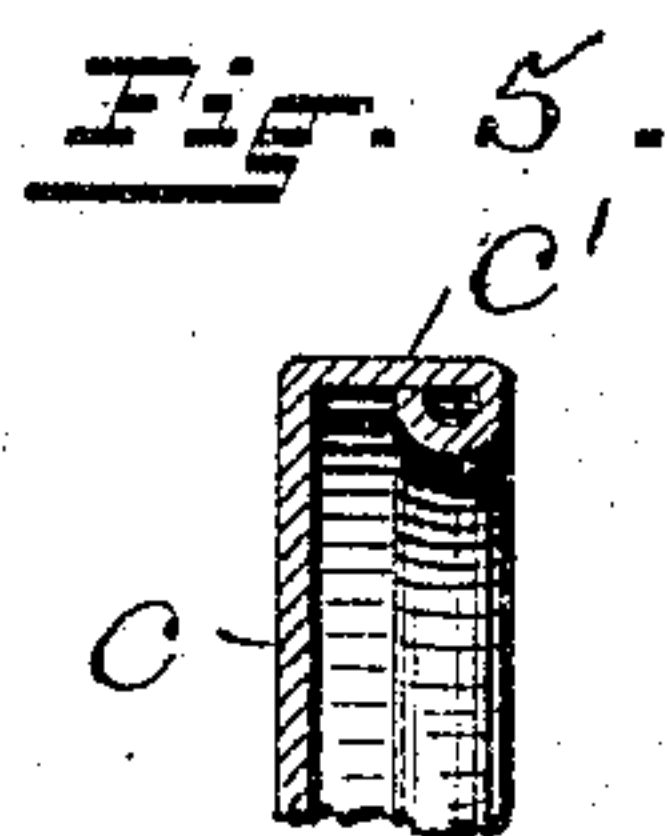
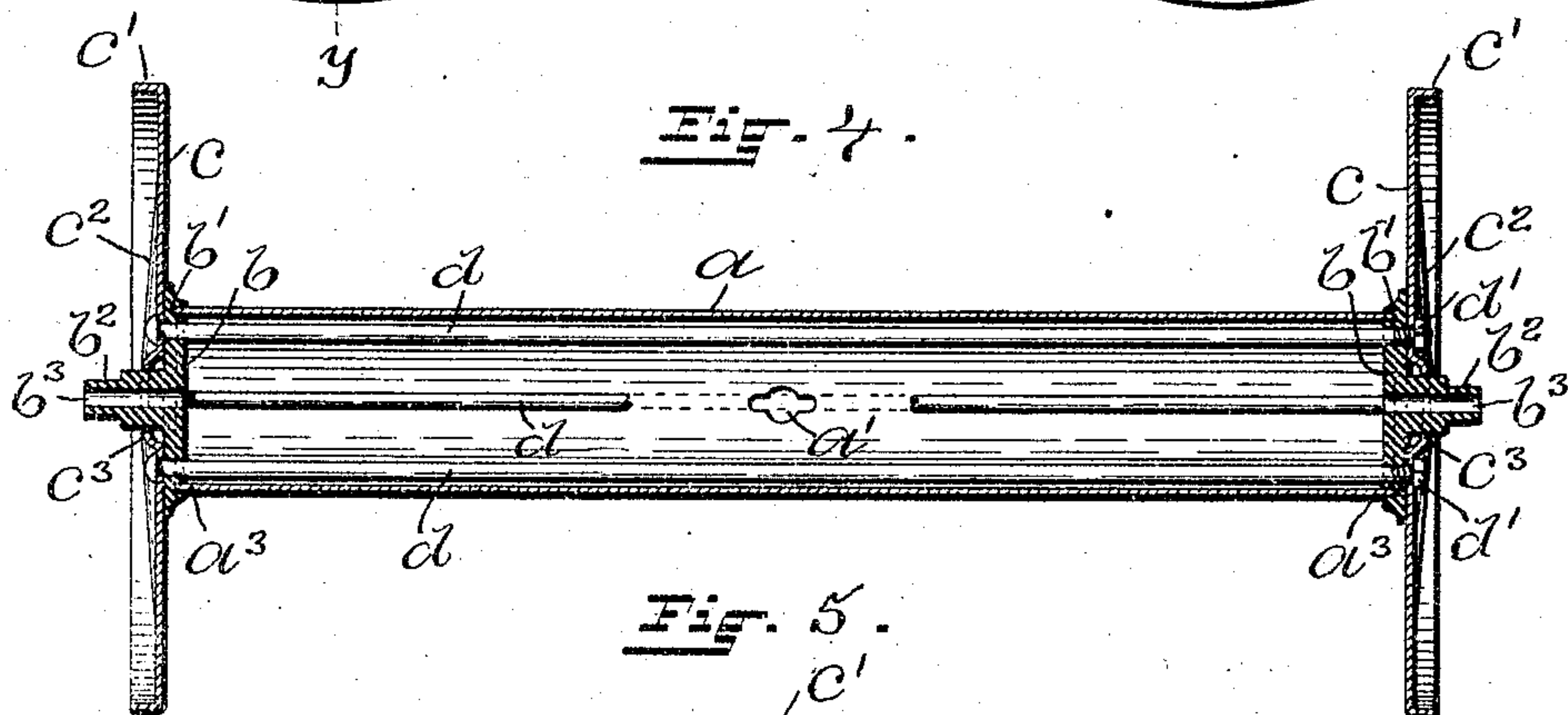
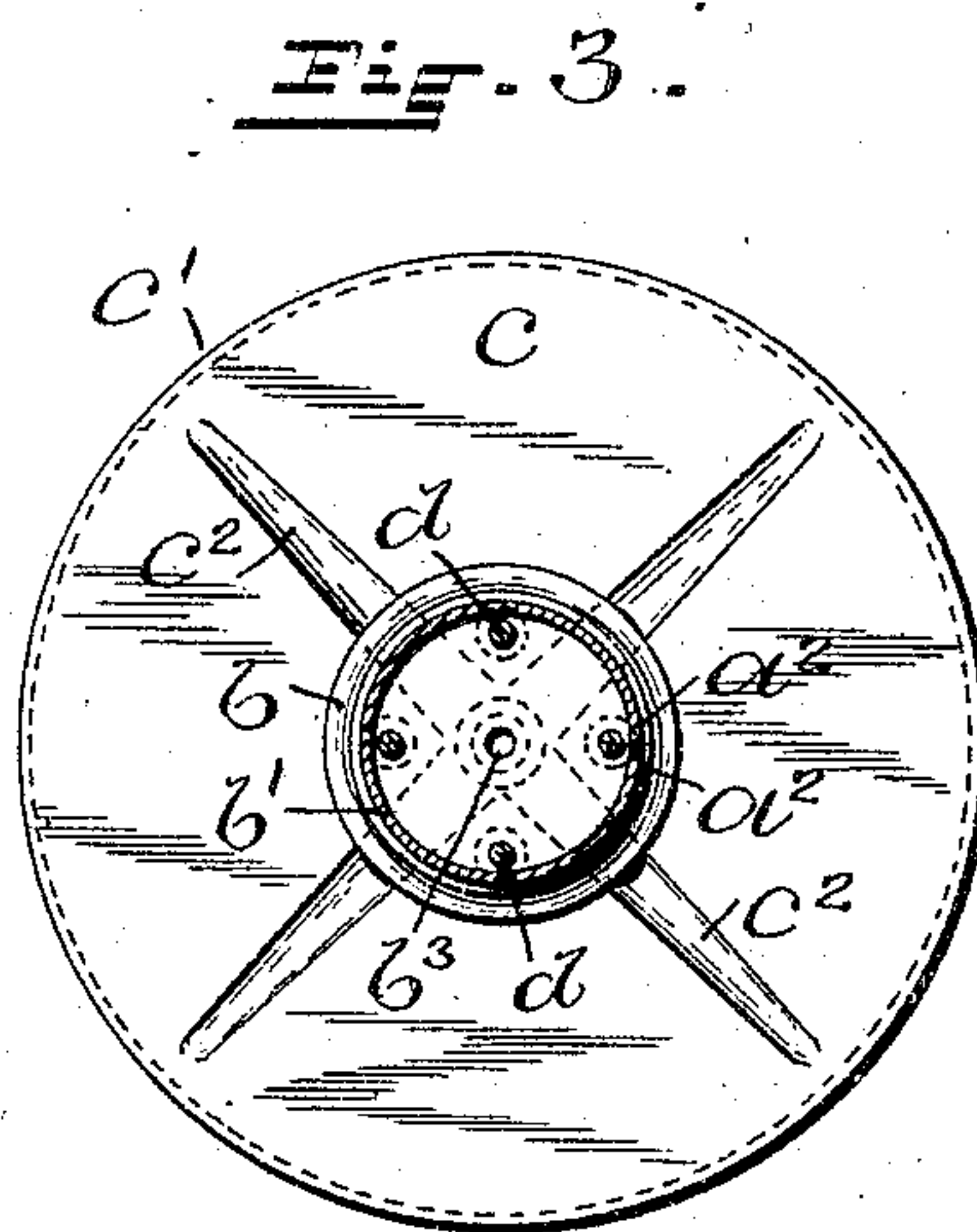
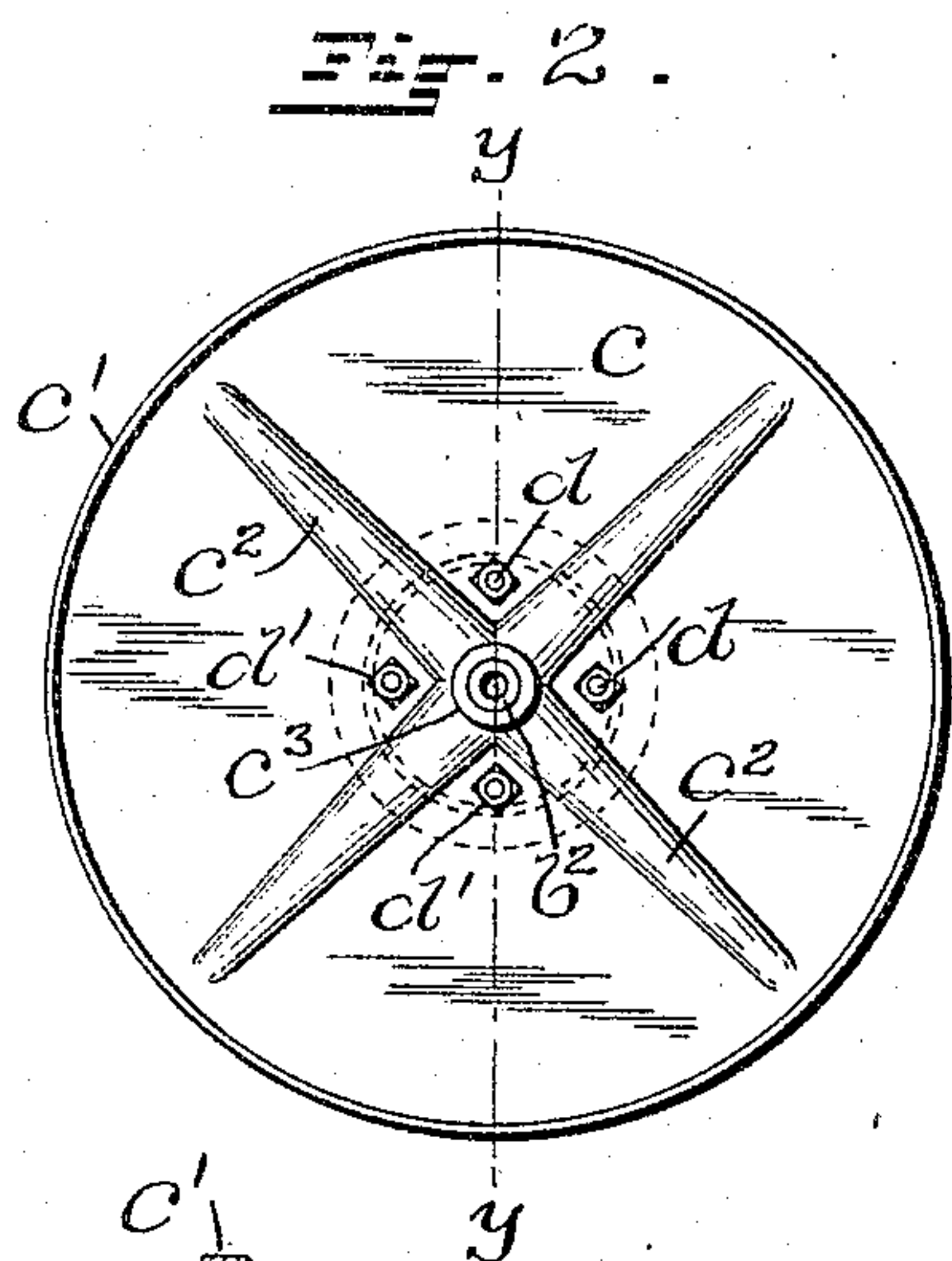
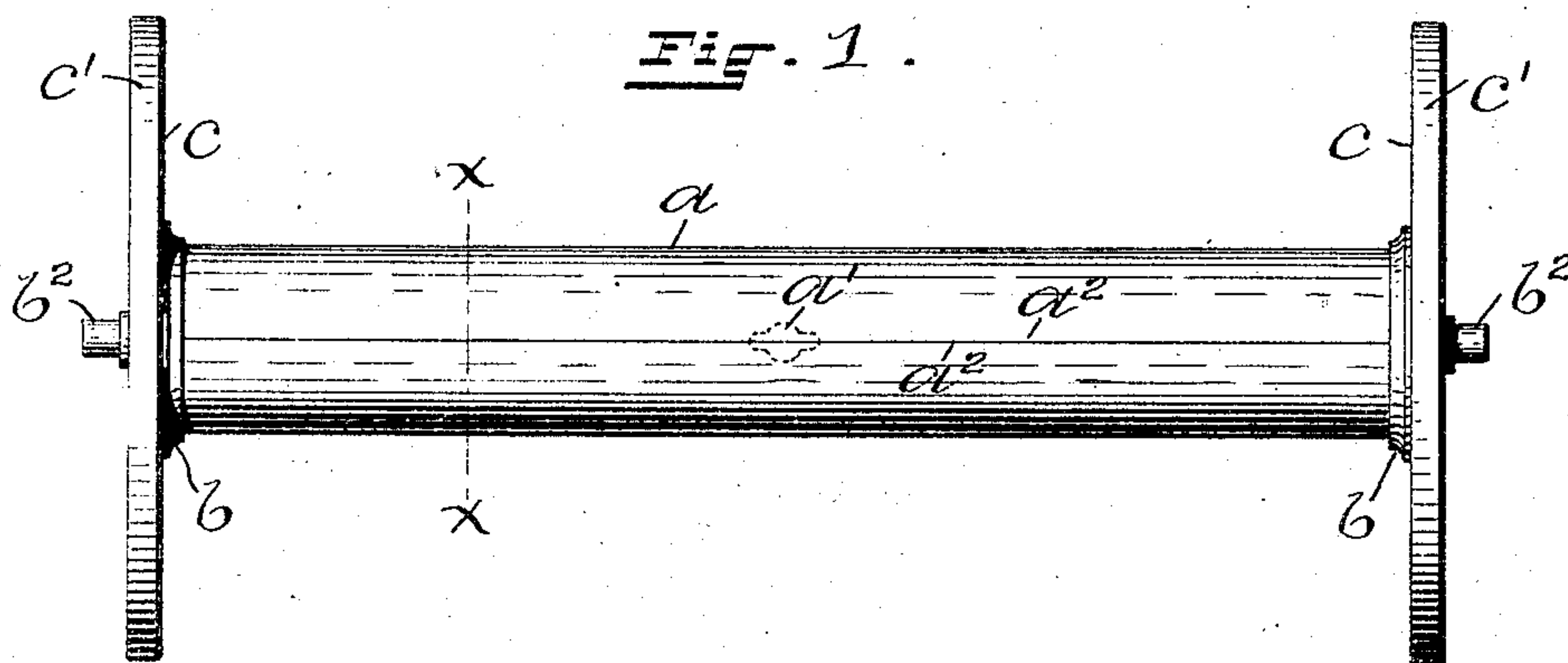


A. J. THORNLEY.  
WARP BEAM FOR LOOMS.  
APPLICATION FILED AUG. 17, 1904.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## WARP-BEAM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 785,386, dated March 21, 1905.

Application filed August 17, 1904. Serial No. 221,120.

*To all whom it may concern:*

Be it known that I, ALBERT J. THORNLEY, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Warp-Beams for Looms, of which the following is a specification.

This invention has reference to an improvement in looms, and more particularly to an improvement in warp-beams for looms.

The object of my invention is to improve the construction of warp-beams for looms, thereby lightening and strengthening the warp-beam.

A further object of my invention is to construct a more rigid and durable warp-beam than has heretofore been done.

My invention consists in the peculiar and novel construction of a warp-beam having a sheet-metal cylindrical drum, sheet-metal ends, fittings forming the end shafts, each having a circular concentric groove for the ends of the cylindrical drum, means for securing the whole together, consisting of bolts extending through the ends, fittings, and drum, and other details of construction, as will be more fully set forth hereinafter.

Figure 1 is a face view of my improved sheet-metal warp-beam. Fig. 2 is an end view of the warp-beam, showing the stamped-up flange and ribs for strengthening the end. Fig. 3 is a transverse sectional view taken on line X X of Fig. 1. Fig. 4 is a longitudinal sectional view taken on line Y Y of Fig. 2; and Fig. 5 is a detail sectional view of a modified form of flange for the end, showing the edge of the flange rolled under to strengthen the same.

In the drawings, *a* indicates the sheet-metal cylindrical drum; *b b*, the end fittings; *c c*, the sheet-metal ends, and *d d* the fastening-bolts. The cylindrical drum *a* is formed from a sheet of metal having the hole *a'* by rolling the sheet and bringing the abutting edges *a<sup>2</sup> a<sup>2</sup>* together, forming a cylinder having the open ends *a<sup>3</sup> a<sup>3</sup>*. The fittings *b b* are in the form of a disk, each having the concentric circular groove *b' b'* in their inner face for the ends *a<sup>3</sup> a<sup>3</sup>* of the drum

*a* and the outwardly-extending shafts *b<sup>2</sup> b<sup>2</sup>*, having the central longitudinal holes *b<sup>3</sup> b<sup>3</sup>*, as shown in Figs. 3 and 4. The circular ends *c c* are stamped from sheet metal, each having the flange *c' c'*, the radial strengthening-ribs *c<sup>2</sup> c<sup>2</sup>*, and the central hole *c<sup>3</sup> c<sup>3</sup>* for the shafts *b<sup>2</sup> b<sup>2</sup>*, as shown in Figs. 2 and 4. The fastening-bolts *d d* extend lengthwise through the drum *a*, holes in the fittings *b b*, and the ends *c c* and secure the ends *a<sup>3</sup> a<sup>3</sup>* of the drum *a* in the circular concentric grooves *b' b'* in the fittings *b b* and the sheet-metal ends *c c* to the fittings by the nuts *d' d'*, as shown in Fig. 4. If thought desirable, the flange *c'* on the circular ends *c c* could be strengthened by rolling the edge of the flange under, as shown in Fig. 5.

In the use of my improved warp-beam the end of the warp-threads are knotted and secured to the drum *a* through the hole *a'* in the drum. The warp-beam is supported by the shafts *b<sup>2</sup> b<sup>2</sup>* in bearings on the loom in the usual way or by a rod through the longitudinal holes *b<sup>3</sup> b<sup>3</sup>* in the shafts *b<sup>2</sup> b<sup>2</sup>*.

It is evident that the cylindrical drum *a* could have a plurality of holes corresponding to the hole *a'* and could be of any length required without materially affecting the spirit of my invention.

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

1. A warp-beam having a hollow drum constructed from sheet metal, fittings having a circular concentric groove and outwardly-extending shafts, circular ends having a flange and strengthening-ribs stamped from sheet metal, and fastening-bolts extending through the drum, fittings and ends, as described.

2. In a warp-beam, the combination of a hollow drum constructed from sheet metal the abutting edges of which extend lengthwise of the drum, fittings having a concentric groove and an outwardly-extending shaft in which is a longitudinal hole, circular ends having a central hole, a flange and radial strengthening-ribs stamped from sheet metal, and fastening-bolts extending through the drum, fittings and ends, as described.

3. In a warp-beam, the combination of a sheet-metal drum  $a$  having the hole  $a'$ , the abutting edges  $a^2 a^2$  and the open ends  $a^3 a^3$ , the fittings  $b b$  each having a circular concentric groove  $b'$  and a shaft  $b^2$  in which is the  
5 hole  $b^3$ , the sheet-metal ends  $c c$  each having a flange  $c'$ , radial strengthening-ribs  $c^2 c^2$  and the central hole  $c^3$ , and the fastening-bolts  $d d$  extending through the drum, holes in the fit-

tings and ends secured by the nuts  $d' d'$ , as is described.

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

ALBERT J. THORNLEY.

Witnesses:

ADA E. HAGERTY,  
J. A. MILLER, Jr.