

(No Model.)

C. S. SCOTT.
PNEUMATIC TIRE.

No. 557,441.

Patented Mar. 31, 1896.

Fig. 6.

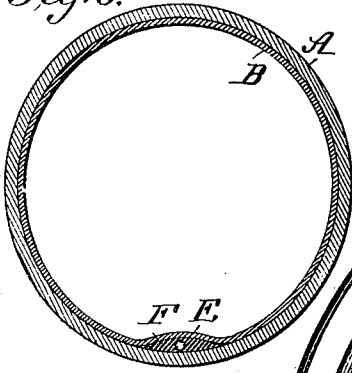


Fig. 1.

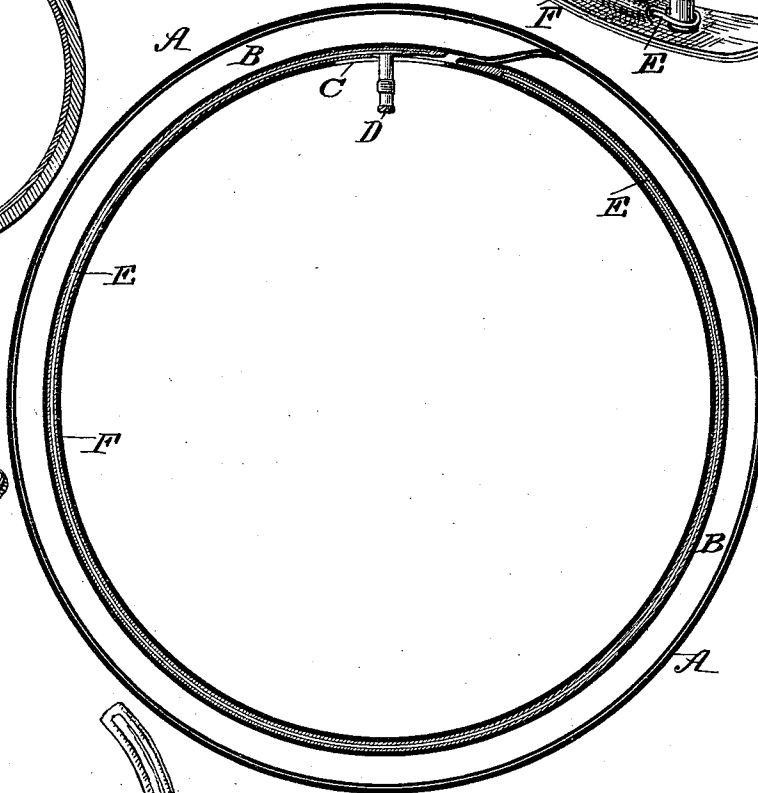


Fig. 5a

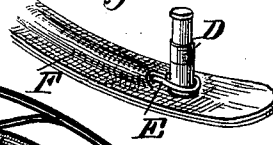


Fig. 5

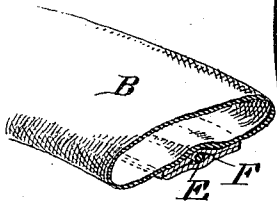


Fig. 3.

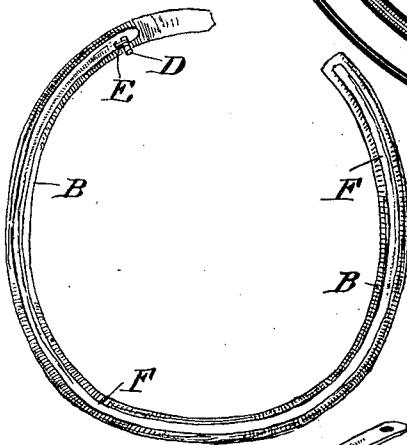


Fig. 2

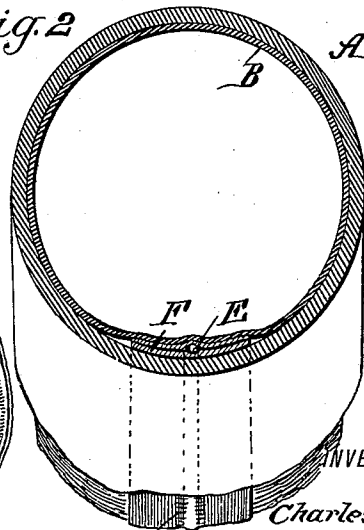
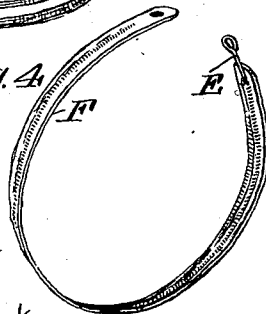


Fig. 4



WITNESSES:

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CHARLES S. SCOTT, OF CADIZ, OHIO.

PNEUMATIC TIRE.

SPECIFICATION forming part of Letters Patent No. 557,441, dated March 31, 1896.

Application filed September 26, 1895. Serial No. 563,777. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. SCOTT, of Cadiz, in the county of Harrison and State of Ohio, have invented an Improvement in Pneumatic Tires, of which the following is a specification.

This invention relates generally to pneumatic tires and particularly to that class thereof in which the outer tire is in the form of a ring, slit only in one place, and the inner tube is of the linear form, in contradistinction to the full circular tube so commonly in use.

More particularly stated, my invention is an improvement upon that class of pneumatic tires, of which the Morgan & Wright tire is a good example.

One objection to a tire constructed in this manner is the difficulty in inserting the inner or inflating tube into the outer tube through the small slit or opening in said outer tube, and numerous appliances, such as strings, tapes, &c., have been employed for the purpose of pulling the inner tube into the outer tube. The objection to all these devices is that it requires considerable time and skill to insert the string or tape preparatory to pulling the inner tube; and the object of my invention is to avoid all of these difficulties and provide an inner tube which can be readily inserted into the outer without the employment of any auxiliary device and also without any trouble whatever.

With these objects in view my invention consists, broadly, in constructing the inner tube with a longitudinal stiffening member, whereby the said inner tube can be readily threaded into or inserted through the opening of the outer tube.

My invention also consists in providing a longitudinal stiffening member which can be readily attached to the inner tubes of the linear form now in use.

My invention also consists of an improved pocket or envelop adapted to receive a stiffening member and be attached to the inner tube, whereby said tube can be easily inserted into or extracted from the outer tube.

My invention also consists in certain details of construction and novelties of combination, all of which will be fully described and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a vertical longitudinal section of a bicycle-tire constructed in accordance with my invention. Fig. 2 is a transverse vertical section. Fig. 3 is a detail view of the inner tube removed. Fig. 4 is a detail view of the stiffening member and its envelop; and Figs. 5 and 5^a show details of construction. Fig. 6 shows a modified form.

In the practical application of my invention I employ the outer tube A and the inner tube B, said outer tube being open only at the point C for a short distance; or, in other words, the outer tube or tire A is constructed similar to the well-known Morgan & Wright tire. The lineal tube B is of the lineal or butt-end pattern, also employed in the Morgan & Wright tire, and is provided with the usual vent-plug D. Along the inner side of the inner tube B is arranged a longitudinal stiffening member E, said member being composed of wire, rattan, hard rubber, or other suitable substance, as desired, and it may be attached to the inner tube by vulcanizing, cementing, or any other convenient method, the prime object of said rigid member being to render the inner tube sufficiently rigid to be threaded into the outer tube, and the said stiffening member is sufficiently flexible or elastic to readily conform to the circular shape of the tire, and in practice I prefer to slightly curve said stiffening member in order that it may be more easily inserted into the tire. When forming this stiffening member in connection with a new tire, it could be vulcanized thereon, as shown in Fig. 6; but I also propose to apply my invention to linear forms of tubes now in use, and in order to do this I provide a pocket or envelop F, of canvas or other fabric, in which the stiffening member is carried, and by cementing the pocket or envelop to the inner tube all of the objects above mentioned are accomplished, as said stiffening member then virtually forms a part of the inner tube. In practice I prefer to use a steel spring-wire G for this stiffening member, such as can be readily inserted into or withdrawn from the fabric pocket or envelop. It will thus be noticed that I provide a tire in which the stiffening member forms a component part thereof and remains with said tire always in the outer tube, so that when it

is desired to withdraw the inner tube it will facilitate the extraction of said inner tube equally as much as it facilitated its insertion. Again, it will be noticed that my invention
 5 can be easily applied to all of the inner tubes of this form now in use; and, furthermore, the stiffening member can be made removable from the pocket or envelop, so that if a tire
 10 or inner tube is constructed with this pocket or envelop the wire or stiffening member can be withdrawn from one inner tube when worn out and inserted in another tube, thus rendering it convenient for a rider to carry an
 15 inner tube provided with a pocket or envelop which, in case of accident, can be readily equipped with the stiffening member and inserted into the outer tube in place of the disabled one, which is, of course, first removed.

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

1. An inner tube of lineal form for pneumatic tires, provided with a longitudinal stiffening member, substantially its entire length,
 25 whereby said inner tube can be threaded into the outer tube substantially as described.

2. As an improved article of manufacture a stiffening member adapted to be attached
 30 to an inner tube of lineal form, said stiffening member consisting of a wire having an

eye at one end adapted to embrace the air-vent plug for the inner tube, said wire being incased in a suitable envelop whereby it can be attached to the inner tube, substantially
 as shown and described. 35

3. In a bicycle-tire, the combination, with an inner tube, of a longitudinal stiffening member, detachably secured thereto, said stiffening member extending substantially
 40 the entire length of the tube whereby it can be readily threaded into the outer tube substantially as shown and described.

4. In a bicycle-tire, the combination, with the inner and outer tubes, of the fabric pocket or envelop attached to the inner tube, and
 45 the stiffening member, such as steel wire, inserted in said pocket or envelop, said stiffening member extending the entire length of the inner tube whereby said tube can be threaded into the outer one which is tubular
 50 in form said member being wholly within the outer tube substantially as and for the purpose described.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES S. SCOTT.

Witnesses:

M. J. MCCOY,
 J. O. DICKERSON.