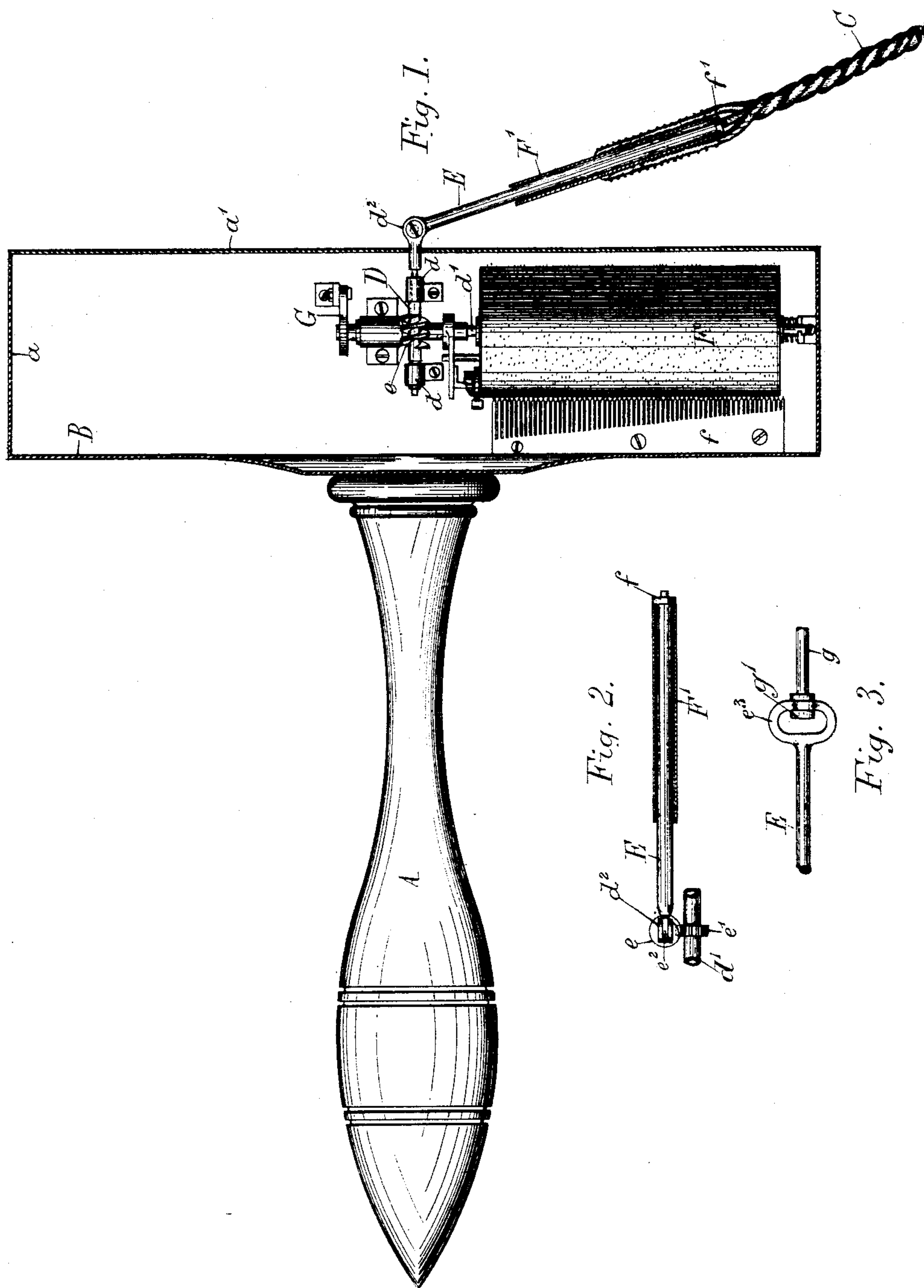


(No Model.)

L. RITCHIE.  
MUSICAL SKIPPING ROPE.

No. 403,556.

Patented May 21, 1889.



Witnesses:

Chas Woodroff  
Robt A. Blake.

Inventor:

Lizzie Ritchie.  
per Henry H Leigh  
Attorney.

# UNITED STATES PATENT OFFICE.

LIZZIE RITCHIE, OF PORTLAND PLACE, COUNTY OF MIDDLESEX, ENGLAND.

## MUSICAL SKIPPING-ROPE.

**SPECIFICATION** forming part of Letters Patent No. 403,556, dated May 21, 1889.

Application filed October 6, 1888. Serial No. 287,406. (No model.) Patented in England December 5, 1887, No. 16,711.

*To all whom it may concern:*

Be it known that I, LIZZIE RITCHIE, spinster, a subject of the Queen of Great Britain, and residing at No. 53 Charlotte street, Portland Place, in the county of Middlesex, England, have invented a new and useful Musical Skipping-Rope, (for which I have obtained a patent in Great Britain, No. 16,711, bearing date December 5, 1887,) of which the following is a specification.

This invention relates to an improvement in skipping-ropes; and it consists in the combination of a springless musical box with one of the handles of a skipping-rope, the end of the rope being attached to the first-motion shaft of the musical box, to which it communicates a motion of rotation as itself is thrown round the person of the skipper.

I attain the object of my invention by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation, and Fig. 2 a detail elevation. Fig. 3 illustrates a modified form of swivel.

A is one handle of the skipping-rope, to which the musical box is attached; and B, the box itself.

C is part of the skipping-rope.

D is the first-motion shaft, adapted to be rotated, by the means hereinafter described, in bearings  $d$   $d$ , and engages with the second or barrel shaft,  $d'$ , for the purpose of rotating it by any suitable mechanical device—*e. g.*, a worm,  $e$ , on the former, and a worm-wheel,  $e'$ , on the latter.

F is a musical-box barrel, and  $f$  the comb. Both barrel and comb are of the usual or any other construction known to manufacturers of mechanical musical instruments in which the sounds are produced by the rotation of a barrel about its own axis.

Fig. 1 illustrates the barrel and comb extending only half of the length of the box and fixed on one side of the center of the box. This is the most convenient proportion and position; but the shaft  $d'$  may be continued toward the opposite end,  $a$ , of the box B, and a second barrel and comb mounted thereon. The first-motion shaft D, supported in suitable bearings, is continued through the side

$a'$  of the box and terminates in a forked end,  $d^2$ , which receives one end,  $e^2$ , of the rod E, thereby forming a knuckle-joint. A piece of tube, F', is passed over the rod E, around which it can move freely. An enlargement,  $f'$ , of the end of the rod E prevents the tube from slipping off the rod. One end of the skipping-rope is securely fastened to the said tube F'. The tube F', rod E, and enlargement together constitute a swivel, which compensates for any twist which the rope C may contract during the act of skipping by way of allowing the same to work out.

I may adopt any kind of swivel device, and do not confine myself to the particular one illustrated in Fig. 1.

In the alternative device illustrated in Fig. 3 the rod E terminates in an eye,  $e^3$ , through which the end of the rod  $g$  is passed. The latter has an enlargement,  $g'$ , upon the end of it, which prevents its being withdrawn from the eye  $e^3$ , in which, however, it can freely turn. The skipping-rope is connected to the projecting portion of the rod  $g$ . The handle at the other end of the skipping-rope is an ordinary one, and may be connected to the rope in any well-known or convenient way.

The action of my invention is as follows: The handles are held and the rope C thrown round the person of the skipper in any of the usual and well-known ways. As the rope is swung round its motion is communicated through the knuckle-joint, forming the connection between the first-motion shaft D and the rod E to the former, and the barrel F is rotated accordingly.

I provide a ratchet and pawl, G, or other equivalent device for the purpose of preventing the barrel being rotated in the wrong direction.

The box B may be dispensed with and the barrel, comb, and movement mounted in the handle, the axis of the barrel being parallel with that of the handle and the position of the shaft D modified accordingly.

I claim—

1. The combination of skipping-rope end made fast to one member of a swivel, a swivel one member of which is so made fast to a skipping-rope end and the other connected by a



knuckle-joint to the end of the first-motion shaft of a musical box, said knuckle-joint being produced in the adjacent ends of the said swivel member and the first-motion shaft, as  
5 set forth.

2. The combination of a musical box the first-motion shaft of which is continued through the side of the box, where it is connected by means of a knuckle-joint to a rod  
10 about which a tube to which a skipping-rope end is made fast is free to rotate, the said rod

and tube together forming a swivel connecting the said skipping-rope end and the first-motion shaft, as set forth.

In testimony whereof I have hereunto set  
my hand this 23d day of July, 1888.

LIZZIE RITCHIE.

Witnesses:

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