

No. 668,107

Patented Feb. 12, 1901.

H. F. LÖSCHER.  
ROLLER FOR WINDING PAPER TUBES.

(Application filed Aug. 29, 1900.)

(No Model.)

Fig. 3.

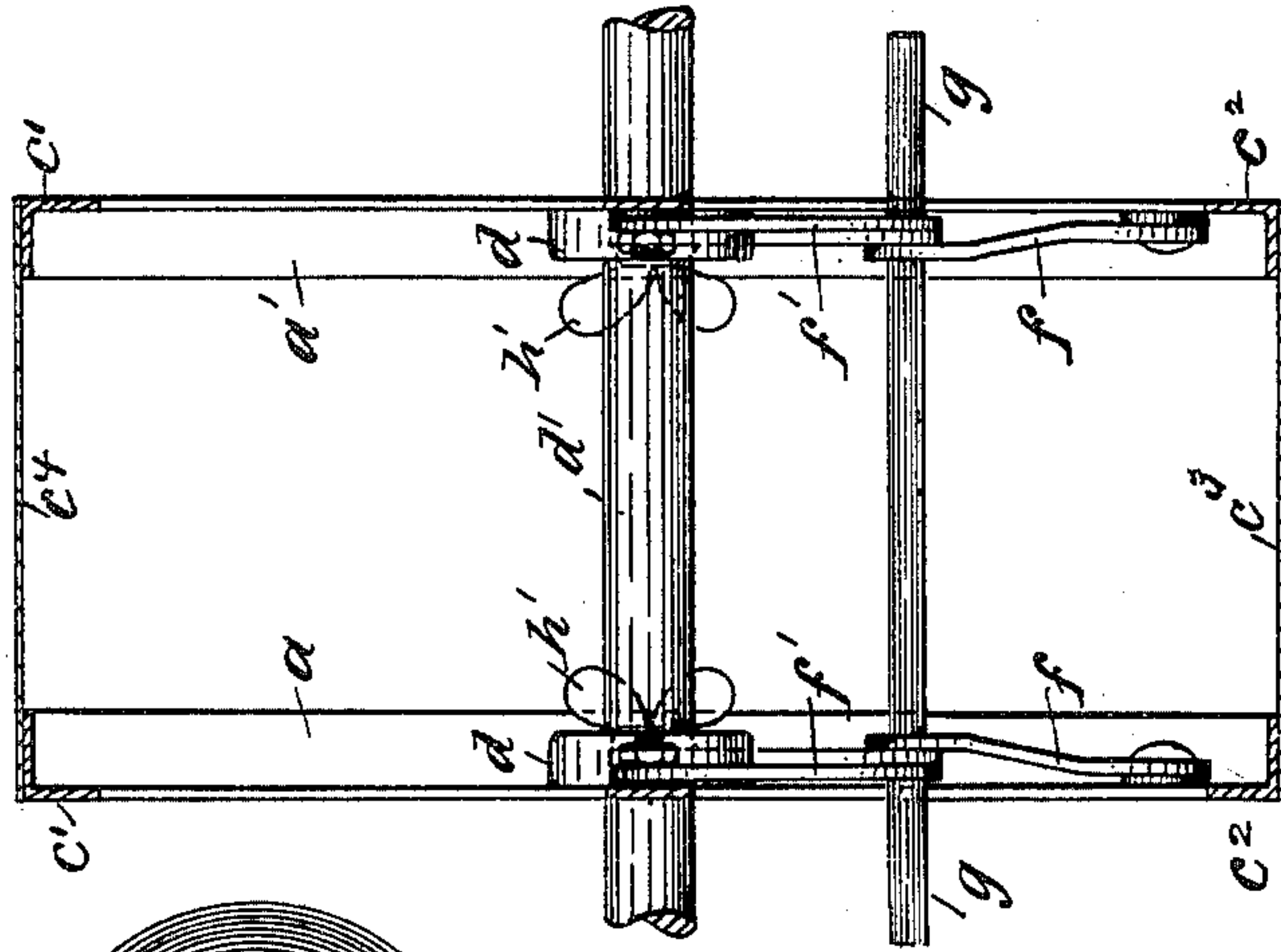


Fig. 1.

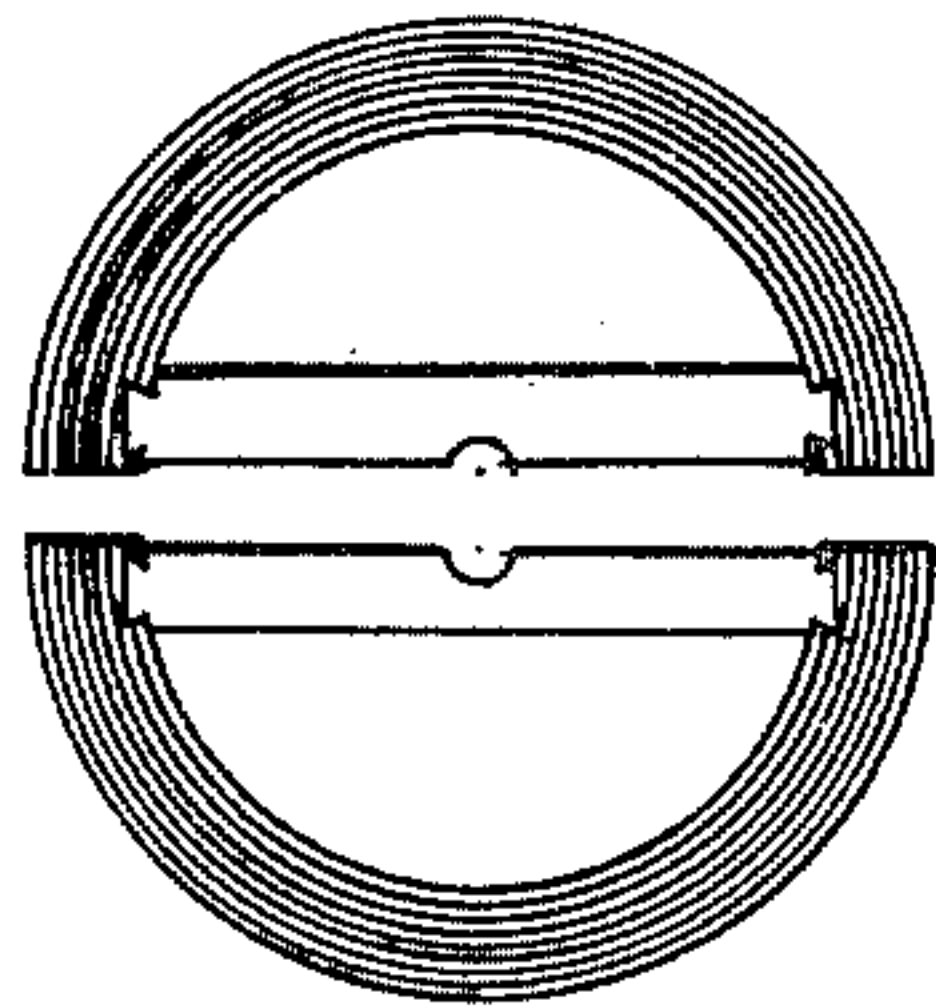
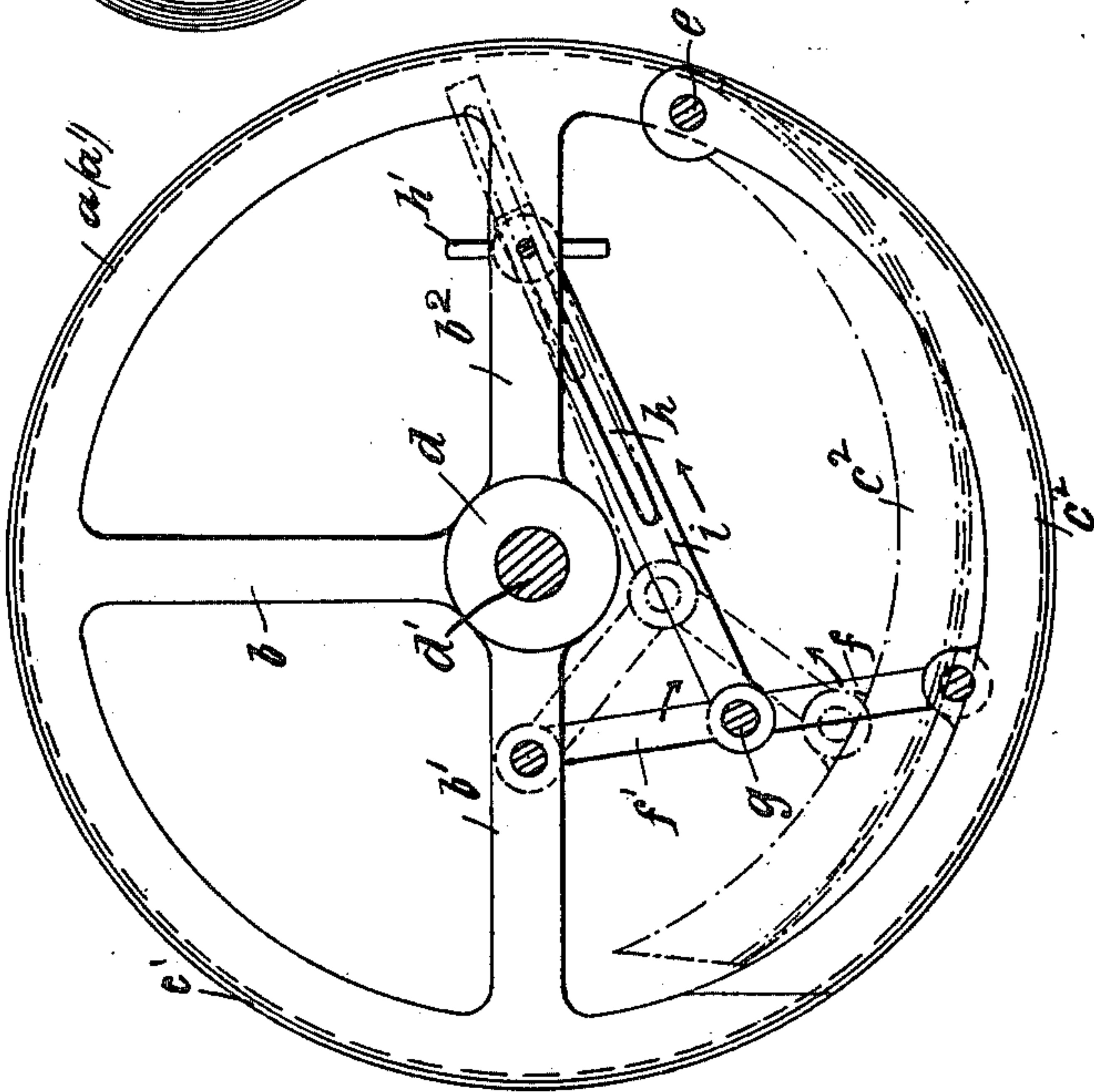


Fig. 2.



Witnesses:

R. F. Storm.

E. E. Masson

Inventor:

Hermann Franz Löscher  
by J. Littman  
Attorney.



# UNITED STATES PATENT OFFICE.

HERMANN FRANZ LÖSCHER, OF GERA, GERMANY.

## ROLLER FOR WINDING PAPER TUBES.

SPECIFICATION forming part of Letters Patent No. 668,107, dated February 12, 1901.

Application filed August 29, 1900. Serial No. 28,466. (No model.)

*To all whom it may concern:*

Be it known that I, HERMANN FRANZ LÖSCHER, a subject of the Emperor of Germany, residing at Gera, in the Principality of Reuss, in the Empire of Germany, have invented certain new and useful Improvements in Rollers for Winding Paper Tubes, of which the following is a specification, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 is a view in end elevation of a wound paper tube divided into two halves. Fig. 2 is an end elevation, partly in section, of a roller constructed in accordance with my invention, the movable parts being shown in their inner positions in dotted lines. Fig. 3 is a view of the same in sectional elevation.

My invention has for its object to provide a roller of improved construction upon which to wind a strip of paper to form a wound tube, which may be used for various purposes, such roller to be of simple and economical construction and provided with means whereby it may be readily collapsed in order to remove the wound tube therefrom.

With this object in view the invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described, and afterward specifically claimed.

Referring to the drawings by letters,  $d'$  indicates a shaft or axle, which may be mounted to rotate in bearings in any suitable frame and be driven by hand or by any suitable power. Upon this shaft, at a distance apart to at least equal the width of the widest strip to be wound, are secured two skeleton plates or spiders  $a$   $a'$ , which form the ends or heads of the roller, each of said heads being composed of a suitable hub  $d$ , diametrically opposite spokes  $b'$   $b^2$ , a spoke  $b$  at right angles to spokes  $b'$   $b'$ , and a rim  $c'$ , the spokes connecting the hub and rim and leaving one-half the spiders without spokes. A portion of each rim, as at  $c^2$ , comprising nearly all of the half which is unprovided with spokes, is pivoted upon a pin  $e$  to permit of its inward movement to a position such as shown in dotted lines in Fig. 2, such inward movement being controlled by mechanism consisting of a lever  $f$ , pivoted to the hinged portion  $c^2$  of the rim, a lever  $f'$ , pivoted to spoke  $b'$  at one

end and to the lever  $f$  and at the other end a flat bar  $i$ , pivoted to the meeting ends of the levers  $f$  and  $f'$  on a rod  $g$ , and provided with a longitudinal slot  $h$ , and a thumb-screw  $h'$ , projected through slot  $h$  and threaded into spoke  $b^2$ . The pin  $g$  projects entirely through the completed roller and beyond its ends to serve as handles. Connecting the fixed portions  $c'$  of the rims of the two end plates  $a$  and  $a'$  is a partial cylinder  $c^4$  of thin material, and a similar partial cylinder  $c^3$  connects the movable portions  $c^2$  of the end plates.

In the practical use of the invention the parts are adjusted to the positions shown in full lines in Fig. 2, and a strip of paper, properly treated to cause the several layers to adhere to each other, is wound around the roller until a suitable thickness of tube is formed. The thumb-screw  $h'$  is then loosened and the projecting ends of rod  $g$  grasped by both hands, when by drawing rod  $g$  toward the central shaft  $d'$  the parts are moved to the positions shown in dotted lines in Fig. 2, drawing the free ends of portion  $c^2$  inward, said portions turning on their pivots  $e$ , and thus reducing the circumference of the roller, so that the wound tube can be easily removed. The rod  $g$  may then be pressed outward, its movement being limited by the length of slot  $h$ , which will bring levers  $f$  and  $f'$ , which act as toggles, in line with each other at the end of the outward movement, in which position they securely and rigidly hold movable portions  $c^2$  of the rims in the same circle with the rigid portions  $c'$  and in which positions they are rigidly secured by tightening up thumb-screws  $h'$ .

For some purposes the tubes wound on the roller will be used as whole tubes; but for split pulleys and the like they may be cut into trough-like halves, as shown in Fig. 1, if desired, and braced by cross-bars, as shown in Fig. 1.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A roller upon which to wind tubes whose periphery comprises a rigid portion and a movable section pivoted thereto in combination with toggle-levers pivoted at their outer ends to the rigid portion and the movable portion, respectively, a rod passing entirely

through and projecting beyond the ends of the roller and forming pivots for the inner ends of the toggle-levers, slotted bars pivoted upon said rod, and thumb-screws projecting  
5 through the slots of said bars and threaded into the rigid portion of the roller substantially as described.

2. A roller upon which to wind tubes provided with a central shaft  $d'$  with skeleton  
10 end plates  $a, a'$  secured thereon at a proper distance apart, each end plate comprising a hub  $d$ , a rim, diametrically opposite spokes  $b', b^2$ , and a hinged portion  $c^2$ , in combination with toggle-levers  $f, f'$ , pivoted at their outer  
15 ends to portions  $c^2$  of the rims and spokes  $b'$

respectively, a rod  $g$  serving as the connecting-pivot for the inner ends of the toggle-levers and projecting entirely through and beyond the end plates to serve as handles, bars  $i$  pivoted on rod  $g$  and provided with longitudinal slots  $h$ , and thumb-screws  $h'$  passing through said slots and threaded into spokes  $b^2$ , substantially as described.

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

HERMANN FRANZ LÖSCHER.

Witnesses:

ERNST SCHNABEL,  
J. STEPHAN.