

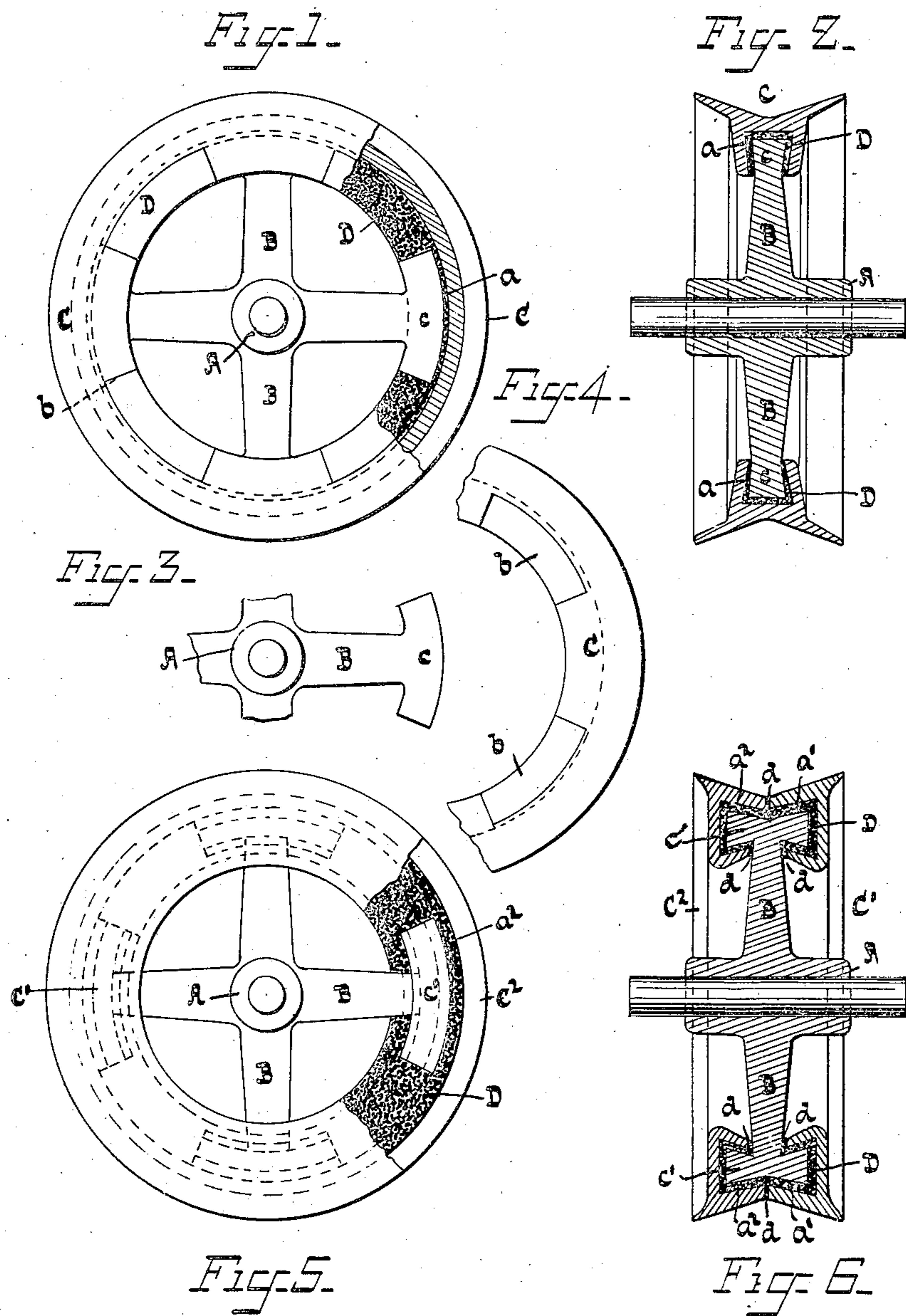
(No Model.)

3 Sheets—Sheet 1.

C. W. THOMAS.
SHEAVE.

No. 427,810.

Patented May 13, 1890.



Witnesses.

A. Faber du Faur
William Miller

Inventor.

Charles W. Thomas

by

A. Faber du Faur
Attorney

(No Model.)

3 Sheets—Sheet 2.

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Fig. 7—

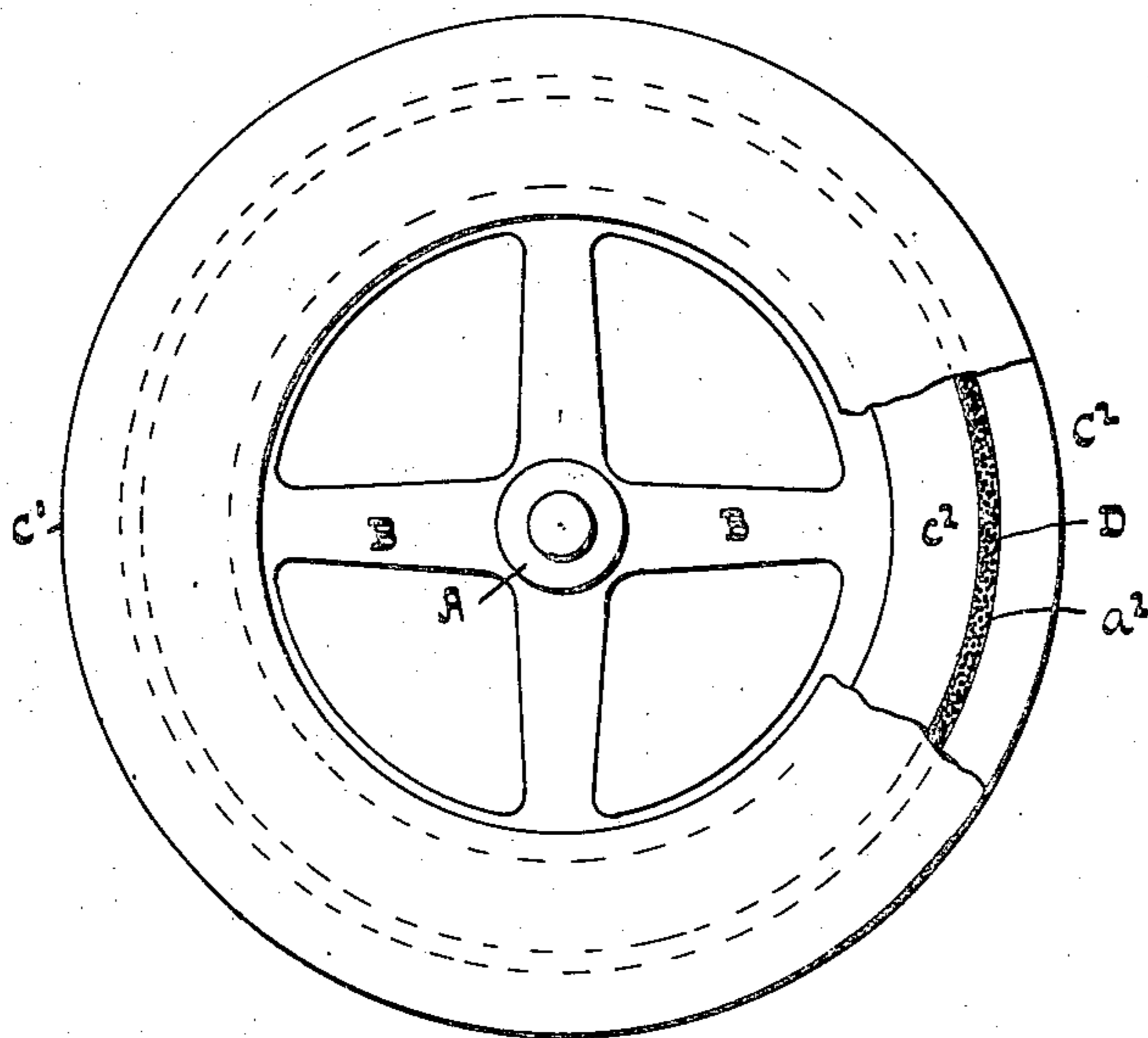
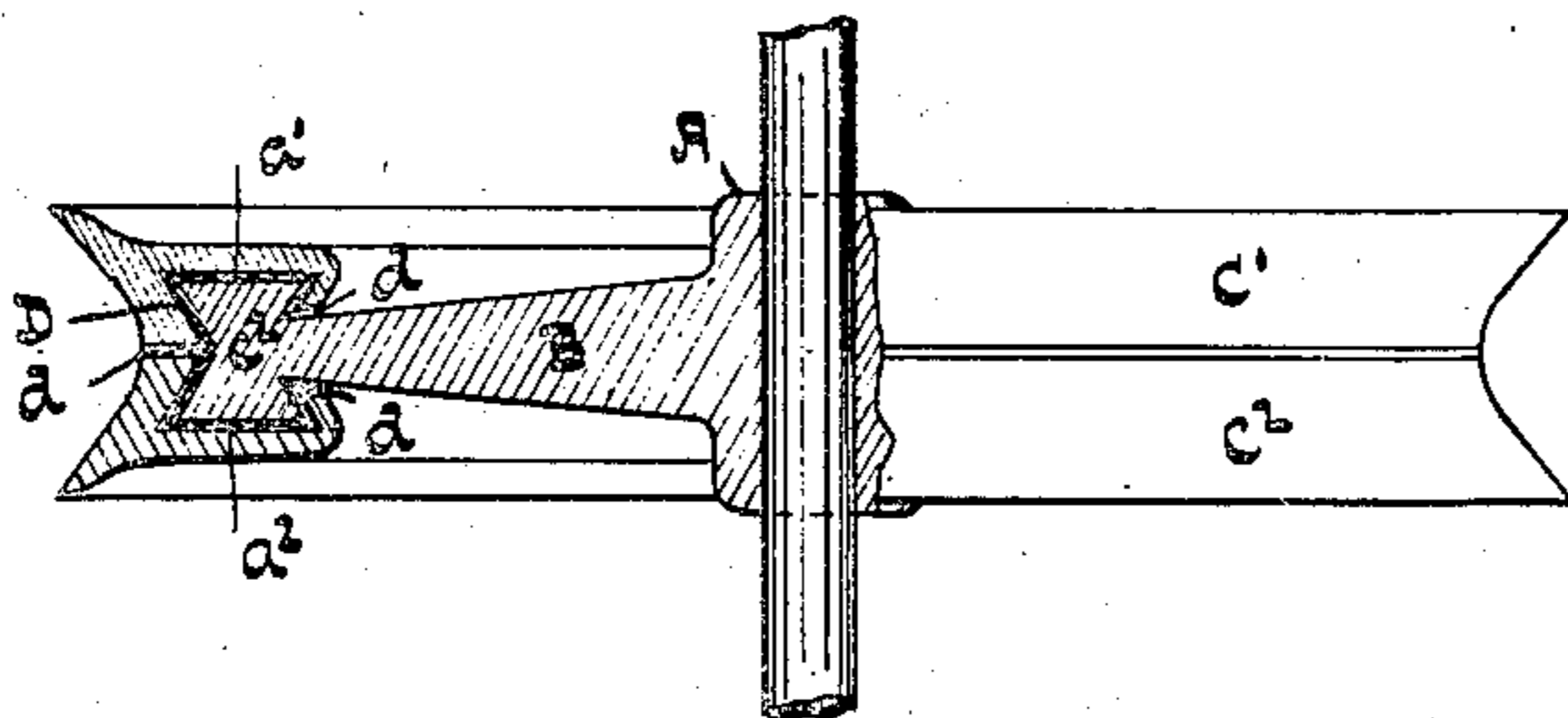


Fig. 8.



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Fig. 9.

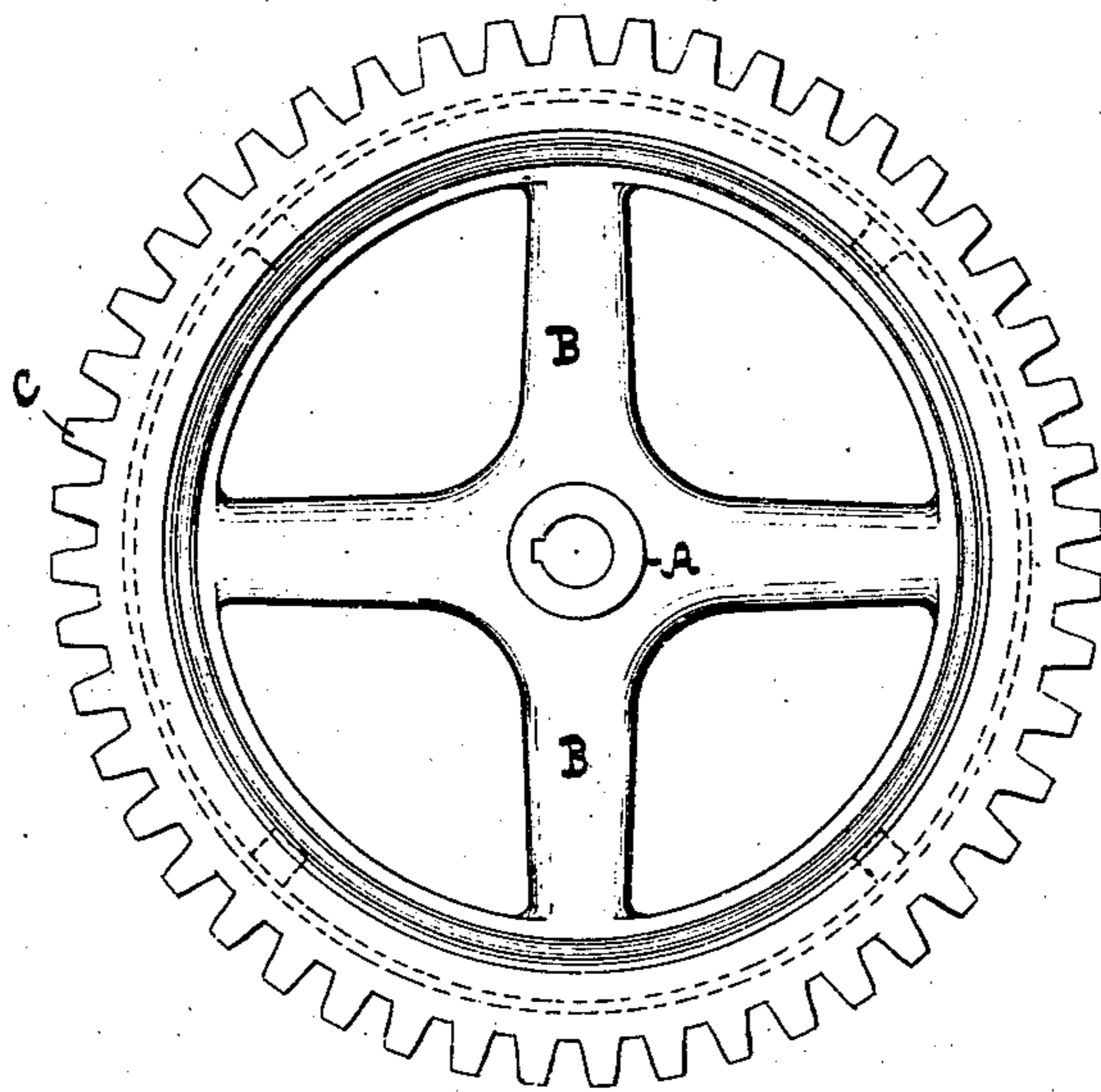
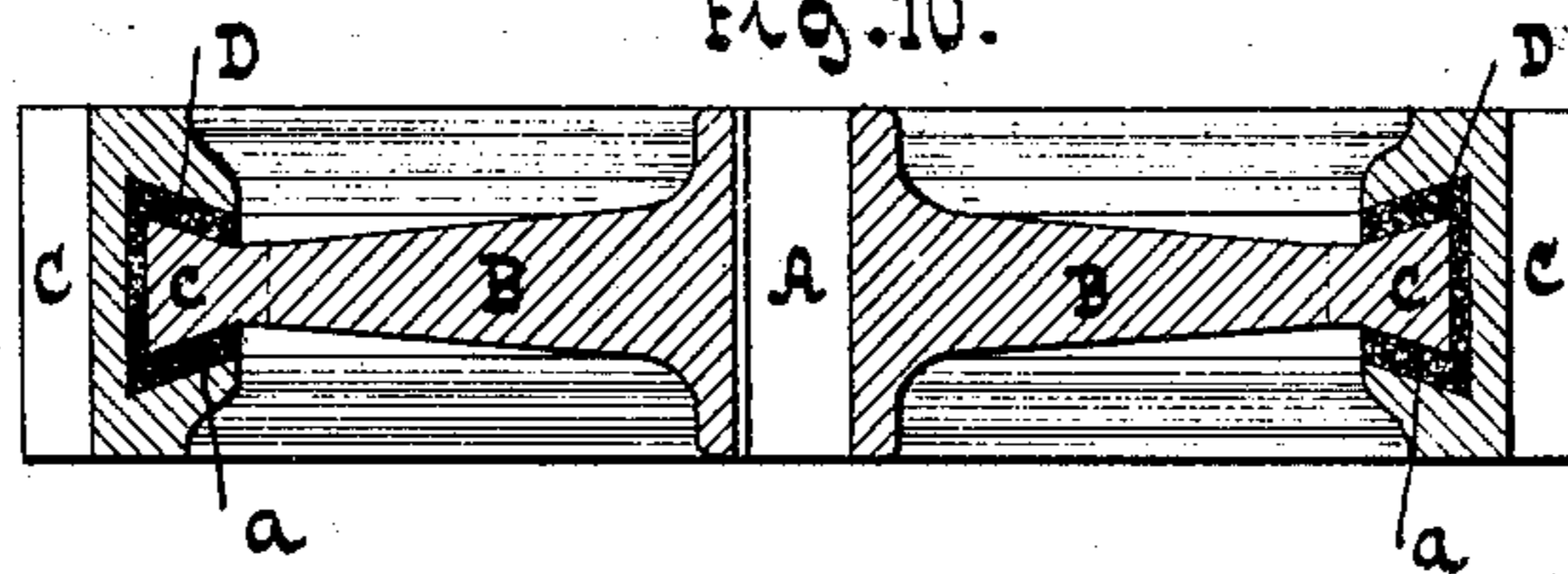


Fig. 10.



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by *A. Faber du Faur*
his Attorney

UNITED STATES PATENT OFFICE.

CHARLES W. THOMAS, OF JERSEY CITY, NEW JERSEY, ASSIGNOR OF TWO-THIRDS TO PHILIP VAN VOLKENBURGH, JR., OF NEW YORK, N. Y.

SHEAVE.

SPECIFICATION forming part of Letters Patent No. 427,810, dated May 13, 1890.

Application filed October 26, 1889. Serial No. 328,280. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. THOMAS, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Sheaves and the Like, of which the following is a specification.

My invention has reference to improvements in sheaves, gear-wheels, and the like, and has for its object to provide means for deadening the noise or rattling usually accompanying the running of metallic sheaves or gear-wheels in which the rim and hub are cast integral or are united directly to each other, my said invention being especially applicable to sheaves such as are used in cable railways for supporting the cable, and serves to obviate the usual noise or rattling caused by the passage of the cable over the sheaves.

To the above-stated end my invention consists, essentially, in a sheave or the like having its rim separated from the hub by an interposed cushion of non-resonant material—such as lead, Babbitt metal, gutta-percha, or other suitable substances—as fully pointed out in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 represents a face view of a sheave for cable railways constructed according to my invention, part of the rim being removed. Fig. 2 is a central section of the same. Figs. 3 and 4 illustrate detail parts. Fig. 5 is a face view of a modification, part of the rim being broken away. Fig. 6 is a face view of a second modification with part of the rim and cushion removed. Fig. 7 is a sectional elevation of Fig. 6. Fig. 8 is a sectional plan or top view of Fig. 7. Fig. 9 is a similar view showing a gear-wheel constructed according to my invention. Fig. 10 is a central transverse section of Fig. 9.

Similar letters indicate corresponding parts.

In the drawings, referring at present to Figs. 1, 2, 3, and 4, the letter A designates the hub of a sheave adapted for cable railways. B B are the arms, preferably cast integral with the hub to form a spider, and C is a separate rim constructed to be united to the arms together with an interposed cushion of non-resonant material D. In the rim is formed a

continuous circumferential groove or socket *a*, which may be provided with tapering walls. At suitable distances apart, corresponding to the distance between the arms B B, one wall of the socket is cut away to form openings *b*, permitting the insertion of the arms into the groove or socket. The arms may be provided at their ends with suitable heads *c*, tapered to correspond to the groove or socket *a* and of such dimensions as to leave spaces on three sides between said arms and the rims for the interposition of the cushion of non-resonant material. The arms having been passed through the openings and into the groove or socket, the spider is turned to bring the heads *c* into positions intermediate of the sockets, whereupon the non-resonant material in a melted state is cast into the space or mold formed between the arms and the rim, sufficient material being poured or forced in to bring the same flush with the outer face of the rim—that is, to fill the openings *b*—whereby any sliding or rotary movement of the rim with respect to the arms is prevented. It will be readily seen that the hub is entirely insulated or out of direct contact with the rim through the medium of the non-resonant cushion. Consequently there will be no noise or rattling as the cable runs over the pulley.

After the rim and spider have been united, as described, the crown of the pulley may be made true in the usual manner. Various other modes may be followed in the general construction of the pulley, sheave, or gear. For instance, in Figs. 5 and 6 I have shown the rim formed of two sections *C'* and *C''*. In this case the rim-sections are each provided with a continuous groove or socket *a'* *a''*, formed in their adjoining sides, said grooves or sockets being wedge-shaped or tapering. The arms B B are provided with similar wedge-shaped heads *c'* *c''* of such dimensions as to leave space on all sides for the interposition of the cushion, and a suitable space is also left between the adjoining sides of the rim-sections, as at *d*.

In Figs. 7 and 8 I have shown the arms B B terminating in a continuous ring *c'*, to which the ring-sections are united as before. In this form less material is required for the cushion. To prevent shifting of the rim in

the two last cases, it is expedient to corrugate or indent the various surfaces of the rim and heads.

In Figs. 9 and 10 I have shown a gear-wheel
5 constructed according to my invention.

The use of gutta-percha as a cushion serves both to deaden the sound and to form an electrically-insulated pulley or sheave.

What I claim as new, and desire to secure
10 by Letters Patent, is—

1. A sheave or the like having its rim separated from the hub by an interposed cushion of non-resonant material, said cushion serving to attach the rim to the hub, substantially
15 as described.

2. A sheave or the like having its rim separated from the hub by an interposed material, serving to entirely insulate the rim from the hub and to unite the two, substantially
20 as described.

3. A sheave or the like having its rim entirely separated from the hub by an interposed non-resonant and insulating material, said material also rigidly uniting the rim and the
25 hub, substantially as described.

4. The combination, with the hub and its

arms, of a rim provided with an internal socket and with transverse openings for the passage of the arms into the sockets, and an interposed uniting material, substantially as
30 described.

5. A sheave or the like consisting of a sectional rim, each section containing sockets, arms extending into said sockets, and an interposed uniting material adapted to entirely
35 insulate the arms from the rim, substantially as described.

6. A sheave or the like having its rim in two circumferential sections, each section being provided with dovetailed grooves and its
40 arms provided with dovetailed terminations, and an interposed cushion uniting the rim to the arms and insulating the rim from the hub, substantially as described.

In testimony that I claim the foregoing as
45 my invention I have signed my name, in presence of two witnesses, this 19th day of October, 1889.

CHARLES W. THOMAS.

Witnesses:

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WILLIAM MILLER.