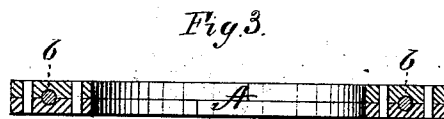
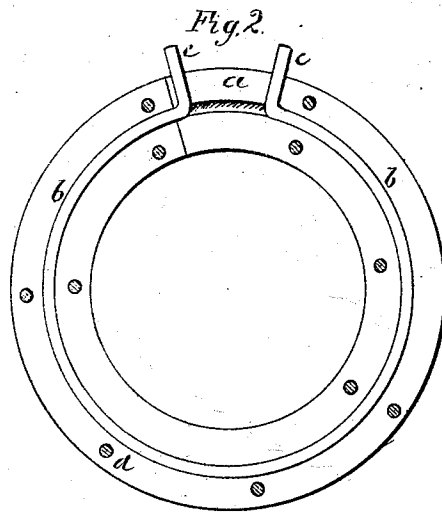
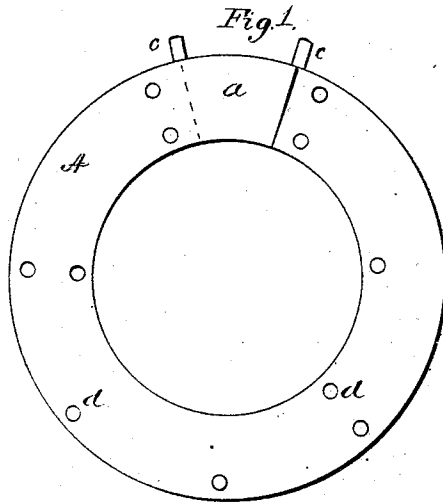


T. C. HARGRAVE.

PACKING RINGS FOR CAR AXLE-BOXES.

No. 170,084.

Patented Nov. 16, 1875.



Witnesses:
F. B. Townsend.
Will. H. Maxon~

Inventor:
Thomas C. Hargrave
per atty
A. N. Evans & Co.

UNITED STATES PATENT OFFICE,

THOMAS C. HARGRAVE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PACKING-RINGS FOR CAR-AXLE BOXES.

Specification forming part of Letters Patent No. **170,084**, dated November 16, 1875; application filed October 26, 1875.

To all whom it may concern:

Be it known that I, THOMAS C. HARGRAVE, of Boston, Massachusetts, have invented a new and useful Improvement in Packing-Rings, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a vertical section of my improved ring, and Fig. 3 is a cross-section of same.

My invention relates to that class of packing-rings used on railway-cars; and it consists in the mode of forming the ring, and the manner of securing the spring within the same.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A represents a packing-ring, formed of two or more thicknesses of leather, cut with the lapping ends *a a*. Between these thicknesses of leather I secure the spring *b*, provided with the arms *c c*, the thicknesses being secured together by the bolts or rivets *d d*. By this means I protect the spring against the possibility of loss or damage, while the lapping ends *a a* allow the ring an automatic adjustment to the size of the spindle.

I am aware that rings have been made in sections with lapping ends; but when these sections have been pressed together the form of the ring is changed more or less, from a circle to an oval.

It is evident, from the above description, that the tendency of a ring of my construction is to preserve its circular form, and change only its diameter to suit the spindle and accommodate itself to the wear.

I am also aware that springs have been used to compress the ring to its work, and therefore I do not claim the use of a spring, broadly, but only when concealed and protected against loss or damage.

The arms *c c* prevent the ring from revolving with the axle.

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

The elastic open packing-ring A, constructed, as described, of two or more pieces of leather, and provided with the metal spring *b*, secured between the thicknesses, substantially as and for the purpose set forth.

THOMAS C. HARGRAVE.

Witnesses:

JAS. P. SULLIVAN,
W. B. S. GAY.