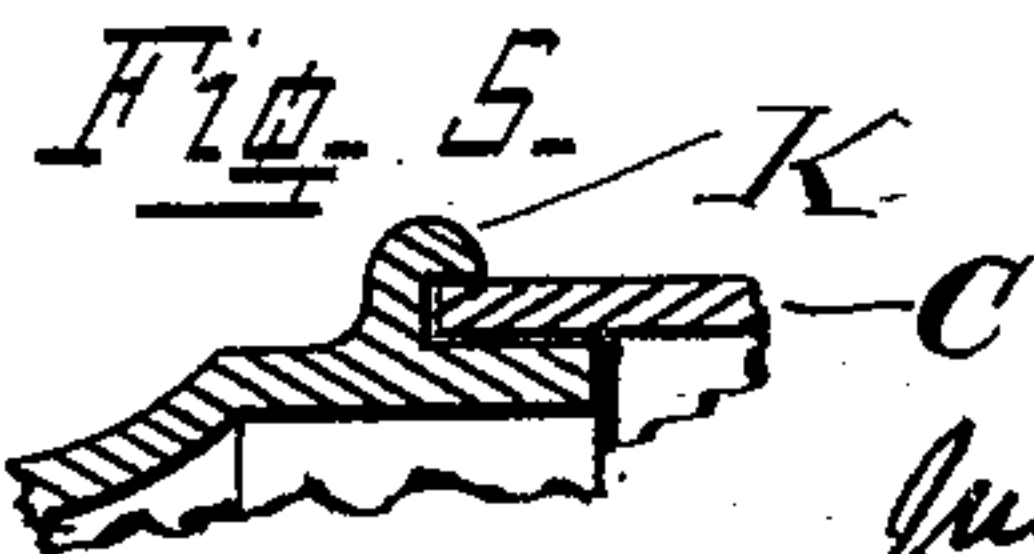
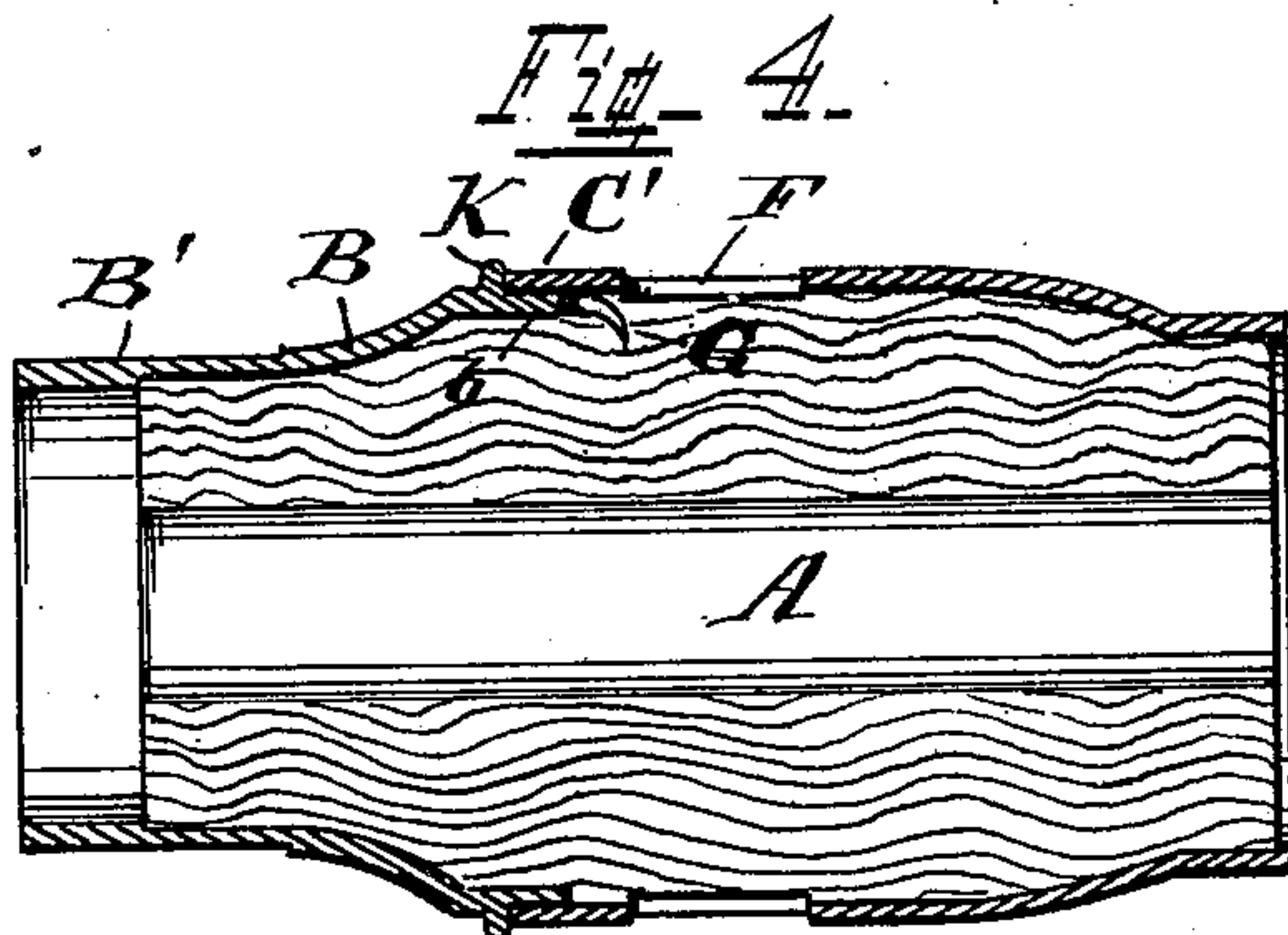
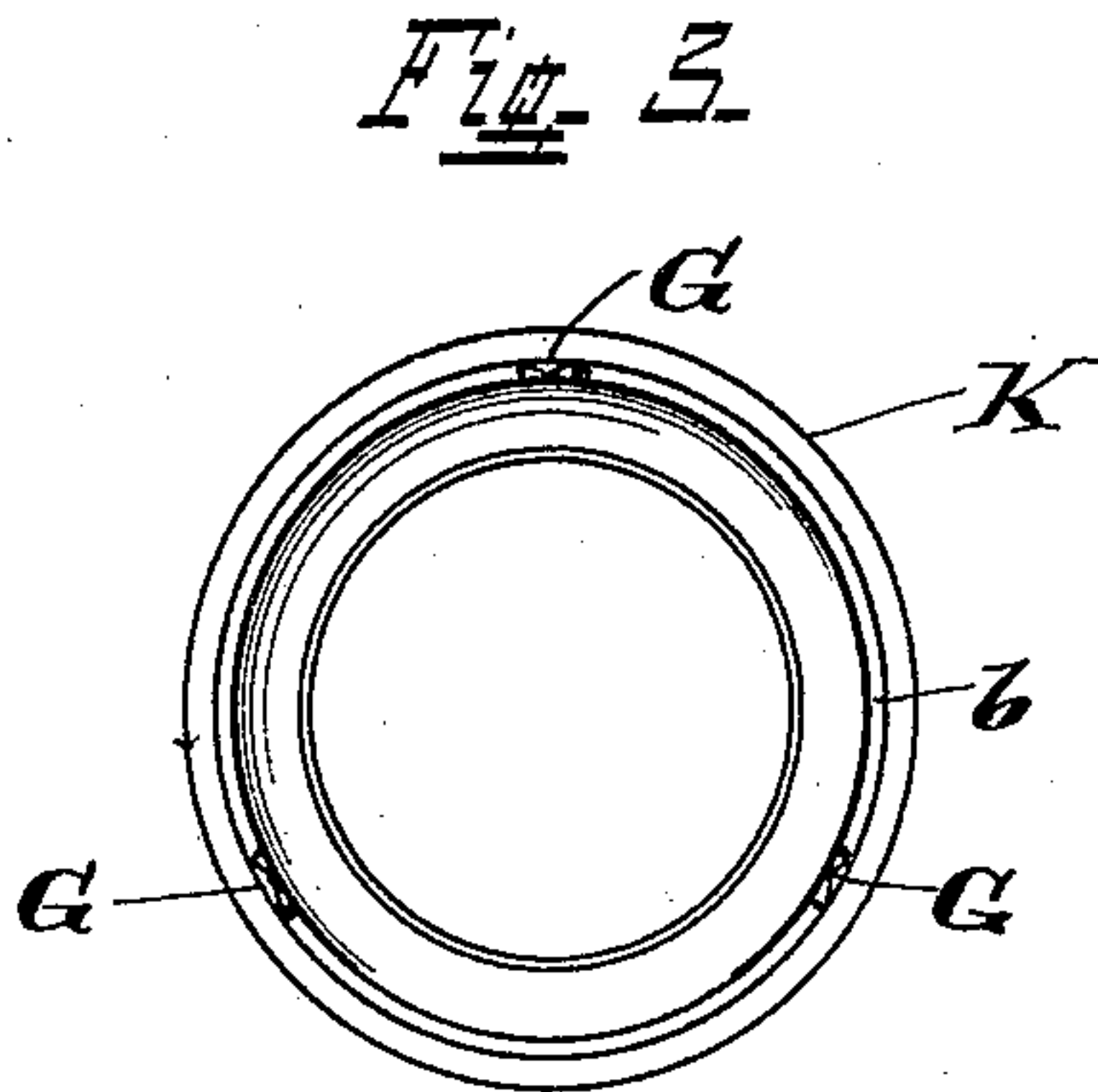
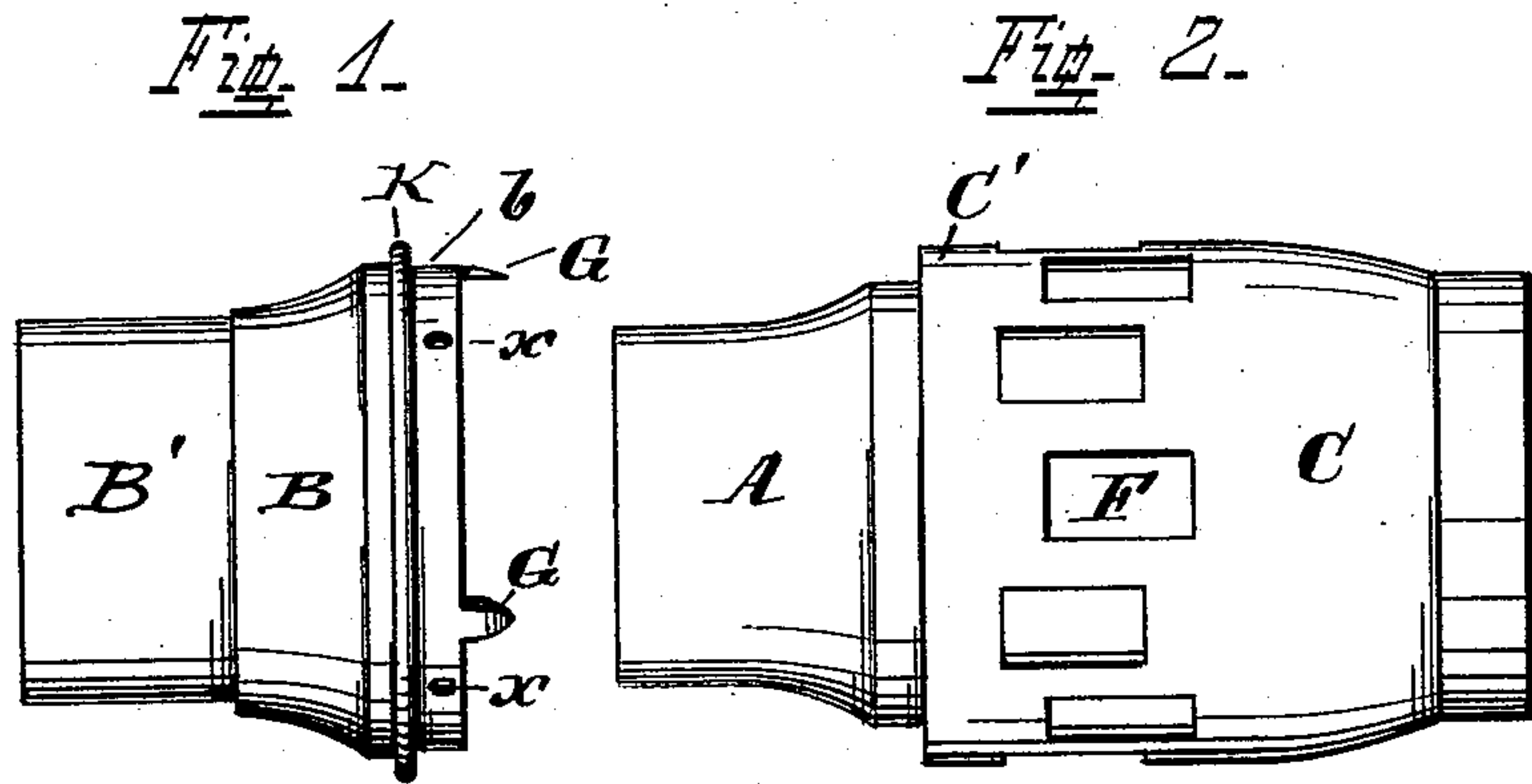


(No Model.)

W. LE B. HAWES.
VEHICLE WHEEL HUB.

No. 404,838.

Patented June 11, 1889.



Witnesses
Alfred M. Allen
George Reichman

Inventor
William L. B. Hawes
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UNITED STATES PATENT OFFICE.

WILLIAM LE B. HAWES, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO
THE STANDARD WAGON COMPANY, OF SAME PLACE.

VEHICLE-WHEEL HUB.

SPECIFICATION forming part of Letters Patent No. 404,838, dated June 11, 1889.

Application filed February 18, 1889. Serial No. 300,341. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LE B. HAWES, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Vehicle-Wheel Hubs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to an improvement in vehicle-wheel hubs; and it consists primarily in incasing the wooden hub in a metallic shell, said shell being made in two or more parts locked to the wooden hub by means hereinafter described, and provided with a bead or beads so located as to hide the joint between the parts of the shell and give to the hub thus incased the appearance of a plain wood hub.

In the accompanying drawings, forming part of this specification, Figure 1 represents a side elevation of the point-shell in position to be applied to the hub. Fig. 2 is a side elevation of the butt-shell in place, embracing the hub. Fig. 3 is a cross-section of the point-shell. Fig. 4 is a longitudinal section of the hub completed with the shell in place. Fig. 5 is a cross-section of a modified form of bead and joint.

Like letters of reference indicate identical parts in all the figures.

A represents the wooden hub turned down to a size and shape to correspond with the internal construction of the shell. B is what may be termed the "point-shell," and C the "butt-shell." The hub being inserted in the butt-shell C, as shown in Fig. 2, the hub is mortised, as at F, to receive the spokes. This may of course be done either before or after the application of the shells. I prefer to mortise it after the butt-shell is put into position. The spokes when driven lock the butt-shell in place and prevent its coming off. The inner edge of the butt-shell is made to embrace the inner edge of the point-shell, as shown at C'. This point-shell is provided with an annular rim *b*, slightly smaller than the outer part of the shell, so as to pass within the edge C' of the butt-shell C. The edge of this rim *b* is provided with teeth G, integral with it. The points or edges of these teeth are beveled on the outside, as shown in the

drawings. This point-shell B is forced onto the hub by pressure, and the teeth catch naturally in the fibers of the wood, and are bent down by the act of pressing the shell on, as shown in Fig. 4, and are thus driven into the wood of the hub, securely locking this point-shell in place, so that it cannot come off without entirely destroying the hub. These teeth are shown somewhat narrow. They may be made much broader, or the rim *b* may extend all the way round, with sections cut out of it to form teeth of what remains.

The inner edge of the shell at C' may be beveled, if desired, so that it will cause the teeth on the point-shell to bend down into the wood. In practice, however, that is not generally necessary, as the shape of the teeth is such that they will catch on the wood, and then the pressure forces them to clinch, as shown in Fig. 4. I provide on either of the shells (in the drawings on the point-shell) a bead K, so located as to come just at the point where the two shells join, and the shells are so constructed that this bead comes at the same point that beads are almost universally turned on wooden hubs. It thus serves the purpose of hiding the joint and completing the resemblance of an ordinary wooden hub. In the drawings I have shown the point-shell constructed with a point-band B', integral with it. Of course this point-band may be made separate, as is done in an ordinary wooden hub, if preferred.

The construction I have shown in the drawings is the one that I have found preferable. It may, however, be made with the point-shell extending over the mortises and held in place by the spokes and the butt-shell locked by means of teeth, as I have shown the point-shell locked; or the shell may be made in three pieces—a center portion embracing the mortises, with the butt and point shells locked by means of the teeth; or where it is desired not to use the teeth the inner shell may be provided with holes in the rim *b* and nails or screws used to fasten it to the wood, as shown at *x*, Fig. 1, and these nails or screws covered and held in place by the outer shell, where it embraces the inner one, as at C', my object being to produce a hub with the shell locked to the wood, instead of having the parts of the shell locked to one another. The bead K

may be made with an internal shoulder, as shown at Fig. 5, so as to extend over the edge of the shell C', and thus cover and more effectually hide the joint.

5 I am aware that hubs have been entirely incased in metal shells, and do not broadly claim such a construction; but,

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

1. A vehicle-wheel hub consisting of a wooden hub incased in a metallic shell made in two or more parts, locked to the wooden hub, one shell being provided with an exter-

nal bead at its inner edge to hide the joint 15 and resemble a plain wooden hub, substantially as and for the purpose described.

2. A vehicle-wheel hub consisting of a wooden center incased within a metallic shell made in two or more pieces, one piece being 20 locked to the hub by means of teeth embedded in the wood, substantially as and for the purpose described.

WILLIAM LE B. HAWES.

Witnesses:

JAS. E. JENNINGS,
GEORGE HEIDMAN.