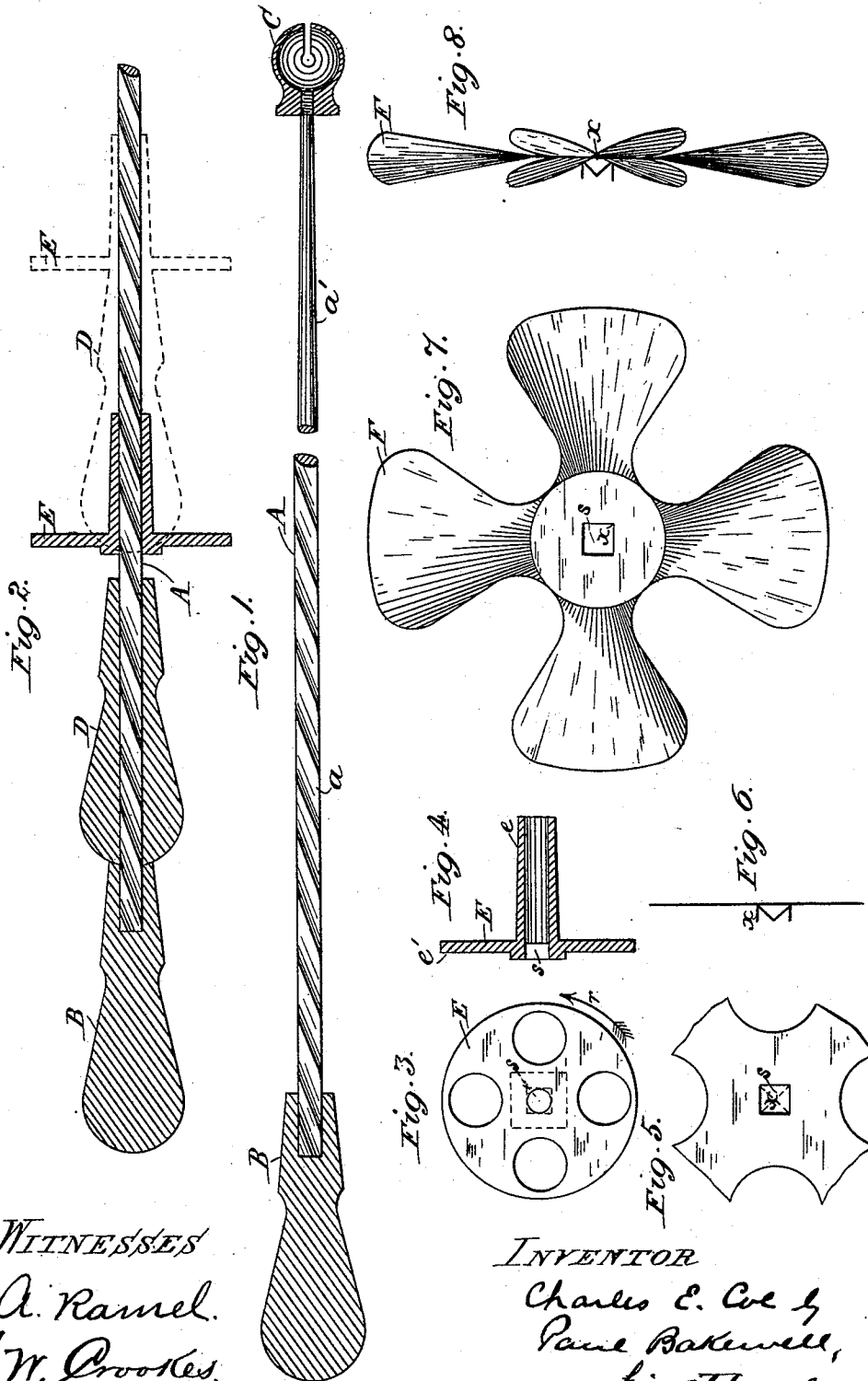


(No Model.)

C. E. COE.
TOY.

No. 465,162.

Patented Dec. 15, 1891.



WITNESSES
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UNITED STATES PATENT OFFICE.

CHARLES E. COE, OF ST. LOUIS, MISSOURI.

TOY.

SPECIFICATION forming part of Letters Patent No. 465,162, dated December 15, 1891.

Application filed May 26, 1891. Serial No. 394,220. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. COE, a citizen of the United States, residing in the city of St. Louis and State of Missouri, have invented a certain new and useful Toy, of which the following is a full, clear, and exact description.

My invention relates to mechanical devices for the amusement of children; and it consists in the novel features and novel combinations of mechanical devices hereinafter described.

In the accompanying drawings, in which like letters of reference denote like parts in the several figures, Figure 1 is an elevational view of the twisted rod which forms the principal part of my new toy, with the handle for holding the same and a retaining device attached thereto. Fig. 2 is a view as in Fig. 1, showing in section one of the attachments hereinafter described and the sliding operating-handle attached thereto and showing in dotted lines a moved position of the sliding handle and consequently changed position of the attachment. Figs. 3 and 4 are respectively a plan view and a central cross-section of the top attachment; and Figs. 5, 6, 7, and 8 are views of the fan or flying dart attachment, Figs. 5 and 6 being respectively a detail plan view and a side elevational view of the center, showing the method of forming the central square perforation in the same, and Figs. 6 and 7 being respectively a plan and side elevation of the same.

I form the rod A, which constitutes the main feature of my toy, by evenly twisting a square or other non-circular rod, forming a spiral of its corners corresponding to the thread of a screw with a very coarse pitch, the cross-section being at any point a square or other non-circular section corresponding to the rod of which it is formed. To one end of the rod A, I rigidly attach the handle B, with which to hold the same in the operation of the toy, as hereinafter described. To the other end of the rod A, I attach a retaining device C, which may be in itself a nut or a small sleigh-bell or like device for making noise, as an additional source of amusement when the attachments, as hereinafter described, are revolved on the rod A itself. I preferably round off

or turn down the end of the rod A, to which the retaining device C is attached, as shown in Fig. 1, forming of the rod A two distinct parts, *a* the spiral part and *a'* the round part. The sliding handle D is formed with a longitudinal perforation adapting it to freely slide on the rod A.

As two of many attachments that might be adapted to be used in conjunction with and be operated by the rod A and sliding handle D, I have illustrated a top E (see Figs. 2, 3, and 4) and a propeller-shaped fan F. (See Figs. 5, 6, 7, and 8.) A description of the operative construction of the top E, as illustrated in Figs. 1 and 2, will serve to explain the essential features of the toy attachments in general. The top E is composed of a small cylindrical portion *e* and the radially-enlarged portion *e'*. In one end of the cylindrical portion *e* is formed a square *s* of a size adapted to loosely fit on the square of the rod A. In the case of the fan being made of comparatively thin material, in making this central perforation, in order to give a longitudinal bearing for the same when operated on the rod A it is necessary to form the square *s'* in a disk of thicker metal secured to the center of the fan, or, as illustrated in Figs. 5, 6, 7, and 8, to form this square by cutting a cross in the material of which the fan is made on two lines at right angles to each other, as shown in Fig. 5, of a length corresponding to the diagonal thickness of the rod, turning up the corners or lips *x*, formed by the cross, as shown in Fig. 7, to form the sides of the square *s'*.

The operation of the toy is as follows: The handle D is slipped on the rod A, and then one of the attachments, as the top E, is slipped on and allowed to revolve down the spiral portion of the rod by holding the rod in a vertical position. After the attachment the retaining-button C is screwed on the end of the rod A. Now if the handle D is forcibly pushed toward the button end of the rod A, pushing before it the top E, the top will be given a rapid revolving movement, as indicated by the arrow *r* in Fig. 3, the rod A being kept from turning by the handle B. When the top E has reached in the length of the rod A the round portion *a'*, it is allowed to

freely revolve or spin on the end of the rod A, the retaining device C preventing it from leaving the rod. In that case the retaining device, if it be a bell, as illustrated in Fig. 1, will be made to rattle.

It is obvious that the retaining device C may be dispensed with and the top E be pushed completely off of the rod A and bespun on the floor. This is true, too, when the fan or flying dart F is used, when, it being given a rapid movement of revolution, it will fly on leaving the rod A, dependent, of course, on the force with which it is made to revolve, to a distance in whatever direction the rod is pointed. In this case—that is, allowing the attachment to leave the rod—it is obviously not necessary to form part of the rod, as at *a'*, round, forming the whole length of the rod A with a spiral, as at *a*, Fig. 1.

As will be evident from the foregoing description, the motion of revolution given to the attachments is effected by forcing the sliding handle D toward the outer end of the rod A, necessarily causing the attachments to revolve in following the spiral part of the rod A, and, further, it would be an obvious mechanical equivalent to place a spiral spring between the handle B and sliding handle D, forcing the handle down against the spring, compressing it, and allowing the spring, on the handle D being released, to force the handle D away from the handle B, effecting the same results as by pushing it by hand.

I claim—

1. In a mechanical toy of the character described, a rod formed in part of its length as a spirally-twisted rod of non-circular cross-section and in part of its length as a round rod, a handle rigidly secured on the non-circular end of said rod, a retaining device removably secured on the round end of said rod, and an attachment formed with a perforation of a size and shape adapted to fit on the non-circular portion of said rod, combined and operating substantially as described, and for the purposes specified.

2. In a mechanical toy of the character described, a rod formed in part of its length as a spirally-twisted rod of non-circular cross-section and in part of its length as a round rod, a handle formed in or secured to one end of said rod, a retaining device removably se-

cured on the rounded end of said rod, a handle adapted to freely slide on said rod, and an attachment adapted to be operated on said rod and formed with a perforation of a form and size corresponding to the cross-section of said rod, combined and operating substantially as described, and for the purposes specified.

3. In a mechanical toy of the character described, a spirally-twisted rod of non-circular cross-section, a handle formed in or secured to one end of said rod, an attachment adapted to be operated in conjunction with said rod, said attachment being formed with a perforation corresponding with the cross-section of said rod, and a handle adapted to freely slide on said rod, combined and operating substantially as described, and for the purposes specified.

4. In a mechanical toy of the character described, a spirally-twisted rod of non-circular cross-section, a handle formed in or secured to one end of said rod, a handle adapted to freely slide on said rod, and an attachment formed with a perforation corresponding with the cross-section of said rod and adapted to be operated in conjunction with said rod, the said attachment consisting in a top the stem of which is a tube, combined and operating substantially as described, and for the purposes specified.

5. In a mechanical toy of the character described, a spirally-twisted rod of non-circular cross-section, a handle formed in or secured to one end of said rod, and an attachment adapted to be used in conjunction with said rod, formed with a perforation corresponding in shape with the cross-section of said rod, said attachment consisting in a propeller-shaped fan, the said perforation in said attachment being formed by turning up the material of the said fan around the said perforation, combined and operating substantially as described, and for the purposes specified.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 21st day of May, 1891.

CHARLES E. COE.

Witnesses:

A. RAMEL,
JOS. W. CROOKES.