

(No Model.)

C. A. VOLKE.  
TOY.

No. 299,703.

Patented June 3, 1884.

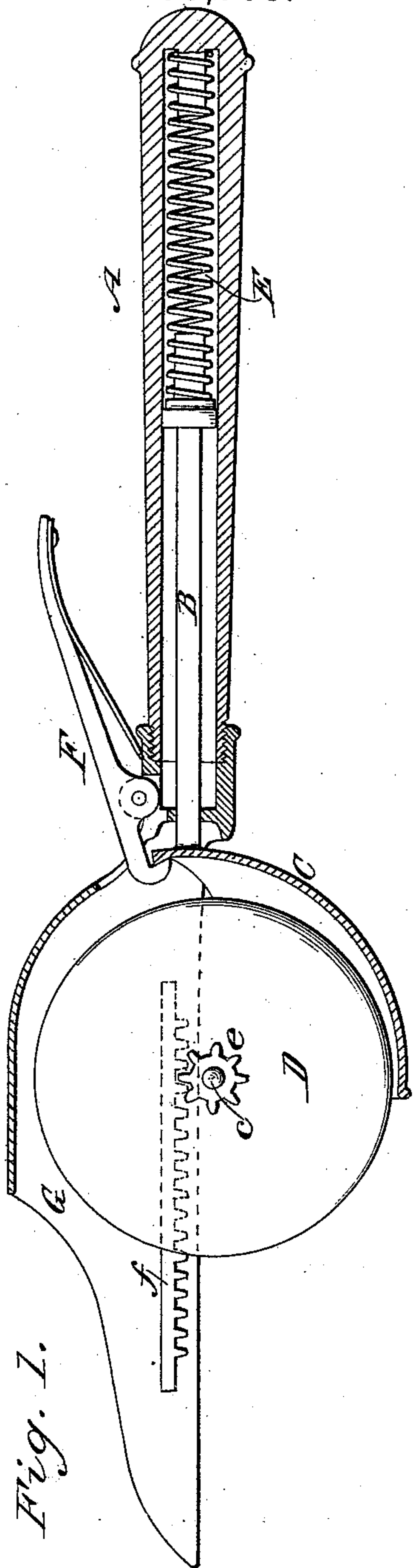


Fig. 1.

WITNESSES:

John H. Deemer  
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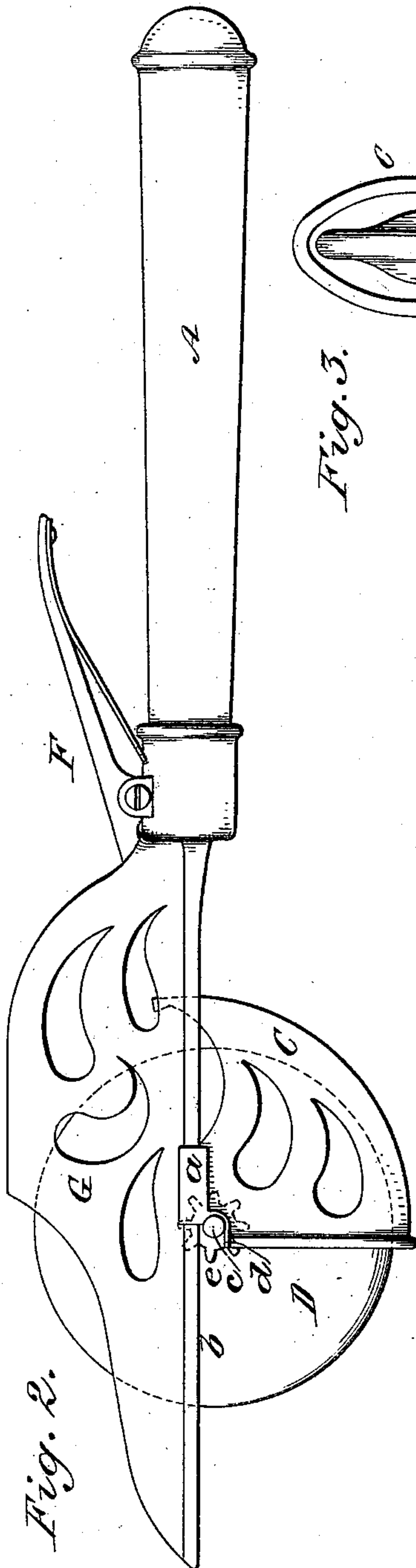


Fig. 2.

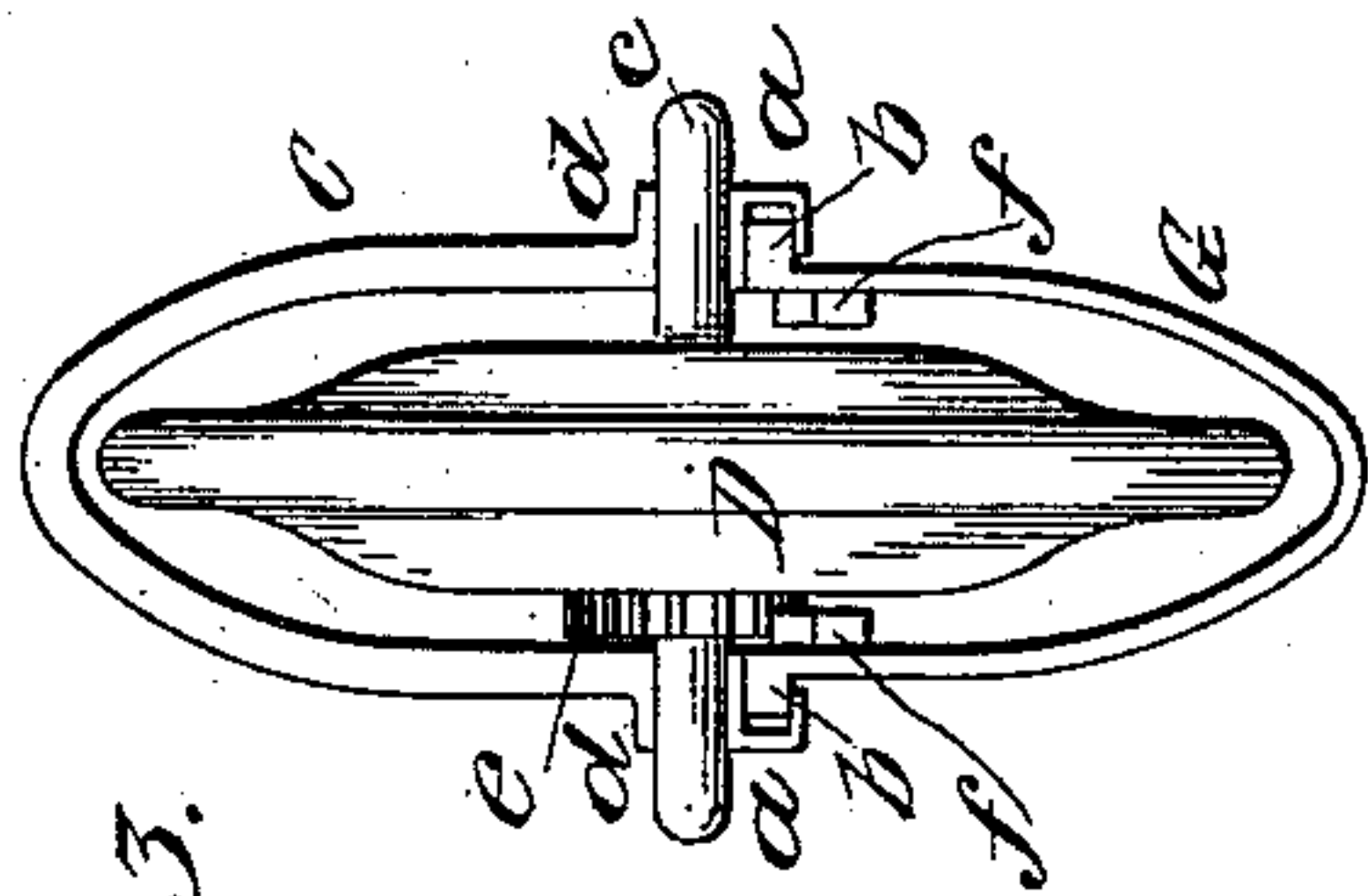


Fig. 3.

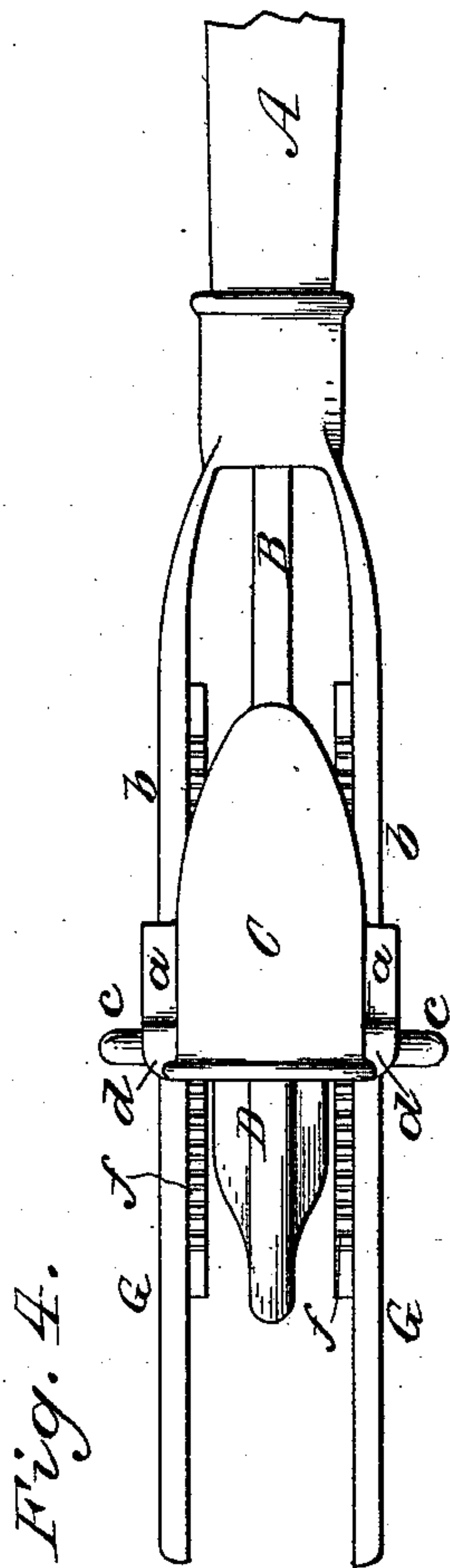


Fig. 4.

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CHARLES AUGUST VOLKE, OF KOBÉ, JAPAN.

## TOY.

SPECIFICATION forming part of Letters Patent No. 299,703, dated June 3, 1884.

Application filed April 8, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES AUGUST VOLKE, of Kobé, Japan, have invented a new and Improved Toy, of which the following is a full, clear, and exact description.

This invention consists in a toy in or by which a wheel or circular projectile mounted on or provided with a spindle is made capable of having imparted to it rotary motion in different directions, according to the position in which the toy is held—as, for instance, either a rolling motion in the direction in which it is impelled, or a return rolling motion after its inertia due to its propulsion has been expended, or, again, by further changing the position of the toy, said wheel may be spun upon its axis as a top.

The invention includes certain constructions and combinations of parts whereby these several results, or any of them, may be obtained in an easy and efficient manner, substantially as hereinafter described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a longitudinal section of the toy with its wheel or top in position ready to be discharged as a projectile, and the whole in position so that when said wheel is discharged it will first have a rolling or turning motion in a forward direction and afterward a return rolling motion. Fig. 2 is a side view of the same with the wheel in the course of being discharged, but before leaving a carrier, through which the impulse to project it is communicated. Fig. 3 is a front end view, but with the parts in an inverted position; and Fig. 4 is a longitudinal view in part, in a plane at right angles to Figs. 1 and 2, and with the parts in the same inverted position as in Fig. 3.

A indicates the handle of the toy, which handle is here shown as made hollow, and as forming a guide for a rod, B, on the outer end of which is firmly secured a carrier, C, for the wheel or projectile D of the toy. Within this handle A is a spring, E, that serves, by its pressure on the rod B, to impel the carrier C to the position shown for it in Fig. 2. On

said handle is fitted a trigger, F, arranged so that when the carrier C and its rod B are forced back against the pressure of the spring E it engages with the carrier to retain the carrier in a locked position, as shown in Fig. 1. By pressing, however, on the rear end portion of the trigger, the carrier is released, and it is forcibly driven outward by the action of the spring E.

The carrier C is provided with clips *a a*, which are fitted to engage with and slide upon or along parallel longitudinal ribs *b b*, formed upon opposite sides of a bifurcated or channel-like guide, G, arranged to extend outward from the handle A, which guide serves to retain the carrier in its proper position and to direct its motion when liberated from the trigger.

The wheel or circular projectile D is mounted on a spindle, *c*, and the carrier C is constructed with recessed bearings *d* on opposite sides of its forward ends, to receive freely within them from the front end of the carrier the ends of the spindle *c*, and forming a guide and support for said spindle when the carrier having the wheel within it occupies a downward position, as shown in Figs. 1 and 2.

With the wheel D is combined an outer concentric disk or pinion, *e*, which may be mounted on the spindle *c*, or be otherwise connected to the wheel. When the wheel D is set within the carrier C, this disk or pinion *e* bears against or is in contact with a ledge, rail, or rack, *f*, on and along the guide G; or there may be a rail or rack, *f*, along each side of said guide, and duplicate disks or pinions *e* on or connected with the wheel D, to work in contact therewith. It is preferred to construct each disk *e* with teeth, or, in other words, to make a pinion of it, and to similarly construct each ledge *f* to make of it a rack, so that when the wheel D is thrown out by the action of the spring-propelled carrier C a positive revolving motion by gear will be imparted to said wheel about or around its axis, which motion, by reason of the reduced diameter of the disk as compared with that of the wheel, will be a very rapid one. When each disk *e* and ledge *f* are plain or smooth—that is, formed without teeth—then said devices may be so arranged



that a rotary motion is imparted to the wheel D simply by frictional contact between the disk and ledge or rail.

The toy may be used either for shooting and 5 rotating the wheel in the air, or for impelling and rotating it over the ground or floor, or for spinning it as a top on its spindle. Supposing the toy to be held with its carrier C in a downward position, as shown in Figs. 1 and 2, 10 and so that the wheel D, when projected, is made to roll over or come in contact at its periphery with the ground or floor, then, so soon as its inertia, due to the impulse given it by the spring-propelled carrier, has died out, 15 said wheel will be made to roll backward—that is, to have a return movement by reason of the back rotary motion given it when in its guide and carrier through the contact of the disk or pinion *e* with the rail or rack *f*. On 20 the other hand, supposing the toy to occupy an inverted position, as shown in Figs. 3 and 4, then the wheel D, after it has been thrown from the carrier C, will simply have a forward rolling motion given to it by the rotary motion it received when in its guide and carrier. 25 Again, if the toy be held with one of its sides uppermost, or so that the wheel D, after it has been thrown out, will drop upon one end of its spindle *e*, the rotary motion which it received when in its guide and carrier C will 30 cause it to spin like a top in a right-hand direction; and if the toy be again turned to present its other side uppermost, then the wheel D will be caused to spin in a left-hand direction. 35

While it is preferred to use a spring-propelled carrier for the wheel, the toy might be made with a solid handle or without a spring to propel the carrier, and said carrier be provided with a handle to project it by hand for 40 the purpose of throwing out the wheel or top, which will have rotary motion imparted to it when in its guide and carrier, as hereinbefore described. Under such an arrangement, of course, the trigger would also be dispensed 45 with.

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

1. In a toy for throwing a circular projectile 50 wheel or top, the combination, with the stock or handle and guide for said projectile, of a carrier for imparting the necessary impulse to the projectile, and means for giving a rapid rotary motion to the projectile while in its 55 guide and carrier, substantially as specified.

2. In combination with the guide for the wheel or top and the sliding carrier by which said wheel or top is projected out of the guide, the wheel or top provided with a spindle and 60 one or more disks or pinions for operation in connection with one or more rails or racks on the guide, essentially as described.

3. The combination, substantially as hereinbefore described, of the spring-propelled 65 carrier, the trigger for retaining and releasing the carrier, and the guide.

4. The carrier C, constructed with open-mouthed recessed bearings *d* in its forward end, substantially as and for the purpose here- 70 in set forth.

5. The combination, substantially as hereinbefore described, of the spring-propelled carrier, the trigger for retaining and releasing the carrier, the guide, the ledge, rail, or 75 rack on the guide, the wheel to be placed within the carrier, and the disk or pinion formed on or connected to the wheel and bearing against or engaging with the ledge, rail, or rack on the guide. 80

6. In a toy for throwing and rotating a wheel or circular projectile, the method herein described of giving to said wheel a return rolling motion after the inertia as derived from its projection has been expended, by communicating a back rotary motion to the wheel 85 while in the act of being projected, essentially as specified.

CHARLES AUGUST VOLKE.

Witnesses:

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WM. W. LUYSTER.