

O. D. SPALDING.  
Wheels for Vehicles.

No. 137,629.

Patented April 8, 1873.

Fig. 1.

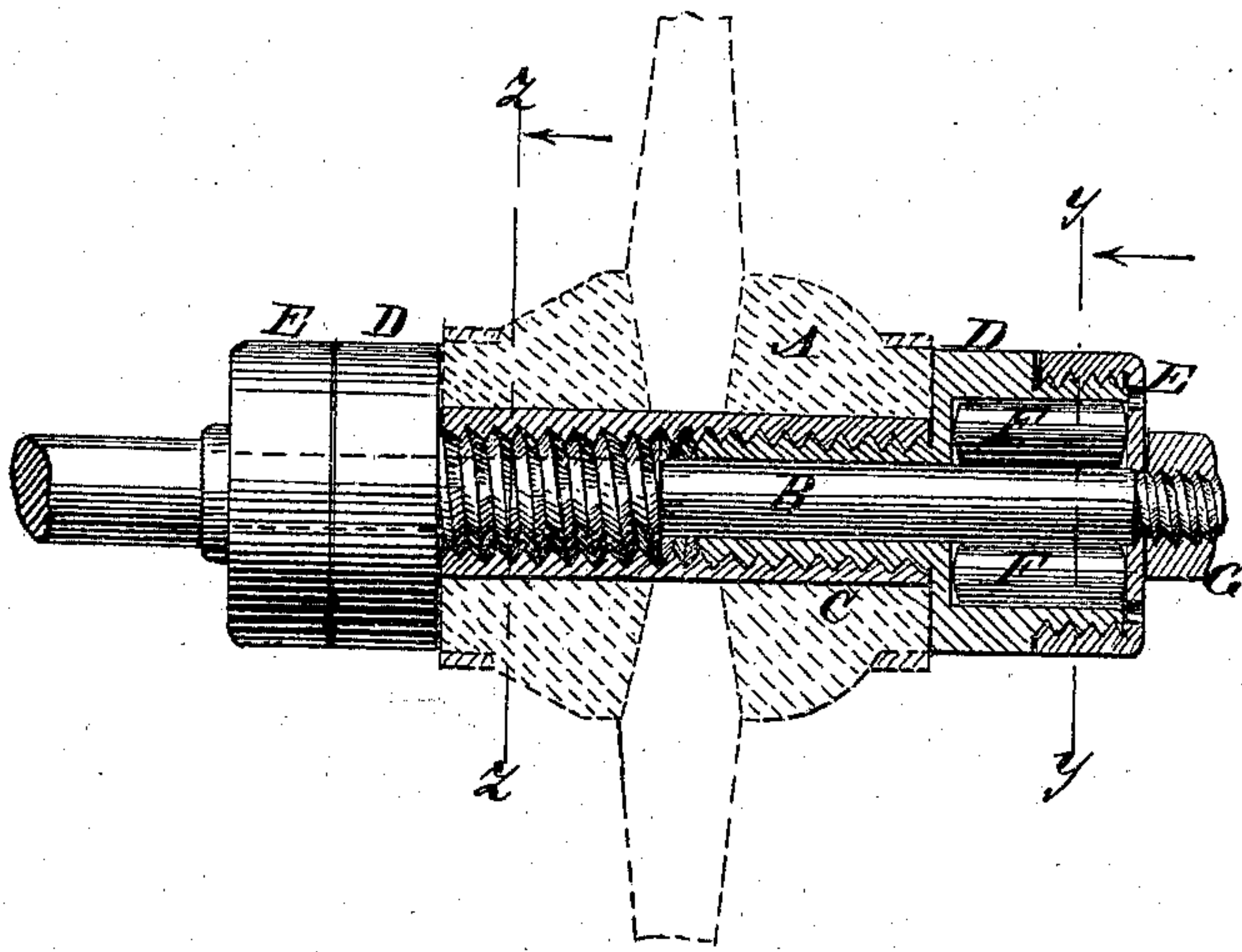


Fig. 2.

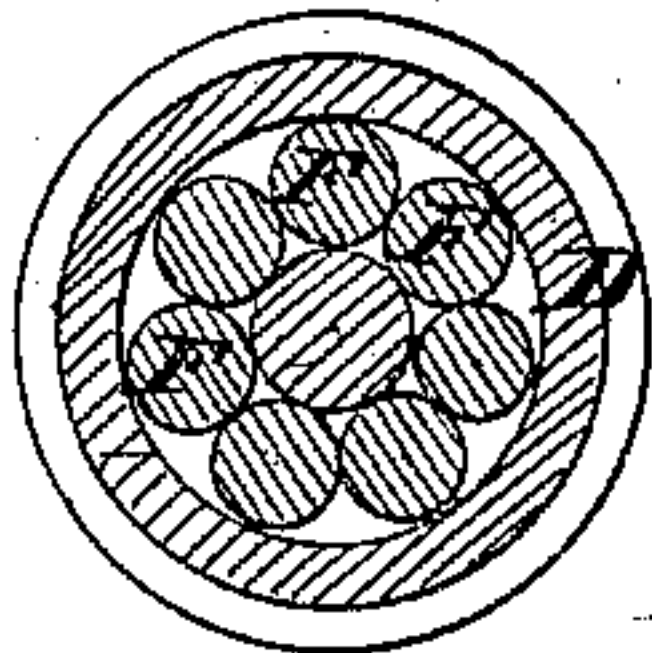


Fig. 3.

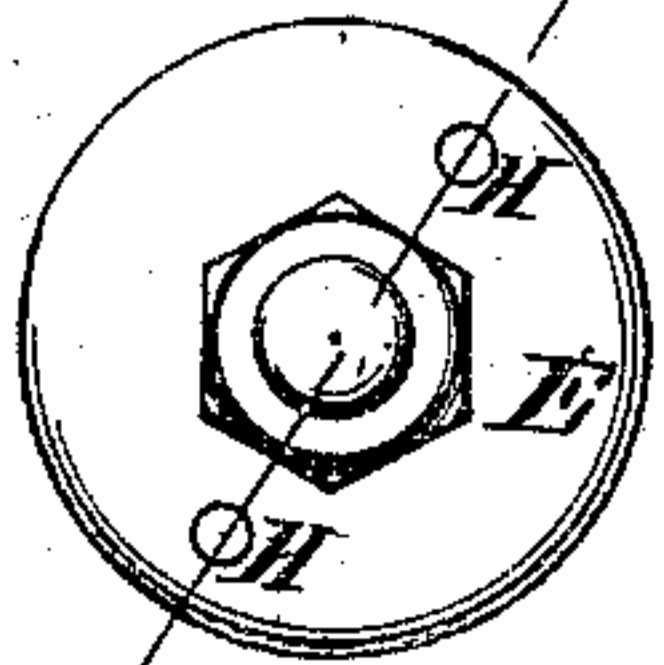
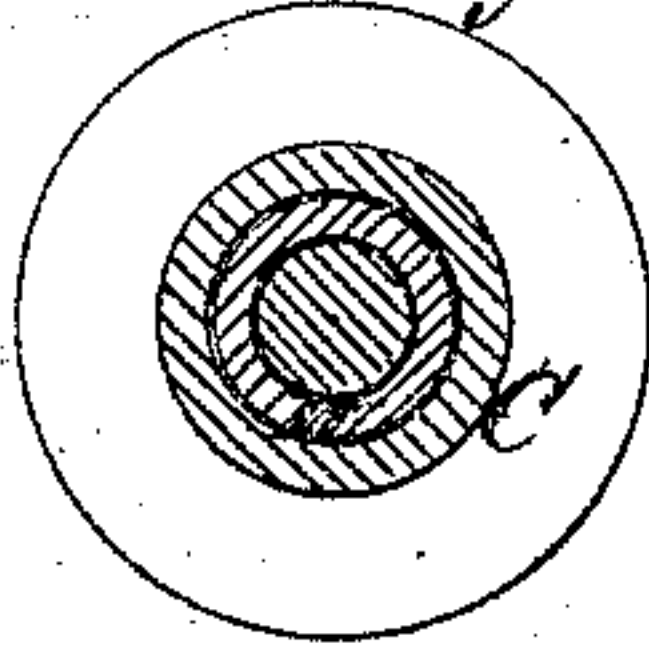


Fig. 4.



Witnesses:

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# UNITED STATES PATENT OFFICE.

ORLANDO D. SPALDING, OF MANKATO, MINNESOTA.

## IMPROVEMENT IN WHEELS FOR VEHICLES.

Specification forming part of Letters Patent No. **137,629**, dated April 8, 1873; application filed October 26, 1872.

*To all whom it may concern:*

Be it known that I, ORLANDO D. SPALDING, of Mankato, in the county of Blue Earth and State of Minnesota, have invented a new and useful Improvement in Anti-Friction Axle-Boxes, of which the following is a specification:

The invention consists in the mode of forming an anti-friction bearing for axles, as hereinafter fully described and subsequently claimed.

In the accompanying drawing, Figure 1 represents a longitudinal section of a wheel-hub taken on the line *x x* of Fig. 3 with my anti-friction boxes attached. Fig. 2 is a vertical section of Fig. 1 taken on the line *y y*. Fig. 3 is an end view. Fig. 4 is a vertical section of Fig. 1 taken on the line *z z*.

Similar letters of reference indicate corresponding parts.

A is the hub; B, the axle. C is a tube, which passes through the hub and is fast therein. D represents the shell or casing at each end of the hub, in which the rollers are placed. E is a cap which screws on the end of the shell and confines the rollers. F represents the rollers. G is a screw-nut on the end of the axle. H H are holes in the cap E for the use of a pin-wrench in the cap. The shells D are screwed into the tube C, as seen

in Fig. 1, such screw portions of the shells being tubes through which the axle passes. This enables the shell to be screwed tight up to the ends of the hub. The rollers are simple solid cylinders of steel, the diameter of which is just sufficient to fill the annular space in the shell around the axle. The entire bearing at each end of the hub is on the two sets of these rollers, arranged as represented.

The rollers revolve around the axle as the wheel revolves. The entire contact-surface is rolling and not rubbing surface, which reduces the friction to a minimum.

These boxes are more especially designed for the axles of wheeled vehicles, as carriages and wagons; but they may be applied to railroad cars, and to all other purposes for which they are adapted.

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

The arrangement, on each side of hub and within shells D, of a series of loose bearing-rollers F, without journals, in contact with each other, and moving freely with the axle, as and for the purpose set forth.

ORLANDO D. SPALDING.

Witnesses:

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