No. 772,758. PATENTED OCT. 18, 1904.

# F. F. THOMPSON.

## DOUBLE TUBE TIRE.

APPLICATION FILED JULY 23, 1904.

NO MODEL.

Fig. 1

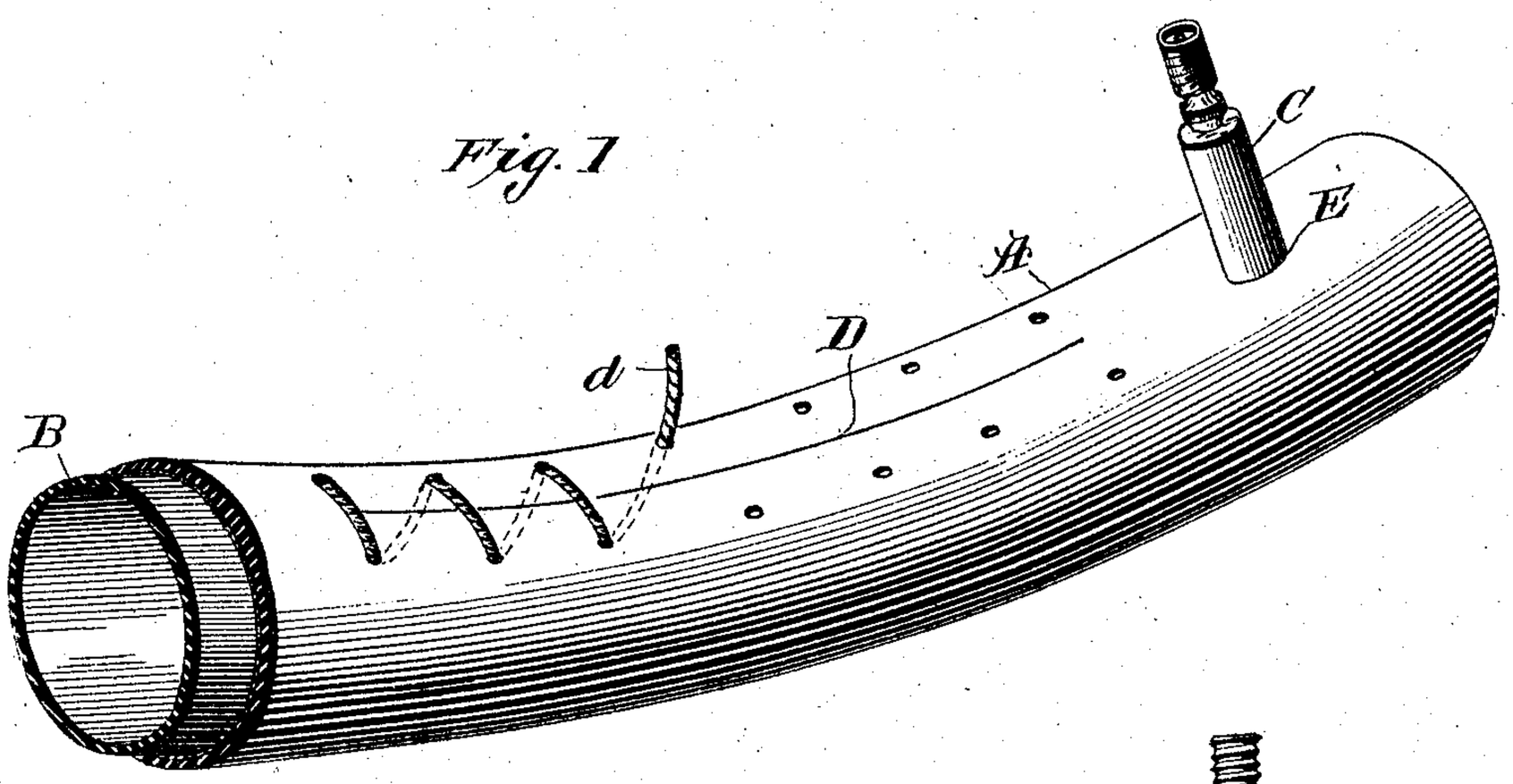



Fig. 1a

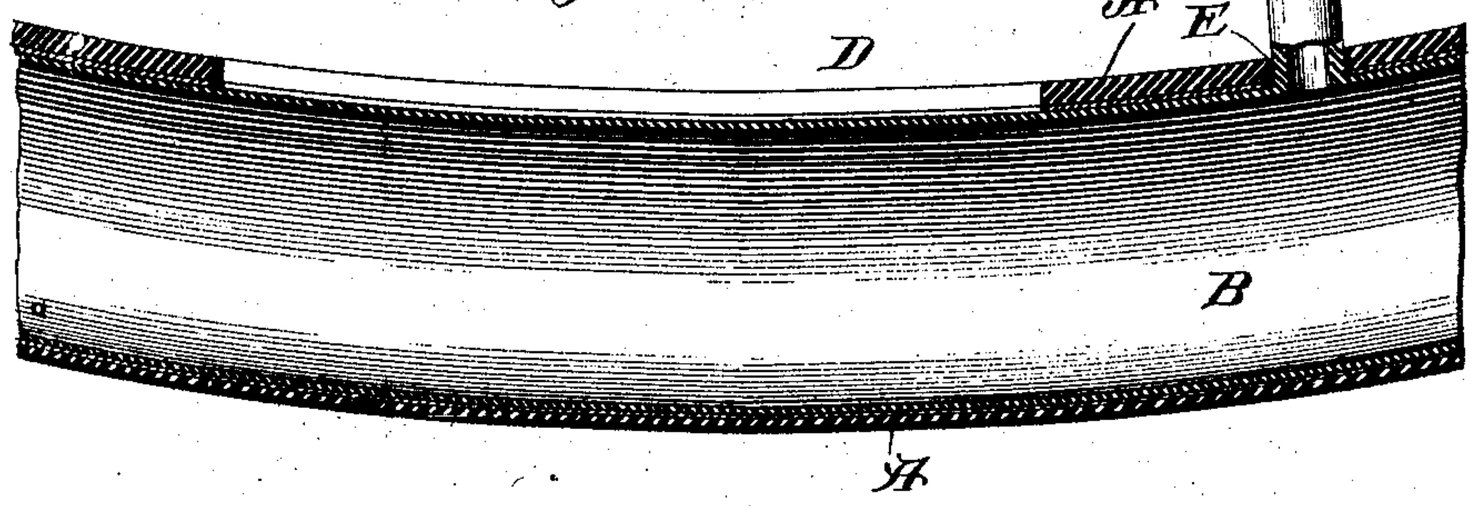
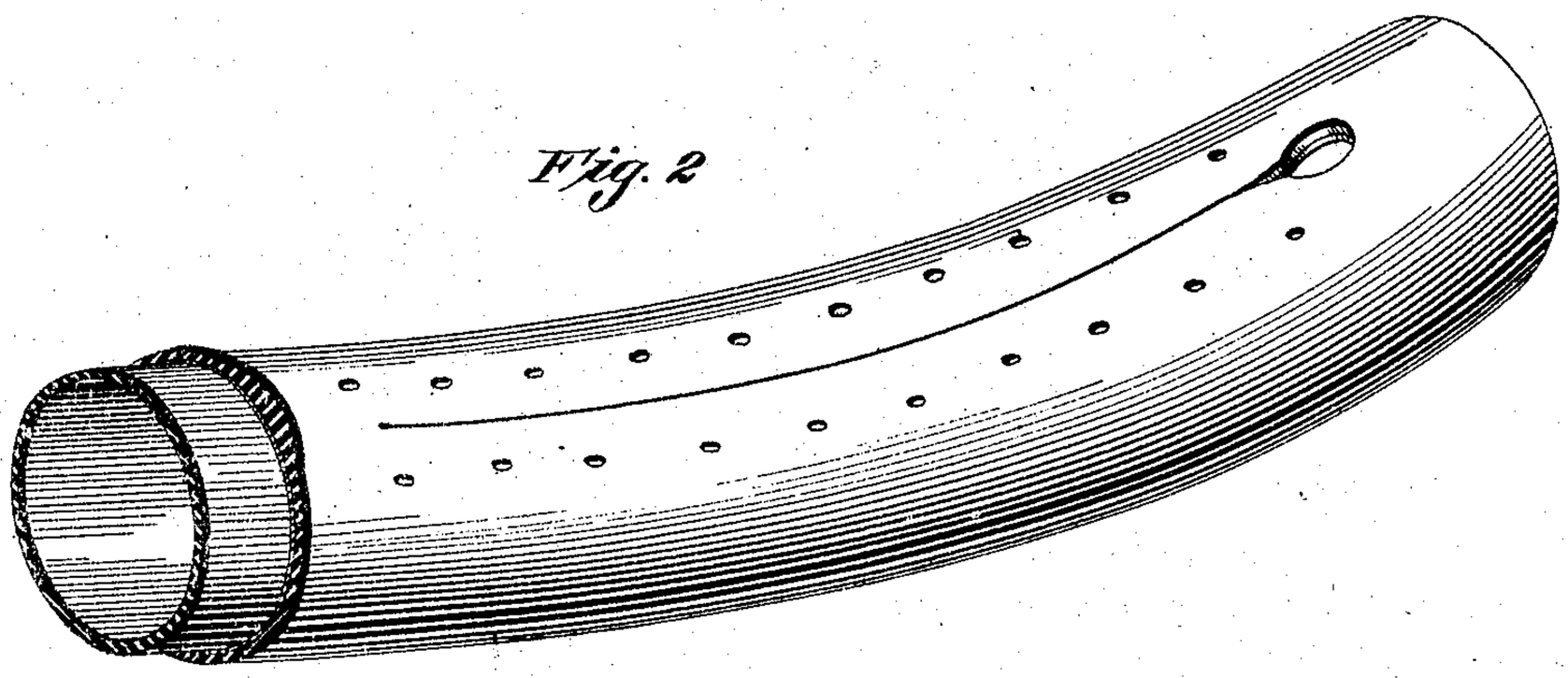



Fig. 2



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No. 772,758. Patented October 18, 1904.

# UNITED STATES PATENT OFFICE.

FREDRICK FOSTER THOMPSON, OF LAWTON, OKLAHOMA TERRITORY.

## DOUBLE-TUBE TIRE.

SPECIFICATION forming part of Letters Patent No. 772,758, dated October 18, 1904.

Application filed July 23, 1904. Serial No. 217,795. (No model.)

*To all whom it may concern:*

Be it known that I, FREDRICK FOSTER THOMPSON, a citizen of the United States, residing at Lawton, in the county of Comanche, Oklahoma Territory, have invented a new and useful Improvement in Double-Tube Tires, of which the following is a specification.

My invention relates to double-tube tires for bicycles, automobiles, and other vehicles.

In the "M and W" tire and others of its class the heavier outer tube is slitted longitudinally on the inner side next the rim for a distance of about five inches, and at the end of the slit and communicating with the same is a round hole to receive the valve-nipple of the inner tube, which protrudes through the hole, the two edges of the slit being afterward laced together up to the valve-nipple. In this arrangement the valve-nipple hole in the outer tube really forms the end of the slit, and the hole is not surrounded by an unbroken collar of the outer tube material, but is open or slitted at one side. In inflating the inner tube it has been found that the expansion of the inner tube at the point of juncture of the hole and the slit will allow the edges of the slit to expand on this side of the valve no matter how tightly laced, and this produces several objectionable results. In the first place it causes a bulge on the inner surface of the tire on that side of the valve which will not let the tire fit up close and solid to the rim and which as the wheel revolves allows the valve-nipple to have a movement through the hole in the rim, in and out, which rubbing and chafing action causes the valve-nipple to rapidly wear and become leaky. In the second place this bulge on one side of the valve turns the valve-nipple from its true radial position to a position inclined to the radial, which accelerates its wear and depreciation. In the third place the strain of the bulging of the inner tube at this point comes upon the lacing and tears out the lacing-holes on each side of the slit adjacent to the valve. My invention is designed to overcome all of these difficulties in a simple and practical way; and to that end it consists in locating the valve-hole of the outer tire at a distance beyond the slit, so that said hole is not bisected on one side by the slit; but the hole has a solid collar of the outer tube material all around the valve-hole, forming an unbroken reinforce for the valve-nipple, so that there is no bulging of the inner tube on one side of the valve immediately adjacent thereto and the above-named difficulties are entirely obviated.

Figure 1 is a perspective view of a portion of my improved double-tube tire. Fig. 1ª is a longitudinal section, and Fig. 2 is a view of a portion of the old form of double-tube tire.

In Figs. 1 and 1ª, A is the outer tube; B, the inner tube bearing the valve-nipple C. D is the longitudinal lacing-slit, *d* the lacing, and E the hole to receive the extension of the valve-nipple therethrough. This hole, it will be seen, does not form the end of the slit, as seen in Fig. 2, but is located about an inch beyond the end of the slit, so that there is an unbroken reinforce of the material of the outer tube all around the hole E. This allows the inner face of the outer tube to fit up flush to the face of the rim, maintains the nipple in true radial position, and avoids the spreading of the slit and the tearing out of the lacing-holes immediately adjacent to the valve.

To insert the inner tube bearing the valve into the outer tube, this is done in much the same manner as heretofore, except that in drawing in the inner tube the lower part of the valve is drawn past the hole E until the free end of the valve is even with the hole, and then the inner tube is drawn back and the free end of the valve is allowed to protrude outwardly through the hole. In this way it may be easily inserted or removed.

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

1. A double-tube tire, comprising an inner tube with valve-nipple and an outer tube having a longitudinal slit in its inner face and a valve-hole placed beyond the end of the slit

and surrounded by an uncut ring of the outer tube material substantially as described.

2. A double-tube tire comprising an inner tube with valve-nipple, an outer tube having a longitudinal slit in its inner face and a valve-hole placed beyond the end of the slit and surrounded by the uncut ring of the outer tube material and a lacing for closing the slit substantially as shown and described.

FREDRICK FOSTER THOMPSON.

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