

975,829.

J. CAIRNS.
TIRE OF WHEELS OF VEHICLES.
APPLICATION FILED AUG. 18, 1909.

Patented Nov. 15, 1910.

Fig. 1.

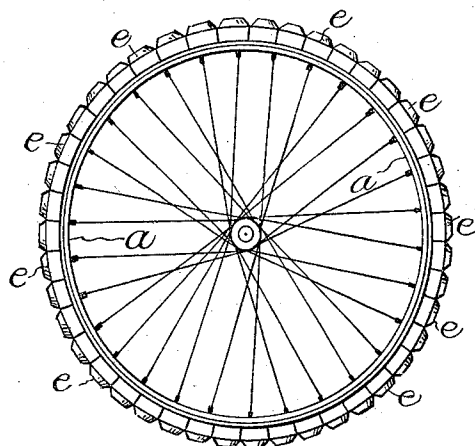


Fig. 2.

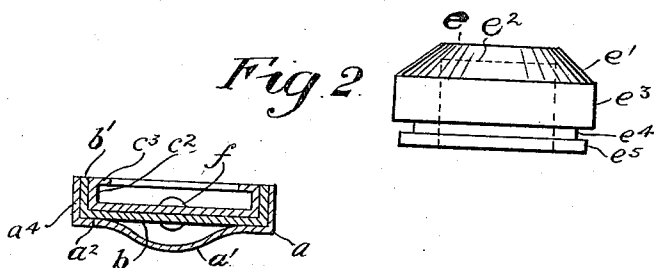


Fig. 3.

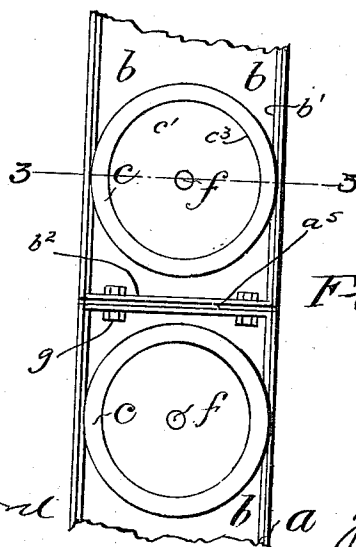


Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN CAIRNS, OF WILLENHALL, ENGLAND.

TIRE OF WHEELS OF VEHICLES.

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Specification of Letters Patent.

Patented Nov. 15, 1910.

Original application filed July 29, 1908, Serial No. 446,005. Divided and this application filed August 18, 1909. Serial No. 513,441.

To all whom it may concern:

Be it known that I, JOHN CAIRNS, late of Birmingham street, now of Walsall Road, Willenhall, South Staffs, England, mechanic, have invented certain new and useful Improvements in and Connected with the Tires of Wheels of Vehicles, of which the following is a specification.

This invention relates to that class of tires wherein the tread portion is formed by a plurality of yielding studs.

The invention has for its object the provision of an improved form of stud and also an improved form of mounting therefor.

The invention will be more fully described in connection with the accompanying drawing and will be more particularly pointed out and ascertained in and by the appended claims.

In the drawing:—Figure 1 is a view in side elevation of a wheel provided with studs arranged thereon in accordance with one embodiment of my invention. Fig. 2 is a view in side elevation of one of the studs detached. Fig. 3 is a cross-sectional view on line 3—3 of Fig. 4, showing the manner in which the stud is mounted. Fig. 4 is a plan view of a portion of the rim of the wheel.

Like characters of reference designate similar parts throughout the different figures of the drawing.

As shown in the drawing the invention is illustrated in connection with a wheel designed for light weight vehicles. The rim *a* is provided with an annular bead *a'* which merges into supporting sections *a''*. Lateral and annular flanges *a'''* project radially outwardly from the supporting sections *a''* and for side walls between which the stud holding parts are anchored. The side walls *a'''* are connected by one or more transverse partitions *a''''*.

Within the lateral walls *a'''*, and lying against the partitions *a''''*, are rectangular holders *b* provided with side flanges *b'* and end flanges *b''*. The end flanges *b''* are bolted as at *g* to the transverse partitions *a''''*. The holders *b* constitute shell receptacles supported on the supporting portions *a''* and fitting within the wall *a'''* of the rim *a* for receiving the shells to which the studs are secured.

As shown the shells are indicated at *c* and are of circular formation having bottom walls *c'* and a vertical side wall *c''* having its upper margin *c'''* bent inwardly to form an engaging flange. The flange *c'''* and bottom walls *c'* form a circular cavity or space for receiving a stud. Conveniently the shells are shown as riveted, at *f*, to the flat bottoms of the holders *b*, the rivets being centrally disposed with respect to the shells.

Studs *e* are hollow and are provided with conical upper portions *e'*, the truncated portion *e''* thereof forming the tread. The lower portion *e'''* is cylindrical and is provided with an annular groove or recess *e''''* to receive the flange *c'''*. The base portion *e'''''* is raised in proportion to project into and fill the space beneath the flange *c'''* so as to hold the studs in place and also to prevent entrance of water and egress of air to and from the interior of the studs, respectively. The base portion *e'''''* is slightly reduced in diameter with respect to the portion *e'''* to accommodate for the thickness of the walls *c''*.

Owing to the hollow construction of the studs the base portions *e'''''* may be sprung into place beneath the flange *c'''* by collapsing the stud and subsequently allowing the same to expand or spread so as to lock the base portions *e'''''* beneath the flange *c'''* in a manner to confine the air within the studs and form an effective cushion. While it will be understood that the stud does not form, with the shell, an air tight chamber, it will be clearly seen that egress or ingress of the air to and from the interior of the stud can only take place slowly whereupon it will be seen that a substantial air cushion is provided.

I claim:—

1. A vehicle wheel tire structure comprising in combination, a plurality of hollow studs of solid yielding material each provided with an annular groove near its base, a plurality of circular shells receiving the bases of said studs and having flanges engaging the grooves therein for securing said studs and confining air therein, and a rim supporting said shells.

2. A vehicle wheel tire structure comprising in combination, a plurality of hollow studs of solid yielding material each pro-

vided with an annular groove near its base,
a circular shell receiving the base of each
stud and provided with a flange engaging
the groove thereof for securing said stud
5 and confining air therein, holders provided
with end and side flanges to which said
shells are secured, a rim provided with side
flanges and a partition engaging the flanges

of said holder, and means securing the end
flanges of said holders to said partition. 10

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

JOHN CAIRNS.

Witnesses:

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