

L. SENGE.
SELF ROTATABLE TOY.

Patented June 30, 1896.

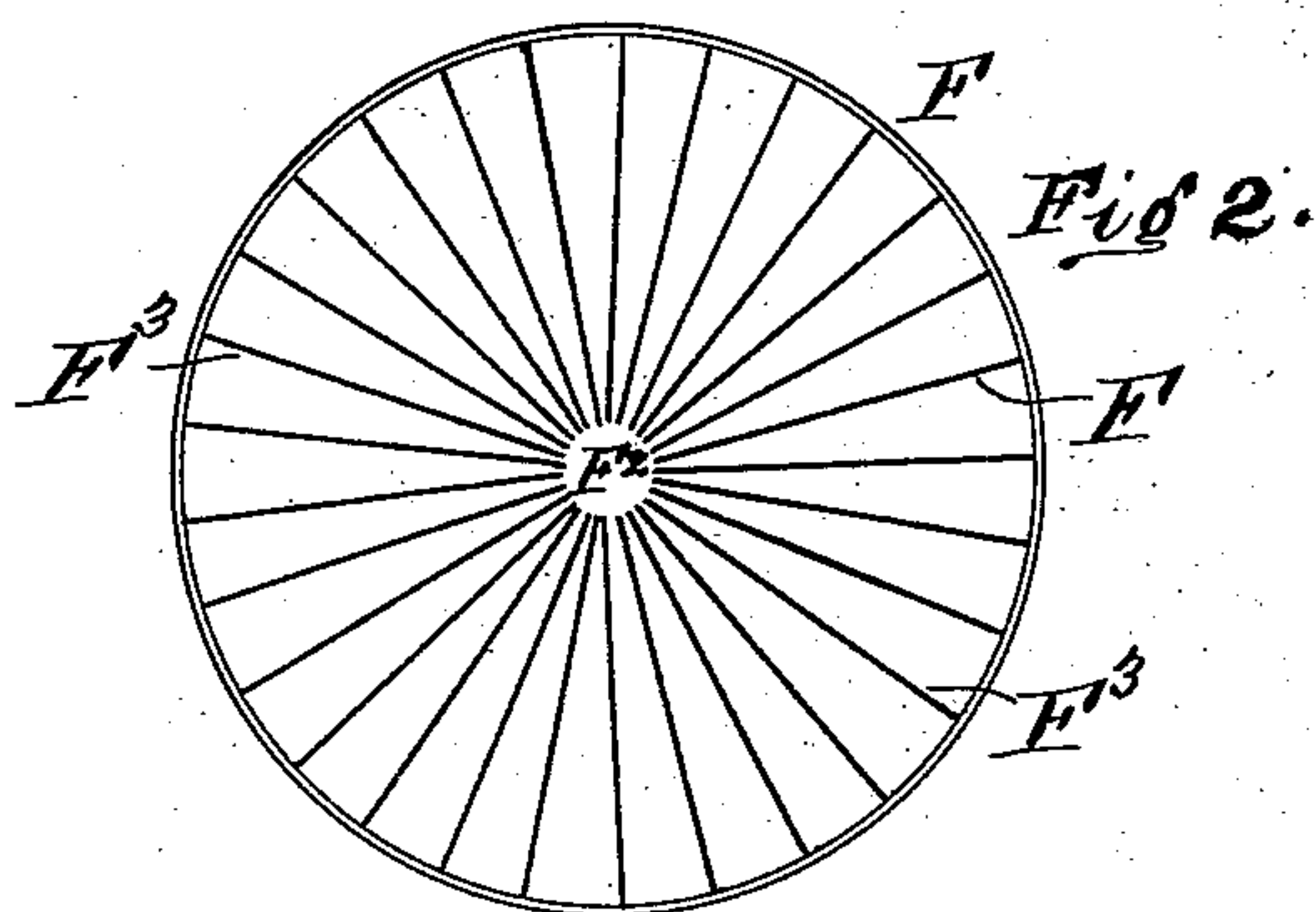
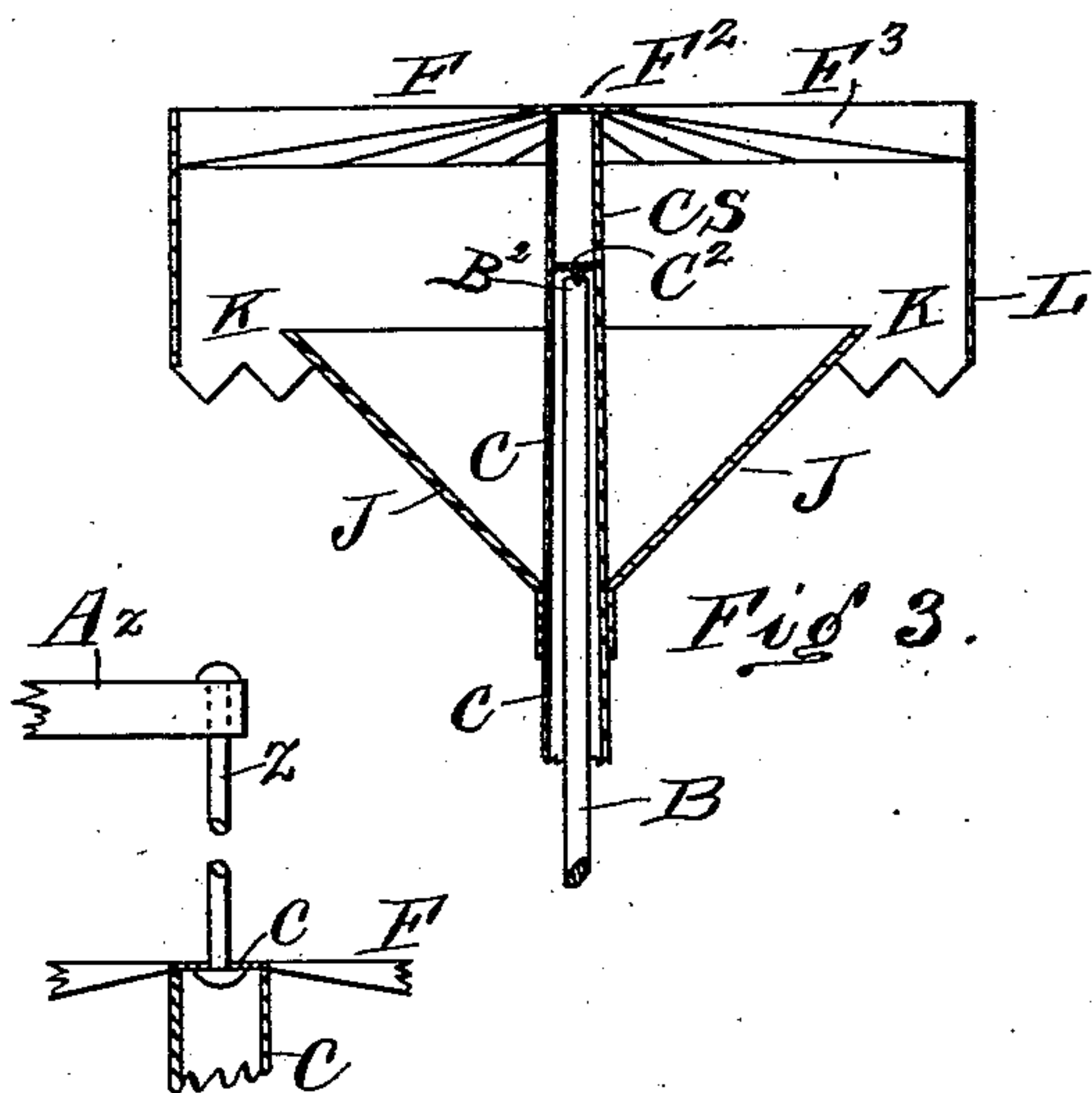
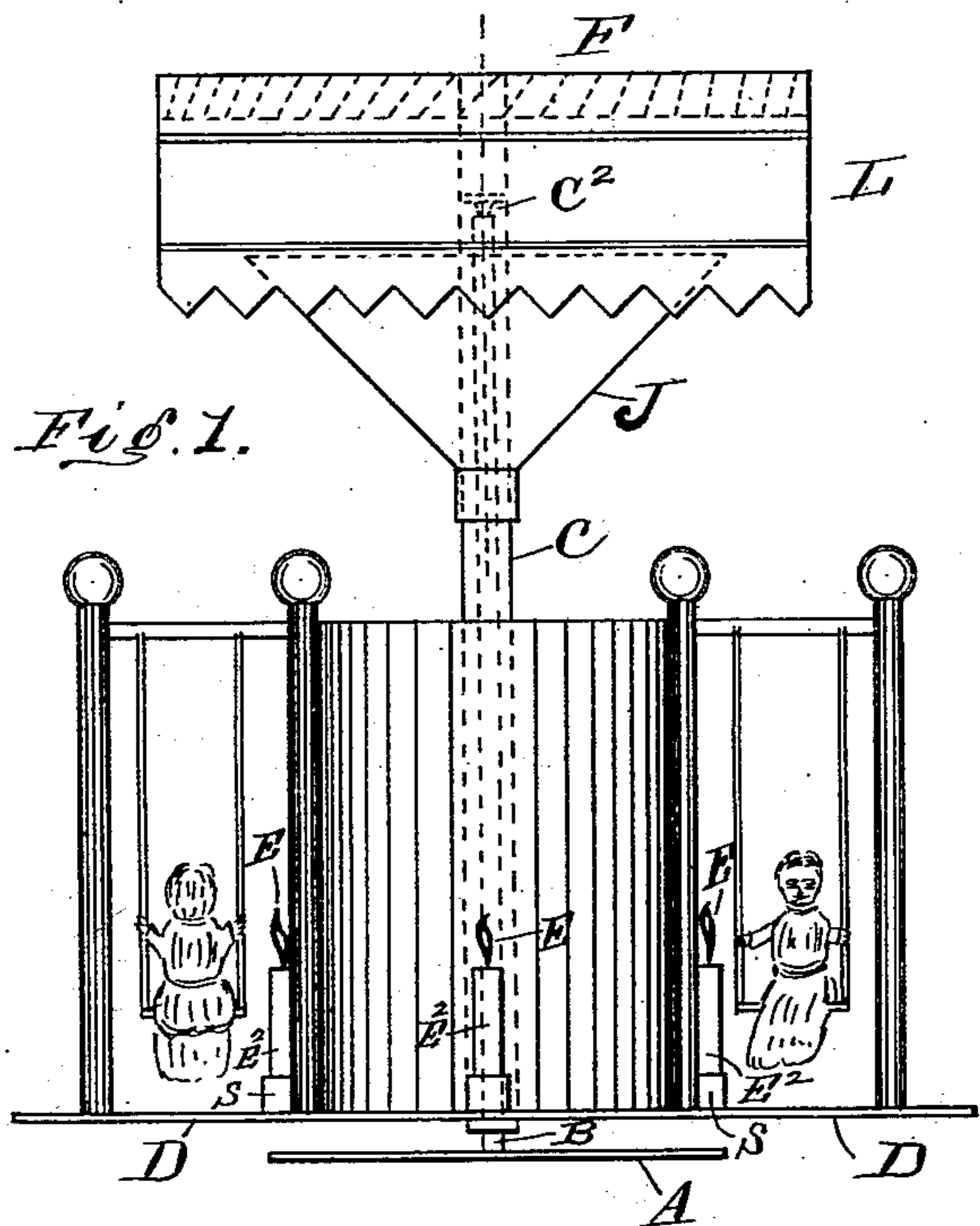


Fig. 4.
Witnesses

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SELF-ROTATABLE TOY.

SPECIFICATION forming part of Letters Patent No. 563,077, dated June 30, 1896.

Application filed January 29, 1894. Serial No. 498,369. (No model.)

To all whom it may concern:

Be it known that I, LIBORIUS SENGE, a subject of the Emperor of Germany, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Self-Rotatable Toys and in the Means for Rotating the Same, of which the following is a specification.

10 A principal feature of my invention consists in arranging a platform upon a central pivotal support, so that the platform or frame can easily rotate in a plane substantially horizontal, with little friction, and combining
15 therewith a device for the deflection of vertically-ascending heated fluid, as air or other gas, and devices located on or fixed to the rotatable platform for generating said heated air or other gas or gases.

20 The other features of my invention will be apparent from the following description and claims. So also the various advantages resulting from the employment of all of the features of my invention, conjointly or otherwise, will be hereinafter set forth.

30 In the accompanying drawings, making a part of this application, and in which similar letters indicate corresponding parts, Figure 1 represents a side elevation of a rotatable toy, illustrating certain features of my invention. Fig. 2 is a plan of the wheel whereby the heated gases operate to rotate the toy. Fig. 3 is a vertical central section of the wheel and accompanying working parts shown in
35 Fig. 2. Fig. 4 is a side elevation of a modified construction for pivotally supporting the rotatable axis or sleeve.

40 A indicates a platform of any suitable configuration or construction. The main requisite essential of the platform for the purposes of my invention is the capacity to receive and firmly hold a vertical rod or shaft around which the rotatable parts can rotate as an axis.

45 In Fig. 1 the platform is a flat wide and broad piece of strong material. To this platform, or foot, or pedestal is fixed the lower end of the vertical rod or shaft B. Around this shaft is a sleeve C. To enable this sleeve
50 and the load it carries to easily rotate around the rod B and with the least friction, a bearing C² is fixed in the sleeve, and this bearing

has a point which rests in a cup or concavity B² in the top of the rod B; but the point might be on the rod B and the concavity in the bearing C². The sleeve C is supported on the rod B by the bearing C², and the lower end of the sleeve does not impinge on the top of the platform A. Hence the rotation of the sleeve C around the rod is accomplished with little
55 friction, and the sleeve C and what it carries will rotate in response to a very small degree of force applied substantially as hereinafter specified. The bearing may be a suspended one, as indicated in Fig. 5, as, for instance,
60 a wire or cord Z may be connected to the bearing C² and also to a support, as AZ, above the apparatus. In such event the rod B may be shortened, or omitted, but it, or an equivalent of it, is preferably retained to prevent
65 the rotatable parts from swaying.

Extending out from the sleeve is a platform D, or series of arms D, (radial extensions,) and these are preferably arranged so as to act as counterbalances to each other on the various sides of the sleeve, so that the weight carried by the sleeve shall have a tendency to
70 cause it to keep its vertical position and prevent it from rubbing against the rod B and there creating undue friction. To this platform or these arms D are fixed devices E for heating the air, and creating a current of heated air.

Lamps are convenient, but for toys such as I am describing, the most convenient articles
75 are candles, as E², and of the latter the kinds used in the decoration of Christmas trees are very desirable.

To the top of the sleeve C or to the upper portion C S thereof, I affix a hub F², having radial spokes F³, the latter being broad and fixed at an angle oblique to the vertical, substantially as shown. The hub and spokes constitute a wheel F. The spokes may be curved
80 as in the manner of a propeller-wheel.

85 Instead of the wheel, there may be used a spiral or volute, or a series thereof, against which the ascending heated air may impinge; but the wheel occupies less room and is light of weight, and is very effective and serviceable.

I will now describe the operation of my invention as thus far specified.

The devices E for generating the heated air

being started, the heated air ascends and, impinging against the oblique spokes, exerts (through the well-known resolution of forces) a pressure upon the spokes in a horizontal direction toward the side of the spoke opposite where the heated air impinges. Such pressure sets the wheel in motion, viz: revolving, and through its fixed connection to the sleeve sets the latter and the radial extensions or platforms D in rotation. Here we then have the interesting spectacle where the devices heating the air also rotate with the arms and the wheel. This rotatable device, whose peculiar means for automatic rotation has now been described, can be applied in a number of useful ways.

When used in toys for the interesting of children, or for general attraction or for advertising purposes, the platforms or radial extensions D may be made to carry any interesting things, reading-matter, articles, or other things.

The construction of my invention is as follows: This feature provides for utilizing all of the ascending heated gases or air, and is especially valuable where the amount of the said heated gases or air is limited, and the weight of the device to be rotated is such that the power of said ascending current of gas or gases is but little in excess of the power required to rotate said device. Such is the case of the mechanism shown in Fig. 1, where the rotatable device is heavy, and only four small candles are provided for producing the air-currents.

To utilize all of the current of heated air, I provide beneath the wheel an air-deflector J, of a form substantially conical, or, in other words, extending from the shaft outwardly as well as upwardly, substantially as shown, but stopping short of the outer edge of the working part of the wheel F. Thus a concentric ring or space K under the outer portion of the wheel (or spokes) is left exposed to the heated currents of ascending air or gases.

In operation, the ascending currents of heated air, &c., from the devices for producing the same, as the candles E², or other device, rise and for the most part meeting the inclined surface of the deflector are sent upward and concentrated at the outer portion of the wheel F.

In accordance with the well-known principles of mechanics, a given degree of power exerted at the outer end of a spoke has more effect to turn the hub than where the same power is applied to the spoke at a point nearer the hub. Consequently the energy of the ascending current of heated air is well utilized

in turning the wheel F and the rotatable device below.

A hood L extends from the outward periphery of the wheel downward, and prevents any of the ascending hot air, deflected outwardly by the deflector J, from passing beyond the outward edge of the wheel F before reaching the latter, but, on the contrary, directs said air upward to the wheel. In the present instance, this hood is made of paper, handsomely figured.

The ornamental designs on the platform of this rotatable device are a central cylinder around which are four swings, located at equal distances one from another, each swing having a little doll seated therein. The four candles E² are located near the outer edge of the platform at equal distances from each other.

My device is simple of construction, economical of cost, effective in operation, and capable of being used for a large variety of good purposes.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination of the rotatable radial platform or extensions, and devices for producing currents of heated air, and the wheel F having oblique portions and an oblique deflector located centrally for deflecting the currents of heated air upward toward the outer portion of said wheel, substantially as and for the purposes specified.

2. The combination of the rotatable radial platform or extensions, and devices for producing currents of heated air, and the wheel F having oblique portions and an oblique deflector located centrally for deflecting the currents of heated air upward toward the outer portion of said wheel, and the hood L, arranged at the outer portion of the wheel and extending down to assist in concentrating the ascending currents of air upon the oblique pieces or floats of the wheel and near the outer portion of the latter, substantially as and for the purposes specified.

3. The combination of a central standard, a sleeve surrounding the same, and a bottom or lower platform connected to the lower portion of the sleeve, and devices for sending up currents of heated air, and an upper oblique device connected to said sleeve for enabling the ascending currents of air to rotate the sleeve, and radial branches fixed to the sleeve and adapted to receive ornamental additions, substantially as and for the purposes specified.

LIBORIUS SENGE.

Attest:

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