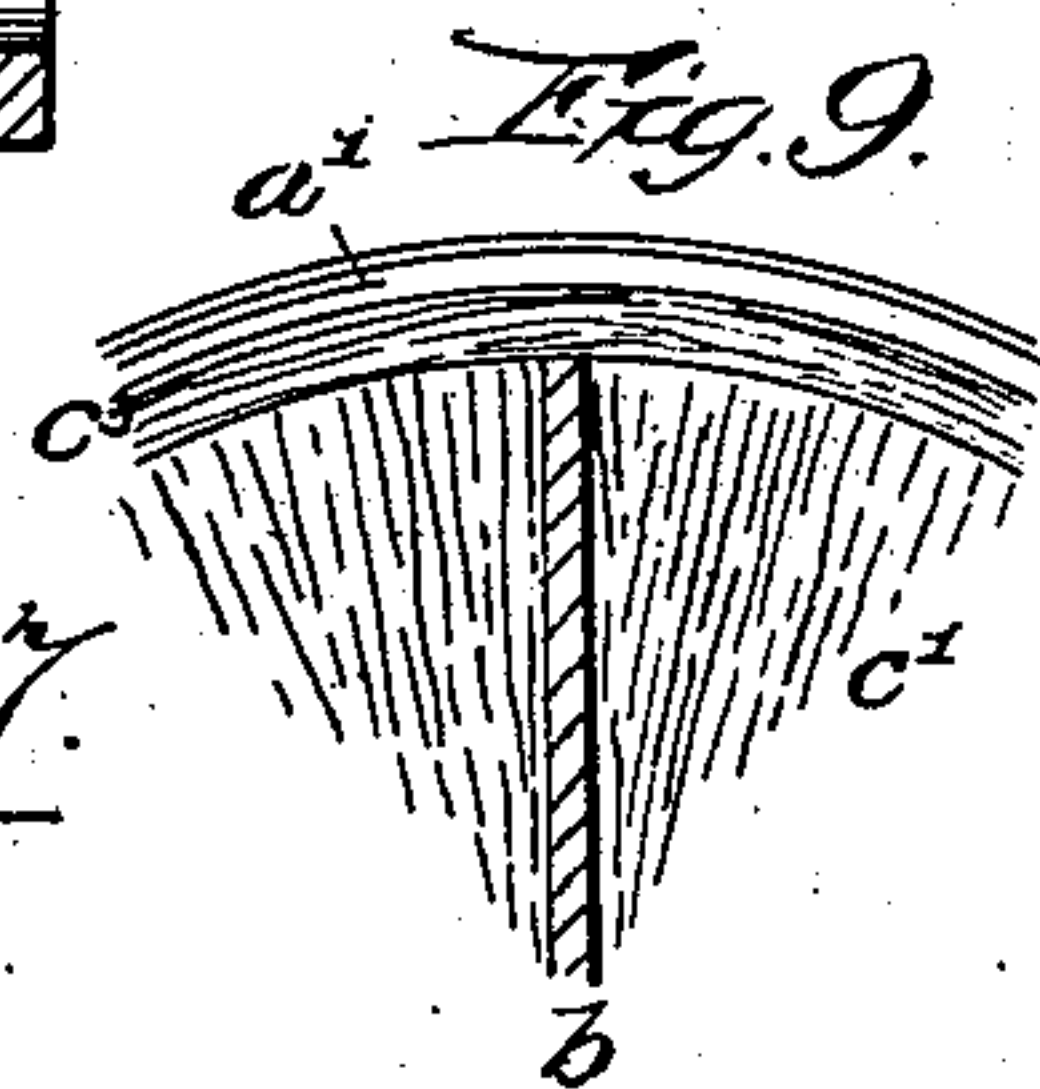
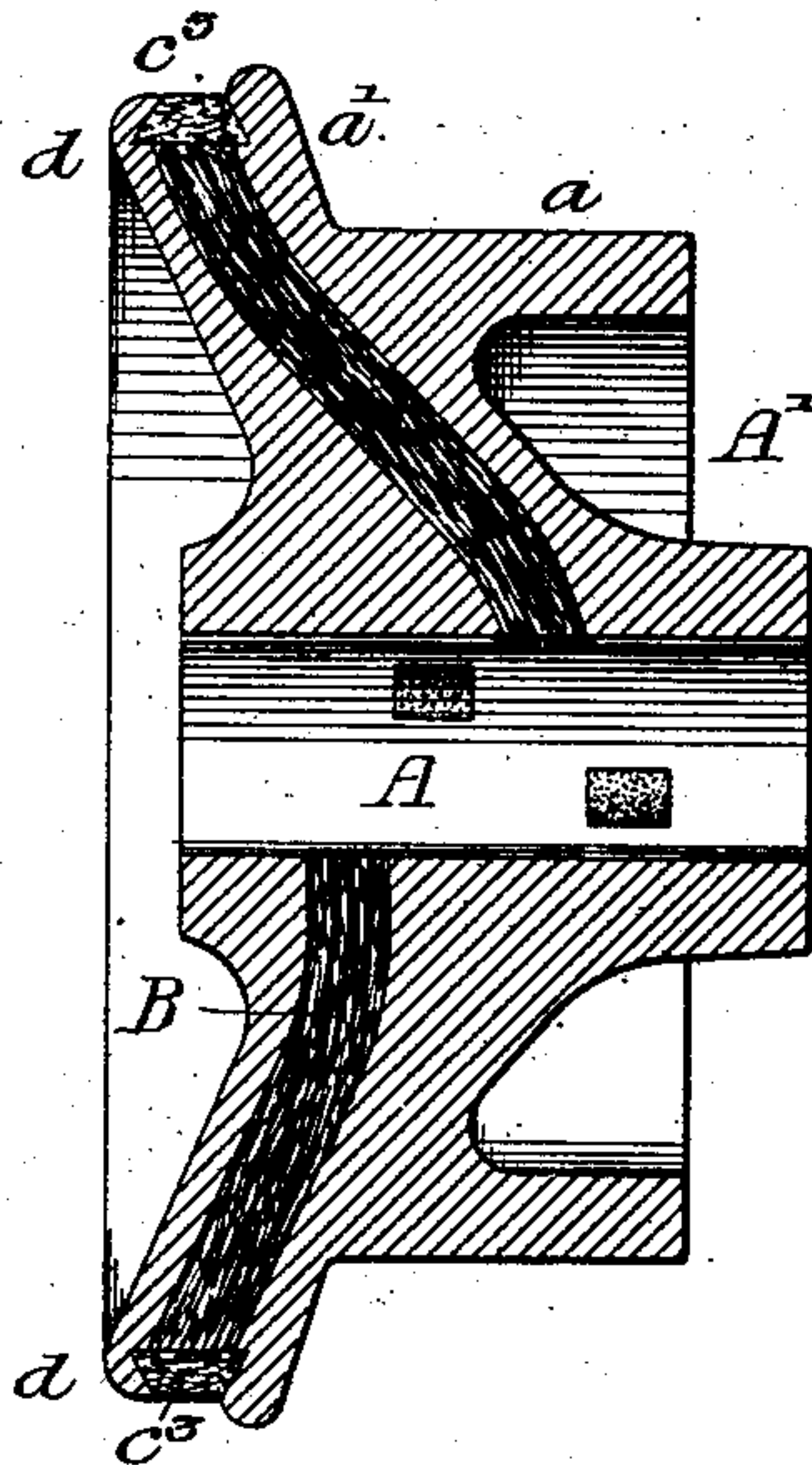


Fig. 7.

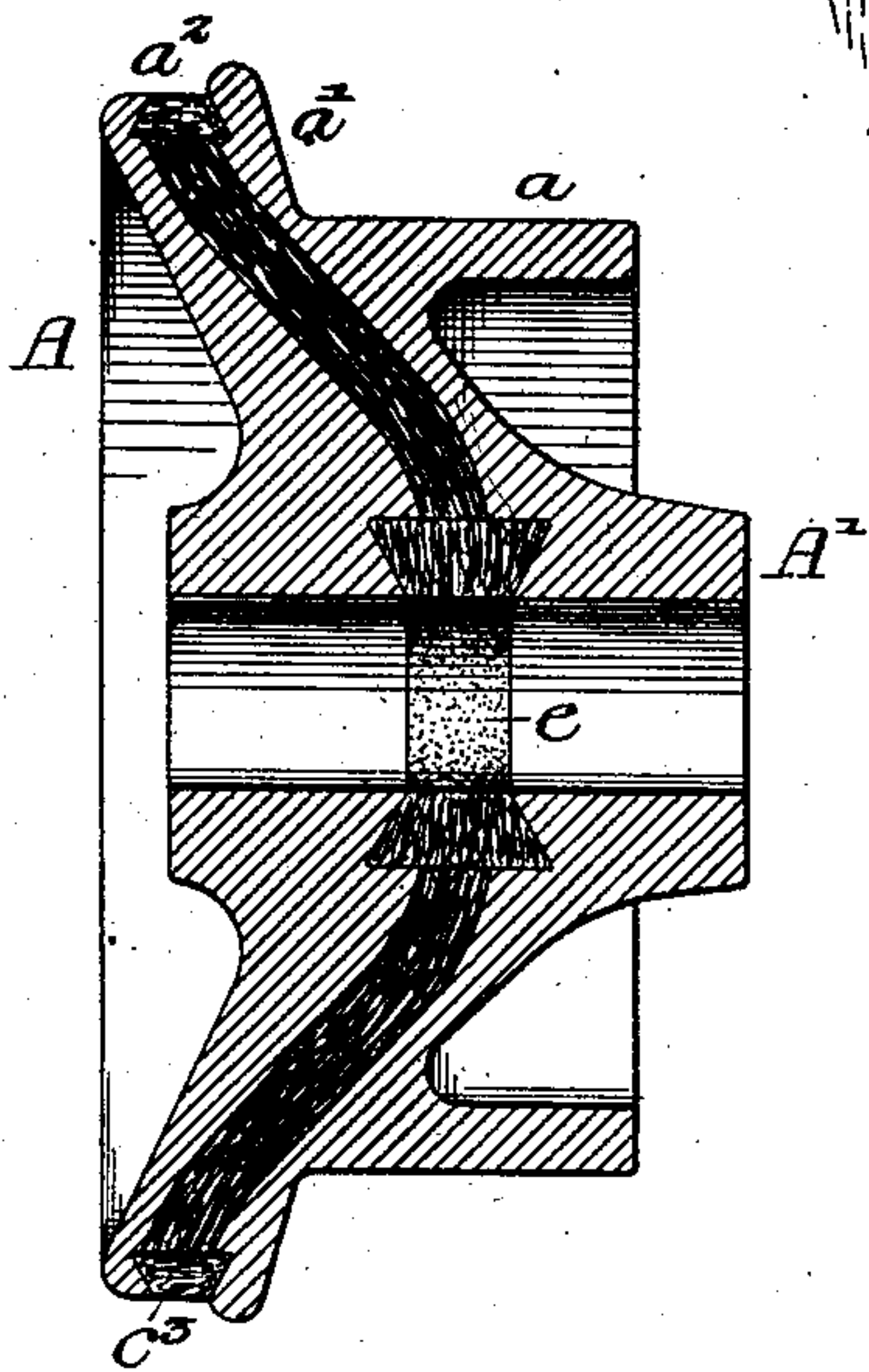
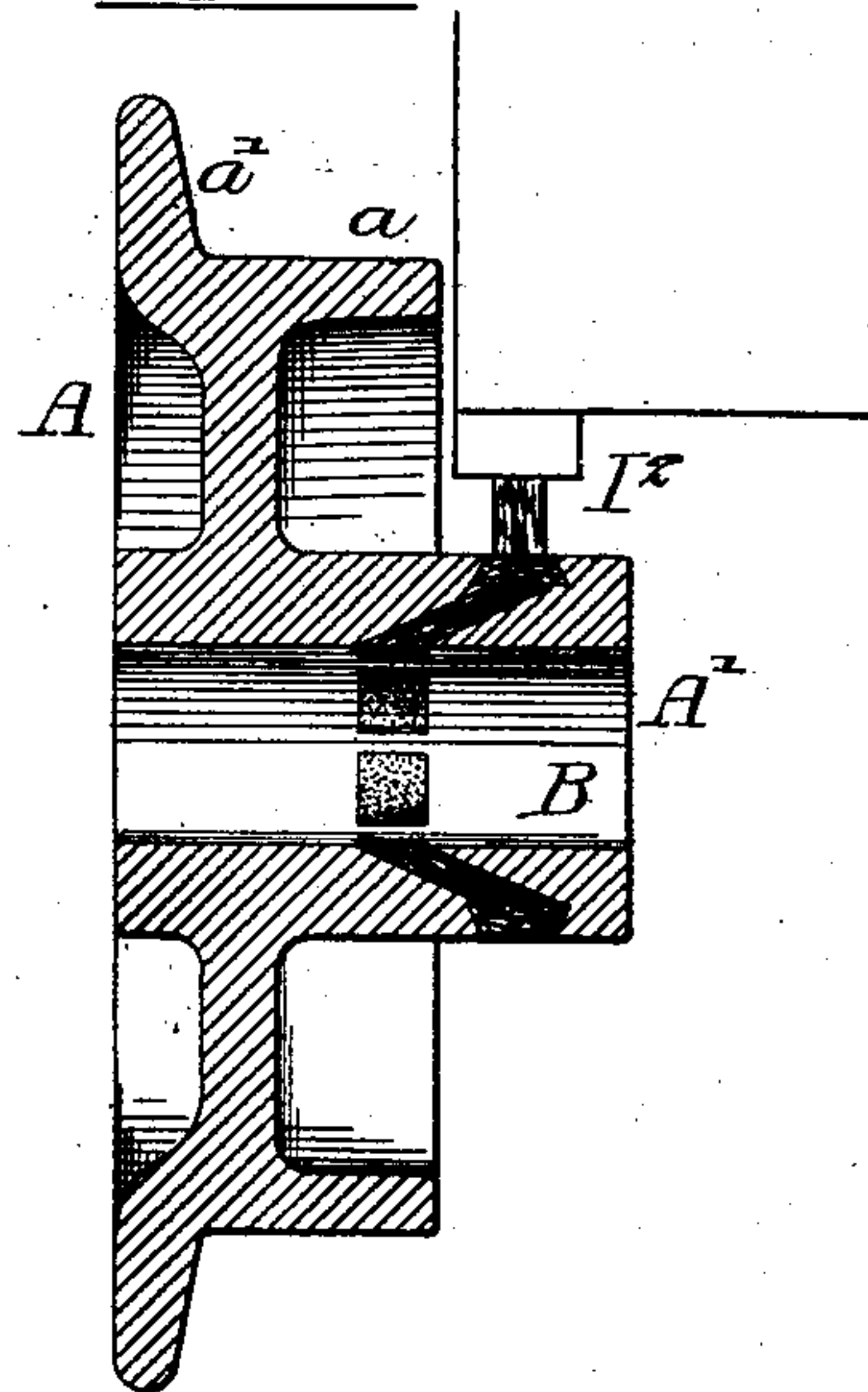


Fig. 8.



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WHEEL OR PULLEY.

SPECIFICATION forming part of Letters Patent No. 696,320, dated March 25, 1902.

Application filed December 5, 1900. Serial No. 38,835. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. DODGE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Wheels or Pulleys, of which the following is a specification.

The object of my invention is to provide means for lubricating the journals or axles of wheels from an exterior point on the wheel
10 and to prevent the entrance of dirt and other foreign matter to the bearing.

My invention is especially applicable to small wheels or carriers used on conveyers, which must be kept constantly lubricated,
15 and where it is impossible to lubricate each wheel through an oil-hole, as the travel of the conveyer cannot be interrupted.

In the accompanying drawings, Figure 1 is an edge view of a trolley-wheel, illustrating
20 my improvement. Fig. 2 is a sectional view on the line 2 2, Fig. 3. Fig. 3 is a section on the line 3 3, Fig. 2; and Figs. 4 to 9, inclusive, are views illustrating modifications of my invention.

25 I will describe my invention in connection with the trolley-wheel of a conveyer; but it will be understood that the invention may be applied to any wheel or pulley without departing from my invention.

30 A is a wheel, in the present instance made in a single casting. This wheel has a tread working face a and a flange a' .

A' is the hub of the wheel. Back of the flange in the present instance is an extension a^2 .
35

I cast channels B in the wheel, as shown. These channels are preferably tapered from the periphery of the hub, and they are open at the periphery and at the hub. These channels are separated by partitions b . (Clearly shown in the sectional view, Fig. 2.) The channel shown in Fig. 3 has an undercut recess b' at the periphery of the wheel and is enlarged at the hub, as shown. In the present instance I have shown six channels; but it will be understood that any number of channels may be used without departing from my invention, the size and the number of the channels depending upon the amount of lubricant
45 required. I pack the channels with any suit-

able conveying medium for the oil or other lubricating liquid. I preferably use felt or cotton wadding, which will readily become saturated with the oil or other lubricant. In using felt I preferably cut it to fit the tapered
55 channels B, and I place the felt in the channels in such a manner that it will not be condensed and prevent the flow of the lubricant. The lips forming the undercut recess b' hold the felt in position, and, if necessary, small
60 lugs on the wheel may extend into the channels for the same purpose.

By the construction illustrated any oil or other lubricant applied to the outer surface of the absorbent material will be transmitted
65 through said material to the axle or journal of the wheel, thus keeping the wheel lubricated and at the same time preventing the passage of dirt or other foreign material to the journal, as the felt or cotton will act as
70 a filter for the lubricant.

D is the journal for the wheel A, and E is a rail upon which the wheel travels. At one side of the rail in the present instance, Fig. 1, is a trough I, containing the lubricating
75 liquid.

The rail E is depressed opposite the trough, so as to allow the portion a^2 of the wheel to travel through the trough. The absorbent material will take up sufficient lubricant to
80 keep the axle or journal of the wheel properly lubricated.

As shown in Figs. 2 and 3, I provide three sections of felt for each channel, one section c at the periphery fitting the space b' , one
85 section c' at the hub, and an intermediate section c^2 between the sections c c' , although in some instances a single piece of felt may be used, as in Fig. 5, extending from the periphery to the hub.
90

When the wheel shown in Fig. 5 is used, a deep trough is necessary, or a wiper, such as that shown in Fig. 8, may be used in place of the trough.

It will be understood that the channels B
95 may extend to any point desired, the construction depending altogether upon the design of the apparatus on which the wheels are mounted.

In Fig. 4 I have shown an extra flange
100

through which the channels B extend, and so arranged that it will travel in a trough I' independent of the rail.

In some instances I may use the construction shown in Figs. 6 and 9, where the channels B connect with an annular undercut channel *d* in the periphery of the wheel, the partitions extending only to the channel *d*, and mounted in this channel is an annular strip of felt or other absorbent material *c*³, which is in contact with the felt or conducting material in the channels B, so that the lubricant is first applied to the annular strip and is absorbed by the strips in the radial channels. In Fig. 6 I have also shown the channels staggered, while in Fig. 3 they have the same degree of inclination toward the axis.

In Fig. 7 I have shown a construction similar to Fig. 6, with an independent channel *e* within the hub, so that a continuous piece of felt or equivalent material may be placed in this channel for conveying the lubricant to the journal or axle.

In Fig. 8 I have shown the channels in the hub only, and in this figure I have shown a wiper I² for supplying the lubricant to the absorbent material in the channels. It will be understood that different appliances may be used for supplying the absorbent material with the lubricant without departing from my invention.

While I have shown the wheel made of a single casting and the channels cored therein, it will be understood that the wheel may be made in two or more parts and the parts secured together as desired; but in the type of small wheels shown I prefer to make the wheel of a single casting.

I claim as my invention—

1. The combination of an axle, a traction-wheel having one or more radiating channels therein and absorbent material arranged in said channel or channels and extending from the periphery of the wheel to the axle and packed so as to convey lubricating material from a point at the periphery of the wheel or pulley to the journal or axle, substantially as described.

2. The combination of a wheel or pulley having a series of radiating channels extending from the periphery of the wheel or pulley to the journal or axle, said channels being larger at the periphery than at the hub, substantially as described.

3. The combination of a wheel or pulley having a series of radiating partitions therein forming channels wider at the periphery than at the hub, absorbent material in said channels to form a medium for the conveyance of lubricating material from a point at the exterior of the wheel to the journal or axle, and means for preventing the withdrawal of

the absorbent material, substantially as described.

4. The combination of a wheel or pulley having one or more radiating channels extending from the hub to the periphery of the wheel, and three sections of absorbent material in each channel, substantially as described.

5. The combination of a wheel or pulley having an annular groove at its periphery, and having one or more radiating channels extending from the said annular groove to the bearing for the axle or journal, with absorbent material in the annular groove and in the channel or channels, substantially as described.

6. The combination of a wheel or pulley having an annular groove in the hub, an annular groove in the periphery, and one or more channels forming communication between the groove at the hub and the groove at the periphery, and absorbent material within the channels and grooves, substantially as described.

7. As a new article of manufacture, a wheel made of a single casting having a working face and having one or more radiating channels therein extending from the hub to the periphery at one side of the working face, substantially as and for the purpose described.

8. As a new article of manufacture, a wheel made of a single casting having a hub, a tread, a flange and an extension back of the flange, and having one or more radiating channels open at the extension and at the hub, substantially as and for the purpose specified.

9. The combination of a wheel or pulley having one or more radiating channels therein extending from the periphery of the wheel to the hub, absorbent material within the said channel or channels, and a trough for the lubricant, so arranged in respect to the wheel that the surface of the absorbent material at the periphery will travel through the trough and take up lubricant therefrom, substantially as described.

10. The combination in a wheel having one or more radiating channels therein and absorbent material arranged in said channel or channels, an extended surface of absorbent material at the periphery of the wheel communicating with the absorbent material in the channel or channels, whereby lubricant applied to the periphery of the wheel will be conveyed by the absorbent material to the journal or axle, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES M. DODGE.

Witnesses:

WILL. A. BARR,
JOS. H. KLEIN.