No. 681,067. Patented Aug. 20, 1901.

J. F. MORRISSEY.

CONNECTION PIECE FOR PNEUMATIC TIRE VALVES.

(Application filed June 18, 1901.)

(No Model.)

Fig. 1.

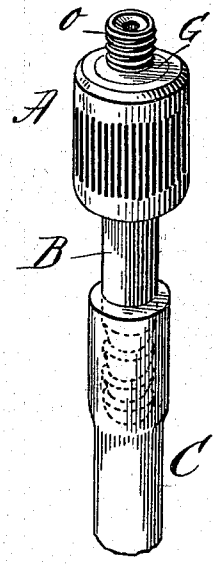


Fig. 2.

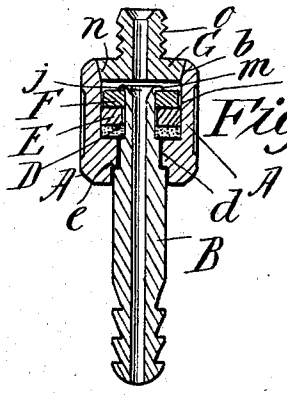
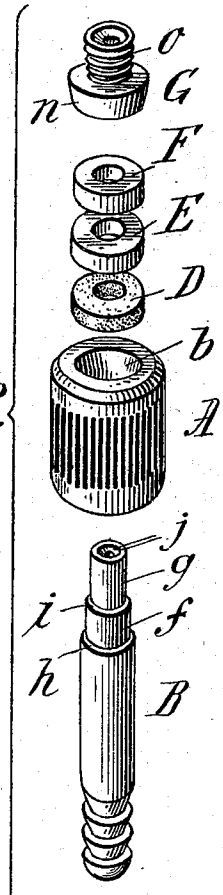


Fig. 3.



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UNITED STATES PATENT OFFICE.

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CONNECTION-PIECE FOR PNEUMATIC-TIRE VALVES.

SPECIFICATION forming part of Letters Patent No. 681,067, dated August 20, 1901.

Application filed June 18, 1901. Serial No. 65,009. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. MORRISSEY, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Connection-Pieces for Pneumatic-Tire Valves, of which the following is a full, clear, and exact description.

This invention relates to tubular couplings or connections particularly designed for connecting the air-tube of an air-pump with the valved stem of a pneumatic tire.

The present improved tubular connection-piece is, however, available for other purposes than that above mentioned.

The object of the invention is to provide a connection-piece comprising two parts, one of which is rotatable in relation to the other and having a passage axially therethrough, which is simple of construction, inexpensive in manufacture, efficient in operation, durable through protracted use, and which is without liability to impairment or derangement.

The invention consists in constructions and combinations of parts, substantially as hereinafter described and explained, and set forth in the claims.

The improved connection-piece is illustrated in the accompanying drawings on a scale somewhat larger than that of actual size for use in connection with the valved stem of a bicycle-tire.

Figure 1 is a perspective view. Fig. 2 is an axial sectional view. Fig. 3 is a perspective view of the several parts of the device separated from each other.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the portion of the connection device which has connection with the valved stem of the tire, and B represents the stem, which is rotatable relatively to the portion A and which is or may be connected with the air-delivery of a pump, such connection being usually by a flexible tube C, and said parts A and B having passage axially through them are connected in such manner that while the axial passages are practically continuations of each other, with no opportunity for intermediate leakage, the said parts are freely rotatable one on or in relation to the other.

I will now proceed to describe the detail construction of the parts and members of my present improved device as I have made it and found it practical and satisfactory, it being understood, however, that I may depart somewhat from the actual and precise details of construction hereinafter specified without departing from the spirit of the invention.

The portion A of the device comprises a cylinder or barrel cupped out or cylindrically chambered from one end, as indicated at *a*, the orifice of such chamber being tapered, as shown in an exaggerated degree at *b*, and the opposite end portion is drilled axially with the opening *d*, having two diameters, whereby the annular seat *e* is produced.

The stem B is at its end portion diametrically reduced twice, as indicated at *f* and *g*, whereby the two shoulders *h* and *i* are produced, the one *h* engaging or having a limiting-rest against the aforementioned seat *e*, while the necked-down portion *g* above the shoulder *i* protrudes centrally within the cylindrical chamber *a* in the part A.

The upper end portion of the axially-drilled stem B is reamed out, as indicated at *j*, so as to render this end portion easily outwardly turned or "upset."

The part B, as seen in Fig. 2, having been slipped into its proper relation to the barrel or casing member A, the washer D, of leather, rubber, or any other suitable material, is placed closely fitting about the portion *g* of the stem member B, such washer also having a fairly close fit within the circular wall at the base of the chamber *a*. The metallic washer E is next crowded into the cylindrical chamber, closely fitting the wall thereof, although the central opening therein is free about the attenuated end portion *g* of the stem member B. This metallic washer is forced firmly against the packing-washer D. Another metallic washer F is employed, the same being placed with a crowding fit about the upper end portion of the part *g* of the stem member, the upper surface of this washer being slightly below the upper end of the said part *g*, which extremity is upset in

the manner of riveting and as indicated at *m* in Fig. 2, so that the washer F is to all intents and purposes as one with the stem member of the connection device. The engagement of the stem member with the barrel or casing member and the packing of the connection having been effected, as described, the closure of the upper orifice of the chamber is done by the insertion of the plug G, which has a taper, (shown in an exaggerated degree at *n*,) the same being driven firmly and hard into the flaring mouth *b* of the chamber. The said plug G has the externally-threaded axially-extended nipple *o* for a screw-thread connection with the valve of the pneumatic tire or other part with which the coupling is to be made.

When the parts are all assembled, the closing-plug G is practically as firmly united with the barrel or casing A as if made integrally therewith. This plug-closing part for the chambered barrel may instead of being secured at the end of the latter with a driving fit be otherwise engaged or secured in its place—as, for instance, by screw threading therein—but a principal aim being to reduce cost to a minimum without impairing the efficiency. The manner of connection explained is a very desirable one. It will be seen that the stem portion is freely rotatable relatively to the nipple-ended barrel portion, a free passage being through the whole device, and yet there is no opportunity for leakage where the stem member enters within and through the base of the barrel member.

The connection-piece may be constructed within this invention without necessarily the inclusion of the metallic washer E, which is, however, preferably used as a clamping means for the packing-washer D, and the barrel in case of the omission of the said metallic washer E would be of less length than when constructed with reference to space for occupancy of such washer.

The parts are constructed and assembled with sufficient regard to freedom of rotational movement, one member in relation to the other, as explained, and yet there is no appreciable endwise play of the stem member relatively to the barrel member.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A connection-piece of the character described consisting of relatively rotatable barrel, and tubular stem members, the barrel member being constructed of cup form with an axial shouldered opening through its base, and the stem member being shouldered, engaging in the seat formed by said shouldered opening and having its extremity protruding within the chamber of the barrel, the packing-washer fitted in the base of the barrel, and closely surrounding the protruding portion of the stem, the flange or enlargement provided to the end portion of the stem member within the chamber, and a plug for closing the end opening in the cup-shaped barrel having a nipple extension and an axial passage therethrough.

2. In a connection-piece of the character described, the combination with the cup-shaped member or barrel having an axial opening through its base, of the tubular stem member extended through said opening and centrally beyond the base, a packing-washer surrounding the portion of the stem within the barrel adjacent the base, a clamping-washer set with a tight fit to the internal wall of the barrel, and against the washer, means for preventing the endwise withdrawal of the stem member, and means for closing the upper end of the barrel having an axial passage therethrough.

3. In a connection-piece, the combination with the cup-shaped member or barrel having an axial opening through its base, of the tubular stem member extended through said opening and protruding centrally within the barrel, a washer at the base of the barrel surrounding closely the stem, a washer fitted about the inner end portion of the stem, and affixed thereto, and free relatively to the inner wall of the barrel, and the plug immovably secured in the open end of the barrel, and having an axial extension, through which and the plug proper is an endwise passage.

4. In a connection-piece, the combination with the cup-shaped member or barrel having an axial opening through its base, of the tubular stem member extended through said opening and protruding centrally within the barrel, a washer at the base of the barrel surrounding closely the stem, a washer fitted about the inner end portion of the stem, slightly below the end of the latter, the end portion of the stem being upset to engage over the face of the washer, and the plug having a driving fit in the open end of the barrel and having an axial tubular extension which is externally screw-threaded.

5. In a connection-piece, the combination with the cup-shaped member or barrel having an axial opening through its base, and having its wall at its orifice flaring as shown, of the tubular stem member extended through said opening in the base and protruding centrally within the barrel, a packing-washer surrounding the portion of the stem adjacent the base of the barrel, a metallic washer secured as one to the inner end portion of the stem, and the plug, tapered and firmly driven into said flaring orifice, and having the axially-passaged nipple extension.

6. In a connection-piece, the combination with the cup-shaped member or barrel having an axial opening through its base, and having its wall at its orifice flaring as shown, of the tubular stem member extended through said opening in the base and protruding centrally within the barrel, a packing-washer surrounding the portion of the stem adjacent the base of the barrel, a metallic clamping-washer next to the packing-washer, a metallic washer secured as one to the inner end

portion of the stem, and the plug, tapered and firmly driven into said flaring orifice, and having the axially-passaged nipple extension.

7. In a connection-piece, the combination with the cup-shaped casing or barrel having through its base the axial opening made of different diameters whereby the seat *e* is produced, and having its internal wall at its orifice flaring as at *b*, of the tubular stem member B having its end portion reduced as at *f* forming shoulder *h*, and again reduced as at *g* forming shoulder *i*, said end portion being entered within the barrel, the shoulder *h* seating at the rest *e*, and the most reduced portion *g* protruding centrally within the chamber of the barrel, the packing-washer D fitted about the portion *g* of the stem adjacent the shoulder *i*, the metallic clamping-washer next to the packing-washer and free of the stem, the metallic washer F closely fitted about the inner portion of the stem below the extreme end thereof and free of the inner wall of the barrel, the extreme end of the stem being outwardly turned or upset upon the face of said washer F, and the tapered axially-passaged plug G driven tightly into the flaring orifice of the barrel, and having the externally-screw-threaded tubular nipple extension *o*, substantially as described and shown.

Signed by me at Springfield, Massachusetts, this 8th day of June, 1901.

JAMES F. MORRISSEY.

Witnesses:

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M. A. CAMPBELL.