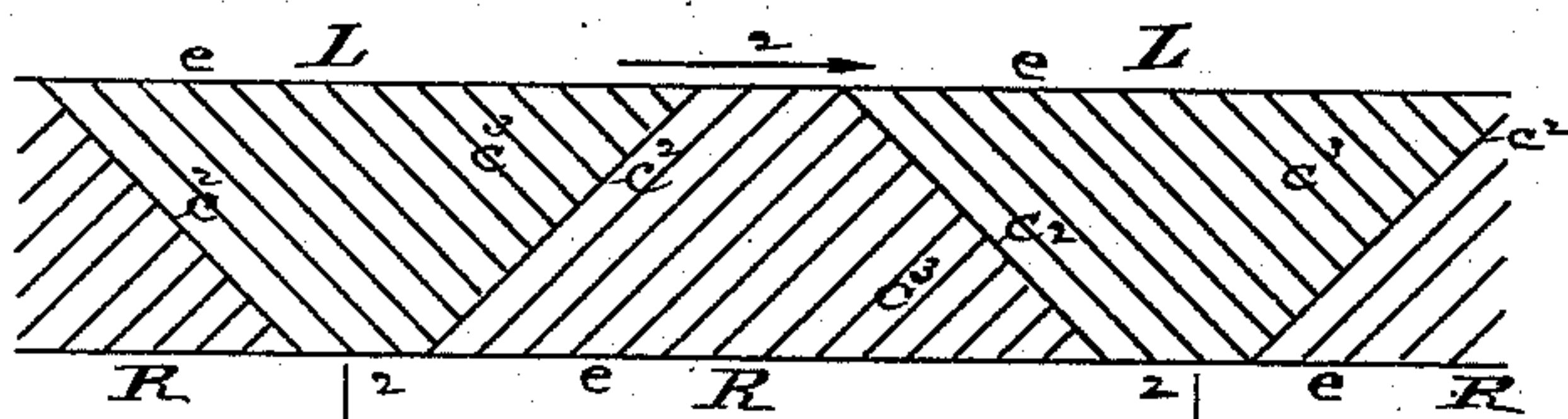
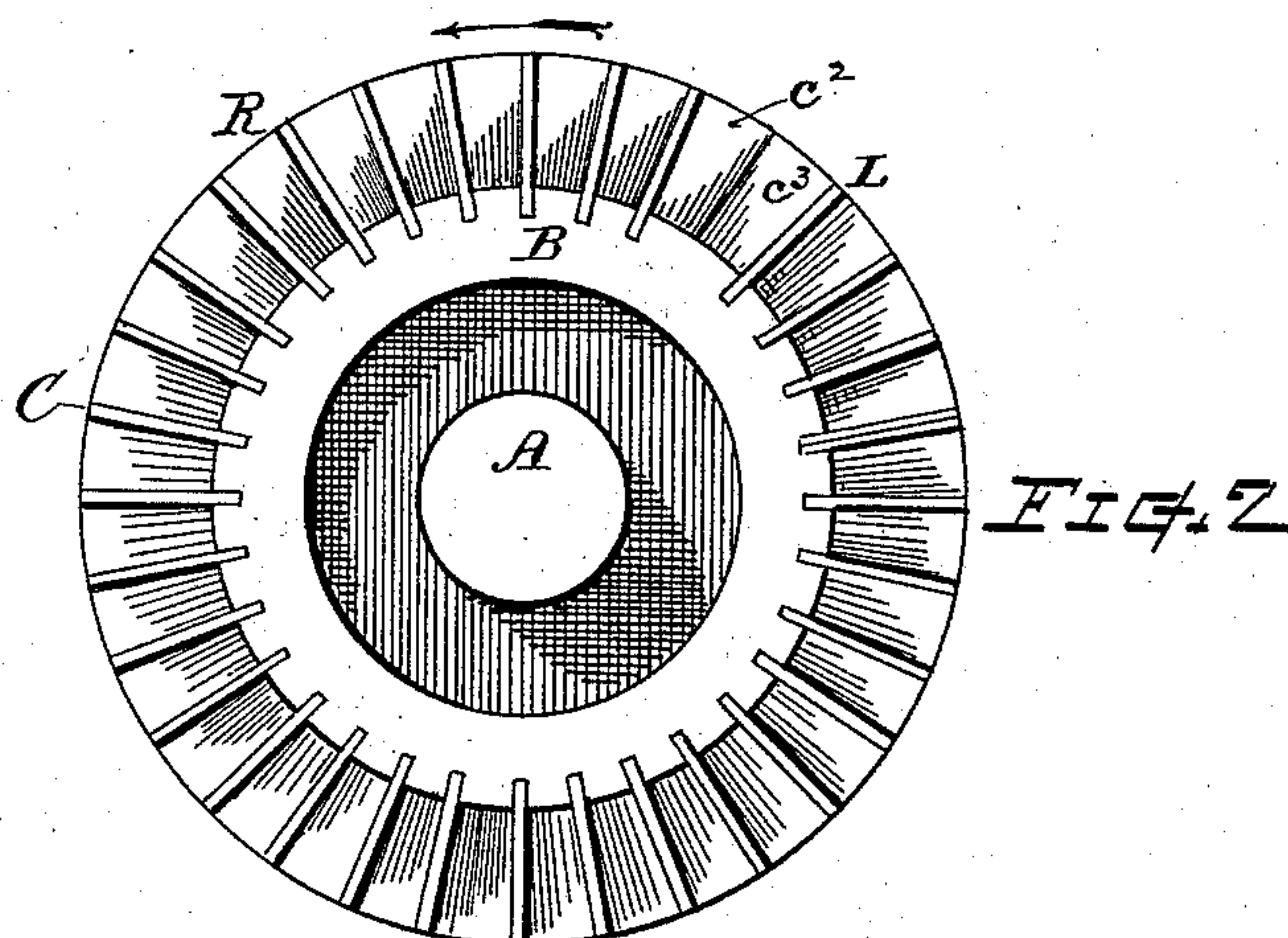
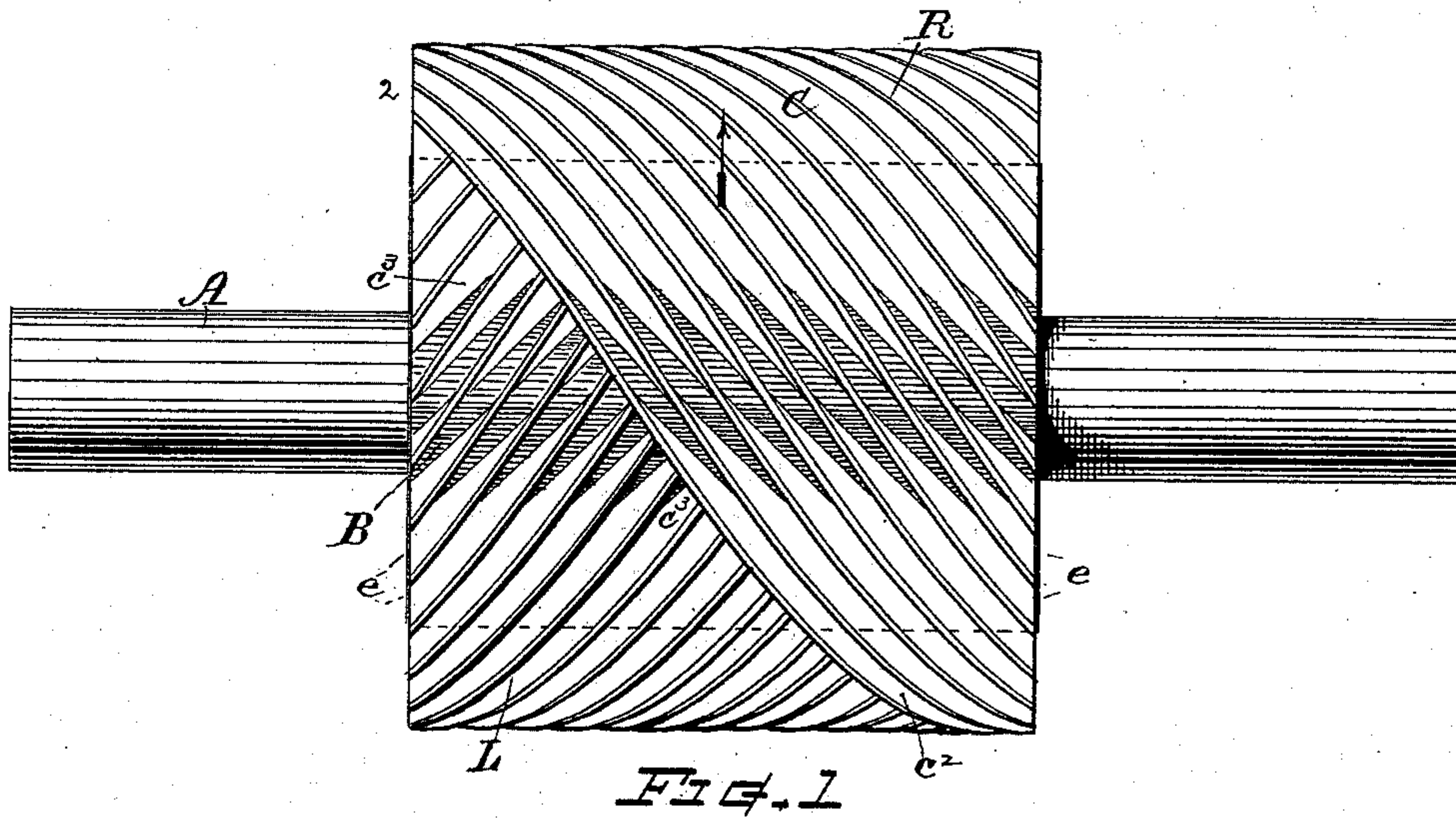


(No Model.)

E. T. MARBLE.  
LEATHER CUTTING CYLINDER.

No. 525,052.

Patented Aug. 28, 1894.



Witnesses.

W. Barton  
Ella P. Blum.

Fig. 3

Inventor.

Edwin T. Marble  
By Chas. H. Burleigh  
Attorney



# UNITED STATES PATENT OFFICE.

EDWIN T. MARBLE, OF WORCESTER, MASSACHUSETTS.

## LEATHER-CUTTING CYLINDER.

SPECIFICATION forming part of Letters Patent No. 525,052, dated August 28, 1894.

Application filed May 19, 1890. Serial No. 352,340. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN T. MARBLE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Rotary Cutter-Cylinder for Leather-Working Machines, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

This invention which relates to that class of bladed rolls or revoluble cutter-cylinders employed in machines for scraping or shaving hides and skins, for whitening, dressing or working leather, and for other analogous purposes; is an improvement in the construction of the cutter-cylinder, the object of which is to provide a more desirable and practically efficient appliance for the purpose named; and to overcome certain objections incident to mechanism of this class as heretofore made and employed.

To this end my invention consists in the cutter-cylinder having its blades or cutters constructed and disposed in the peculiar manner shown and described.

Cutter-cylinders or rolls for shaving or working leather have heretofore, in some instances, been made with spiral cutters or blades; the helical curvature of all of the blades being uniform and continuous in one direction throughout the length of the cylinder; or again, in some instances, a series of short blades have been employed all having a helical trend toward one end of the cylinder, some with greater or less inclination, but either of such style of blades when at work tends to crowd the stock or leather to one side by the incline of the blades. In other instances the cylinders have been provided at one end with blades disposed with a right hand helical curvature, and at the opposite end with blades having left hand helical curvature, the blades from the two ends meeting at or near the center in V form; this style of cutter-cylinders is, however, objectionable in that it works the leather a part to the right and a part to the left on different parts of the cylinder, and leaves a ridge or variation at

the position corresponding with the junction of the right and left spirals of the knives.

My invention provides a roll or cutter-cylinder for the purpose named, wherein the right and left working trend of the cutters or blades will act uniformly upon the entire surface over which the cylinder passes. The periphery of the bladed-roll or cutter-cylinder being furnished from end to end of its face in different sections of its circumference with oppositely inclined series of blades disposed in the peculiar order illustrated, for the purpose specified.

In the drawings, Figure 1 is a side view of a cutter-cylinder constructed in accordance with my invention. Fig. 2 is an end view of the same. Fig. 3 is a diagram, on smaller scale, showing the arrangement of the blades on a plain development of the periphery of the cylinder.

In referring to parts, A denotes the shaft or axle, B the body of the cylinder, and C the blades, cutters, or working flanges which are rigidly fixed in the periphery of the body and stand outward therefrom in radial direction.

In accordance with my invention the periphery of the cylinder is, circumferentially, apportioned into alternate sections or series of helically disposed blades having opposite inclination or direction of trend in the respective sections the series of blades of one section or portion of the cylinder circumference being all disposed with a right hand inclination or helical order, as at R; and the series of blades of the following section or portion of the cylinder circumference being all disposed with a left hand inclination or helical order, as at L. Each section comprises in its series, several principal blades that extend spirally from end to end of the cylinder, as at 2; and parallel therewith a number of shorter blades  $c^3$  of successively varied length that occupy the angular area between a rear principal blade and cylinder end, as shown. The leading ends of the short blades  $c^3$  in the left hand series all abut against or terminate adjacent to the rear long blade  $c^2$  of the right hand series; and the leading ends of the short blades of the right hand series all abut against or terminate adjacent to the rear of the principal blade  $c^2$  of



the left hand inclined series, in the manner illustrated. The blades in each series are preferably parallel with each other and the shorter blades meet the principal blade that extends completely across the cylinder at about a right angle, more or less, at their leading ends or places where they abut against said rear blade  $c^2$  of the oppositely inclined series; and from thence extend to the outer end of the cylinder. Hence when in use, the surface of the skin acted upon is, by the revolution of the cylinder, worked with the left hand spiral blades followed by the right hand spiral blades, or vice versa, in rapid succession; the material being uniformly dressed, since the worked surface is exposed to a continually changing diagonal cut or scrape, alternately with the right and left inclined series of blades, at each rotation of the mechanism.

The cutter-cylinder is here shown as provided with two circumferential sections, one right and the other left; but cylinders of larger diameter could be made with a greater number of alternating blade-sections. It is best, however, to have an equal number of sections with blades tending to the right as to the left.

The outer edges of the blades may be sharp and angular, or may be rounded and dull as best suited to the requirements of the particular work to be performed, accordingly as the roll or cylinder is to be employed in machines for fleshing, buffing, or shaving hides and skins; or for dressing, whitening, smoothing or finishing leather, or for other analogous purpose.

I do not confine myself to any particular number of blades, or any particular size of blades or dimension of cylinder; but in cases where the size of the cylinder admits, and more than two sections of diagonal blades are employed, the blades would be disposed in the peculiar order indicated in the diagram Fig. 3.

It will be observed that the construction and arrangement of the blades are such that when the cylinder is moving forward in the direction indicated by the arrow the inclination of the blades will tend to throw the chips and scrapings out from between the blades at the end spaces  $e$ . It will also be noticed that there are no closed spaces or pockets within which chips and dust would become confined.

Another advantage incident to my invention is that the blade-cylinder imparts a scrape or cut alternately at right and left diagonal, and equal upon the entire surface acted upon, thereby giving a fine uniform surface with-

out ridges, and without tendency to draw the leather to one side, or away from a central line.

This improved cutter-cylinder is applicable to and intended for use in the various kinds of machines for shaving, scraping or working on hides and leather, or in such other machines of like nature as employ a cutter-cylinder or bladed rolls of this class, the cutter-cylinder of course being modified in length, strength or diameter, or in degree only, to conform to the size and requirements of the machine; such machines being well known, and not of my invention, it is unnecessary to herein illustrate their construction, as any person conversant therewith will understand the application of my improved cutter-cylinder thereto.

I am aware that cutter-cylinders having right and left helical blades or flanges have heretofore been employed, in which the blades are arranged with opposite inclinations from a central point in the length of the cylinder, all of the right inclined blades being located on one end of the cylinder, and all of the left inclined blades located on the opposite end of the cylinder; it will therefore be understood that I do not make claim broadly to a cutter-cylinder irrespective of the particular construction illustrated and defined.

I claim as my invention herein, to be secured by Letters Patent—

1. In a cutter-cylinder for the purposes specified, the blades disposed about the periphery of the body in alternating triangular groups each comprising a series of helical blades, said series of blades being oppositely inclined on opposite portions of the circumferential circle of the cylinder, their helical trend directed from the right to the left for one half or portion of the circle, and from the left to the right for the alternate half or portion of the circle, substantially as set forth.

2. The within described bladed-cylinder having thereon at different circumferential portions two oppositely inclined series of blades, each series comprising blades  $c^2$  that extend helically from end to end of the cylinder, and shorter blades  $c^3$  of successively varying length parallel with said longer blades, their leading ends abutting against or adjacent to the rear blade of the preceding series, and from thence extending to the end of the cylinder, as shown and described.

Witness my hand this 12th day of May, A. D. 1890.

EDWIN T. MARBLE.

Witnesses:

CHAS. H. BURLEIGH,  
ELLA P. BLENUS.