

(No Model.)

H. M. LINDSTEDT.

APPARATUS FOR INSERTING SPRINGS IN BICYCLE TIRES.

No. 565,476.

Patented Aug. 11, 1896.

FIG. 1.

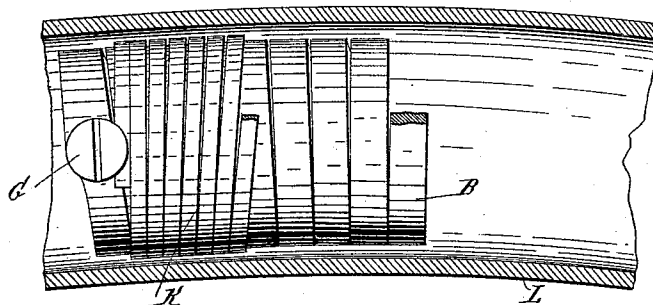


FIG. 2.

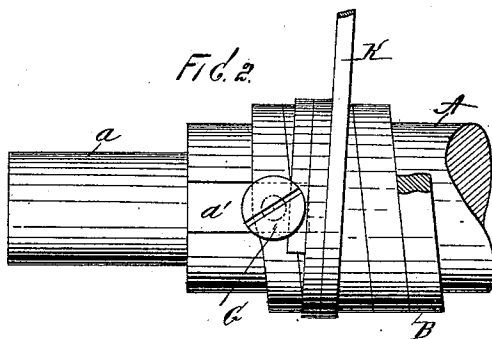


FIG. 3.

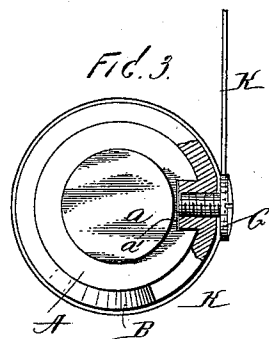
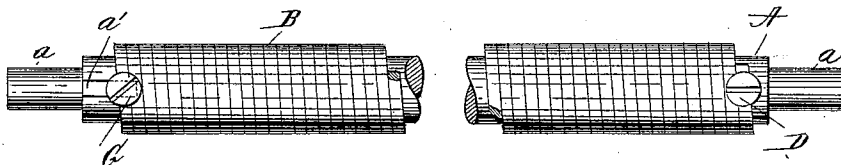


FIG. 4.



WITNESSES:

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APPARATUS FOR INSERTING SPRINGS IN BICYCLE-TIRES.

SPECIFICATION forming part of Letters Patent No. 565,476, dated August 11, 1896.

Application filed November 9, 1895. Serial No. 568,393. (No model.)

To all whom it may concern:

Be it known that I, HERMAN MAGNUS LINDSTEDT, a citizen of the United States, and a resident of Sag Harbor, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Bicycle-Tires, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to hollow tubular tires for bicycles and other vehicles, and particularly to that class thereof which contains springs by which their form and elasticity is maintained, and the invention involves a new method of forming such springs and for placing them within the tubular tire, and also a novel device or apparatus by which the method is carried into effect.

My improved apparatus involves a solid mandrel and a spiral-spring mandrel mounted thereon, on which, in the practice of my invention, the tire-spring is wound, and in carrying my invention into effect the spiral tire-spring is wound upon or over the spiral-spring mandrel, and the latter, with the tire-spring wound thereon, is then removed from the solid mandrel and inserted into the tire, after which the spring-mandrel is withdrawn.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a longitudinal section of a portion of a tubular tire, showing also a portion of the spring-mandrel and a portion of the tire-spring wound thereon; Fig. 2, a side elevation of a portion of the solid mandrel which I employ, also a portion of the spring-mandrel mounted thereon and a portion of the tire-spring wound on the spring-mandrel. Fig. 3 is an end view of Fig. 2, partly in cross-section; and Fig. 4, a side elevation of the solid mandrel and the spring-mandrel combined.

In the practice of my invention I provide a cylindrical mandrel A, the ends of which are reduced in size, as shown at *a*, and formed in one end of the mandrel A is a longitudinal slot *a'*. Mounted upon the cylindrical mandrel A is a spiral-spring mandrel B, the ends

of which are held in place at one end by a screw D and at the other by a screw G, which enters the slot *a'*, and it will be observed that the spring-mandrel B is mounted on the mandrel A from right to left; and in the practice of my invention I wind upon the spring-mandrel B, from left to right, the spiral spring K, which is intended to be placed within a tubular tire. In this operation the end of the spiral spring K is first secured by the screw G, and then said spring is wound into the spiral form of any desired length and the opposite end thereof is secured in any desired manner. In Fig. 1 of the accompanying drawings L represents a section of a tubular tire which is adapted for use in connection with a bicycle or other vehicle, and in placing the spiral spring therein the spring-mandrel B is removed from the cylindrical mandrel A and it, together with the spiral spring K, wound thereon, which is intended to entirely fill the tire, is then inserted into said tire, and then by releasing the ends of the spiral spring from the spiral mandrel said spring will expand and the spiral mandrel may be withdrawn therefrom.

The spiral spring K is of such size that when it expands it entirely fills and expands the tubular tire, and thus provides for the perfect elasticity thereof, while retaining the same in proper shape; and my improved tire constitutes an effective and durable substitute for the ordinary pneumatic tire and is not so liable to get out of order and need repairing, while being at the same time much more durable.

My invention is not limited to the exact form, construction, and arrangement of the parts of the apparatus herein described, and I therefore reserve the right to make all such alterations therein and modifications thereof as fairly come within the scope of my invention.

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

1. In an apparatus for forming spiral springs for tubular tires, and placing them in position, cylindrical mandrel, and a spiral mandrel mounted thereon, adapted to be inserted in spiral tire-spring and removed

therefrom when the spring is placed in position in the tire, substantially as shown and described.

2. In an apparatus for forming spiral
5 springs for tubular tires, and placing them
in position within the tires, the combination
of a cylindrical mandrel, a spiral-spring man-
drel mounted thereon, and a spiral tire-spring
wound on said spring-mandrel, said spring-
10 mandrel being removable from the cylindrical
mandrel, and it, together with the spiral tire-
spring wound thereon, being adapted to be in-
serted into the tire, substantially as shown
and described.

15 3. In an apparatus for forming spiral
springs for tubular tires, and placing them
in position within the tires, the combination

of a cylindrical mandrel, a spiral-spring man-
drel mounted thereon, and a spiral tire-spring
wound on said spring-mandrel, said spring- 20
mandrel being removable from the cylindrical
mandrel, and it, together with the spiral tire-
spring wound thereon, being adapted to be in-
serted into the tire, and said spiral-spring
mandrel being adapted to be removed there- 25
from, substantially as shown and described.

In testimony that I claim the foregoing as
my invention I have signed my name, in pres-
ence of the subscribing witnesses, this 5th
day of November, 1895.

HERMAN MAGNUS LINDSTEDT.

Witnesses:

GEORGE C. RAYNOR,
ELEANOR McCULLIN.