June 15, 1926.

1,589,020

C. J. SIEBENHAAR

FIGURE TOY

Filed April 15, 1925

3 Sheets-Sheet 1

Fig. 1.

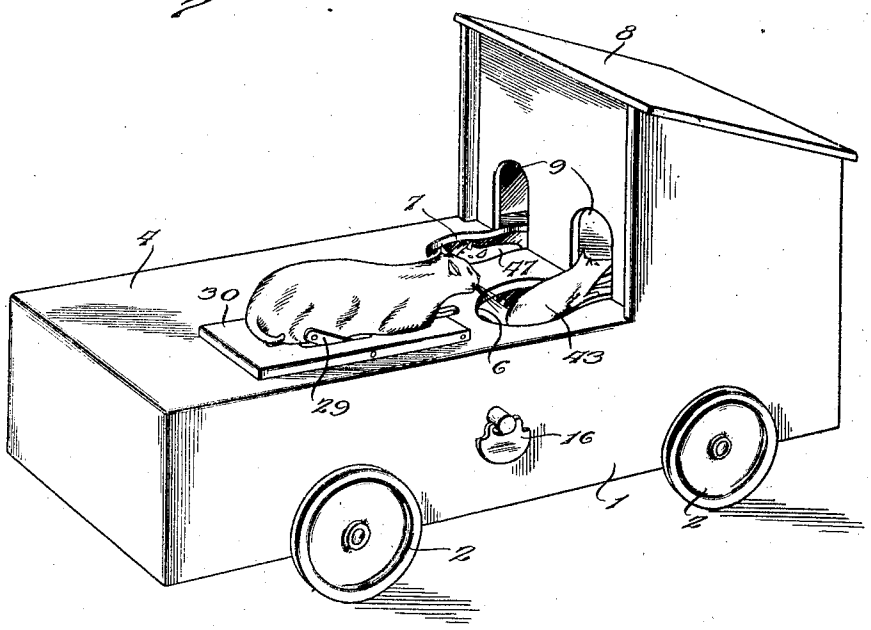
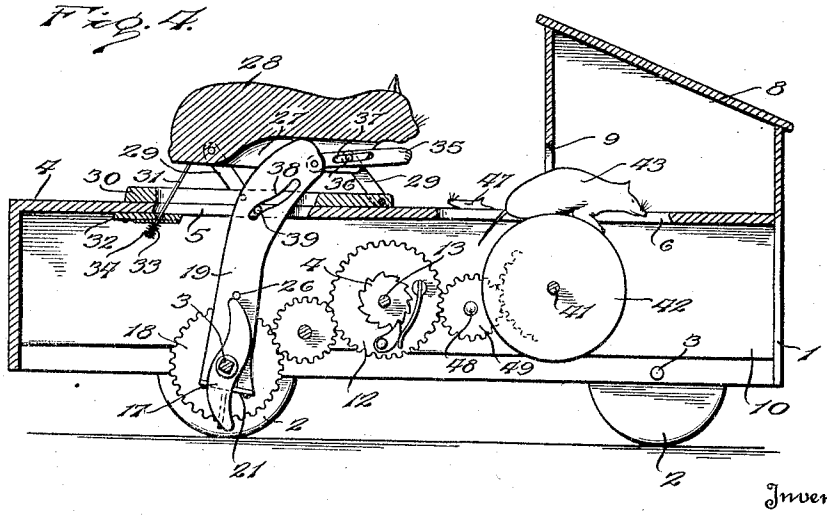


Fig. 4.



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FIGURE TOY

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Fig. 2.

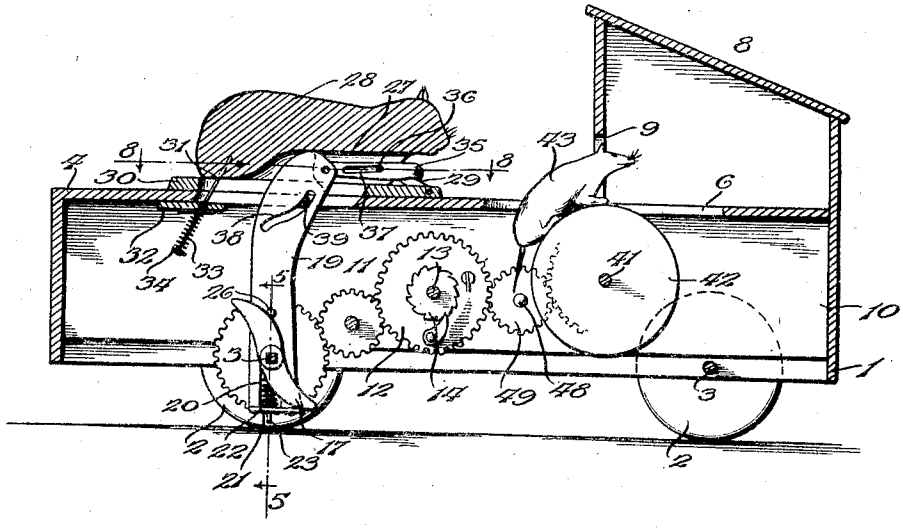
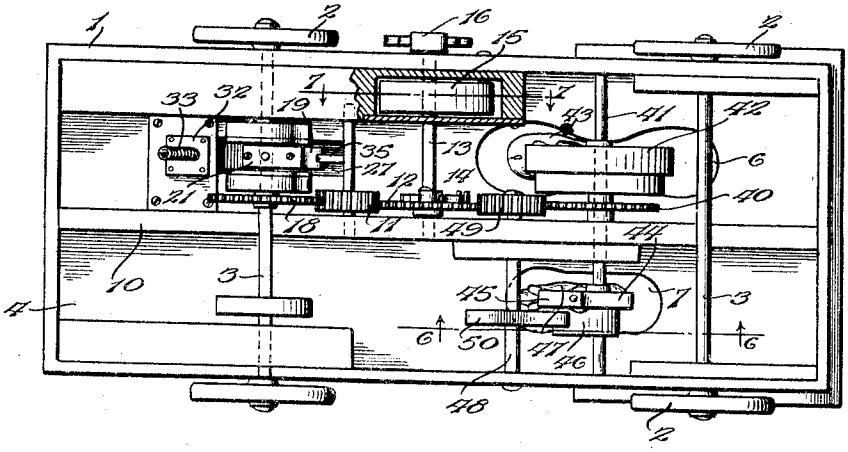


Fig. 3.



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FIGURE TOY

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Fig. 5.

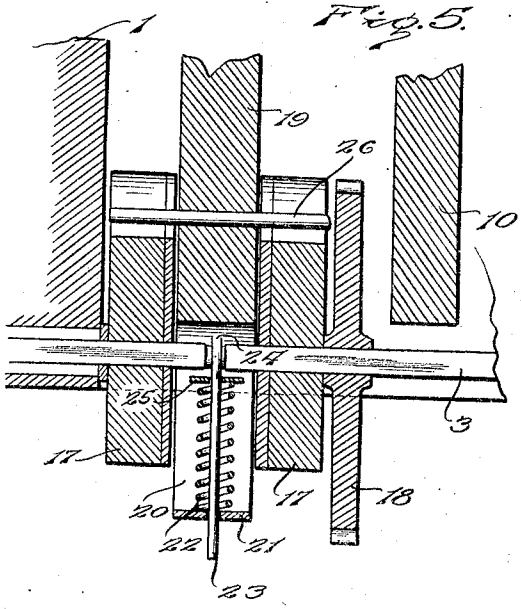


Fig. 6.

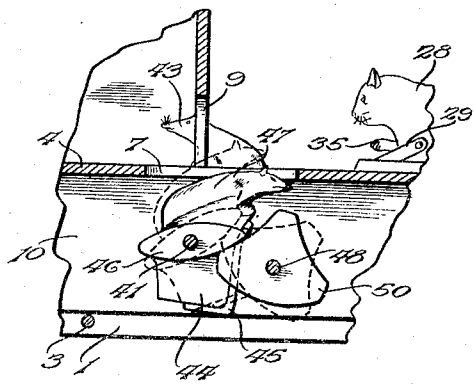


Fig. 7.

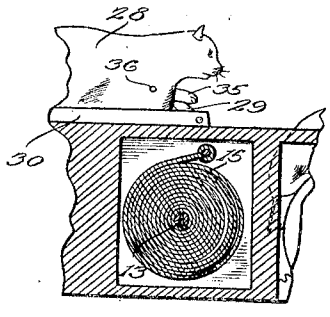
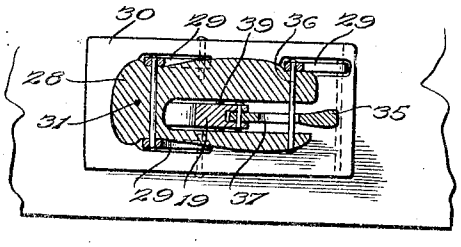


Fig. 8.



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Patented June 15, 1926. 1,589,020

UNITED STATES PATENT OFFICE.

CHRISTIAN J. SIEBENHAAR, OF BELOIT, WISCONSIN, ASSIGNOR OF ONE-HALF TO VINCENT BARBER, OF BELOIT, WISCONSIN.

FIGURE TOY.

Application filed April 15, 1925. Serial No. 23,293.

This invention relates to figured toys and has for its object the production of a toy which will simulate the efforts of a cat to capture a mouse and which will operate automatically. The invention seeks to provide a toy of the type stated which will be compact and simple in the construction and arrangement of its parts whereby it may be produced at a low cost. One embodiment of the invention is illustrated in the accompanying drawings and will be hereinafter fully described, the novel features being particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a perspective view of my improved toy;

Fig. 2 is a longitudinal section of the same;

Fig. 3 is a bottom plan view thereof;

Fig. 4 is a view similar to Fig. 2 but showing the parts in a different position;

Fig. 5 is an enlarged detail section on the line 5—5 of Fig. 2;

Fig. 6 is an enlarged detail section on the line 6—6 of Fig. 3;

Fig. 7 is a detail view on the line 7—7 of Fig. 3, and

Fig. 8 is a horizontal section on the line 8—8 of Fig. 2.

The toy constructed in accordance with my invention comprises a supporting frame 1 which may be an open skeleton frame if so desired but is illustrated as of a box-like structure. This main supporting frame is carried by wheels 2 which are mounted upon axles 3 extending transversely through the frame adjacent its ends and the wheels may be located outside the frame, as shown in the drawings or within the lines of the frame as may be preferred. In the illustrated structure, the frame includes a top plate 4 having longitudinal slots 5, 6 and 7 therethrough, and upon one end of the frame is erected a superstructure 8 resembling a house or cabin having door openings 9 in its inner wall.

Within the frame or box-like body 1 is a central longitudinal partition 10 which terminates at its lower edge above the axles 3, as clearly shown in Figs. 2 and 4. Supported by this partition and one side wall is a train of gearing 11 which includes a master gear 12 fitted upon a motor shaft 13 and adapted to be operatively connected with the motor shaft through a pawl and ratchet mechanism, indicated at 14, and operating in a well-known manner. The motor illustrated is a spring 15 attached at one end to the motor shaft and at its opposite end to the supporting structure whereby rotation of the shaft in one direction, through the manipulation of a key 16, will wind the spring, and release of the key will permit the spring to unwind, and, in unwinding, it will, of course, rotate the shaft so that the motion will be imparted through the ratchet to the master gear. The employment of the spring motor is, however, merely a matter of convenience and a small electric motor may be employed where the facilities for operating the same exist.

The wheels 2 are preferably loose upon their respective axles so that they will rotate independently of the axles and the rear axle is angular in cross section, as shown clearly in Figs. 2 and 4, whereby it may be utilized to actuate cams 17 which are fitted thereon, a gear 18 being also secured upon said axle so that motion may be imparted thereto from the master gear, as will be readily understood. A lifter 19 has its lower end disposed between the cams 17 and is provided in its lower extremity with a slot 20 extending in the direction of the length of the lifter so that it may span the axle 3 and ride past the same in the operation of the toy. The lower end of the slot 20 is closed by a cap 21 and a spring 22 is housed within the slot and bears against the said cap to hold the lifter normally in its lowered position, the spring being retained in its proper place by a guide pin 23 which is hung upon the axle and extends through an opening provided therefor in the cap 21 and also extends axially through the spring, as shown clearly in Fig. 5. The guide pin is provided at its upper end with an eye 24 loosely encircling the axle 3 and an abutment or collar 25 is carried by the pin immediately below said eye to receive the upward thrust of the spring 22. The lifter is provided on its sides with projections 26 which may conveniently be the ends of a pin inserted transversely through the lifter, as shown in Fig. 5, and the working edges of the cams 17 ride against the said projections. It will be noted that the cams are provided in a pair with one member of the pair at each side of the lifter and they work in unison, of course,

so that the lifting force will be applied to the lifter evenly and lateral rocking of the lifter will be thereby avoided. It will be readily noted, upon reference to Figs. 2 and 4 more particularly, that the cams are duplicates and each consists of a pair of fingers extending radially from the axle at diametrically opposite points thereof so that during each complete rotation of the axle the lifter will be twice caused to rise. The upper end of the lifter 19 extends through the longitudinal slot 5 in the top plate 4 and engages within a longitudinal recess 27 in the under side of a body 28 which simulates a cat. The cat body is connected with the frame or top plate 4 by links 29 which simulate the legs of the animal and are each pivoted at one end to the top plate or to a short platform 30 secured thereon and at their opposite ends to the body of the cat. A retracting and withdrawing pin or rod 31 is attached to the cat body 28 near the rear end thereof and extends through the slot 5 and a keeper plate 32 secured on the under side of the top plate 4, a spring 33 being coiled around the said retracting pin between the said keeper plate 32 and a stop 34 on the extremity of the pin. The spring 33 tends constantly to expand, as shown in Fig. 2, and thereby normally holds the cat in a crouching position upon the top of the frame or main body of the toy. One forepaw 35 of the cat is disposed horizontally and is not attached to the body but is supported thereon by a pin 36 on the body extending through a longitudinal slot 37 in the paw, the forward end of this paw being free while the rear end thereof is pivoted to the upper end of the lifter 19. Near the upper end of the lifter an ogee or cam slot 38 is formed therein and engages with a pin 39 secured in the walls of the slot 5, as clearly shown in Figs. 2 and 4. It will now be understood that, when the motor is operating, the cams 17 on the rear axle will be continuously rotated and will ride against the projections 26 so as to raise the lifter 19, the spring 22 returning the lifter to its lowered position as the said projections clear the ends of the cams. When the lifter 19 rises, it will, of course, impart an upward movement to the cat body and this will be translated partly into a forward horizontal movement through the medium of the links 29. The ogee cam slot in the upper portion of the lifter by its engagement with the pin 39 will cause the upper end of the lifter to also move forwardly and thereby impart a forward movement to the forepaw 35 which will be caused to simulate the action of a cat in striking at a mouse or other object

The portion of the train of gearing 11 which extends forwardly from the master gear 12 terminates in a gear 40 which is secured on a shaft 41 mounted in the main frame at a point above the front axle. Secured upon the shaft 41 below the slot 6 is a disk 42 which will obviously be caused to rotate with the shaft, and upon the periphery of this disk is a body 43 simulating a mouse, the direction of rotation of the disk 42 being such that the mouse body will at regular intervals rise through the slot 6 immediately in front of the cat body and then pass through the alined door opening 9 to disappear within the cabin 8. The movement of the mouse body is continuous with the disk 42 and, after the mouse disappears within the cabin 8, it turns downwardly to follow the circular path described by the rotating disk 42 so that, when the disk makes a complete turn, the mouse body will again appear at the outer end of the slot 6 and again disappear through the doorway 9. The parts are so timed that, as the mouse rises to view in front of the cat, the cat will be actuated through the operation of the lifter 19 to move toward the mouse and reach after him with the movable forepaw 35.

The shaft 41 extends through the partition 10 and at the side of the latter remote from the disk 42 loosely supports a weight or pendulum block 44 which is so shaped that the excess of its weight will be in rear or at the inner side of the vertical plane of the shaft. In Fig. 6, I have clearly shown this weighted block or pendulum as provided upon its inner side or edge with a metal strip 45 whereby the desired location of the greater portion of its weight is insured. Upon one side of this weight or pendulum is formed a rib 46 which is substantially elliptical in outline and normally lies substantially horizontal with respect to the shaft, extending in opposite directions from the shaft. Upon the upper edge of the weight or pendulum is provided a body 47 which simulates a mouse and is disposed normally directly below the slot 7. In rear of and parallel with the shaft 41 a countershaft 48 is mounted in the partition 10 and the adjacent side of the main frame or body, and this shaft is continuously rotated by an intermediate pinion 49 forming a part of the train of gearing. Secured upon the countershaft 48 in the vertical plane of the rib 46 is a cam block 50 which is adapted to impinge against the under side of the adjacent end of the said rib 46 and thereby impart a rocking movement to the pendulum and the mouse body 47 thereon whereby the said mouse body will be caused to move through the slot 7 and represent the action of a mouse peeping through a hole and then immediately withdrawing.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that I have provided a very simple and inexpensive toy which will

represent the natural movements of a mouse escaping from a cat and also the movements of a mouse making observations to determine whether he may safely enter upon a marauding expedition, as well as the movements of a cat springing after a mouse. The movements of the several bodies will very closely simulate the natural movements of the animals represented by them and will afford considerable amusement to young children. The device is set upon a floor or other smooth surface after the motor spring has been wound and when released it may then move forward under its own power and the same power will be utilized to actuate the several animal bodies.

Having thus described the invention, I claim:

1. A toy comprising a supporting structure, a cat body mounted thereon, yieldable restraining means for normally holding the cat body in a crouching position, means within the supporting structure acting in opposition to the yieldable restraining means for imparting an upward and forward springing motion to the cat body, a mouse body mounted in the supporting structure, and means within the supporting structure for imparting motion through a vertical orbital path to said mouse body whereby it will rise through the supporting structure and simulate a mouse running from a cat.

2. In a toy of the class described, the combination of a supporting structure, a cat body resting on the supporting structure, a restraining pin secured to the cat body and extending therefrom into the supporting structure, a stop on said restraining pin, a spring carried by said restraining pin and acting between the stop thereon and the supporting structure whereby to hold the cat body normally in a crouching position, a lifter mounted within the supporting structure and engaging the under side of the cat body, and means for imparting vertical movement to the said lifter whereby to impart springing movement to the cat body.

3. In a toy of the class described, the combination of a supporting structure, a cat body arranged at the top of the supporting structure, swinging links connecting the cat body with the supporting structure, means for yieldably holding the cat body normally against the supporting structure, a lifter mounted within the supporting structure, and means within the supporting structure for imparting vertical movement to the lifter whereby to effect springing movement of the cat body.

4. In a toy of the class described, the combination of a supporting structure, a cat body disposed above the supporting structure, means for yieldably holding the cat body to the supporting structure in a crouching position, a lifter mounted within the supporting structure and having its upper end bearing against the cat body, a forepaw pivotally attached to the upper end of said lifter and movably supported upon the cat body, and means for imparting a vertical oscillatory movement to the lifter whereby to effect springing movement of the cat body and reaching movement of the said forepaw.

5. In a toy of the class described, the combination of a supporting structure, a cat body mounted above the supporting structure, means for yieldably holding the cat body normally in a crouching position, a lifter mounted within the supporting structure and having its upper end in engagement with the cat body, projections on said lifter, cams mounted within the supporting structure and arranged to ride against and under said projections, yieldable means for holding the projections in the path of the cam, and means for rotating the cam whereby to impart vertical movement to the lifter and effect springing movement of the cat body.

In testimony whereof I affix my signature.

CHRISTIAN J. SIEBENHAAR. [L. S.]