

E. W. PRICE.

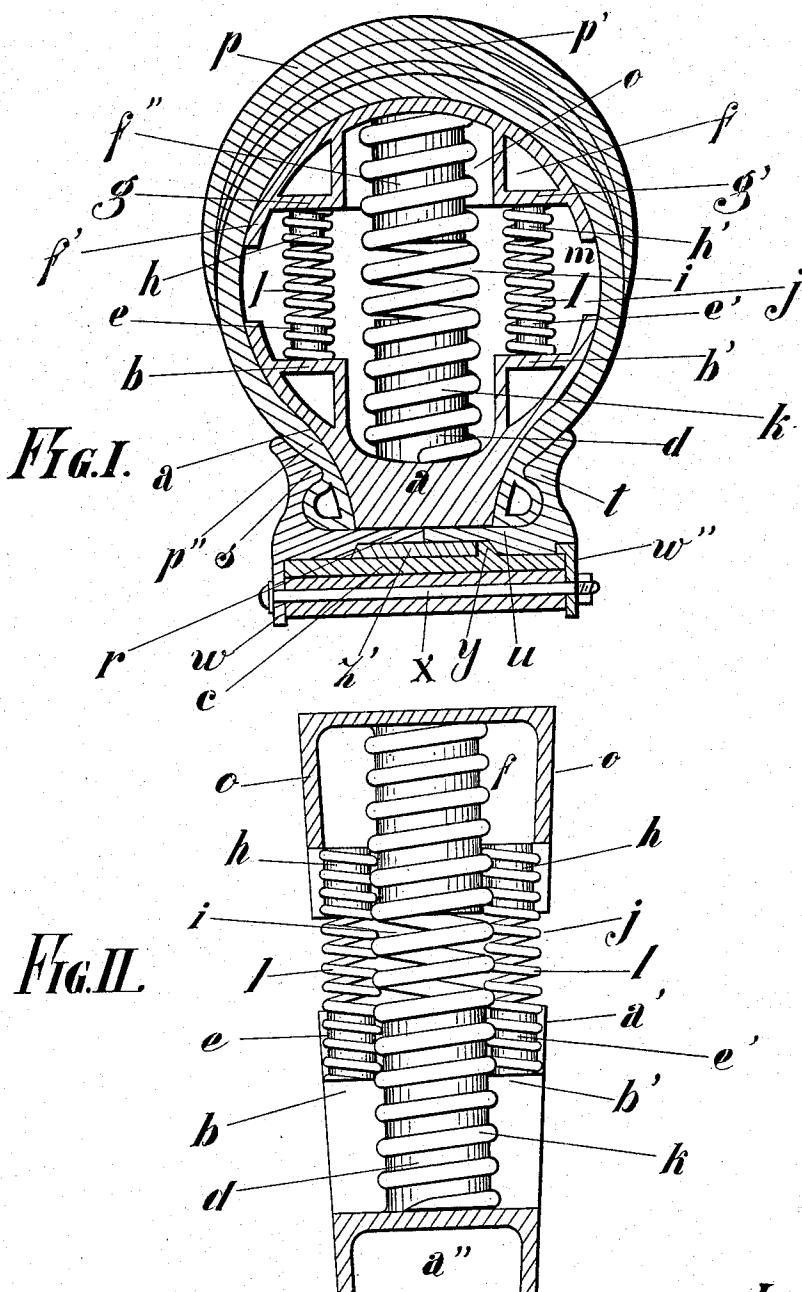
RESILIENT TIRE.

APPLICATION FILED APR. 10, 1915.

1,168,413.

Patented Jan. 18, 1916.

2 SHEETS—SHEET 1.



WITNESSES

Edward Bernstein

Agileobil

INVENTOR

Edward W. Price
by Charles Shuckles
attorney

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2 SHEETS—SHEET 2.

FIG. V.

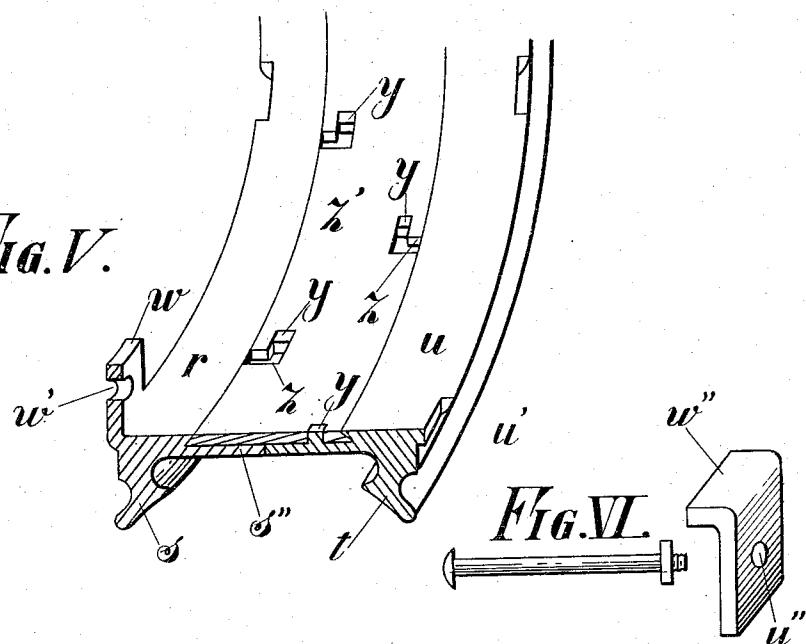
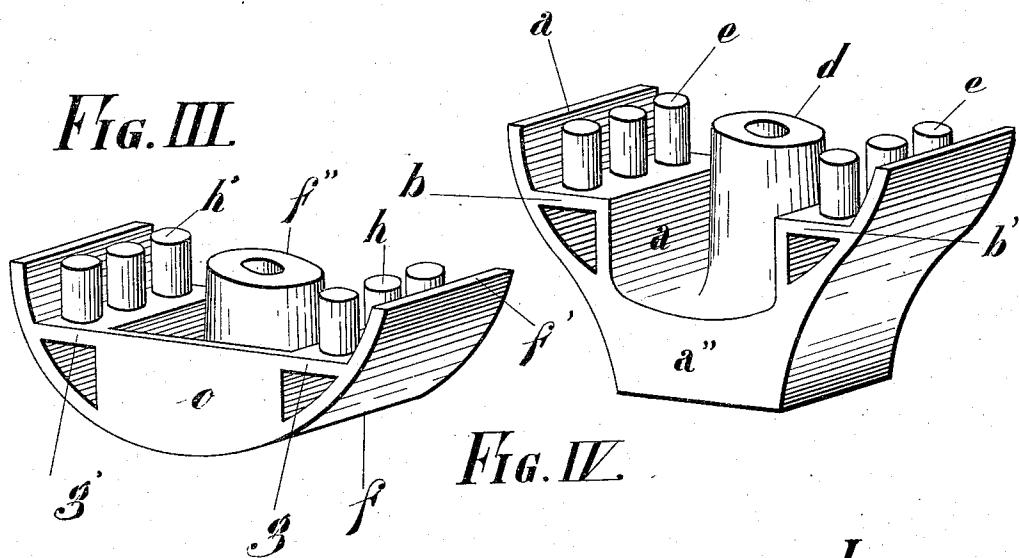


FIG. III



WITNESSES

Edward Bernstein
George Wodil

INVENTOR

Edward W. Price
by Chas. H. Neale
attorney

UNITED STATES PATENT OFFICE.

EDWARD WALTER PRICE, OF TORONTO, ONTARIO, CANADA.

RESILIENT TIRE.

1,168,413.

Specification of Letters Patent. Patented Jan. 18, 1916.

Application filed April 10, 1915. Serial No. 20,573.

To all whom it may concern:

Be it known that I, EDWARD WALTER PRICE, a citizen of the United States of America, residing at the city of Toronto, in 5 the county of York and Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Resilient Tires; and I hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to resilient tire comprising two concentric sets of arched segments, the segments of the inner set being arranged around the felly or rim of the wheel, and those of the outer set having independent movement in a radial direction and normally separated from the inner set by compression springs, the transverse or lateral movement of the segments being controlled by auxiliary springs connected with the opposed segments of the two sets.

In the drawings:—Figure 1, is a cross sectional view of the tire showing the arrangement of the arched segments and springs inclosed by a covering; Fig. 2, is a vertical section taken at right angles to Fig. 1 through two opposed segments; Fig. 3, is an inverted perspective view of one of the segments of the outer set; Fig. 4, is a perspective view of one of the segments of the inner set; Fig. 5, is a fragmentary view of the locking rings; and Fig. 6, is a detail view of the clamping bolt and detachable clamping lug.

Like characters of reference refer to like parts throughout the specification and drawings.

Each of the inner segments *a* consists essentially of an arched plate *a'*, a base *a''*, and internal spring seats *b*, *b'*.

The base *a''* is centrally located with respect to the edges of the arc of the segment *a*, and the outer sides of the base *a''* converge toward the rim *c*, for the purpose hereinafter described. Extending radially from the interior of the segment *a*, is a stud or post *d*, and at each side of the stud or post *d*, parallel with the edge of the segment *a*, are the spring seats *b*, *b'*, provided with studs or posts *e*, *e'*. The arched plate *a'*, the base *a''*, the spring seats *b*, *b'*, and the posts *d*, *e* and *e'* are preferably cast in one piece. Each of the outer segments *f* consists of an arched plate *f'*, a stud or post *f''* extending radially from the interior of the segment, and spring seats *g*, *g'*, located on

opposite sides of the stud or post *f''*, and provided with studs or posts *h*, *h'*.

As shown in Figs. 1 and 2 of the drawings, the studs or posts *d* and *f''* of each pair of opposed segments are radially alined, with a separation *i* between them of the same depth as the separation *j* between the edges of the arched plates *a'* and *f'* of the opposed segments, so that the outer segment can move in the direction of the inner segment during the compression of the springs *k* and auxiliary springs *l*. Encircling each pair of radially opposed posts *d* and *f''*, and engaging the corresponding inner and outer segments, is a compression spring *k*, to resist the inward movement of the outer segment when under pressure, and to restore the outer segment to its normal position when relieved of the pressure.

The posts of each row *e*, *e'* are alined with those of each row *h*, *h'* respectively, the posts of the inner segment *a* being spaced from those of the outer segment *f* by a separation *m* corresponding to the separations *i* and *j*. On each pair of opposed posts of the rows *e* and *h* and *e'*, *h'* respectively, are auxiliary springs *l*, the purpose of which is to assist the compression spring *k* in resisting the inward movement of the outer segment and restoring the outer segment to its normal position, and also to control the lateral or transverse movement of the outer segment with respect to the inner segment, the bending movement of the auxiliary springs being limited by the overhanging parts of the arched plates *a'* and *f'*.

As shown in Fig. 3, the sides of the arched plate *f'* are formed with webs *o* to prevent the flattening out of the arched plate under the influence of the load; the plate *f'*, spring seats *g*, *g'*, posts *f''* and *h*, *h'* and webs *o*, being preferably made of a single casting.

As shown in Fig. 1, the arcs of the segments *a* and *f* are described from the same center, so that when the parts are assembled, they will form a substantially annular metal tube to be incased by the rubber or leather covering *p*, the tread *p'* of which overlies the arched segments *f* and the sides *p''* of which contact the outer surfaces of the segments *a* and the sides of the base *a''*.

Interposed between the bases of the segments *a* and the rim *c* are the locking rings *r* and *u* having flanges *s* and *t* respectively, 110 which engage the sides *p''* of the covering *p* and press them against the sides of the

base a'' , the ring r being provided with radial lugs w apertured at w' , and the ring u being grooved at u' to receive the clamping lugs w'' apertured at u'' for the clamping bolts x , by which the locking rings are drawn together to enable the flanges s and t to clamp the sides of the covering p against the base. By means of the flanges s and t , lugs w and w'' and the clamping bolts x and base a'' , a lock is formed to secure the covering to the inner and outer segments.

The inner surface of each of the locking rings r and u is channeled at s'' and is provided with studs y which enter the bayonet joint slots z in the fastening rings z' , which, as shown in Fig. 5, is contained in the channels s'' . When the studs y are fully entered in the bayonet joint slots, the fastening ring z' will effectively hold the locking rings together and prevent their inadvertent lateral separation.

In assembling the parts, the edges of the locking rings are butted together with the studs entered in the bayonet joint slots, after which a slight rotating movement is given one of the locking rings to drive the studs of both rings to the inner ends of the slots.

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

1. A resilient tire comprising two concentric sets of arched segments normally separated for the independent inward movement of those of the outer set, a stud extending radially from the interior of each segment, compression springs held by each pair of opposed studs and engaging their

respective segments to resist the inward movement of the outer segments, spring seats for each segment located on opposite sides of its radial stud, studs extending from the spring seats, and auxiliary springs held thereby and engaging the spring seats to resist the lateral movement of the outer segments. 45

2. A resilient tire comprising two concentric sets of arched segments normally separated for the independent movement of those of the outer set, each segment of the outer set comprising an arched plate, a stud extending radially from the interior of the arched plate, and spring seats located on opposite sides of the stud and provided with a row of studs, each of the arched segments of the inner set comprising an arched plate, a base having converging sides centrally located with respect to the edges of the arched plate, a stud extending radially from the interior of the segment, and spring seats at each side of the radial stud, each spring seat being provided with a row of studs, in combination with compression springs held by each pair of radially-opposed studs engaging their respective segments to resist the inward movement of the outer segments, and auxiliary springs engaging the opposed spring seats and held by the rows of studs thereof to resist the lateral movement of the outer segments. 50 55

Toronto, April 1st, 1915.

EDWARD WALTER PRICE.

Signed in the presence of—

EDWARD S. BERNSTEIN,

STANLEY RUBES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."