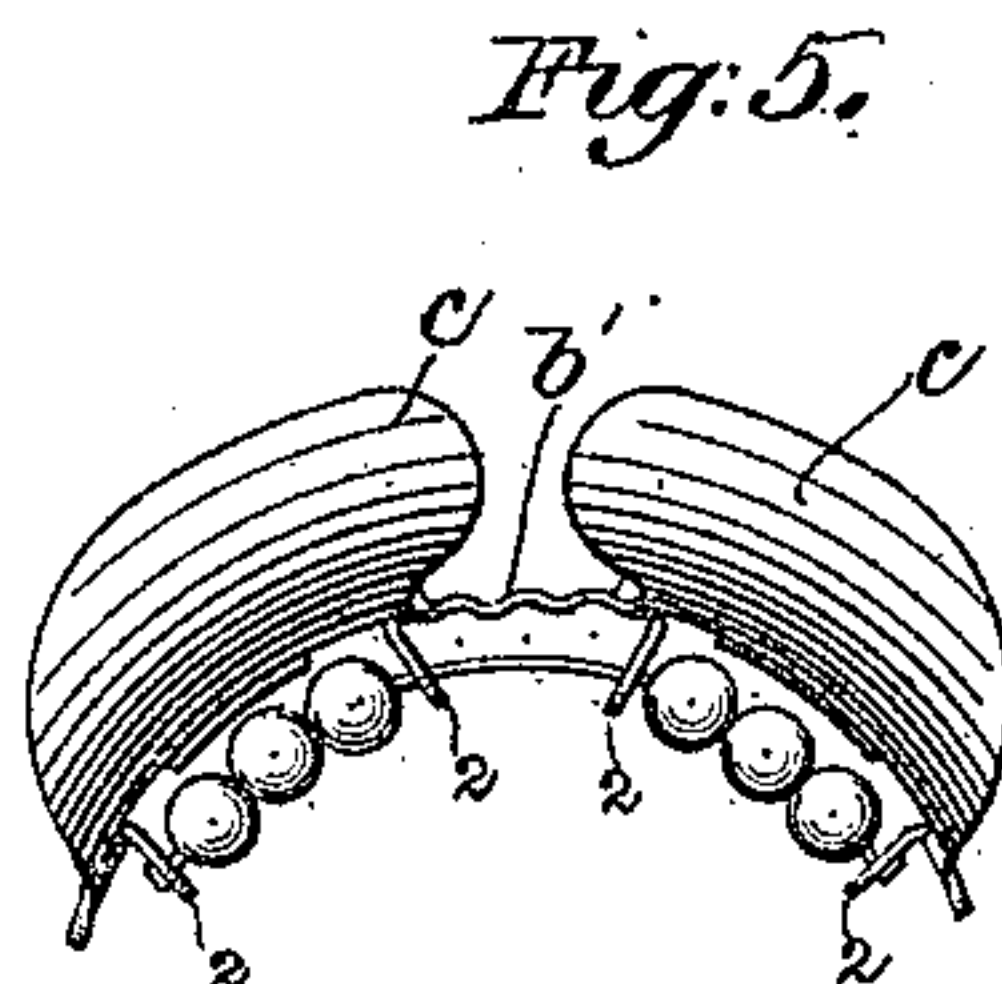
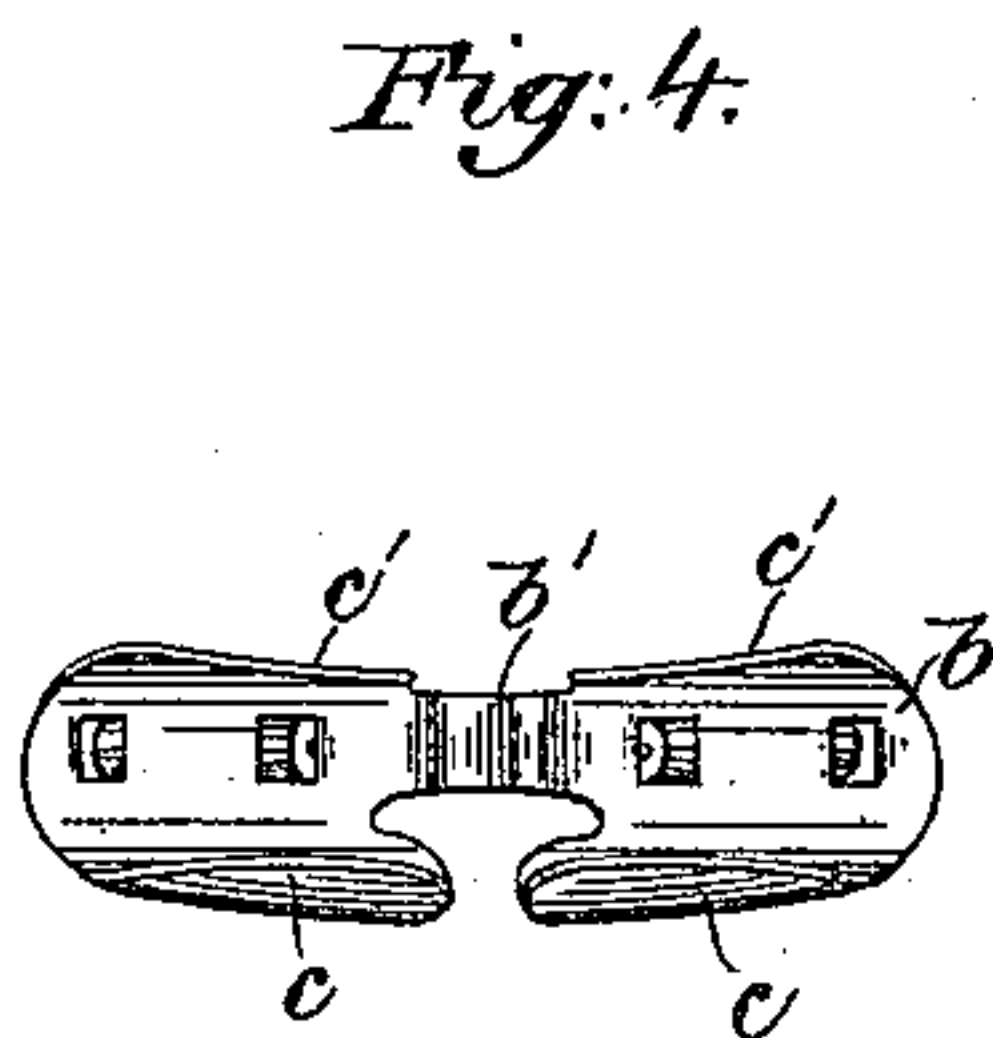
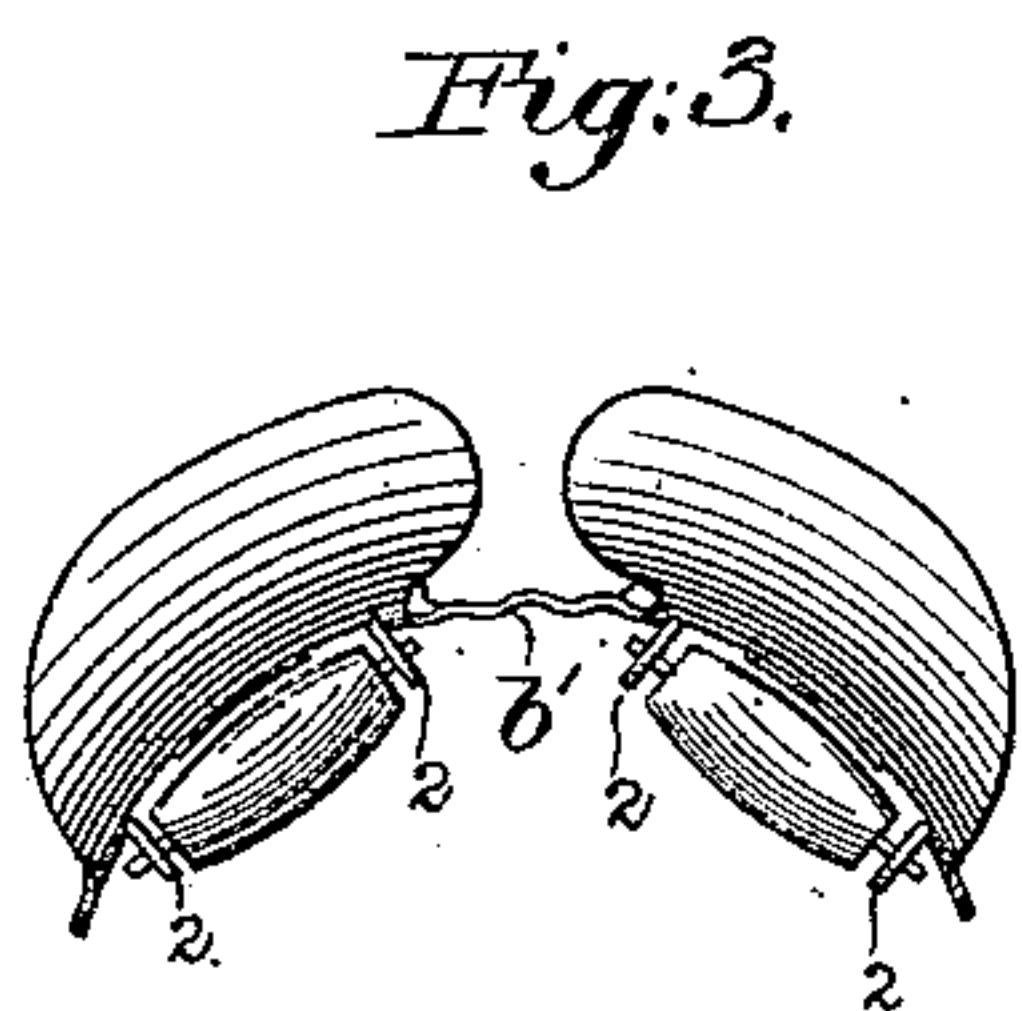
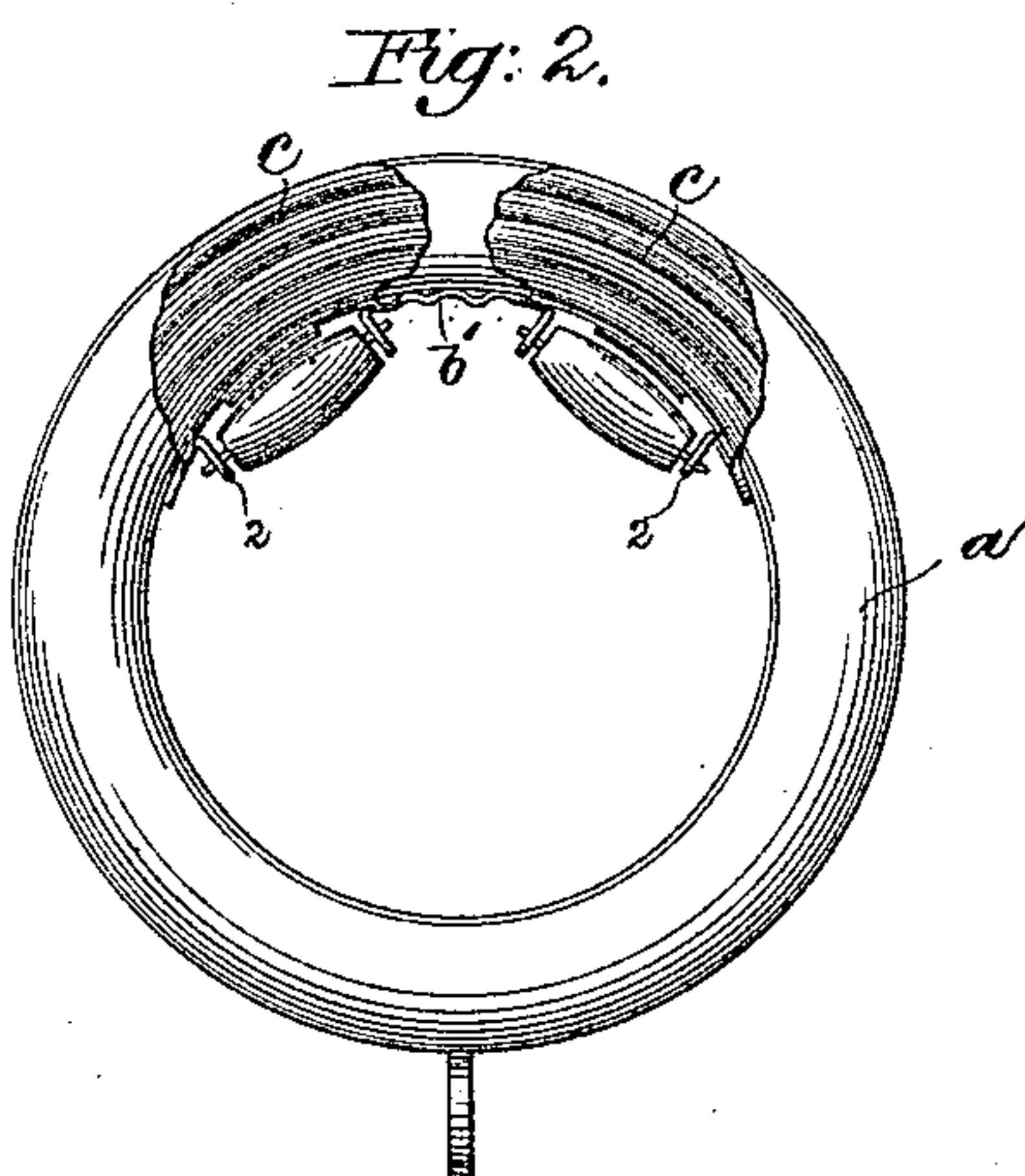
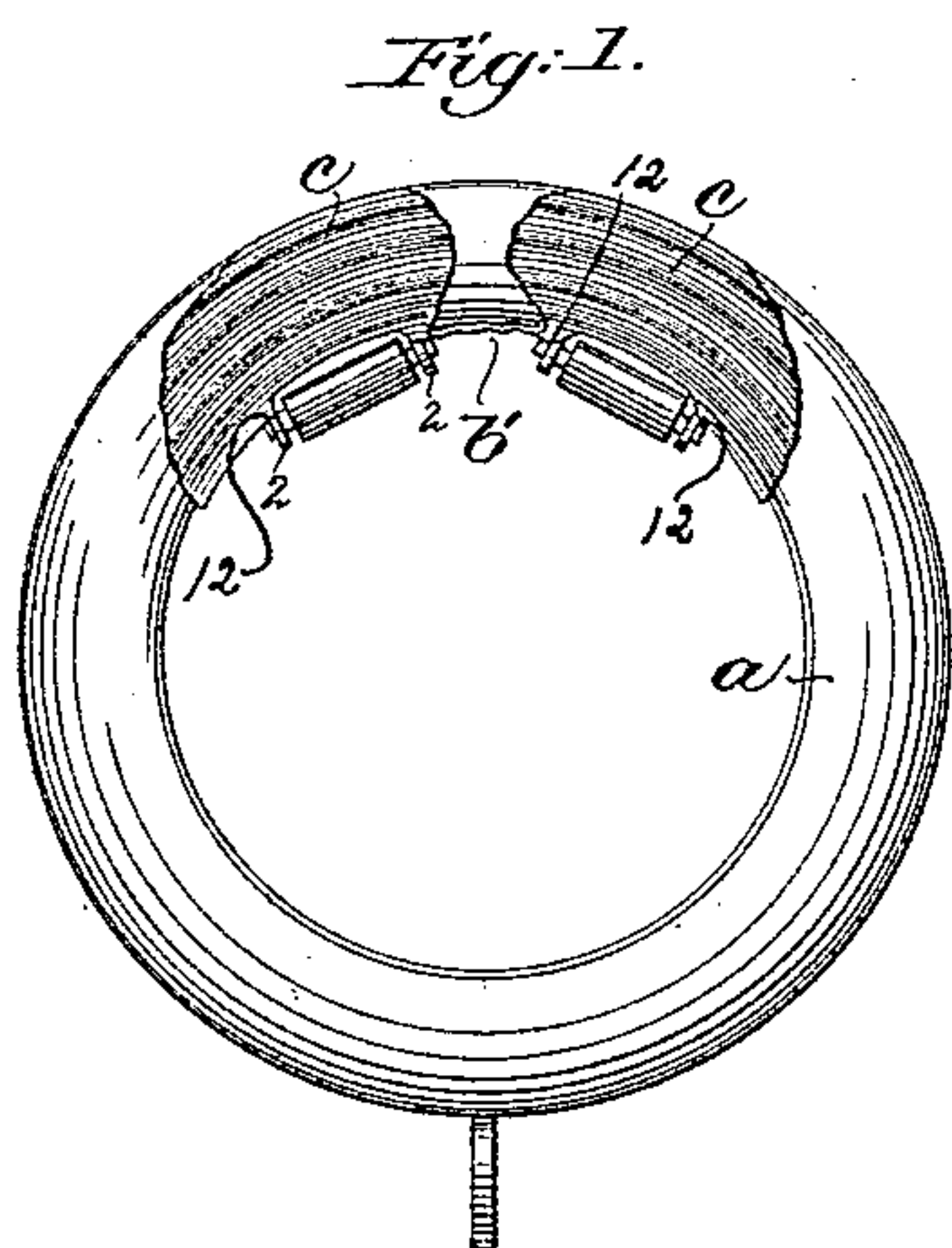


(No Model.)

J. W. LESLIE.
CURTAIN RING OR HANGER.

No. 440,170.

Patented Nov. 11, 1890.



Witnesses:
Howard F. Eaton
Frederick L. Emery

Inventor.
James W. Leslie,
by Leroy & Gregory
Attys.

UNITED STATES PATENT OFFICE.

JAMES W. LESLIE, OF EVERETT, MASSACHUSETTS.

CURTAIN RING OR HANGER.

SPECIFICATION forming part of Letters Patent No. 440,170, dated November 11, 1890.

Application filed May 28, 1889. Serial No. 312,422. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. LESLIE, of Everett, county of Middlesex, State of Massachusetts, have invented an Improvement in
5 Curtain Rings or Hangers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the pro-
10 duction of a roller or ball-bearing for curtain-rings which may be applied to rings now in use, as well as to new rings.

The invention consists, essentially, in a
15 sheet metal carrier or frame curved longitudinally and having a narrow or cut-away portion between its ends, whereby its longitudinal curvature may be varied, said ends being also curved transversely to embrace and hold
20 the carrier or frame on a ring, combined with rollers or balls supported on the under side of the said carrier or frame, substantially as will be described, also in other features to be hereinafter set forth.

Figure 1 shows in side elevation a roller or
25 ball carrier or frame embodying this invention and a ring to which it is attached; Fig. 2, a similar view showing a slightly-modified form of roller or ball-carrier; Fig. 3, a similar view of the roller or ball-carrier removed from
30 the ring; Fig. 4, a top view of the carrier or frame; Fig. 5, a side view of the carrier or frame, having balls instead of rollers.

The ring *a* may be of any suitable shape and construction.

35 The roller or ball carrier or frame comprises a piece of metal bent transversely to present a recess for the ring, and cut away at each side at a point between its end to present a narrow neck, as at *b'*. The portions upturned
40 by transversely bending the strip, such portions being shown at *c c'*, comprise more than one-half a circle, so as to engage and hold a ring without the necessity of any other fastening. As herein shown, the portions *c'* are
45 made shorter than the portions *c*, so as to be applied to or sprung onto the rings from one side. The rings are mostly quite small in diameter, and hence I curve the roller or ball carrier or frame longitudinally to conform to
50 the curvature of such rings, and as they vary in diameter the narrow neck *b'* permits the

carrier or frame to be more or less curved. As the neck *b'* is shown as quite narrow, I preferably corrugate it to add strength and durability, and the portions *c c'* are also, preferably, corrugated. 55

Ears, as 2, are formed on the carrier or frame, which receive the journals of the rollers, as represented in Figs. 1 and 3, and as supports for a wire, rod, or bar upon which balls
60 are arranged, as shown in Fig. 4. The ears are herein shown as formed integral with the roller or ball carrier or frame, but they may be attached to it. The roller or ball carrier or frame is preferably flattened and down-
65 turned at points adjacent the ears 2, as at 12, (see Fig. 1,) for a sufficient distance to come in contact with the upper side of and serve as bearings for the journals in addition to the bearings given by the width of the ears, in
70 order that the journals may not be cut off by the sharp edge of the bearings in the ears 2. The carrier or frame is herein represented to be held to the ring by friction or by embracing more than one-half the circumference of a ring. 75

The carrier or frame herein described may be readily applied to rings now in use of any well-known kind.

I claim—

1. A sheet-metal carrier or frame curved 80 longitudinally and having a narrow or cut-away portion *b'* between its ends, whereby its longitudinal curvature may be varied, said ends being also curved transversely to embrace and hold the carrier or frame on a ring, 85 combined with rollers or balls supported on the under side of the said carrier or frame, substantially as described.

2. A carrier or frame curved longitudinally and also transversely at its ends to comprise 90 more than one-half a circle thereat, and made spring-acting transversely to partially surround the exterior of and hold a ring by frictional contact, combined with rollers or balls provided with journals supported by said car- 95 rier, substantially as described.

3. A carrier or frame curved transversely at its ends to present more than one-half a circle thereat to partially surround and hold 100 a ring by frictional contact therewith, and having ears upon its under side, combined with rollers or balls provided with journals

supported by said ears, substantially as described.

4. A carrier or frame having two or more upturned spring-acting end portions *c c'*, bent transversely to comprise more than half a circle and adapted to spring over a ring and hold thereon frictionally, combined with rollers or balls supported by the carrier, substantially as described.

5. A carrier or frame weakened or cut away at a point between and connecting its ends to present a neck and spring-acting curved portions to tightly clasp and hold a ring therein, said neck being corrugated, combined with rollers or balls supported by said carrier or frame upon independent journals, substantially as described.

6. A carrier or frame formed to present spring-acting end portions to partially surround and hold a ring therein, said portions being corrugated longitudinally, combined with rollers or balls carried by it upon independent journals, substantially as described.

7. An independent carrier or frame having transversely-curved spring-acting end portions and balls or rollers upon its under side, the axes of which are arranged lengthwise to the carrier or frame, substantially as described.

8. An independent carrier or frame having transversely-curved spring-acting end portions and ears, as 2, upon its under side and flattened portions 12 adjacent to said ears, combined with rollers or balls supported on journals held by said ears, the portions 12 serving as additional bearings for the journals, substantially as described.

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

JAMES W. LESLIE.

Witnesses:

BERNICE J. NOYES,
HOWARD F. EATON.