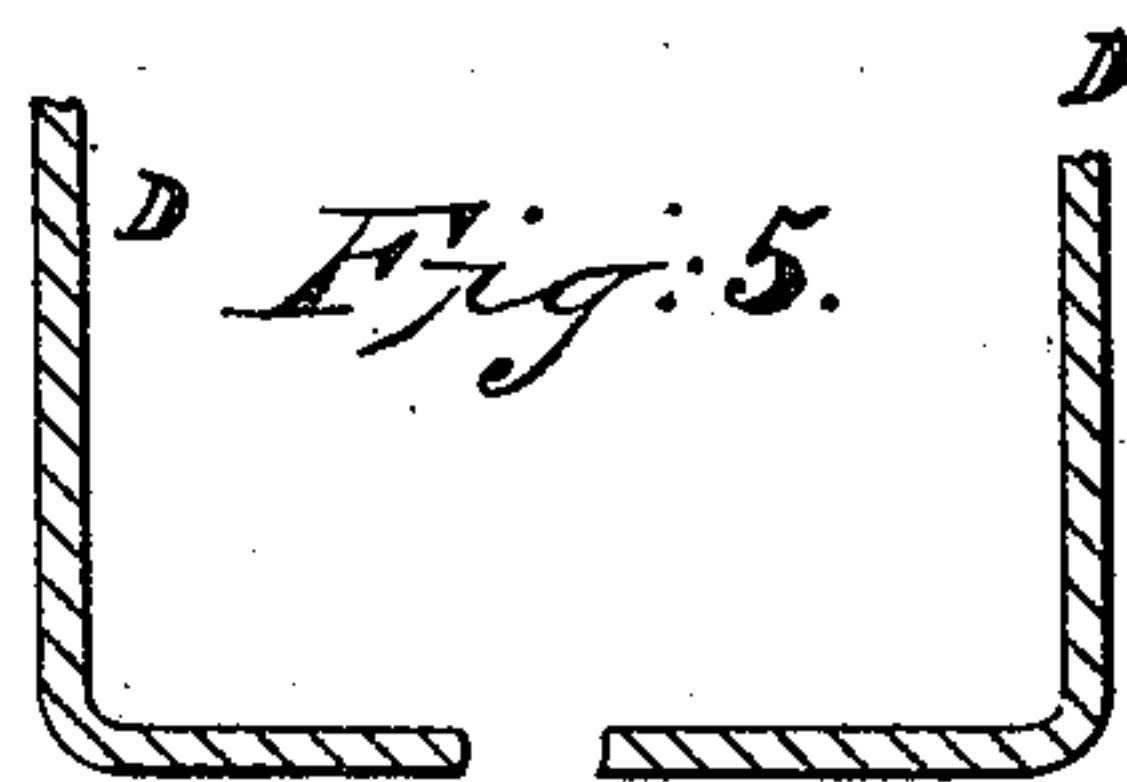
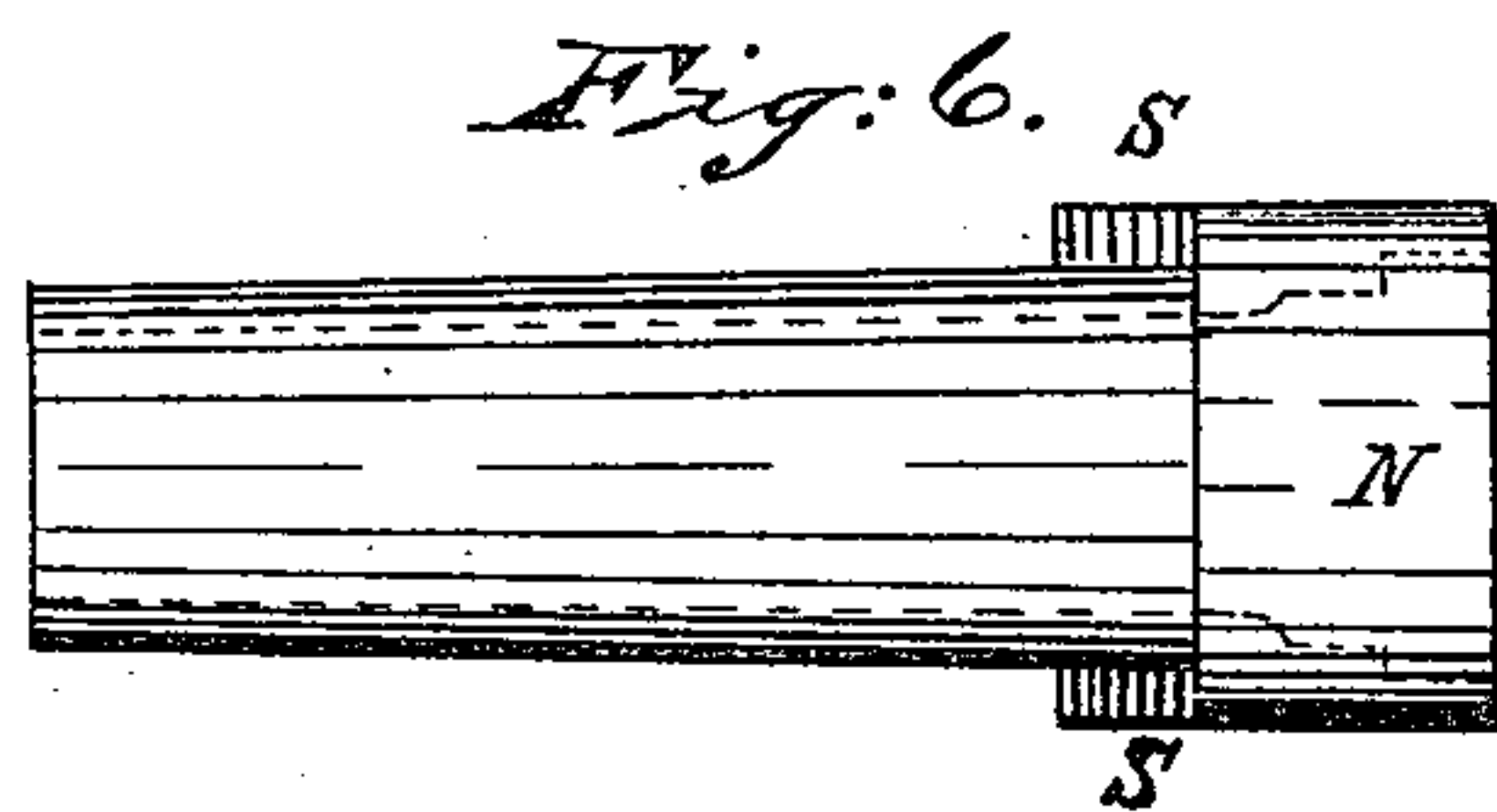
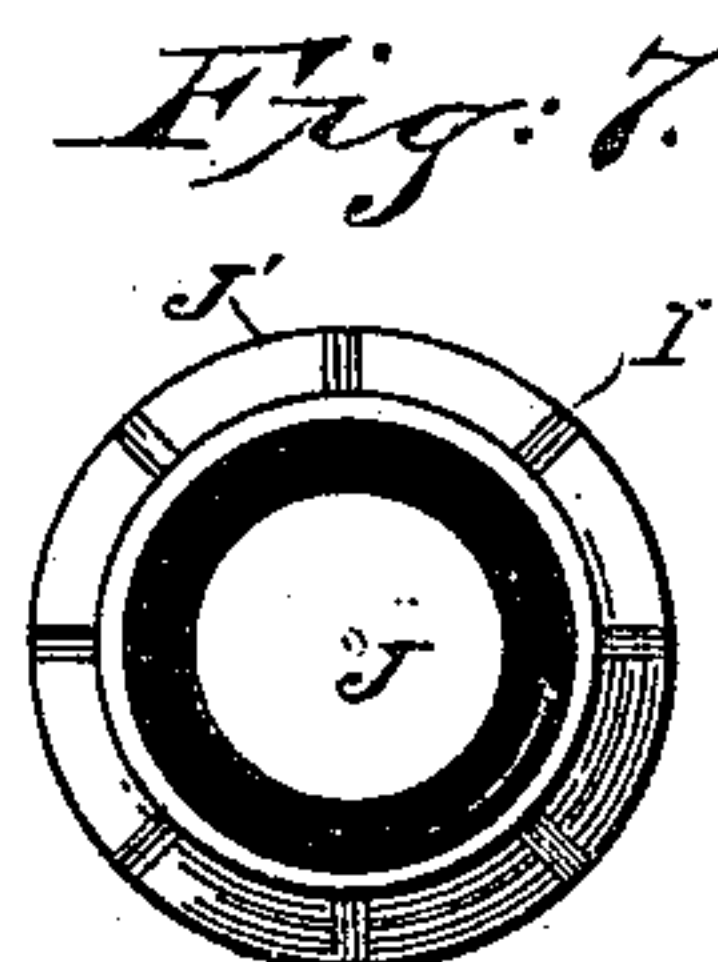
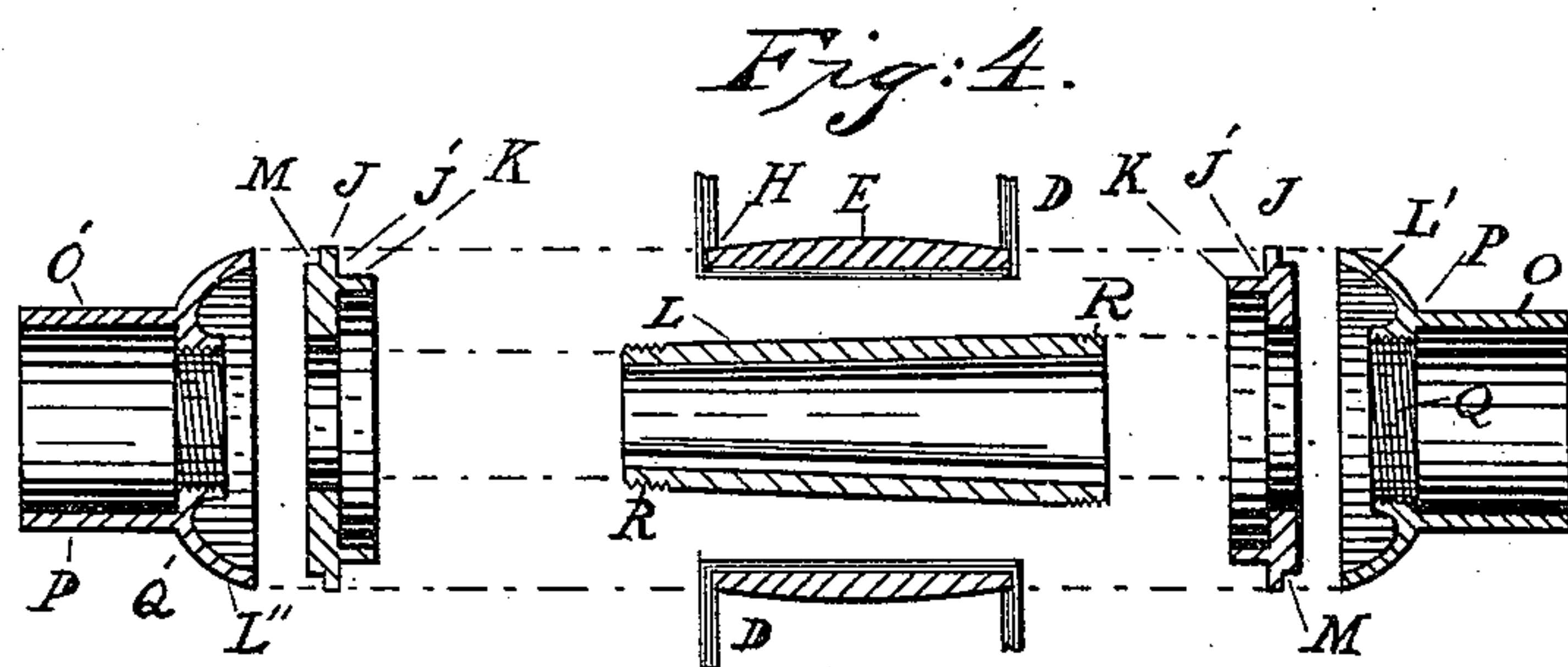
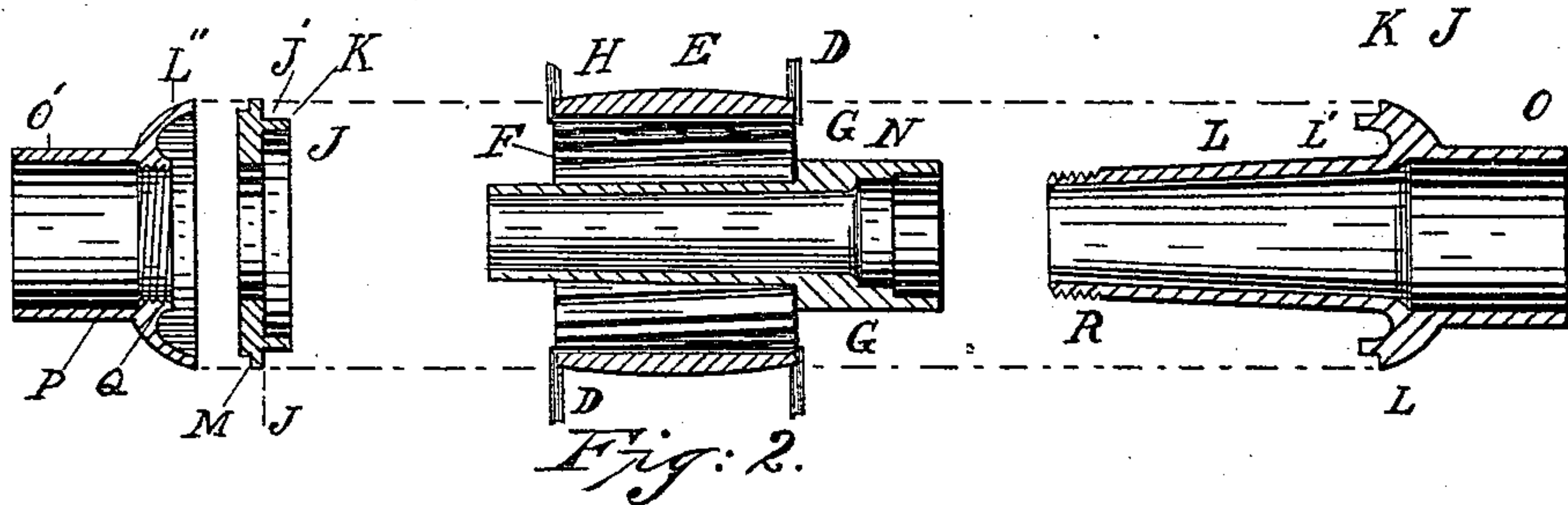
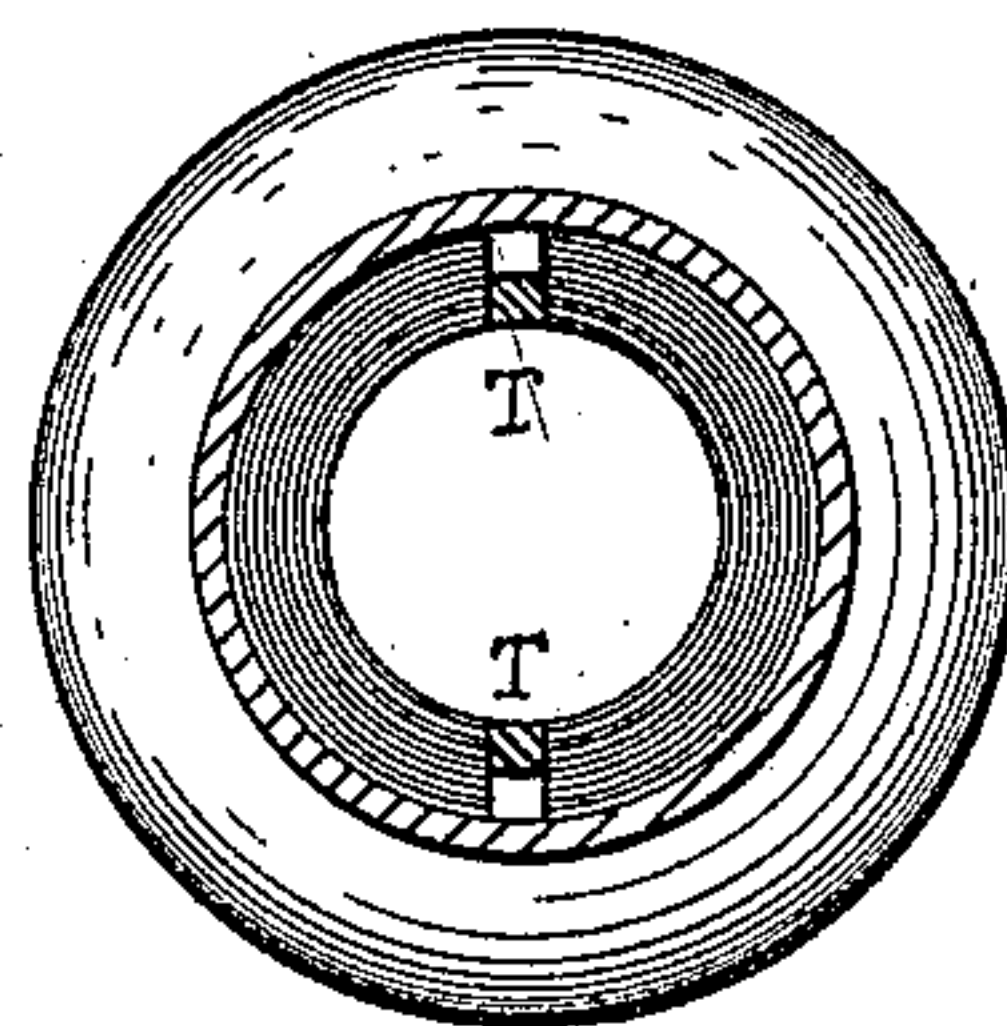
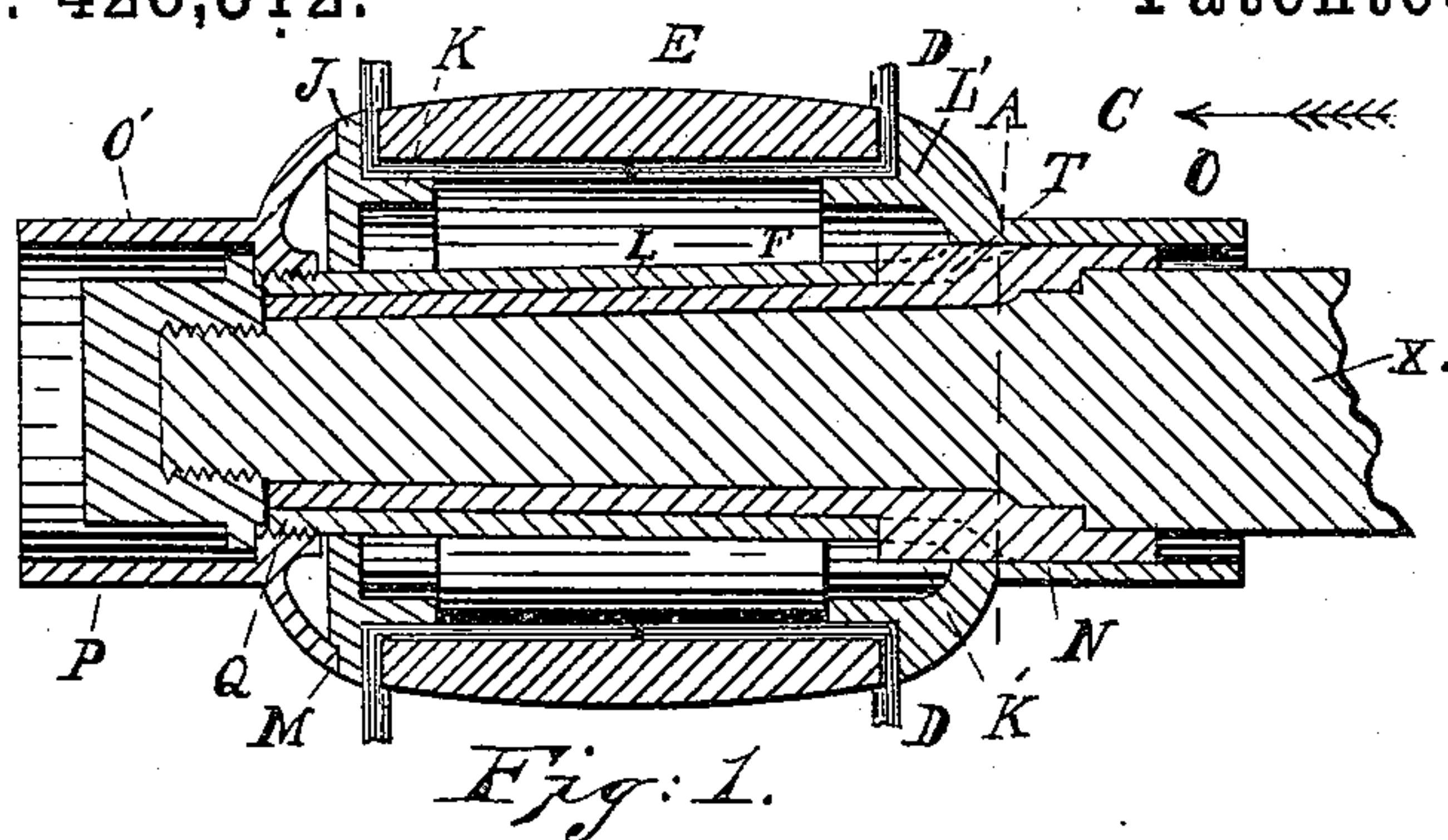


(No Model.)

A. L. H. MESSMER.
METALLIC WHEEL HUB.

No. 428,312.

Patented May 20, 1890.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALEXANDER L. H. MESSMER, OF HAMMOND, INDIANA.

METALLIC WHEEL-HUB.

SPECIFICATION forming part of Letters Patent No. 428,312, dated May 20, 1890.

Application filed September 17, 1889. Serial No. 324,184. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER L. H. MESSMER, a citizen of Germany, residing at Hammond, in the county of Lake and State of Indiana, have invented certain new and useful Improvements in Metallic Wheel-Hubs; 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.

My invention relates to improvements in metallic wheel-hubs, and more especially to that class of said hubs which are used for light vehicles.

The construction of and the form into which I have developed my improvement adapts it more particularly to road use for light horse vehicles in distinction from the class known as "infants' carriages" and "toy carts," though this device is well adapted to these uses also.

The type of iron wheels to which my improvements are applicable embodies the following elements: a central axle-box, between which and an exterior shell are secured spokes, which radiate from said connection, said shell being provided upon its ends with radiating notches, between which and the retaining-flanges parts of the said radiating spokes are compressed in the longitudinal direction of said axle-box.

This invention is an improvement upon a hub for which a patent was granted to me by the United States, November 16, 1886, No. 352,832.

The objects of my improvements are, first, to provide a stronger, lighter, and more durable wheel of the said type than that now in use; second, to provide an intermediate annular washer having a two-sided shoulder, which shoulder is adapted to secure the spokes radiating from the hub by pressing them against the inner longitudinal side and against an end of the exterior shell of the hub; third, in connection with said washers, to provide retaining-flanges in a concaved form to admit of increasing the size of the hub and beautifying its form without adding undue weight and material thereto; fourth, to connect with the said retaining-flanges sand-bands projecting longitudinally with the general direction of the hub, and being of a circular or polygo-

nal form and forming the longitudinal end extremities of the said hub; fifth, to connect two of the said concaved projecting sand-band flanges adjustably together by means of a hollow shaft; sixth, to provide a hub of the construction herein described with a removable journal-box, so that without disconnecting any of the parts of said hub it shall be adapted to receive and, with the aid of the axle and its retaining-nut, to hold the said box in fixed position relatively to the parts of the said hub. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the entire hub. Fig. 2 is a longitudinal section of the entire hub with its parts longitudinally separated the better to show them. Fig. 3 is a sectional view of the retaining-flange, taken on line A, Fig. 1, and as viewed from the direction of the arrow C. Fig. 4 is a longitudinal section of a modification of the entire hub, shown without the journal-box N shown in Figs. 1 and 2. Fig. 5 are sections of parts of two spokes when made in two instead of one piece of metal. Fig. 6 is a side elevation of the central axle-box. Fig. 7 is an end view of the grooved annular washer.

Similar letters refer to similar parts throughout the several views.

Referring to the drawings, E represents the exterior shell, the same as the corresponding part employed in my former invention before referred to.

Bearing diagonally or spirally against the interior face F of the shell E, and preferably lying in grooves G, formed therein and bent to fit into radial grooves H, formed in the ends of said shell, are the spokes D, which spokes are preferably made as shown in Figs. 3 and 4, so that each piece of metal is bent to form two spokes; but each spoke may be formed separately and from a single piece of metal, as shown in Figs. 1 and 5.

J is an annular washer having the radial grooves I in its inner face J', and two shoulders which are respectively formed by the inner radiating face J' of the said washer, and the exterior surface of the inwardly-projecting flange K and on its outer face by the annular notch M, the object of which will be hereinafter explained.

In Figs. 1 and 2 is shown a hollow sleeve L, threaded at R at one end to receive a binding-nut P. This sleeve L has a retaining-flange L', which is preferably made in a concave form, and is used in a hub in combination with one of the grooved and shouldered annular washers just described, as shown in Figs. 1 and 2; or there may be two of said washers—one at each end—as shown in Fig. 4. For cheapness it is, however, preferably constructed, as shown in Figs. 1 and 2, with only one of said annular washers. The said hollow sleeve L, besides having the retaining-flange L', is also provided with a sand-band O, which is preferably made as an integral part thereof.

In Fig. 4 is shown a modification of my invention, wherein the sleeve L is made to serve the additional purpose of the removable journal-box N. (Shown in Figs. 1, 2, and 6, and hereinafter more fully described.)

In Figs. 1, 2, and 4, at P, are shown the binding-nuts, threaded at Q, which are employed to secure the several parts of the hub together. This nut corresponds with, and is adapted to be screwed upon, the thread R on the end of the hollow sleeve L. For the purpose of making this part of the hub more compact, I have combined in one integral piece the nut P, the retaining-flange L', and the sand-band O'. The uses of the flange L' and sand-band O' on the outer end of the hub are analogous to the uses of the parts L' and O on the opposite end of the hub or out nut P when two of them are used, the uses of the said retaining-flanges L' being, as their names indicate, to retain in proper position the intervening parts of the said hub, and the use of the sand-band being obvious and well known, as its name indicates, to protect the interior wearing parts from the ingress of sand and dust.

In Fig. 6, and at N in Figs. 1 and 2, is shown a removable journal-box, which revolves upon the axle in the well-known manner. This box is of the ordinary well-known form used in common vehicle-wheels, and is provided with the well-known shoulder-lugs S. The hollow sleeve L has notches, as shown at T in Figs. 3 and 1, into which the lugs S are adapted to fit for the purpose of holding the said parts in fixed position and to cause them to rotate with each other.

In order to connect the several parts of this hub, the peripheries of the retaining-flanges L' and L'' are concentrically finished, and are adapted in form and size to fit the part with

which each unites. For instance, the periphery of the flange L'' is adapted in form and size to just fit the outer shoulder M in the washer J, and the inner shoulder therein, formed by the plane J' and the exterior surface of the flange K, is adapted to fit the bore of the shell E and center the same, while the corresponding parts on the hollow sleeve L are just adapted in form and size to fit the bore in the opposite end of the shell E and center the same; or when two washers J and nuts P are used, as in Fig. 4, the nut P carries the flange L', said flange fits the washer J, and said washer enters and centers the inner end of the shell E the same as the other washer does the outer end of said shell.

Having described my invention, I do not claim, broadly, a wheel-hub embodying the following elements: a central axle-box, between which and an exterior shell are secured the spokes, which, extending beyond the ends of the said exterior shell, are bent outwardly at an angle from the axial line of said exterior shell, and secured against the ends of the said exterior shell by means of clamping flanges or washers, or by means of clamping flanges and washers combined, whether the same be grooved or plain, for hubs so constructed are well known and in general use; but

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

1. In a metallic hub, the outer shell E and the spokes D, engaging the ends and interior thereof, in combination with a washer J, having an interior shoulder adapted to clamp said spokes against the end of and within said shell, and also having an outer shoulder M, a nut P, having a concave flange L', adapted to engage said outer shoulder M, and means, substantially as described, for compressing said nut against said washer and the latter into position, as set forth.

2. In a hub, the shell E, spokes D, engaging the same, and sleeve L, having means, substantially as described, for pressing said spokes into place, said sleeve having notches T, in combination with the box N within said sleeve, said box having lugs engaging said notches for securing said box therein, substantially as set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

ALEXANDER L. H. MESSMER.

Witnesses:

WM. EVERS,

GEO. LOUIS EVERS.