

No. 754,936.

PATENTED MAR. 15, 1904.

S. PALMER.
FLEXIBLE TUBE.

APPLICATION FILED NOV. 17, 1903.

NO MODEL.

Fig. 1.

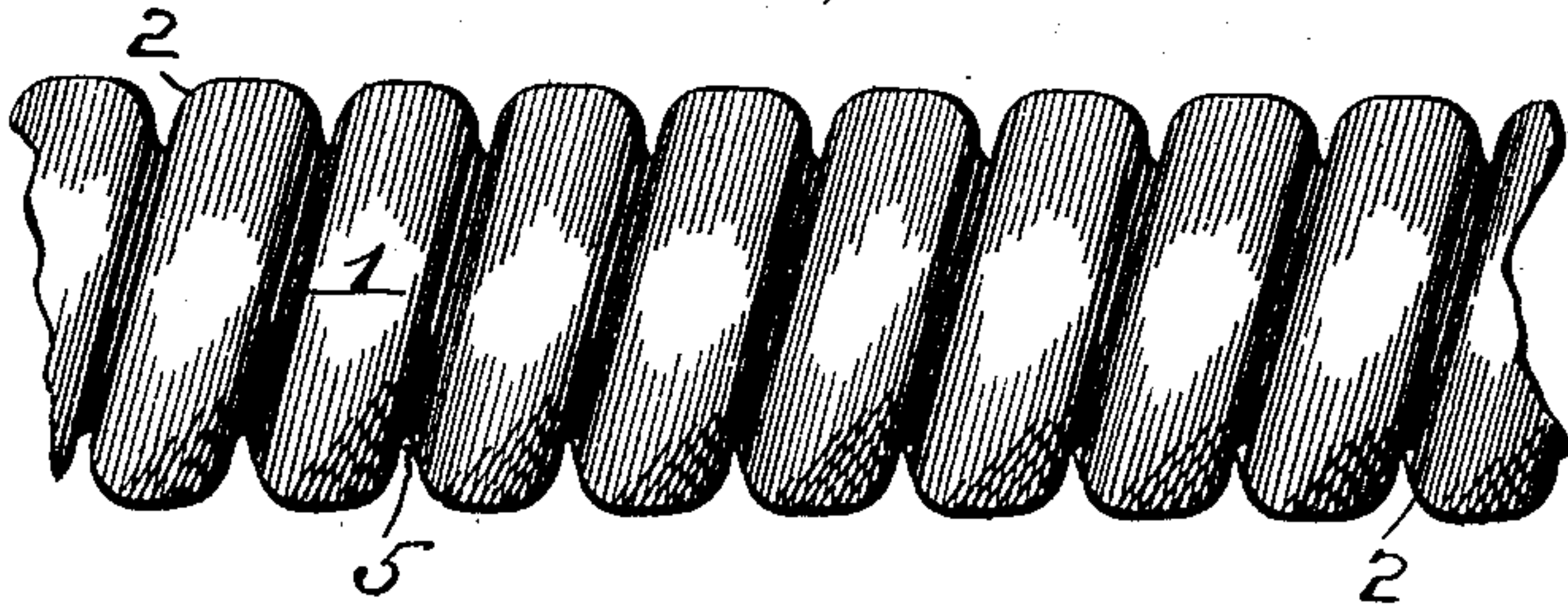


Fig. 2.

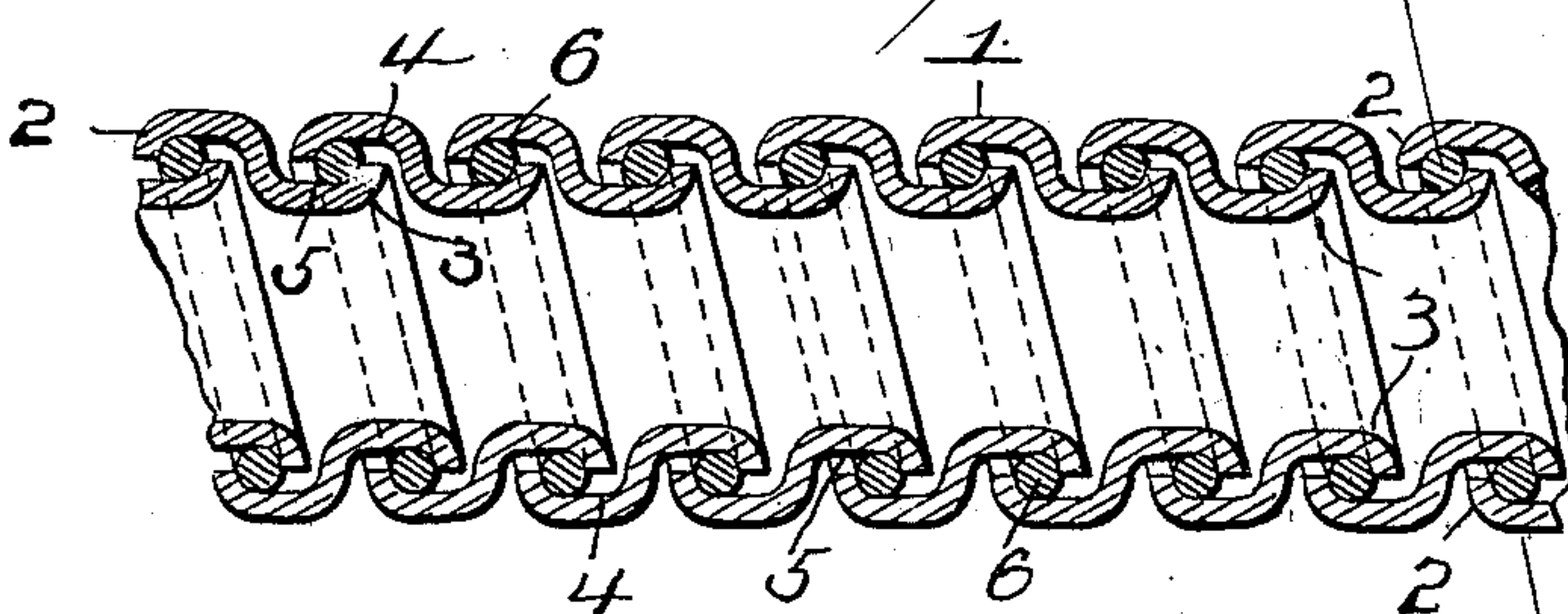


Fig. 3.

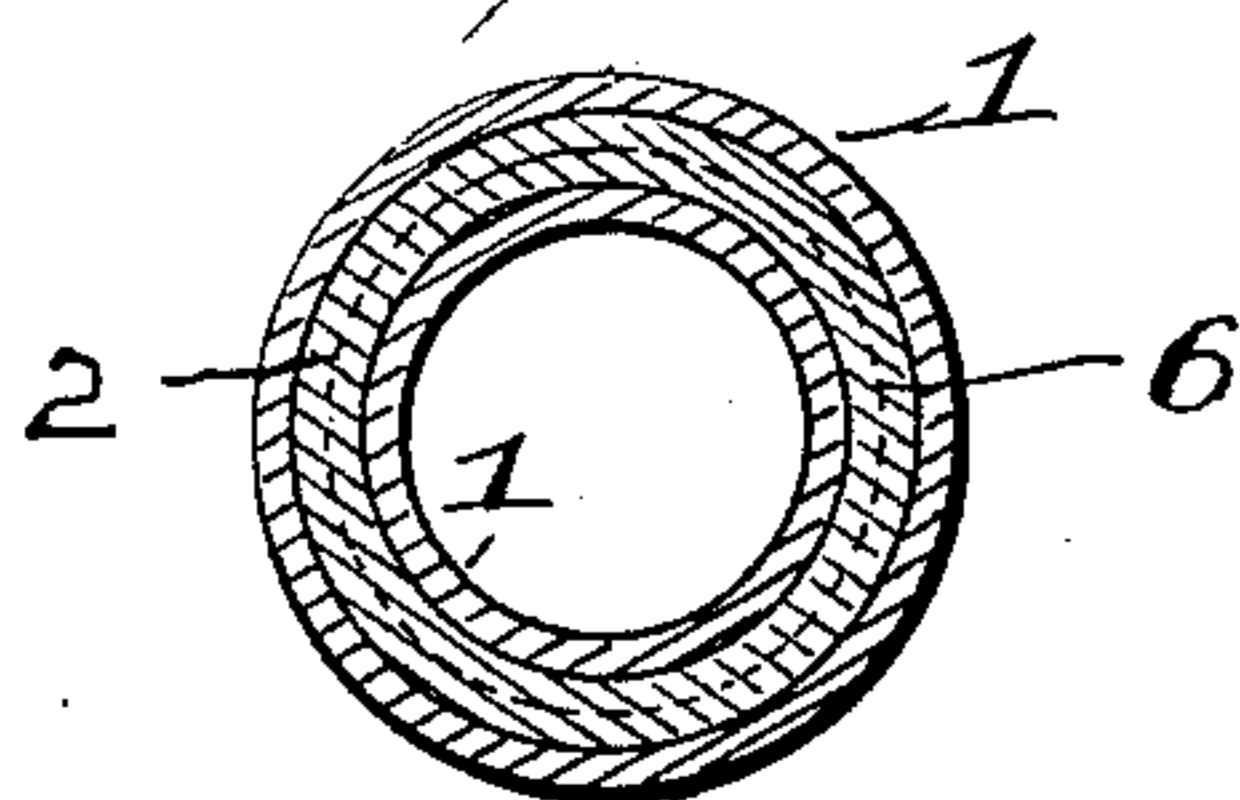
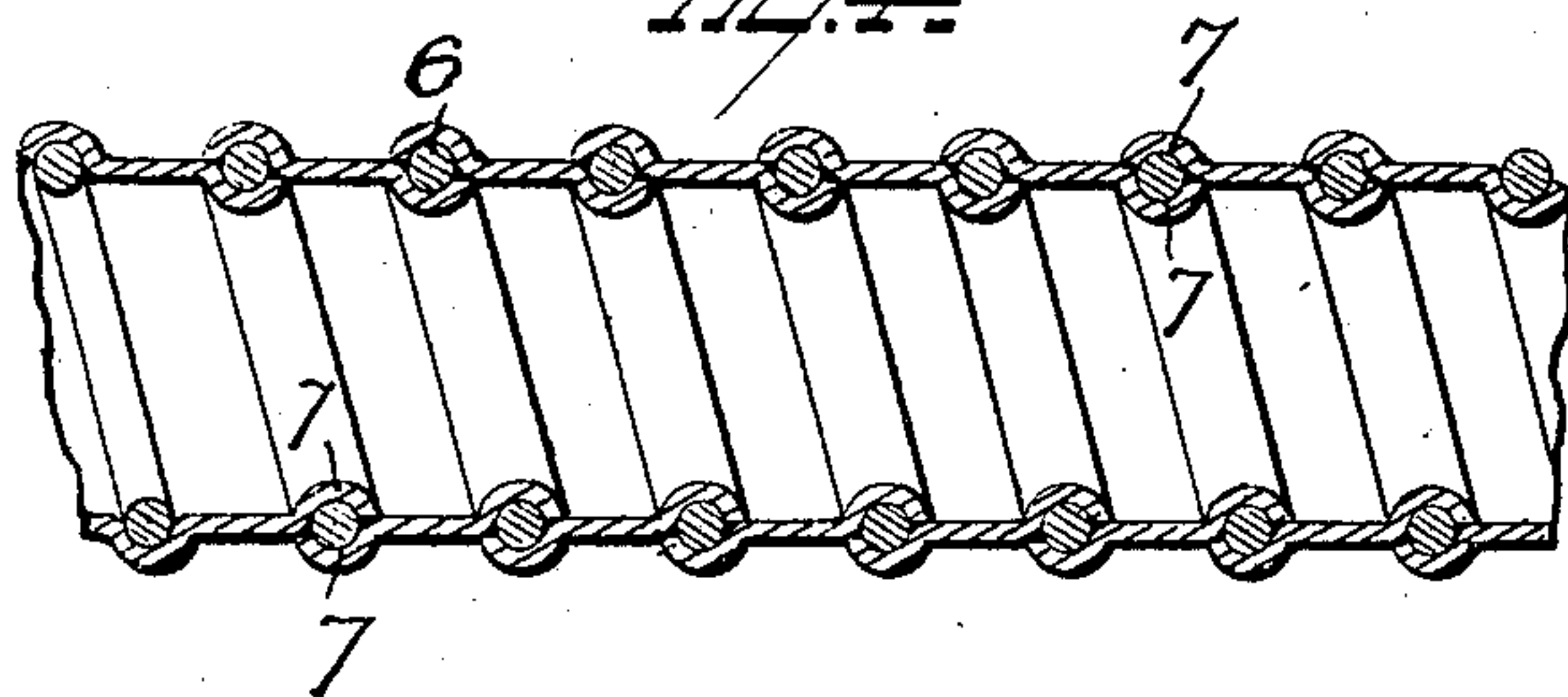


Fig. 4.



WITNESSES

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FLEXIBLE TUBE.

SPECIFICATION forming part of Letters Patent No. 754,936, dated March 15, 1904.

Application filed November 17, 1903. Serial No. 181,538. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN PALMER, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Flexible Tubes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved flexible tube, the object of the invention being to provide a casing composed of a spirally-wound suitably-shaped metal strip, with an interlocking member between the overlapping edges of the coils of said strip to insure the perfect locking thereof, thus forming a tube of great longitudinal strength, yet permit of lateral bending to accommodate itself to any and all uses to which a casing of this character may be put.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation, illustrating my improvements. Fig. 2 is a view in longitudinal section. Fig. 3 is an enlarged sectional detail view, and Fig. 4 is a view of a modification.

My improved casing is formed from a strip of metal 1, preferably of steel, spirally wound and of the shape in cross-section shown in Figs. 2 and 3. One longitudinal edge of strip 1 is bent downward, forming a flange 2, and the other longitudinal edge is bent upward, forming a flange 3, while the metal between the flanges has a general compound curve with alternate flat faces 4 and 5 on its upper and lower surfaces.

In forming the casing the strip 1 is wound spirally, and a locking member 6—such as a wire, narrow strip, or cord—is interposed between the overlapping faces 4 and 5 of the strip and between the flanges 2 and 3 thereof, said locking member being of sufficient thick-

ness to prevent the flanges 2 and 3 being drawn over the same, and thereby securely locking the coils together, yet permitting of sufficient lateral bending and longitudinal expansion and contraction of the casing to accommodate itself to the many uses a device of this character may be subjected.

The particular shape of the strip 1 is not essential, as strips of a shape other than that shown in Figs. 1, 2, and 3 may be employed. For example, in the modified construction shown in Fig. 4 I illustrate a strip having longitudinal depressions 7 on its opposite faces near its longitudinal edges to receive the wire or cord 6 in said facing grooves 5 and securely lock the coils together, and a great many other changes might be made in the general form and arrangement of the several parts described without departing from my invention, and hence I do not restrict myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. A flexible tube comprising a spirally-wound metal strip, and a rigid locking member between the overlapping coils of said strip and constituting the sole means for locking the edges of the strip.

2. A flexible tube comprising a spirally-wound metal strip having oppositely-bent flanges at its longitudinal edges, and a locking-wire located between the overlapping edges of the coils and between the flanges of the respective coils to lock them together.

3. A flexible tube comprising a spirally-wound metal strip having oppositely-bent flanges at its longitudinal edges and faces adjacent to its flanges, and a locking-wire coiled with the strip and located between the faces and flanges of the overlapping coils of said strip.

4. A flexible tube comprising a spirally-

wound strip and a spirally-wound locking-wire interposed between the overlapping edges of the strip, substantially as set forth.

5 5. A flexible tube comprising a spirally-wound strip having longitudinal recesses and a spirally-wound wire interposed between the overlapping edges of the strip and located in said recesses.

10 6. A flexible tube comprising a spirally-wound strip having flanges at its edges bent in opposite directions, and a continuous spi-

rally-wound wire interposed between the oppositely-bent flanges on the overlapping edges of the strip, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

STEPHEN PALMER.

Witnesses:

S. W. FOSTER,

S. G. NOTTINGHAM.