

C. F. WILSON.
TROLLEY WHEEL.

APPLICATION FILED JAN. 17, 1905.

Fig. 1.

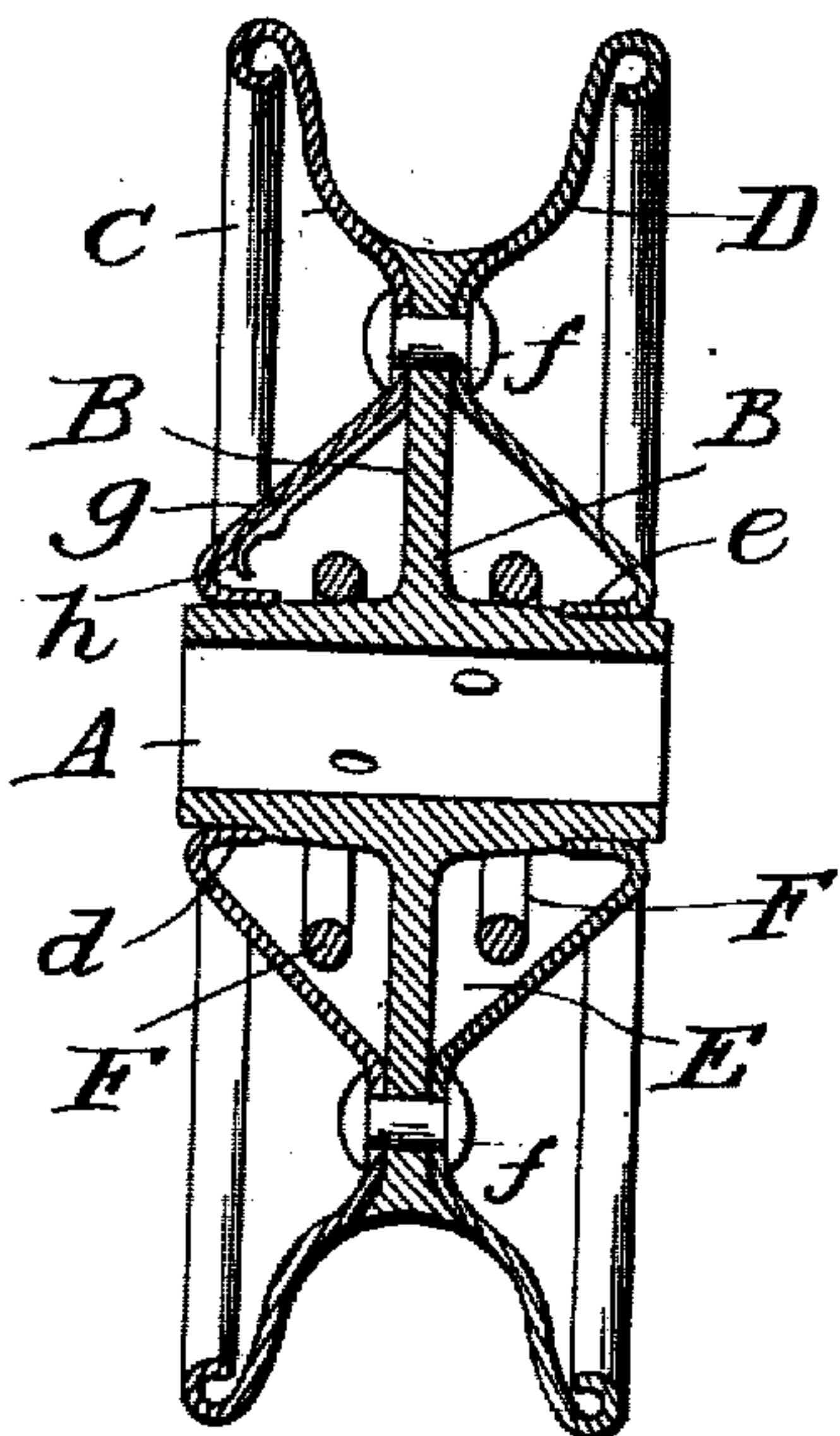


Fig. 2.

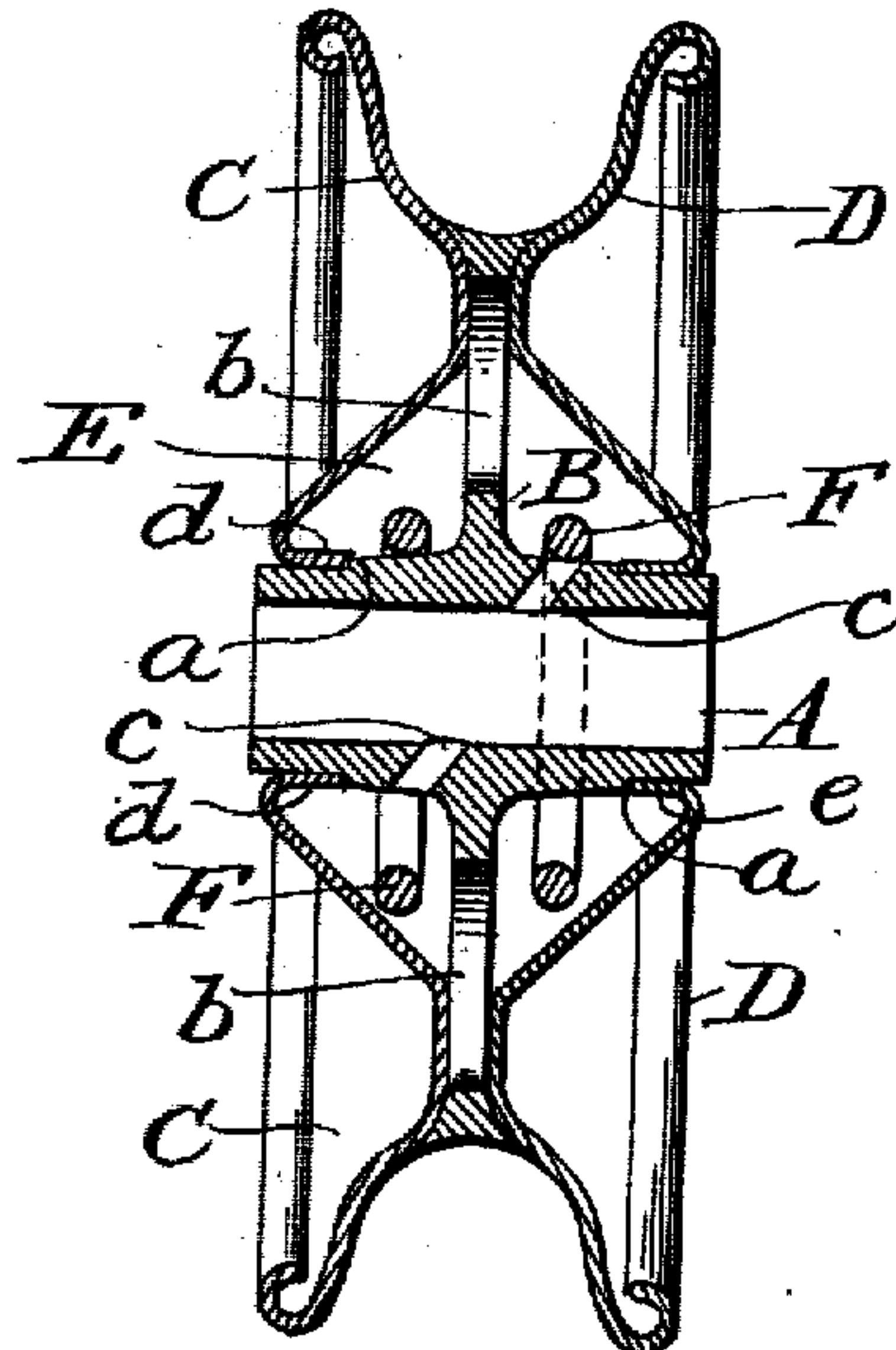


Fig. 3.

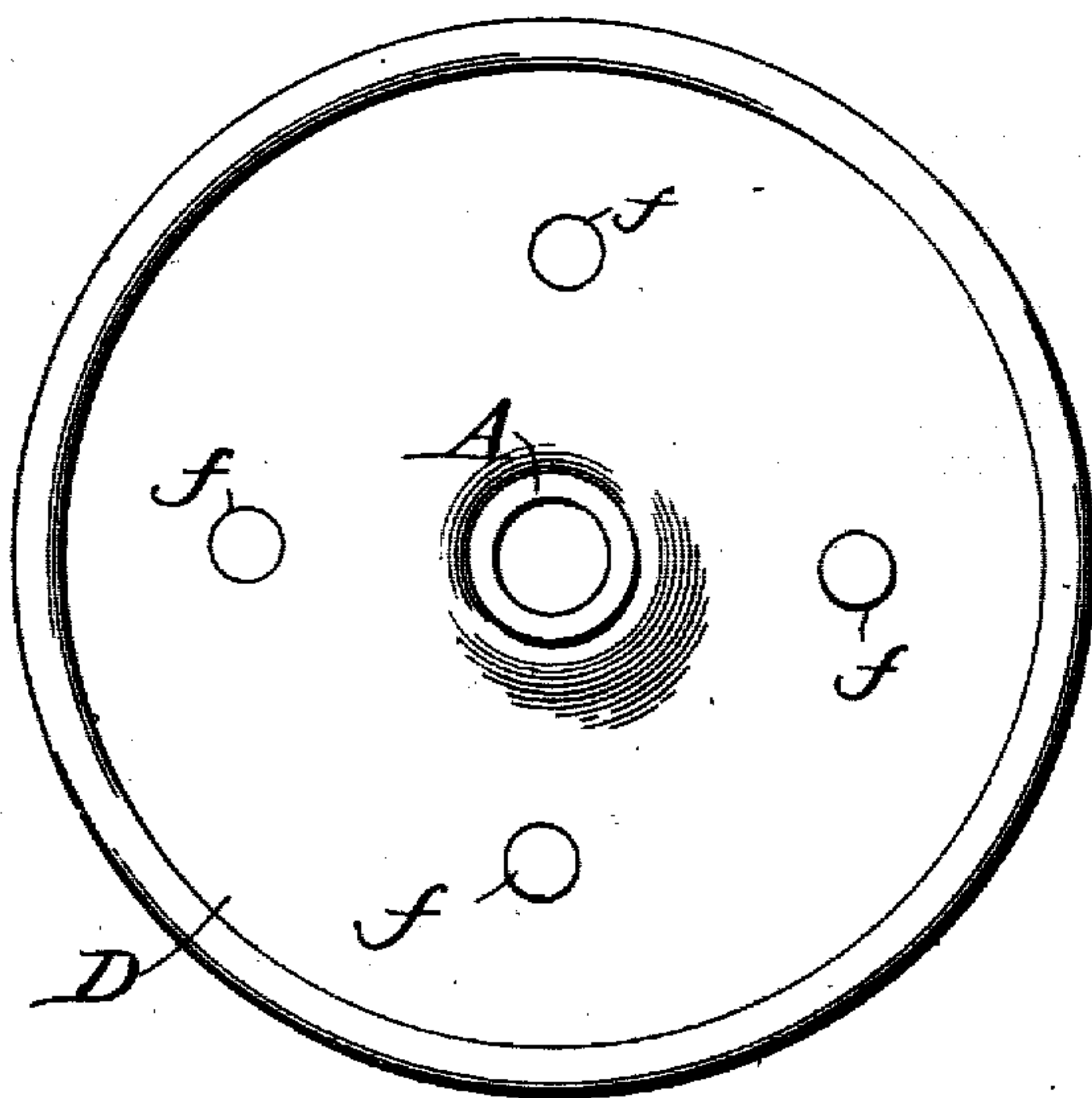
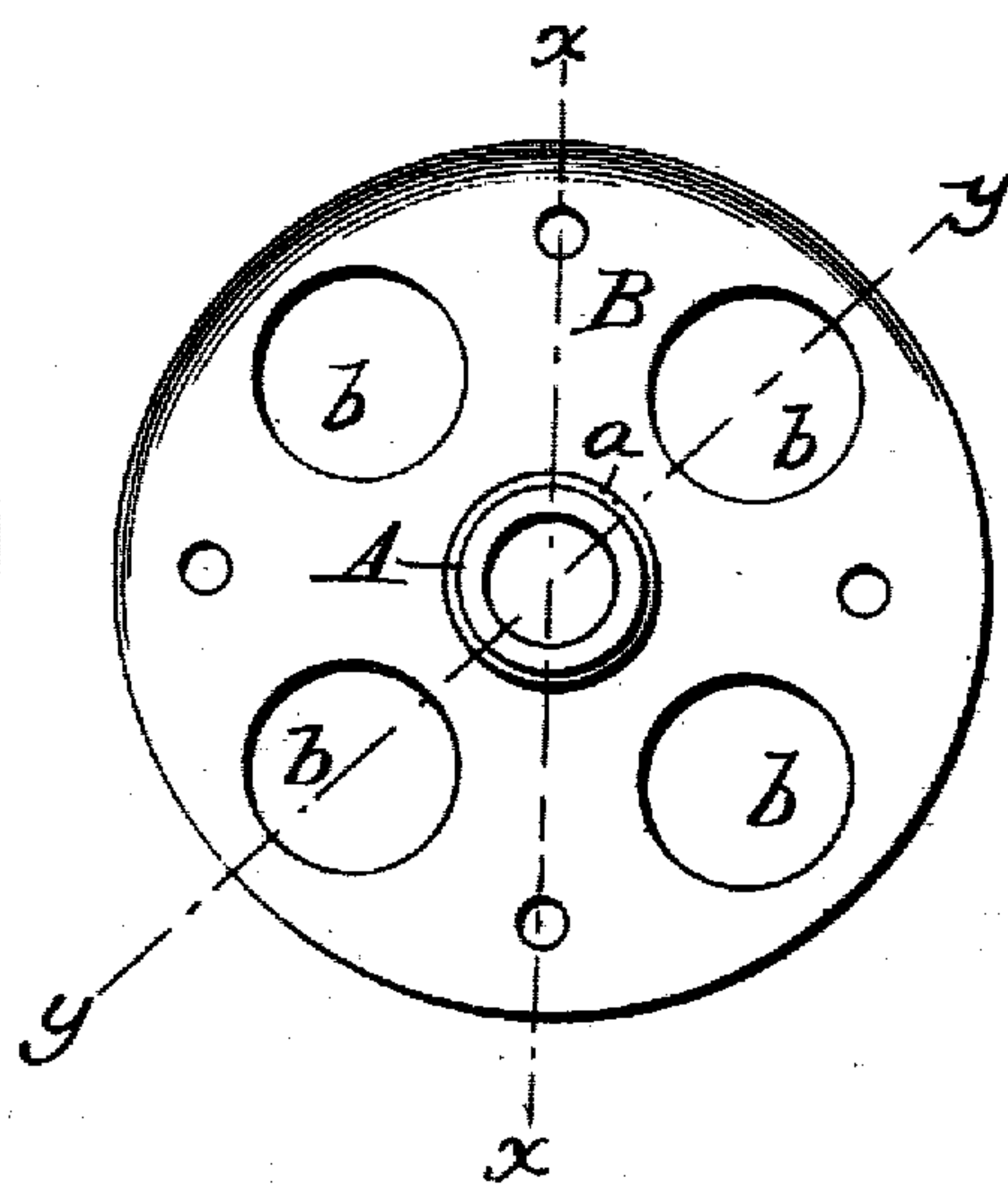


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES F. WILSON, OF NEW YORK, N. Y.

TROLLEY-WHEEL.

No. 825,501.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed January 17, 1905. Serial No. 241,410.

To all whom it may concern:

Be it known that I, CHARLES F. WILSON, a citizen of the United States, residing in the borough of Brooklyn, city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Trolley-Wheels, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My present invention relates to the construction of trolley-wheels, especially such as are employed on railway-cars for contacting with the overhead wire and for taking the current from said wire and transmitting it to the electric motor by which the vehicle is propelled.

Among the principal objects of my invention are the production of a light, simple, and efficient trolley-wheel which may be easily and cheaply made and which will be strong and durable and afford all the desired conductivity and to provide accommodation for means for maintaining a constant lubrication of the wheel as it turns upon its arbor or shaft.

To accomplish the foregoing objects and to secure other and further advantages in the matters of construction and operation, my invention involves certain new and useful peculiarities of construction and relative arrangements or combinations of parts, as will be herein first fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical section and elevation of my improved wheel on a plane through the line *x x* of Fig. 4 and showing the exterior opening through which the lubricating material is supplied to the interior chamber. Fig. 2 is a view similar to Fig. 1, but on a plane through the line *y y*, Fig. 4, showing the openings through the vertical web connected with the hub. Fig. 3 is a side elevation corresponding with Fig. 1. Fig. 4 is a side elevation of the central hub and web or disk connected therewith or forming an integral part thereof, the same being detached from the other parts.

In all the figures like letters of reference wherever they occur indicate corresponding parts.

The improved wheel is made up of separate

parts which are afterward assembled and secured together to constitute the complete trolley-wheel.

A represents the hub, which carries at or near the central part of its length a projecting web or disk, (represented at B.) This web is preferably cast with the hub, although it might be applied as a separate piece, and the web and hub are made of copper, brass, bronze, or other metal or other composition best suited for the purpose of conducting electricity.

The ends of the hub are slightly reduced, so as to form an abutting ledge, as at *a a*, against which the side pieces may bear, and the web is perforated, as at *b b*, to reduce the weight of metal and to form openings through which lubricating material may pass from one side to the other of the interior chamber. The hub is provided also with perforations, as at *c c*, for the passage of lubricating material through to the arbor or shaft on which the wheel may be made to turn.

In connection with the hub and its web I employ two side plates, as C and D, which are preferably similar in outline and are intended to constitute the sides of the wheel. These side plates are made of thin metal and may be of malleable iron or of sheet-steel or other metal and struck up. They are preferably fashioned at their central parts as indicated in Figs. 1 and 2—that is, with intumed portions *d* and *e*, which fit tightly upon the reduced portion of the hub and against the ledges *a a* to form a close bearing therewith. The side plates bear also closely against the outer portion of the web B, but inside its rounded-out part, and are secured in place by rivets, as *f f*, which pass through perforations in the plates and in the web, the perforations for the rivets in the web being between the larger perforations *b*.

The outer portions of the side plates are beaded over or otherwise rounded off, so as not to injure the overhead wire, and the groove or channel for accommodating the wire is rounded out at bottom, the outer portion of the web B being preferably enlarged somewhat, substantially as indicated, so as to form a complete and perfect bearing for contact with the conducting-wire.

The side plates and the web are closely joined, so as to prevent leakage of lubricating

material at their place of union, the side plates extending beyond the perforations through the web, as indicated.

The two side plates and the hub and its web form a chamber E, which constitutes a receptacle for lubricating material, such as oil or plumbago or other suitable substance or mixture. This chamber being charged with lubricating material, the latter finds its way to the arbor or shaft through the perforations c. When the wheel is being revolved rapidly, as it is while it is traveling on the conducting-wire, the tendency is always to throw the lubricating material away from the hub, and thus to prevent the constant lubrication which is desirable. To overcome this disadvantage and to carry a small portion of the lubricant to the hub, I supply the chamber with loose rings, one or more, as F F, one on each side of the web and around the hub, these rings being of diameter considerably greater than the exterior of the hub. The rings F F reach well out to the outer extremity of the chamber, and as the hub turns they travel in contact with it, carrying a portion of the lubricant from the outermost part of the chamber in contact with the hub, and thence it flows through the orifices provided for the purpose in the hub and into contact with the stationary arbor.

At g through one of the side plates is a charging-orifice, and this is kept normally closed by a spring h, which carries a projection fitting the interior of the orifice g and operating to confine the material within the chamber and to prevent entrance of dust or foreign matters. The spring is secured on the inside of one of the plates before it is mounted in place. To charge the chamber, it is only necessary to insert the nozzle of the charging-can through the orifice g, which operation forces the spring h back and permits the necessary filling, after which the charging-orifice is automatically closed.

The side plates being of much less expensive material than the hub and web, the improved trolley-wheel can be made at much less cost than if cast solid of the usual conducting material. The side plates being made of more durable material than that

usually employed in the solid wheels, the improved wheel will last longer than the solid wheel. The constant supply of lubricating material will also tend to enable the improved wheel to run for a longer time than the solid constructions.

The trolley-wheel constructed and arranged for operation substantially in accordance with the foregoing explanations will be found to admirably answer all the purposes and objects of the invention hereinbefore alluded to.

Having now fully described my invention, what I claim as new herein, and desire to secure by Letters Patent, is—

1. In a trolley-wheel, a hub carrying a projecting web and reduced at its ends to form abutting ledges, and two side plates combined with said hub and web, the plates having inturned portions fitting the reduced portions and bearing against the ledges, the parts being secured together, substantially as and for the purposes set forth.

2. In a trolley-wheel, the combination with the hub and web, of the two side plates secured thereto by rivets as explained and forming a chamber for lubricating material, the outer portion of the web being enlarged and rounded out and the side plates contacting with the web inside of the rounded-out portion, substantially as and for the purposes set forth.

3. In a trolley-wheel, the combination with the hub and web, of two side plates secured thereto, the said web being provided with the marginal rounded-out portion and with openings as explained, the side plates contacting with the web beyond the margins of the openings and inside the rounded-out portion and secured by rivets passing through the web between the openings, substantially as and for the purposes explained.

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

CHARLES F. WILSON.

Witnesses:

WORTH OSGOOD,
L. H. GROTE.