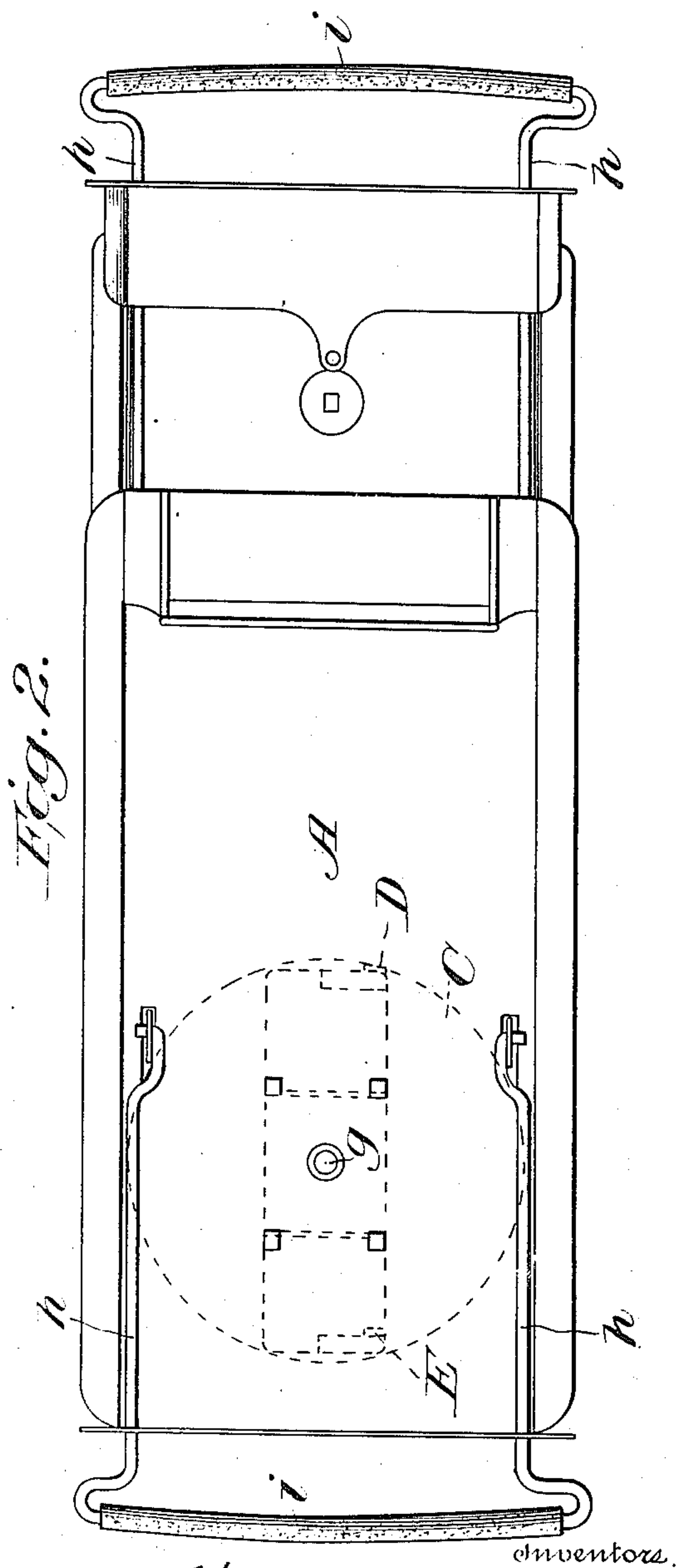
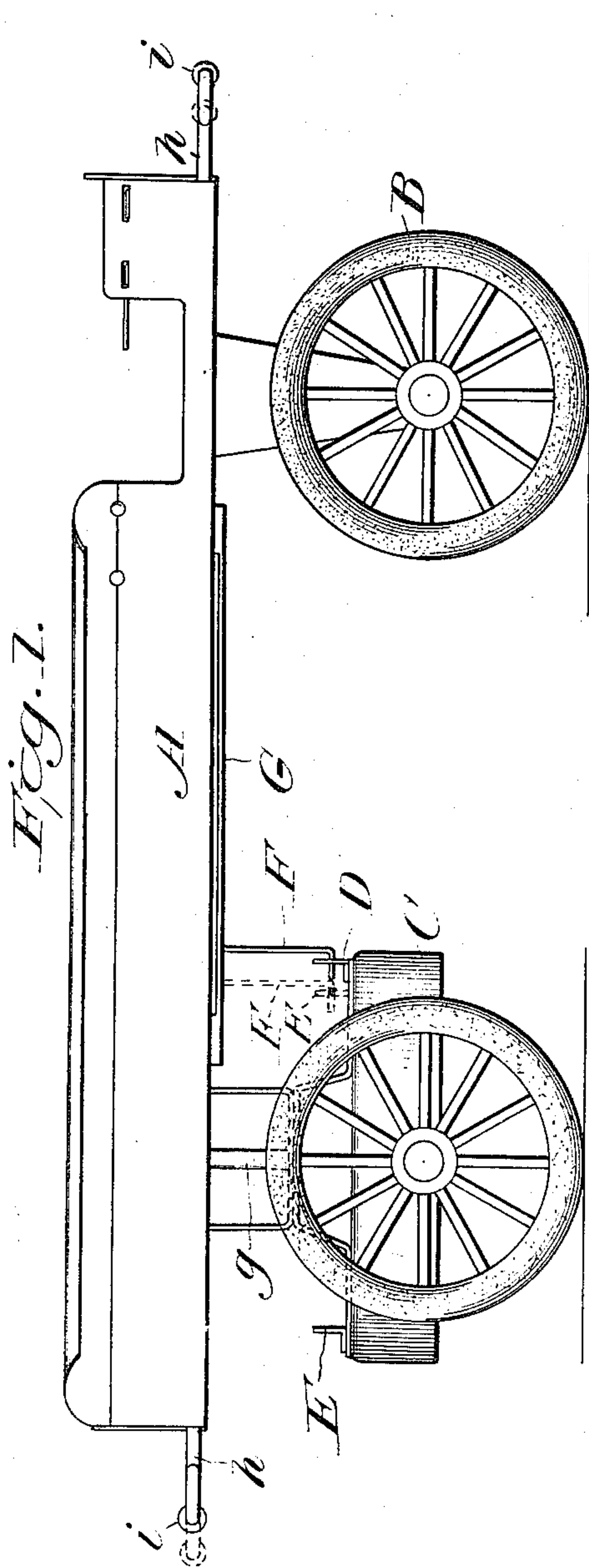


H. T. KINGSBURY & M. J. KIDDER.  
 AUTOMATIC REVERSING MOTOR TOY.  
 APPLICATION FILED NOV. 4, 1909.

963,715.

Patented July 5, 1910.

3 SHEETS—SHEET 1.



Witnesses

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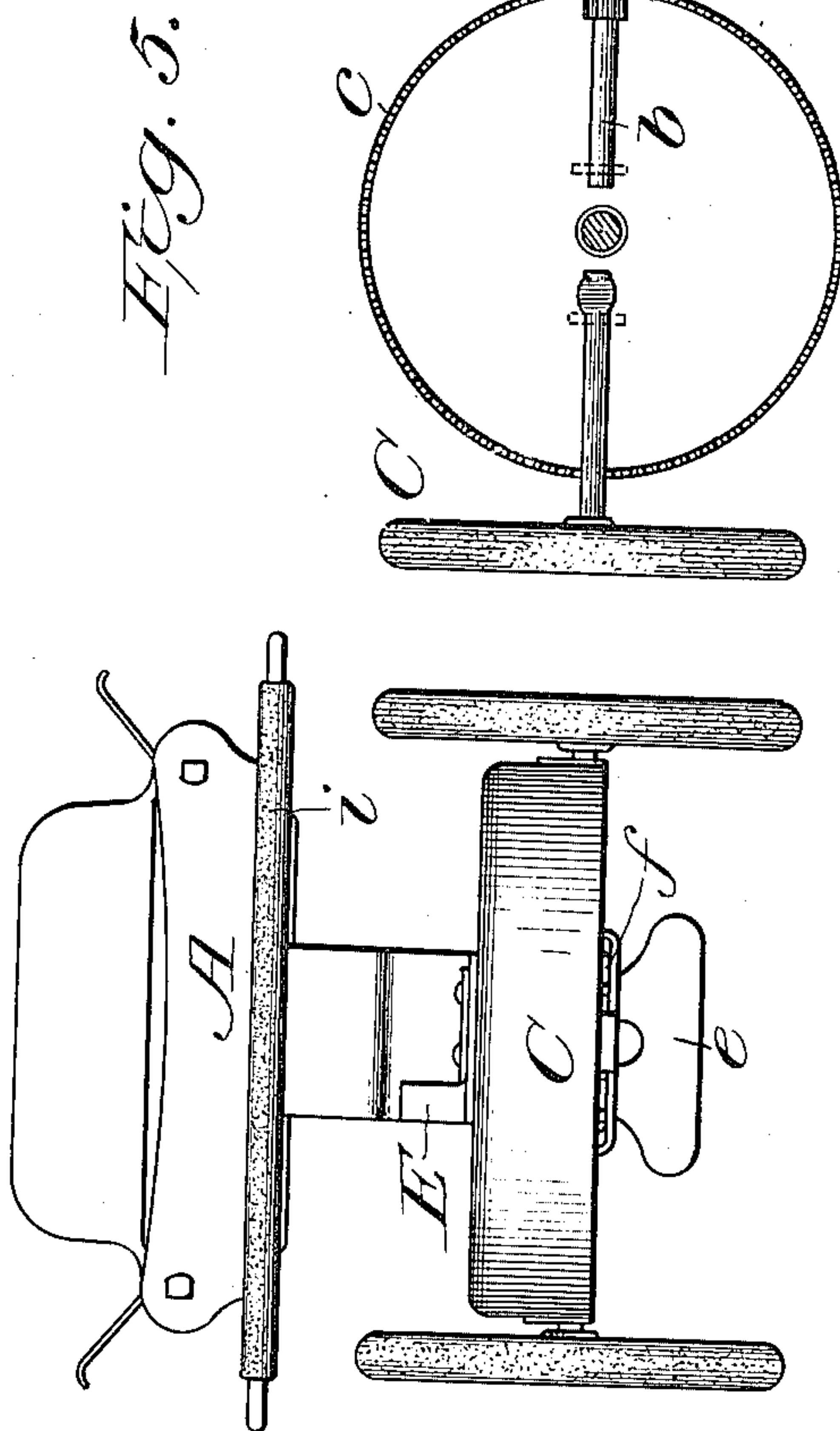
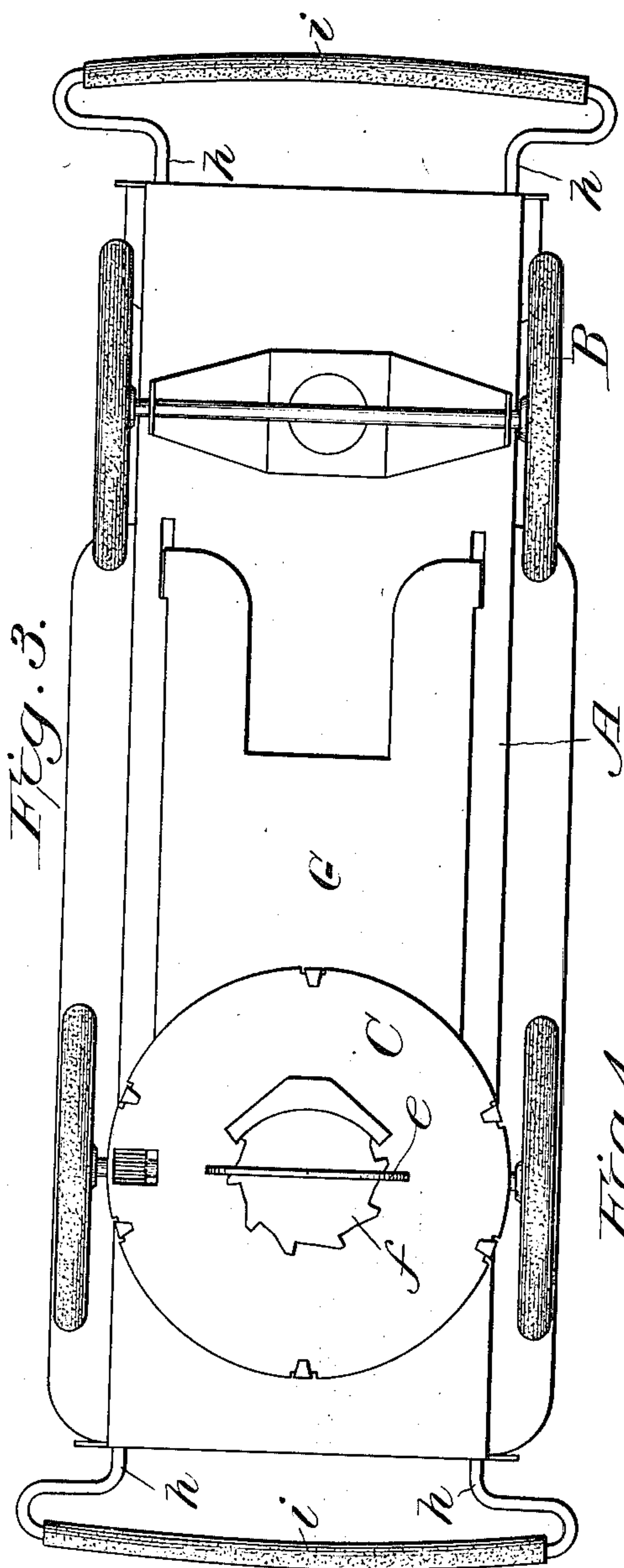
Attorneys

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 6.

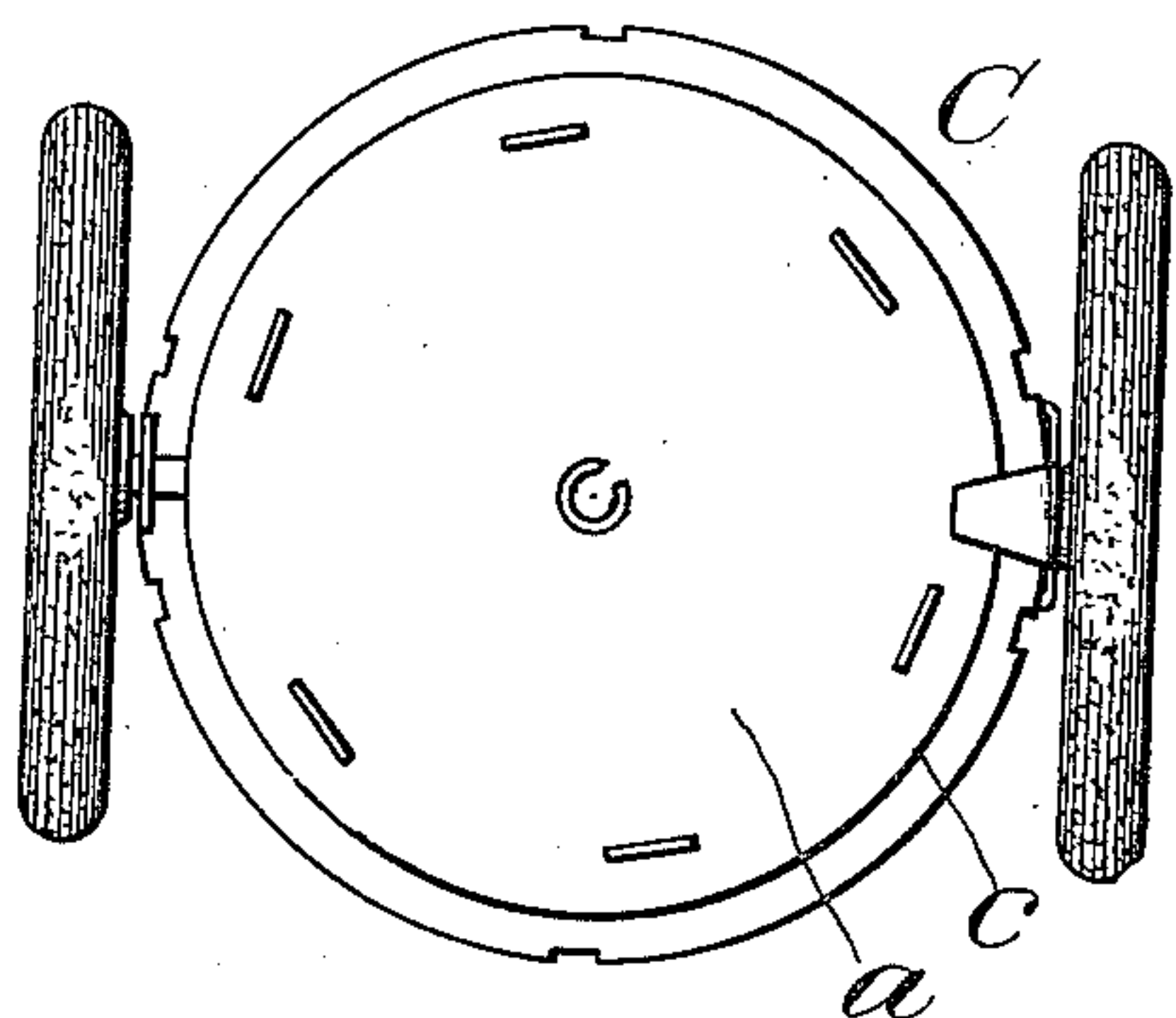


Fig. 7.

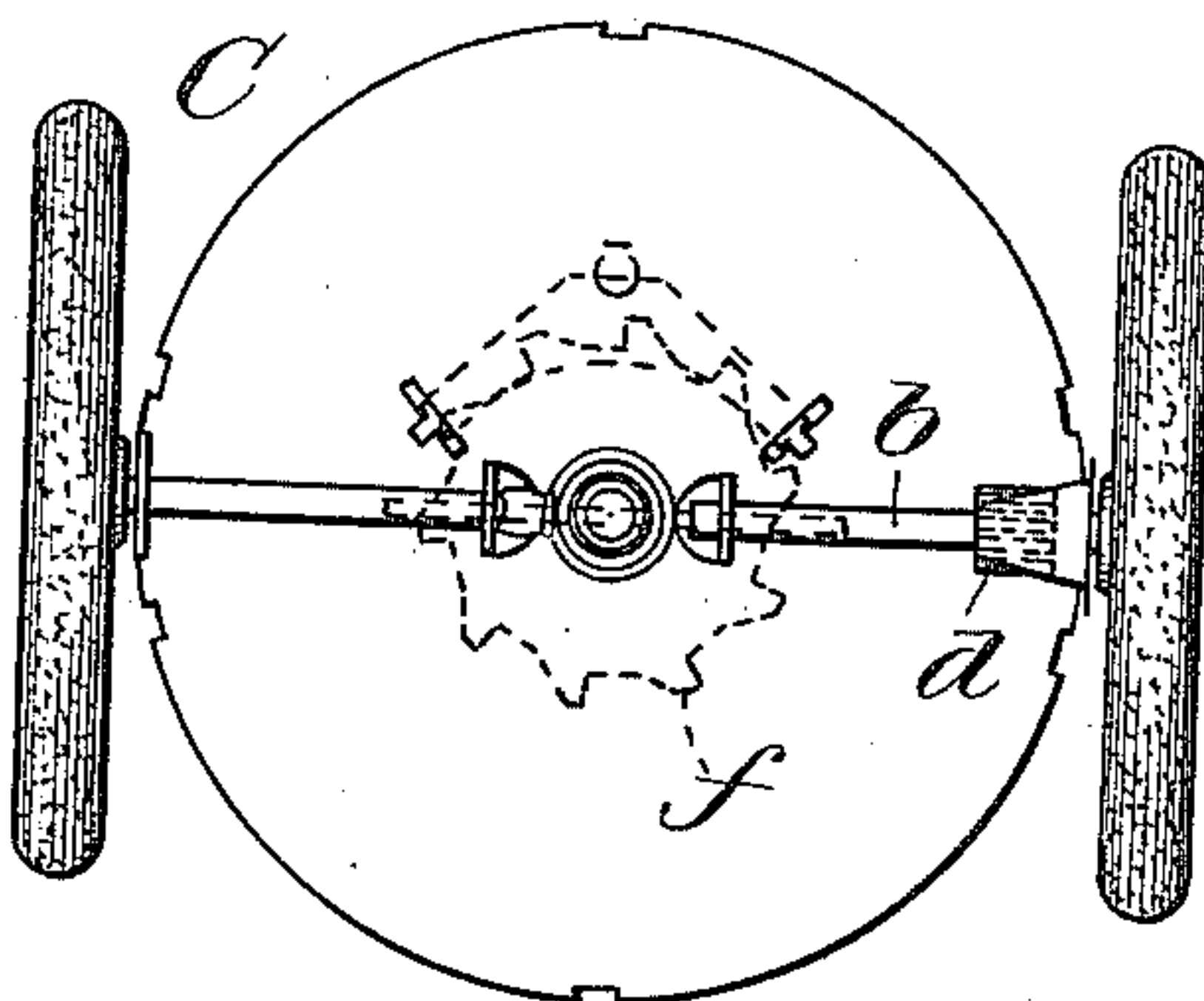


Fig. 8.

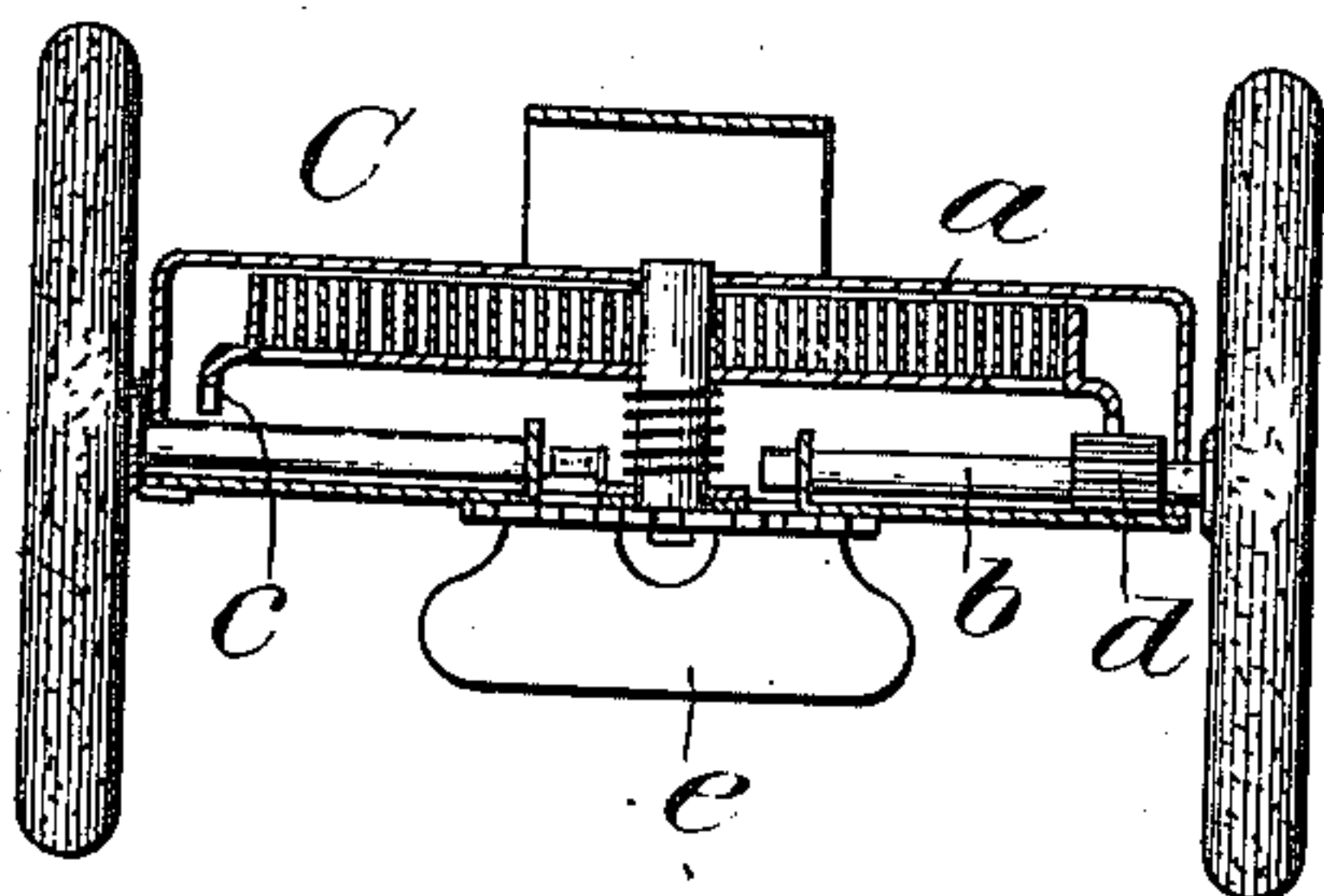


Fig. 9.

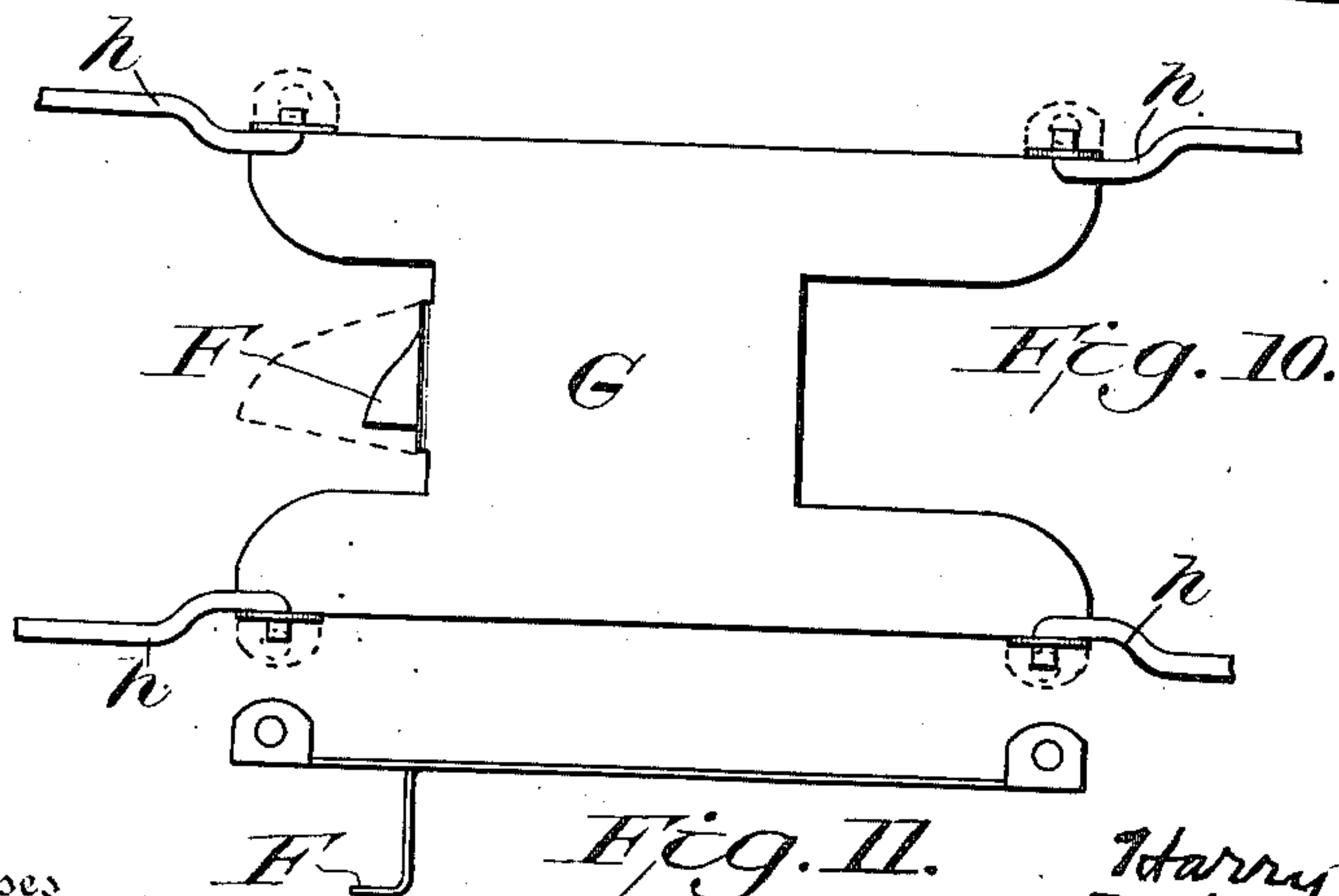
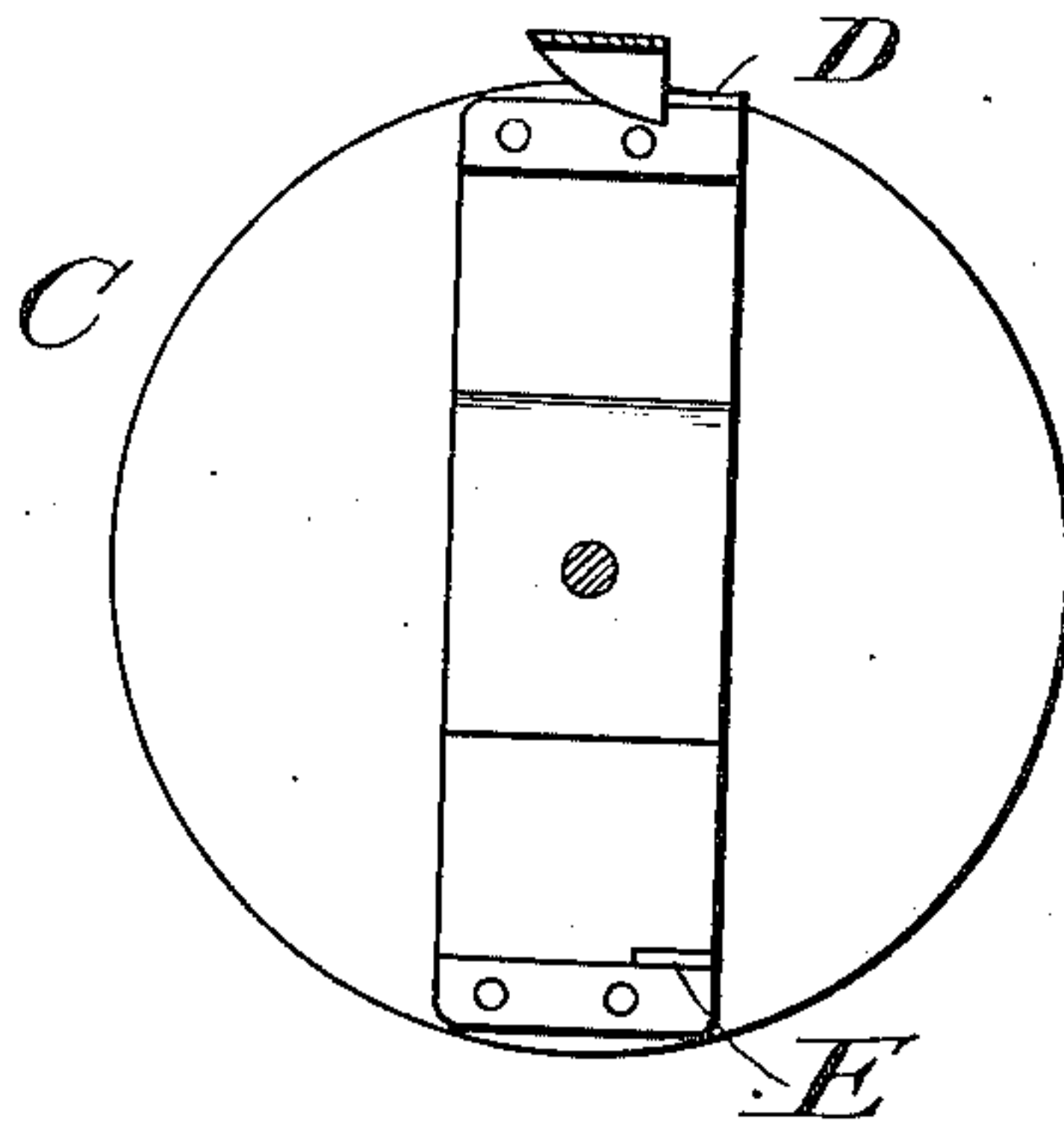


Fig. 10.

Fig. 11.

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# UNITED STATES PATENT OFFICE.

HARRY T. KINGSBURY AND MELVIN J. KIDDER, OF KEENE, NEW HAMPSHIRE; SAID KIDDER ASSIGNOR TO SAID KINGSBURY.

## AUTOMATIC REVERSING MOTOR TOY.

963,715.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed November 4, 1909. Serial No. 526,288.

To all whom it may concern:

Be it known that we, HARRY T. KINGSBURY and MELVIN J. KIDDER, citizens of the United States, residing at Keene, in the county of Cheshire, State of New Hampshire, have invented certain new and useful Improvements in Automatic Reversing Motor Toys, of which the following is a description, reference being had to the accompanying drawing and to the letters of reference marked thereon.

Our invention relates to an improvement in toys and particularly to a motor driven wheeled toy having means whereby on the striking of an obstacle by either end of the toy its direction of movement is reversed automatically.

The invention consists in the matters herewith described and referred to in the appended claims.

In the accompanying drawings which illustrate the invention Figure 1, is a side elevation of a toy embodying the same. Fig. 2 is a top plan view. Fig. 3 is a bottom plan view. Fig. 4 is a rear end view. Fig. 5 is a bottom plan of the rear truck with the bottom motor covering plate removed. Fig. 6 is a top plan view of the rear truck with the upper casing removed. Fig. 7 is a bottom plan of the rear truck. Fig. 8 is a cross section of Fig. 6. Fig. 9 is a top plan view of a detail. Fig. 10 is a plan view of the slide which is shifted when an obstacle is struck and Fig. 11 is a side view of the same.

In these drawings A represents the body of a toy of suitable construction.

B is the front truck and C the rear truck. The rear truck carries the barrel casing inclosing the motor, which consists of the spring *a* the wheel shafts *b* the rack *c*, and the small gear *d* on one of the wheel shafts, the winding key *e* and the usual pawl and ratchet mechanism *f*. It will be noticed that only one of the wheels is driven by the motor, the other being a traction wheel, and therefore the tendency of the motor truck is to rotate around its central pivot *g*. This bodily rotation of the truck is prevented by providing projections D—E on top of the motor casing which are adapted to come into engagement with a projection F, carried on the sliding plate G connected by link *h*, with the buffers *i* on the front and rear of the toy. It will be seen therefore that

when the slide G is arranged in its forward position the stop D which is farther from the center of the motor casing than the projection E, is in the position shown in Fig. 1, bearing against the stop F. When in this position the axis of the rear truck is directly transverse to the body so that the toy is propelled straight in a forward direction, the stop F preventing the rotary movement of the motor truck casing. When an obstacle is struck by the forward buffer *i* the slide G is moved to the rear to the position shown in dotted lines in Fig. 1, the stop F being therefore moved out of engagement with the projection D to the position shown in dotted lines in Fig. 1. The motor truck then rotates around its axis until the projection E which is a less distance from the center than D, engages the stop F in its new position and the toy moves off in a reverse direction until another obstacle is struck by the rear buffer, when the forward movement takes place again.

We claim—

1. In a motor toy, a motor truck, a wheeled axle supporting the same, said truck being pivoted on an axis perpendicular to the axle, with means tending to rotate it constantly on its axis, and means for limiting the rotary motion of said truck to cause it to travel in a definite direction.

2. In a motor toy, a motor truck, a wheeled axle supporting the same, said truck being pivoted on an axis perpendicular to the axle, with means tending to rotate it constantly on its axis, and means for limiting the rotary motion of said truck, to cause it to travel in a definite direction, and means for shifting the position of the limiting means.

3. In a motor toy, a motor truck, a wheeled axle supporting the same, said truck being pivoted on an axis perpendicular to the axle, with means tending to rotate it constantly on its axis, and means for limiting the rotary motion of said truck to cause it to travel in a definite direction, and means controlled by the striking of an obstacle for shifting the position of the limiting means.

4. In a motor toy, a motor truck, a wheeled axle supporting the same, said truck being pivoted on an axis perpendicular to the axle, with means tending to rotate it constantly on its axis, a shifting obstacle controlled stop, and projections carried by



the motor truck respectively engaging the said stop.

5 In a motor toy, a motor truck, a wheeled axle supporting the same, said truck being pivoted on an axis perpendicular to the axle, with means tending to rotate it constantly on its axis, projections substantially diametrically opposite each other on the motor truck and arranged at varying  
10 distances from the center, and a shifting obstacle operated stop adapted to be respectively engaged by the projections.

6. In a motor toy, a motor truck, a wheeled axle supporting the same, said  
15 truck being pivoted on an axis perpendicular to the axle, having means for swinging the truck on its axis, thus effecting a reversal of the direction of movement of the truck, and obstacle engaging means for controlling the said reversal.  
20

7. In a motor toy, a truck, a motor mounted thereon and operatively engaging one wheel of the truck, whereby the truck tends to rotate constantly in one direction on an

axis perpendicular to the wheeled axle, projections carried by the motor casing, a movable stop controlled by the striking of an obstacle to cooperate with the respective projections and prevent rotation of the truck on its axis. 25 30

8. In a motor toy, a truck, a wheeled axle supporting the same a motor casing carried thereby and pivoted on an axis perpendicular to the wheeled axle, a motor comprising a spring, a rack, and a gear meshing therewith, said gear driving one of the truck wheels, projections on the motor casing, a slide carrying a stop adapted respectively to engage the projections and stop the rotary movement of the truck, said slide being controlled by the striking of an obstacle. 35 40

In testimony whereof we affix our signatures, in presence of two witnesses.

HARRY T. KINGSBURY.  
MELVIN J. KIDDER.

Witnesses:

FRED P. BEEDLE,  
ALICE J. DAVIS.