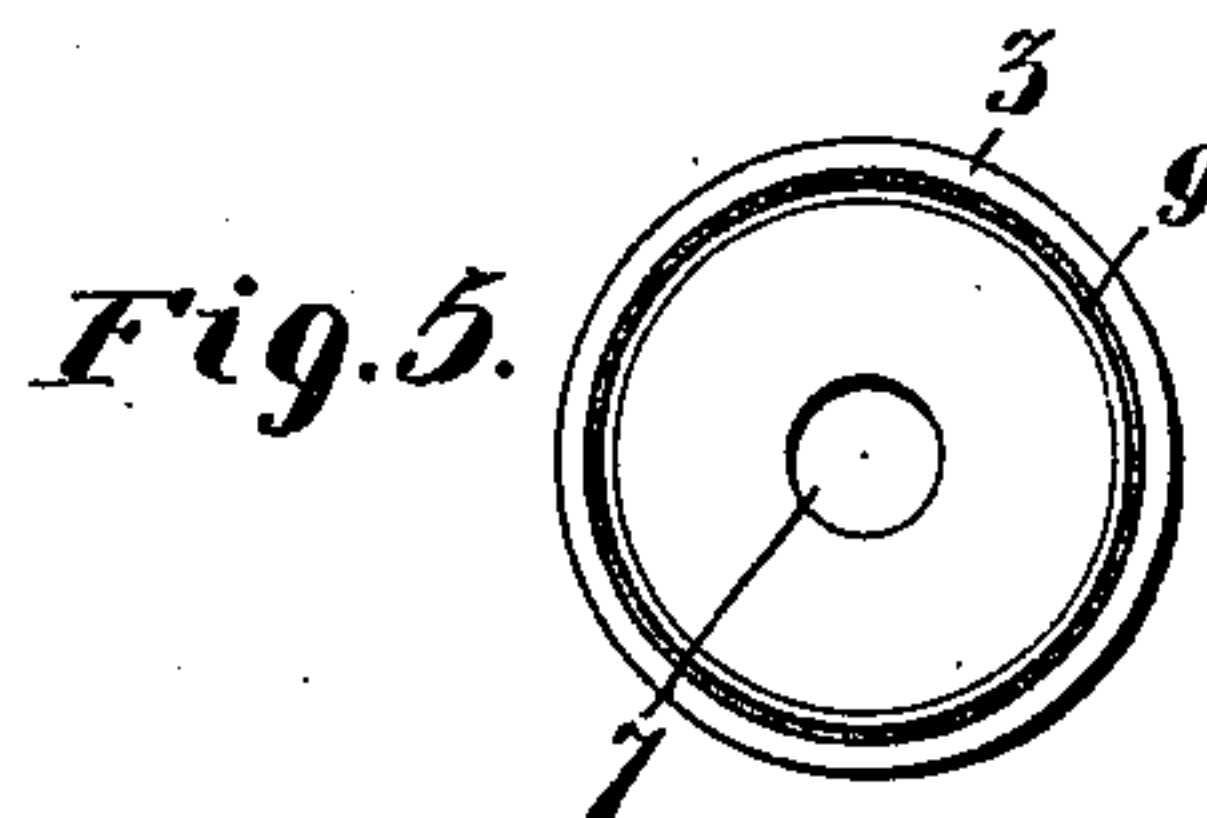
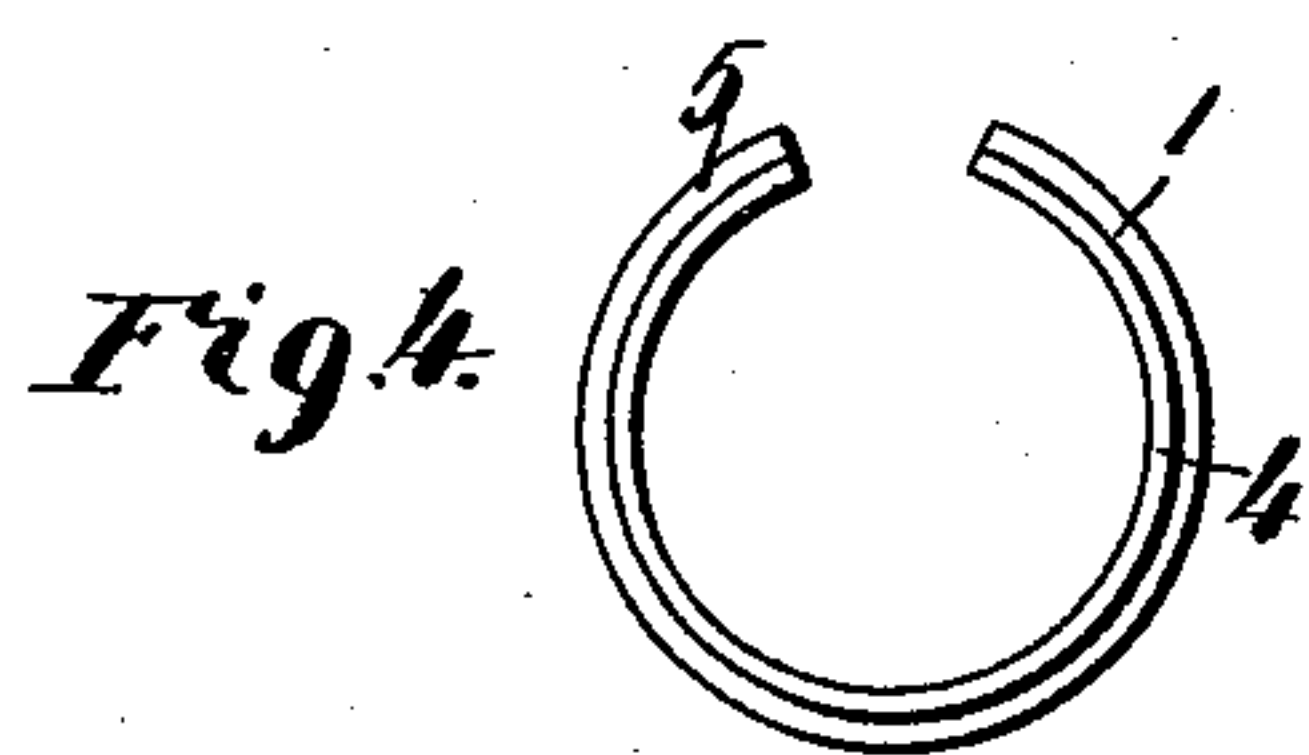
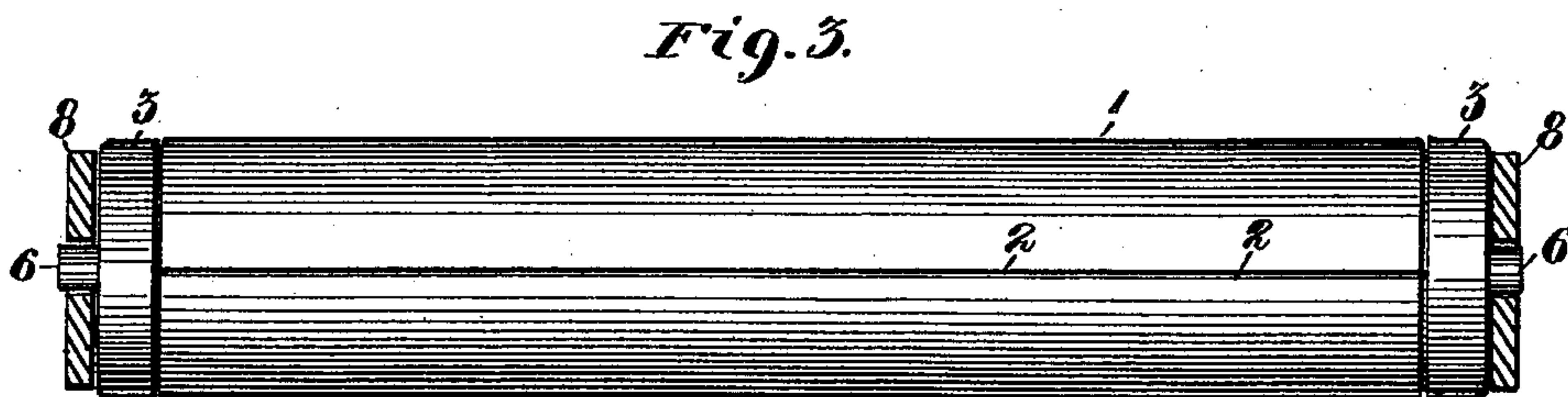
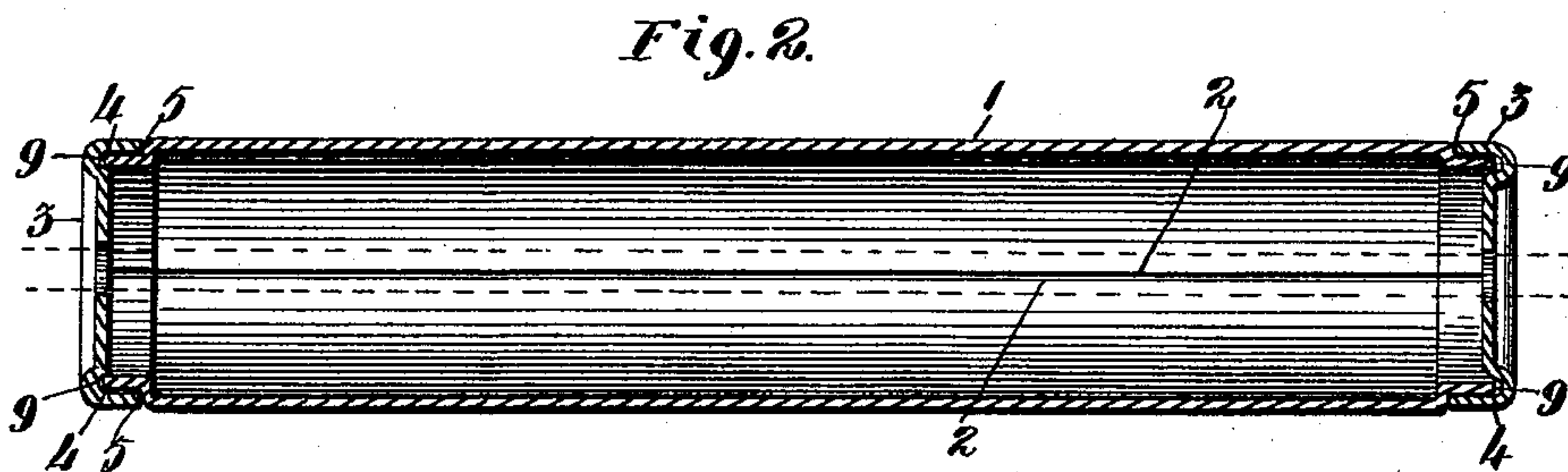
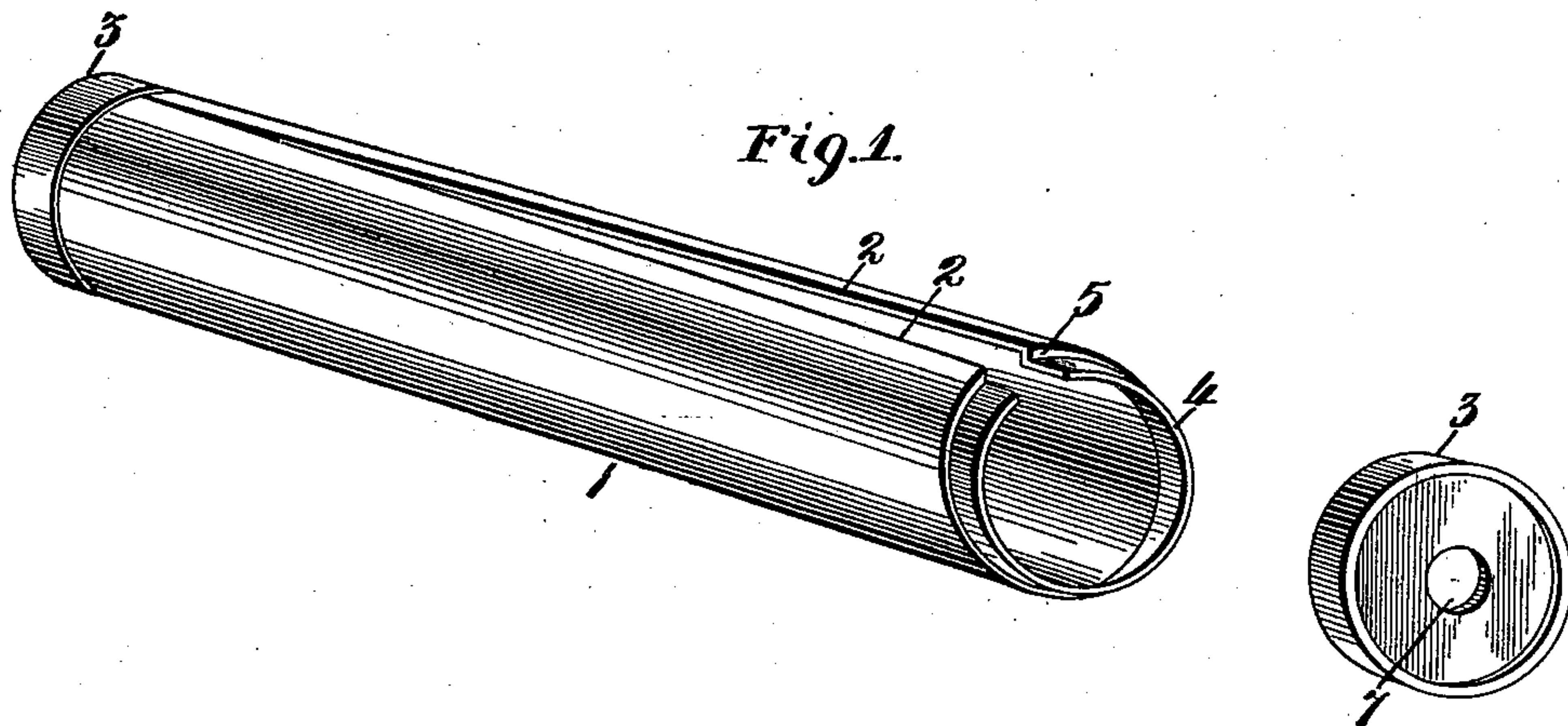


(No Model.)

P. J. PAULY, Jr.  
SHELF ROLLER.

No. 510,088.

Patented Dec. 5, 1893.



Witnesses  
*James J. O'Rourke*  
*J. Vastine*

Inventor  
*Peter J. Pauly, Jr.*  
By his Attorneys  
*Keller & Starek*



# UNITED STATES PATENT OFFICE.

PETER J. PAULY, JR., OF ST. LOUIS, MISSOURI.

## SHELF-ROLLER.

SPECIFICATION forming part of Letters Patent No. 510,088, dated December 5, 1893.

Application filed July 7, 1893. Serial No. 479,831. (No model.)

*To all whom it may concern:*

Be it known that I, PETER J. PAULY, Jr., of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Shelf-Rollers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to rollers for shelving and consists in the novel arrangement and combination of parts more particularly set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my complete invention with one of the cap plates removed therefrom. Fig. 2 is a longitudinal section of the roller with the parts united. Fig. 3 is a side elevation of the roller as applied to a shelf. Fig. 4 is an end view of the tubular portion of the roller with the cap plate removed therefrom; and Fig. 5 is a plan view of one of the cap plates.

My invention has for its object to provide a novel and simplified construction in rollers for book shelves which rollers are made of sheet metal and the several parts comprising the same united without the use of solder, seaming or overlapping of the edges of the metal as heretofore.

The invention therefore consists of a tube made from sheet metal the opposite ends of which tube are reduced to receive combined cap and bearing plates which hold the several parts together, and further operate to form bearings for the tube or roller.

Referring to the drawings, 1 represents a plate of sheet metal which is passed through suitable machinery or dies and shaped as shown in Fig. 4, and when the edges are brought together or in contiguous relation as shown in Figs. 2 and 3, and the cap plates attached to the ends of the tube thus formed, a complete roller is made. The original plate from which the tube is made is made of resilient metal, so that when the contiguous edges 2, 2, thereof are brought together the resilient tendency of the sheet will be to separate the edges as clearly shown in Fig. 1 where a collar 3 is shown as securing the edges of the tube at one end thereof. The opposite ends of the tube have reduced ends 4 formed by a

suitable compression of said ends, the inner flange 5 of which is of sufficient depth to admit the collar or cap plate 3 which is passed over the reduced end 4 to come flush with the surface of the tube, as best shown in Figs. 2 and 3.

In the completed roller the contiguous edges 2, 2, do not quite come together, a sufficient space being left between them to allow of a slight compression of the tube and consequent loosening of the cap plates, which are held on the reduced ends of the tube by the resilient action of the metal, in cases where occasion arises to remove the said cap plates. The cap plates in addition to their function as such, perform the function of bearing plates, permitting as they do of the passage of a suitable shaft or rod 6 which rod extends through the tube and projects out of each cap plate at either end of the roller through an opening 7 of each cap plate.

8, 8, represent sections of shelving upon which the roller by means of the rod 6 is mounted.

The advantages of a roller of the present description are obvious: it is light and durable; the several parts are easily put together without the use of solder and without the necessity of any welding of parts, such parts being held in place by the elasticity of the metal composing the tube; the cap plates are flush with the surface of the tube and the roller when complete rolls evenly and without binding and is noiseless.

To avoid flattening or otherwise disfiguring the tube where the same is subjected to excessive pressure from books or other heavy objects passing over it, the cap plates 3 have formed therein circular depressions or grooves 9 which receive the ends of the tube, this construction being best shown in Fig. 2. By this arrangement the ends of the tube are reinforced against any excessive weight the tube may sustain.

Having thus described my invention, what I claim is—

1. A roller composed of sheet metal having its contiguous edges brought together to form a tube or body portion, reduced ends and flanges from which said ends project, and cap plates having central openings passed over

said ends, the flanges being of sufficient depth to admit the caps flush with the exterior surface of the tube, substantially as set forth.

2. A roller composed of resilient sheet metal  
5 1 having its contiguous edges brought together but slightly separated to form a tube or body portion, reduced ends 4 and flanges 5 from which said ends 4 project, cap plates 3 having grooves 9 for receiving the ends of the  
10 tube and provided with central openings 7

for the reception of a suitable rod or shafting, the said flanges 5 being of sufficient depth to admit the caps 3 flush with the exterior surface of the tube, substantially as set forth.

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

PETER J. PAULY, JR.

Witnesses:

JAMES J. O'DONOHUE,  
C. F. KELLER.