

No. 616,746.

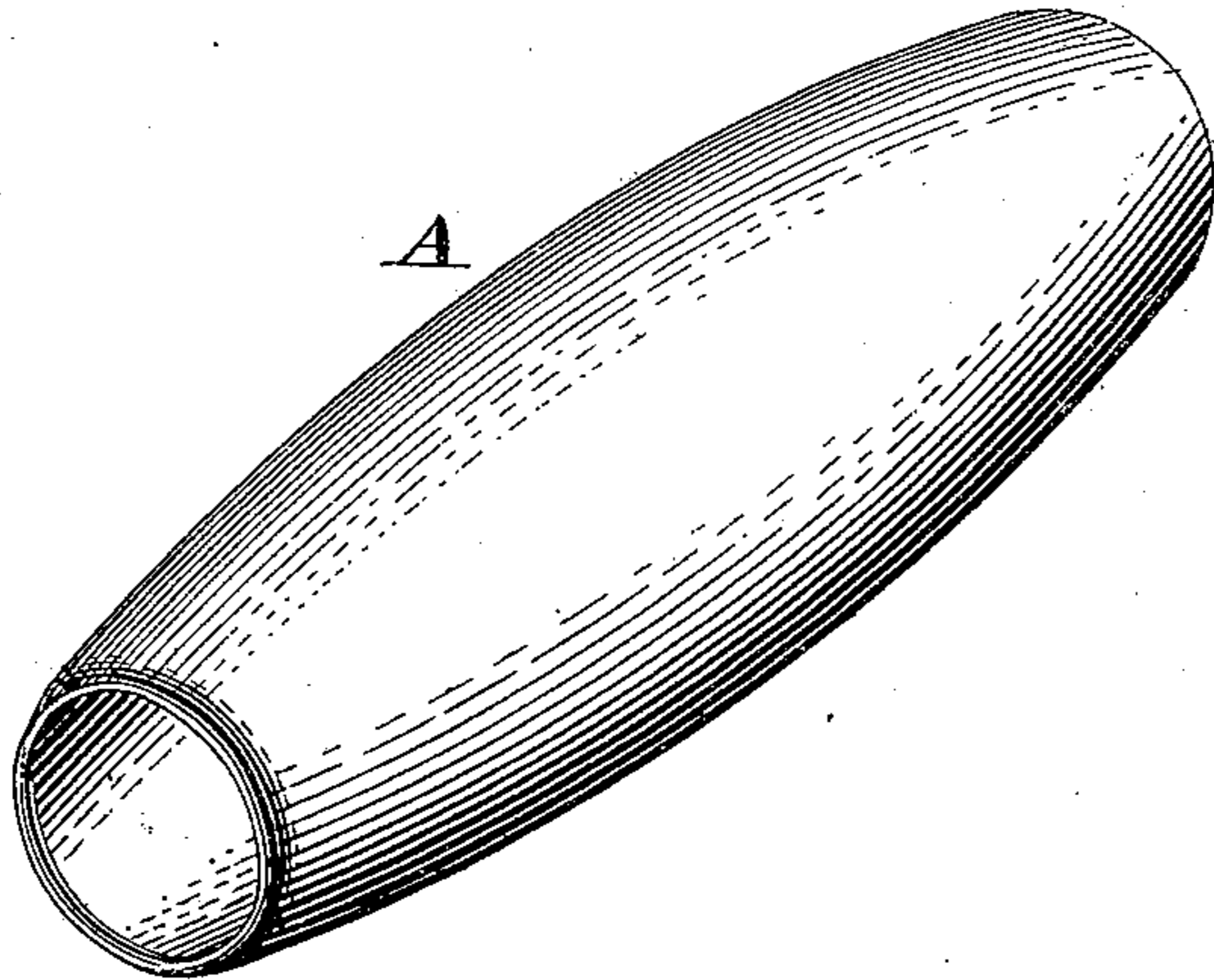
Patented Dec. 27, 1898.

F. TAYLOR.  
HAND GRIP FOR HANDLES.

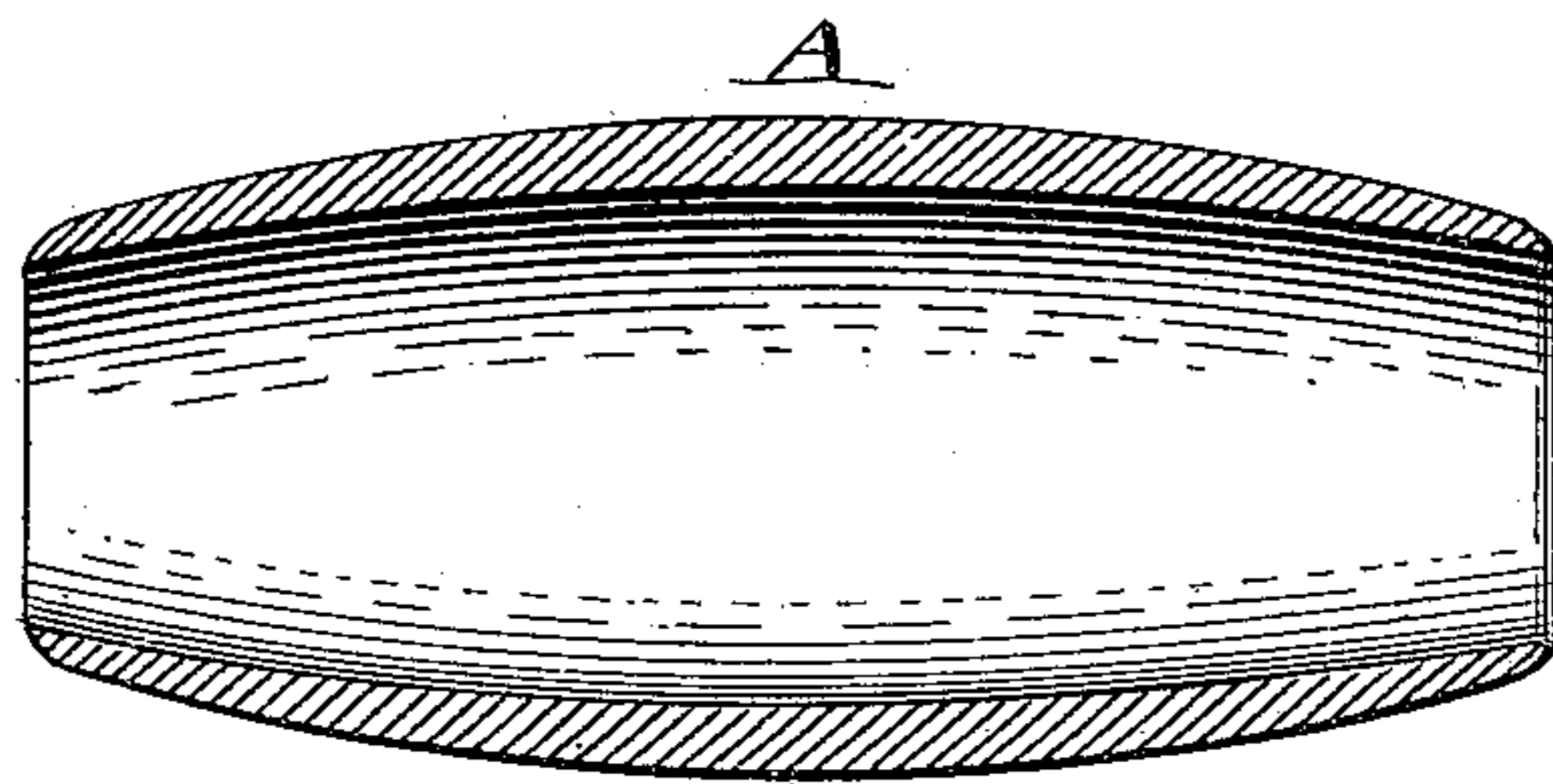
(Application filed Nov. 10, 1897.)

(Specimens.)

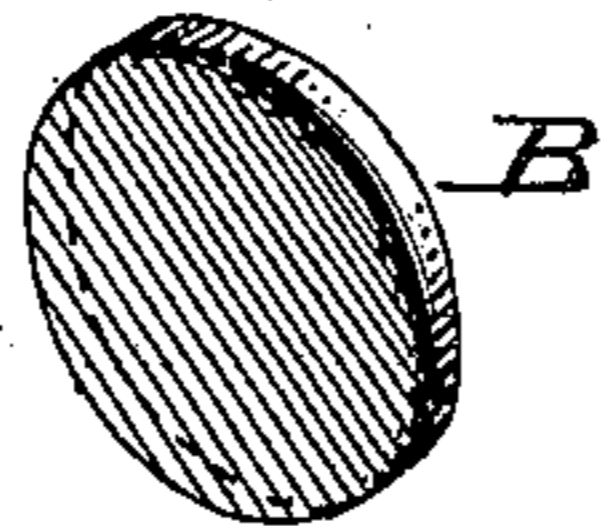
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

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## HAND-GRIP FOR HANDLES.

SPECIFICATION forming part of Letters Patent No. 616,746, dated December 27, 1898.

Application filed November 10, 1897. Serial No. 658,002. (Specimens.)

*To all whom it may concern:*

Be it known that I, FRANKLIN TAYLOR, a citizen of the United States, residing at Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Hand-Grips for Handles, especially on the handle-bars of bicycles and the handles of tools, of which the following is a specification.

My invention relates to improvements in adjustable hand-grips to be used wherever it is sought to provide a firm handhold of tough, cheap, durable, and simple material, and has for its object to provide a grip made in one piece, of easy application, of little cost, and very light and strong. This object I accomplish in the manner and by the means hereinafter more fully described, and pointed out in detail in the claims, reference being had to the accompanying drawings, in which like letters of reference indicate like parts in all the figures.

Figure 1 is a view in perspective of my invention. Fig. 2 is a central longitudinal sectional view of same. Fig. 3 is a detail view of the disk with which one end may be closed detached.

My improved vulcanized-fiber hand-grip may be used for many purposes and is very durable, does not deteriorate rapidly from friction, wear, and tear, and is not breakable by a fall, blow, or jar.

In making articles of vulcanized fiber it has been usual to have the blanks cut out of a piece of fiber of suitable size and then turned down to the desired shape. In turning the blanks the cuttings are lost, as there is no known use to which they may be put. This adds to the cost of the article so made. Then if there is any cutting except parallel with or right across the fiber as the blank was built up it leaves a portion unsupported except by its lateral connection with its own layers of fiber, and hence is easily crushed or broken.

Turning also has the effect of leaving the more exposed parts, such as ends or edges, especially if the articles taper toward the ends or edges, the weakest instead of, as they should be, the strongest parts.

My invention consists of a vulcanized-fiber

hand-grip A, exteriorly and interiorly gradually diminishing in diameter from its middle toward each end. The hand-grip is made of vulcanized fiber in any desired color and is adapted to fit tightly on the part desired and to be held in place by frictional resistance. A little cement may be used, if desired.

I have discovered that a piece of dry vulcanized-fiber tubing subjected to endwise pressure will expand regularly and uniformly from the ends toward the center and will retain its shape when the pressure is removed.

In making the hand-grip I first make a vulcanized-fiber tube by the well-known methods of manufacture. The tube should be of greater inside diameter than is required at the points of contact of the hand-grip with the handle-bar or handle on which it is to be fitted and the outside diameter of the tube smaller than the greatest outside diameter of the hand-grip when finished. I now cut a piece of the tube of proper length, and just as it is without treatment of any sort, except that it may be either hot or cold, upset it in a die, the whole pressure being directed endwise. This causes the material to pack somewhat all along the piece used, but especially about the ends, while it assumes the desired form, the middle part expanding slightly both exteriorly and interiorly, while the ends slightly contract. The hand-grip thus made has the ends exteriorly and interiorly reduced in diameter, so as to fit tightly on whatever they are put, said ends being at the same time compressed, hardened, and strengthened. The middle of the hand-grip is expanded, giving the desired shape to the outside, and because of the air-space left inside about the handle-bar or handle a slight elasticity. By this means less material is used and the product is lighter, stronger, and tougher than if cut from heavier tubing, solid blocks, or molded in the usual way.

If desired, the hand-grip may be covered with a thin coating of cork, rubber, or other elastic material.

For bicycles and when desired one end of the hand-grip may be closed by a disk B, of vulcanized fiber, of the same diameter as the interior diameter of the end of the hand-grip to be closed. The disk is forced into the end

of the hand-grip, which is then crimped down on it, preventing any movement of said disk B. To still further increase its rigidity, a recess may be made in the end of the hand-grip to receive said disk B.

I do not confine myself to vulcanized fiber in producing my improved hand-grip A; but other materials possessing like attributes are to be considered as obvious substitutes and included in the use of the words "vulcanized fiber" in this specification.

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

1. A hand-grip formed of a single seamless piece of dry vulcanized-fiber tubing by endwise pressure, substantially as shown and described.

2. A hand-grip formed of a single seamless piece of dry vulcanized-fiber tubing by endwise pressure, said grip having ends relatively harder than the central portion, substantially as shown and described.

3. A compressed molded hand-grip made of dry vulcanized-fiber tubing and formed under

endwise pressure, substantially as shown and described.

4. The compressed, seamless, homogeneous, curved hand-grip formed of dry vulcanized fiber, of greater compactness at its ends than elsewhere, substantially as shown and described.

5. A hand-grip, the interior and exterior diameter of which diminish from the center both ways, formed under endwise pressure from a piece of seamless dry vulcanized-fiber tubing, substantially as shown and described.

6. The process herein described of making articles of dry vulcanized-fiber tubing consisting in expanding the central body of such articles by contracting their ends under endwise pressure, substantially as shown and described.

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

FRANKLIN TAYLOR.

Witnesses:

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