

No. 666,401.

Patented Jan. 22, 1901.

E. A. WHITNEY.

CUSHION TIRE.

(Application filed Nov. 10, 1900.)

(No Model.)

FIG. 1.

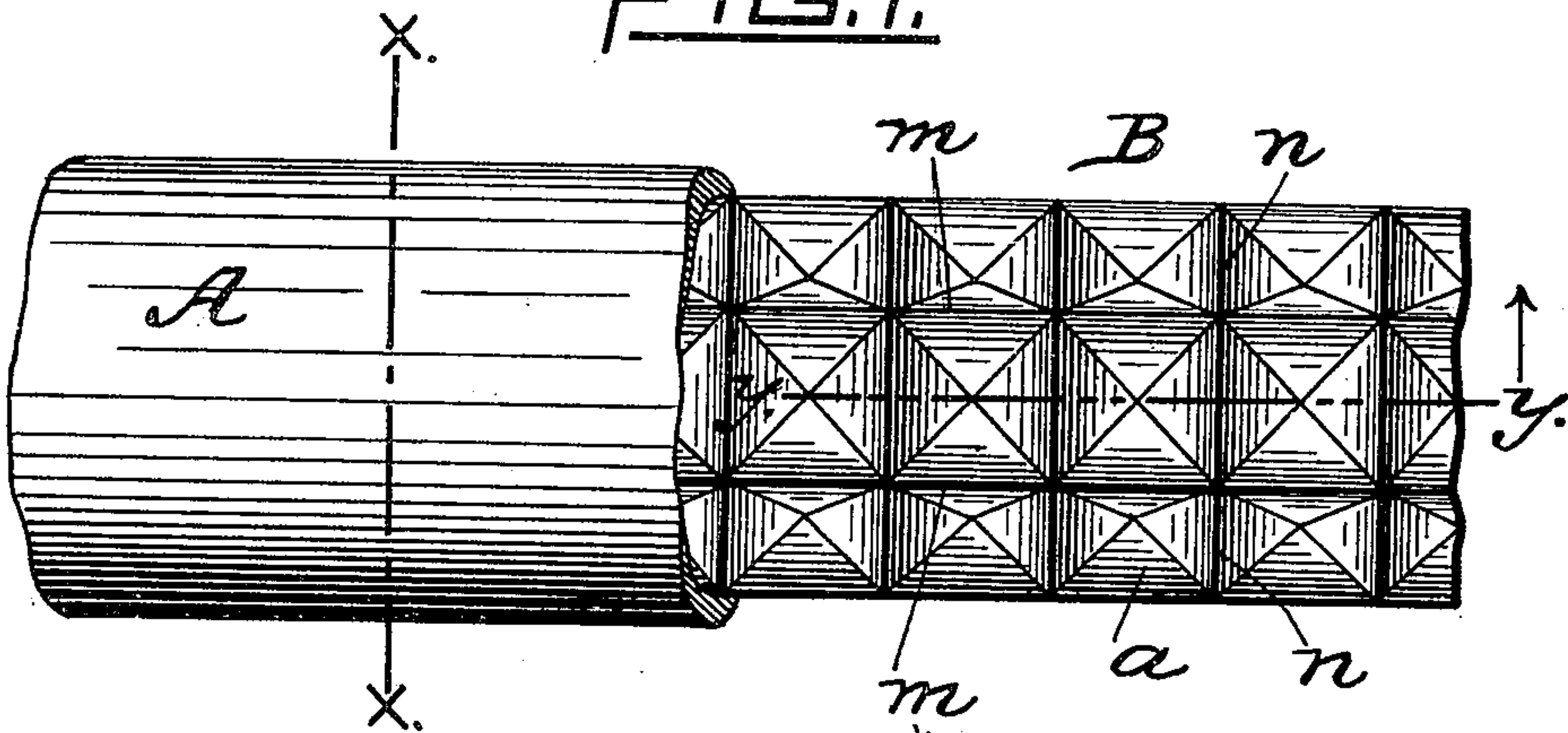


FIG. 2.

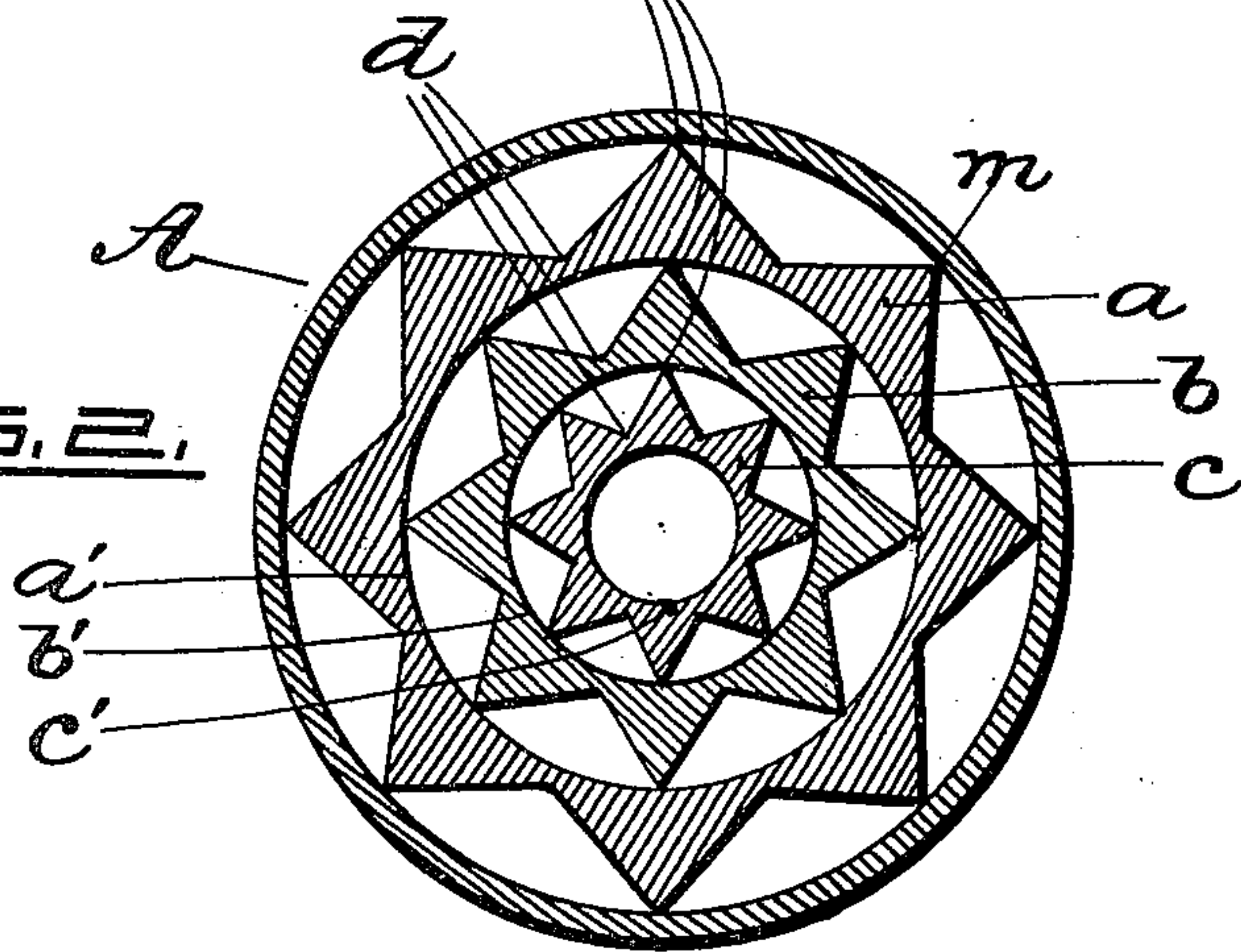
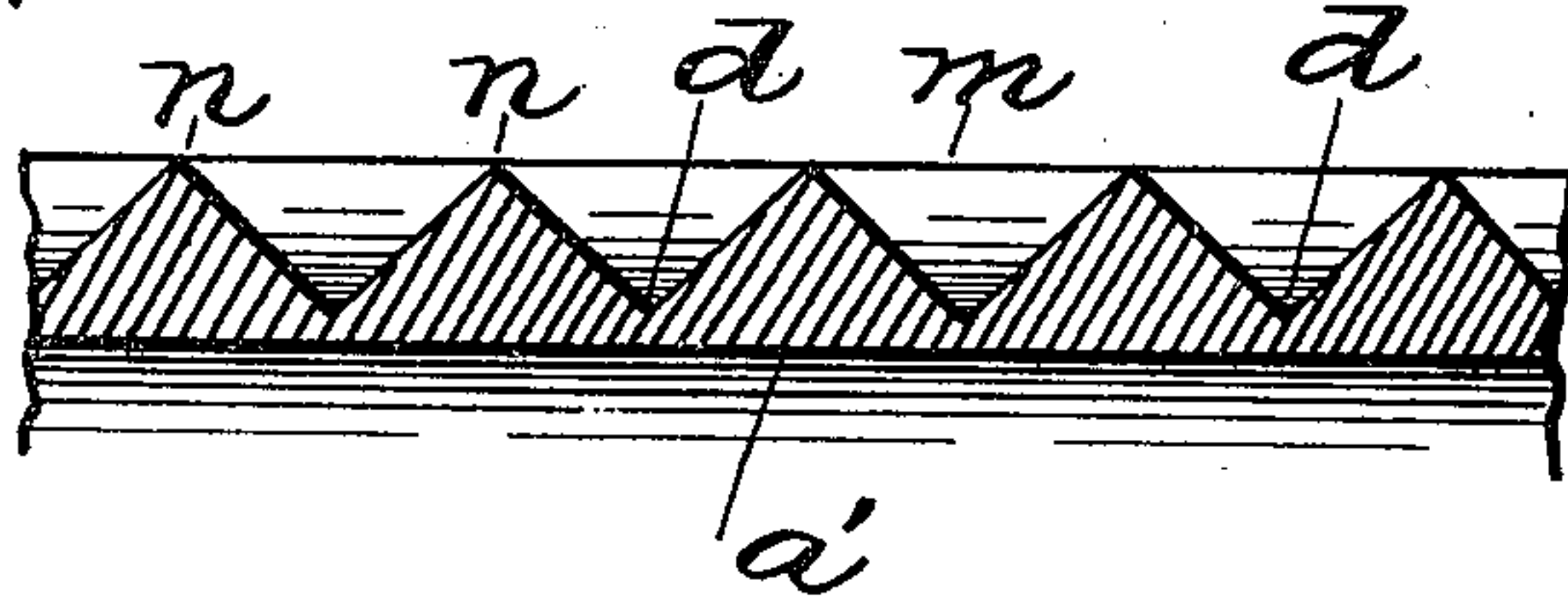


FIG. 3.



WITNESSES.

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CUSHION-TIRE.

SPECIFICATION forming part of Letters Patent No. 666,401, dated January 22, 1901.

Application filed November 10, 1900. Serial No. 36,026. (No model.)

To all whom it may concern:

Be it known that I, ELVIRA A. WHITNEY, a citizen of the United States, residing at Cranston, in the county of Providence and State of Rhode Island, have invented a certain new and useful Improvement in Cushion-Tires, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of tires which has a cellular filling or body. Its objects are strength, resiliency, cheapness of construction, and non-collapsibility in case of puncture.

To this end my invention consists in the novel form and arrangement of parts herein set forth, and illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of a section of my improved tire, showing the sheath removed from a part of the body; Fig. 2, a transverse sectional view of the same on line $x x$, Fig. 1; and Fig. 3 is a longitudinal section of the exterior body tube on line $y y$ of Fig. 1. Similar letters refer to similar parts throughout the views.

Referring to the drawings, A represents the sheath of my tire, and B the body portion of the same, both composed of rubber or similar flexible elastic material throughout. The body B is a compound structure consisting of a series of longitudinal tubes $a b c$, concentrically arranged one within the other. In detail each of these tubes has respectively a smooth cylindrical interior surface $a' b' c'$, while their exteriors are formed with pyramidally-shaped depressions d , arranged in parallel series both longitudinally and transversely. These depressions result in forming upon the tube exteriors parallel series of projections or walls, the longitudinally-disposed wall series m intersecting the circumferential wall series n .

The assemblage of the tire parts is as follows: The tube b is inserted within tube a , preferably with the longitudinal walls or projections m of the tube b directly below the walls m of the tube a . The tube c is inserted within the tube b , with its walls m immediately beneath the walls m of tube b . The assembled tubes $a b c$ are now inserted in or

covered by the flexible covering A, of any convenient construction.

It is obvious that the number of tubes composing the body of my tire may be increased or diminished at will to adapt it for use upon vehicles of different weights and sizes.

Aside from the apparent advantages inherent in my improved tire, a great reduction in cost results from the peculiar configuration of the tube-surfaces on account of the facility of constructing molds for their formation.

By reason of the construction described it will be observed that the interior of the tire, or at least the main body portion thereof, essentially consists of a plurality of inner tubes concentrically arranged one within the other and having exterior superimposed walls, the exterior walls of each tube contacting at their apices against the inner surface of the next larger tube. In the preferred construction the exterior walls of the nested series of tubes are of tapering or triangular shape in cross-section, thus providing a structure in which may be said to be involved a plurality of superimposed solid pyramids, which provide a strong sustaining power for the tire. It will be observed that the longitudinal walls m of the several tubes are alined in radial planes, while the circumferential walls n are alined in circular planes.

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

1. An elastic tire comprising an outer casing or sheath, and a series of inner tubes concentrically arranged one within the other, and each having a plurality of exterior walls bearing against the inner surface of the next larger tube, the points of contact for the walls of the several tubes being alined.

2. In an elastic tire, the combination with the outer casing or sheath, of a series of individually separate inner tubes concentrically arranged one within the other, and each having a plurality of exterior longitudinal walls bearing against the inner surface of the next larger tube, the points of contact for the longitudinal walls for the several tubes being alined in radial planes.

3. In an elastic tire, the combination with

- the outer casing or sheath, of a series of individually separate inner tubes concentrically arranged one within the other, and having cellular exteriors producing a plurality of intersecting longitudinal and circumferential walls, the points of contact for the longitudinal walls being alined in radial planes, and the points of contact for the circumferential walls being alined in circular planes.
4. In an elastic tire, the combination with the outer casing or sheath, of a series of individually separate inner tubes concentrically arranged one within the other and each having a plurality of exterior walls of a tapering width, the apices of which walls bear against the inner surface of the next larger tube, and the points of contact for the said apices being alined.
- In testimony whereof I have affixed my signature in presence of two witnesses.
- ELVIRA A. WHITNEY.
- Witnesses:
HORATIO E. BELLOWS,
CHARLES H. WAITE.