(No Model.)

R. RICHARDSON.

MUSICAL TOP.

No. 335,843. Patented Feb. 9, 1886.

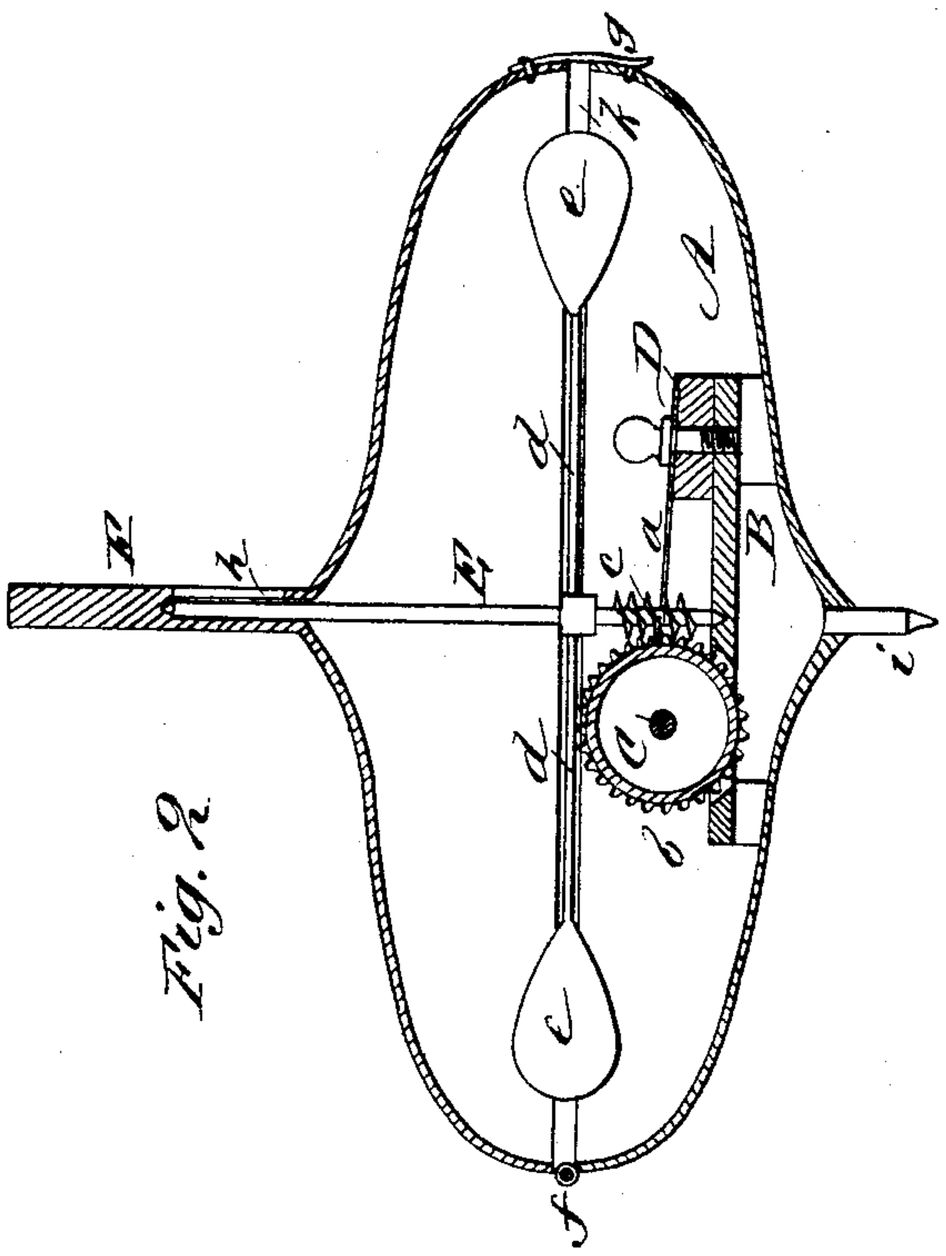

Fig. 2.

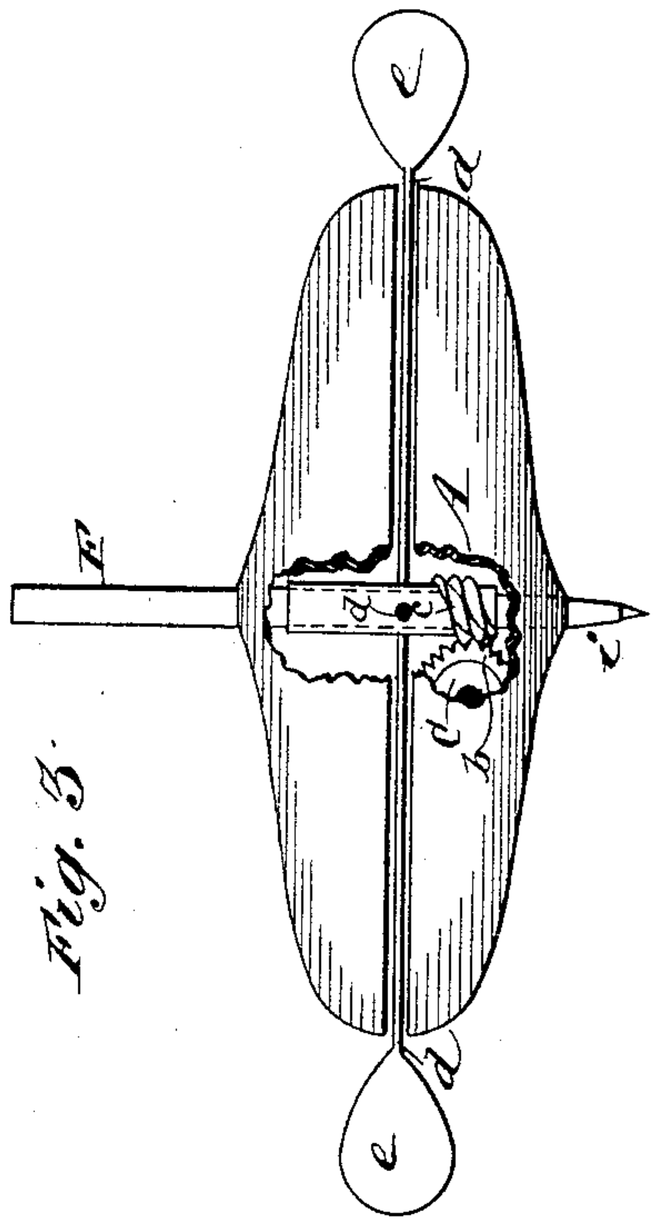

Fig. 3.

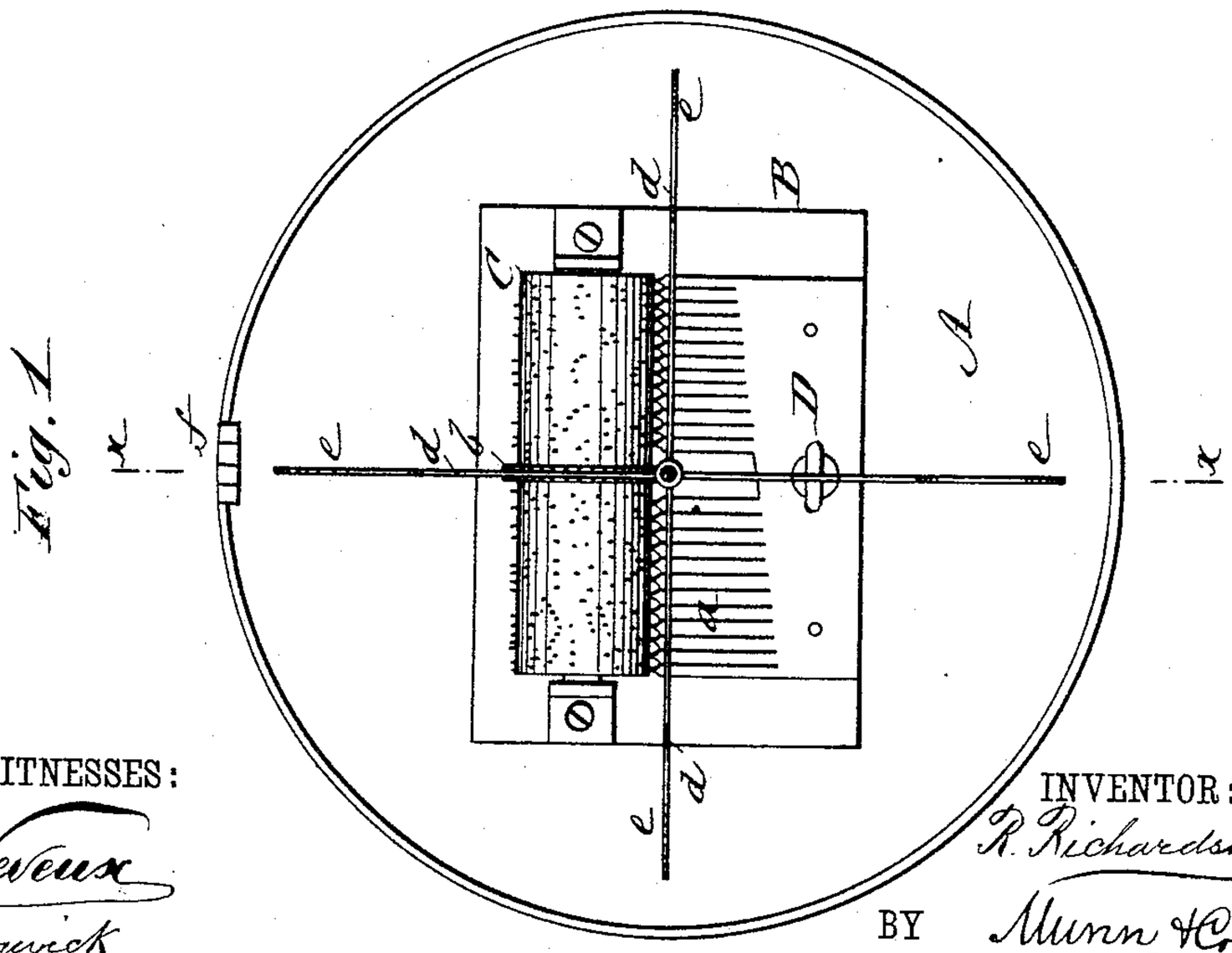

Fig. 1.

WITNESSES:

C. Neveux

C. Sedgwick

INVENTOR:

R. Richardson

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ROBERT RICHARDSON, OF DETROIT, MICHIGAN.

MUSICAL TOP.

SPECIFICATION forming part of Letters Patent No. 335,843, dated February 9, 1886.

Application filed November 13, 1885. Serial No. 182,715. (No model.)

To all whom it may concern:

Be it known that I, ROBERT RICHARDSON, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Musical Tops, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a plan view of my improved top with the cover removed. Fig. 2 is a diametrical section taken on line *x x* in Fig. 1. Fig. 3 is a side elevation of a top having the wings projecting beyond the periphery thereof.

Similar letters of reference indicate corresponding parts in the different figures of the drawings.

The object of my invention is to provide a musical top, in which the music-box having a toothed cylinder and the usual comb may be operated by the rotary motion of the top.

My invention consists in a top provided with a toothed cylinder, a comb arranged to be operated by the toothed cylinder, and a fan supported entirely or partly within the shell of the top, and provided with a worm arranged to act on a worm-wheel formed on the periphery of the toothed cylinder.

In the bottom of the shell A of the top is placed a frame, B, in which is journaled a toothed cylinder, C, of the kind usually employed in music-boxes, and to the frame B is secured a comb, D, having tune-tongues *a*, arranged to be vibrated by the teeth of the cylinder C in the usual way. The frame B and parts carried thereby are arranged relative to the shell of the top so that the top will be perfectly balanced. At the center of the toothed cylinder C is secured a worm-wheel, *b*, and in the axis of the top is journaled a spindle, E, carrying a worm, *c*, which engages the worm-wheel *b* on the toothed cylinder C. The lower end of the spindle E revolves in a step formed in the middle of the frame B, and the upper end of the spindle turns in a bearing in the stem F of the top. To the spindle E, above the toothed cylinder C, are secured a number of arms, *d*, carrying at their outer ends wings *e*, the wings and the arms forming a fan-wheel, which offers resistance to the air as the top is revolved.

In Fig. 2 I have shown the wings *e* wholly inclosed in the shell of the top, and between the upper and lower halves of the shell I have left an air-space, *k*. The upper and lower halves of the shell of the top are connected by a hinge, *f*, and are secured, when closed, by a spring-catch, *g*, of ordinary construction, and the lower half of the top is provided with the usual pivot, *i*.

In the form of top shown in Fig. 3 both halves of the shell of the top are secured to a spindle extending entirely through the top and projecting to form a stem, F. The wings *e* and arms *d* in this case are secured to a sleeve placed on the spindle of the top, and the sleeve carries the worm *c*, which engages the worm-wheel *b* of the toothed cylinder C.

The stem F of the top is provided with a slot, *h*, which reaches down to the spindle, to admit of opening the cover of the top when it is desired to remove the cylinder and replace it with another. The slot *h* extends about one-third around the stem F, so that the string which is wound upon the stem of the top will bear upon the spindle E through the slot *h* with sufficient force to start both the spindle and the shell of the top at the same speed.

The retardation of the motion of the fans and the spindle E, due to the resistance of the air upon the wings *e*, causes the worm-wheel *b*, by its engagement with the worm *c* on the spindle E, in its rotation around the spindle, to slowly revolve the toothed cylinder, and so vibrate the teeth *a* of the comb D and produce musical sounds.

The rapidity with which the cylinder C will be revolved will depend upon the difference between the velocities of the shell of the top and of the spindle E.

When the wings *e* project beyond the periphery of the shell of the top, as shown in Fig. 3, the retardation of the rotary movement of the worm *c* will be greater than in the other case.

The posts in which the cylinder C is journaled are made to spring outward to admit of removing the cylinder and replacing it with another when it is desired to change the tune of the top.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a musical top, the combination, with the toothed cylinder C and worm-wheel *b*, attached thereto, of the worm *c*, spindle E, and wings *e*, carried thereby, substantially as herein specified.

2. In a musical top, the combination, with the toothed cylinder C and worm-wheel *b*, attached thereto, of the worm *c*, the spindle E, wings *e*, and shell A, formed of two parts hinged together and provided with a fastener, substantially as herein specified.

3. In a musical top, the shell A, provided with a stem, F, having an opening, *h*, in the side thereof, the spindle journaled in the stem, the wings *e*, carried by the spindle, the worm *c*, toothed cylinder C, and worm-wheel *b*, attached thereto, substantially as described.

4. In a musical top, the combination of the shell A, the toothed cylinder C, provided with a worm-wheel, *b*, the comb D, and spindle E, provided with a worm, *c*, and the wings *e*, substantially as herein shown and described.

ROBT. RICHARDSON.

Witnesses:
JOHN GEORGE MARRIOTT,
THOMAS SAMUEL MARRIOTT.