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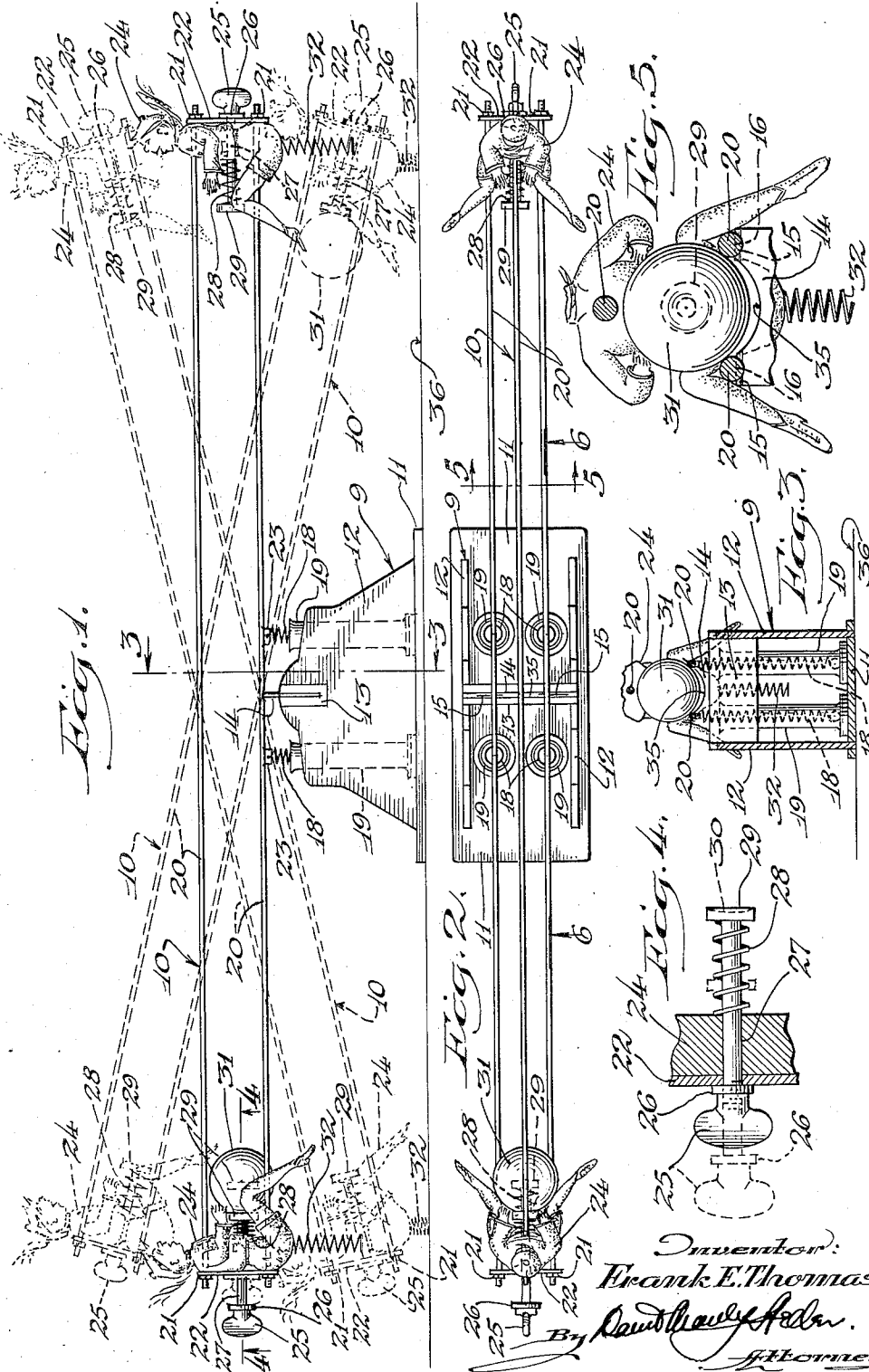
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TOY SEESAW

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## TOY SEESAW

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5 Claims. (Cl. 46—147)

This invention relates to seesaws and particularly to a structure in miniature form for use as an amusement device or toy which requires some skill in its operation and manipulation.

One object of my invention is to provide a toy of the aforementioned character which is operated in part by gravity, and amplified by spring actuated power, motion being provided by imparting a force to a spherical weight which is alternately set in motion thus actuating a seesaw structural element. In other words, the object is to impart force resolving itself into motion until the initial force is dissipated. In order to alternately operate a seesaw mechanism, the force or power imparted to the movable element by the spring actuated elements will impart sufficient momentum to the movable element and cause the same to continue to operate alternately until the force imparted has been fully consumed and dissipated.

Another object of my invention is to provide a toy of the aforementioned character which is practical in construction, simple and efficient in its operation, and of such a construction that it will lend itself to economical manufacture in quantity production.

Another object of my invention is to provide a movable member on what may be substantially termed a frictionless path.

Other objects and features resident in my invention will become apparent from a study of the accompanying drawings when taken in connection with the ensuing description in which like symbols are used to designate like parts, and in which:

Fig. 1 represents a front view of my invention showing in dotted lines the limit of motion of the seesaw device.

Fig. 2 is a top view looking down on Figure 1.

Fig. 3 is a longitudinal cross-sectional view on the line 3—3 of Figure 1.

Fig. 4 is a transversal cross-sectional view on the line 4—4 of Figure 1, the section being in enlargement.

Fig. 5 is a cross-sectional view looking in the direction 5—5 of Figure 2.

Fig. 6 is an enlarged longitudinal cross-sectional view on the line 6—6 of Figure 2.

Fig. 7 is a transversal cross-sectional view substantially on line 7—7 of Figure 6.

Fig. 8 is an enlarged fragmentary cross-sectional view showing the method of anchorage used between the spring element and the seesaw element.

Referring to the various figures, the invention

is comprised of a support generally designated 9 supported on a surface 36 and a movable seesaw element generally designated 10. The dotted positions in Figure 1 show the approximate limit of motion of the seesaw element 10. The base structure 9 is comprised of a plate 11 having two upright bearing members 12 secured thereto, and the said bearing members 12 are secured at the top by a reinforcing element 13 which is suitably slotted in order to receive the knife edge support 14; and as indicated in Figure 6, the knife edge portion designated 15 is suitably balancing the seesaw structure 10 by virtue of the angularly notched portion 16, which is of such an angular relationship to the knife edge portion 15, it being greater in angular magnitude, so as not to impede the seesaw tilting action of the structure 10, and provide ample clearance therefor.

To the base plate 11 are secured elements 17 having holes drilled therein in order to provide anchorage at 33 for the springs 18 at one of their ends. The opposite end of the springs 18 is secured to the extension 23, spot welded to two of the three rod elements 20 comprising the seesaw structure 10, and having a drilled portion to which the hook 34 of the springs 18 is secured at its opposite end. Four of these springs are provided and they are, preferably, housed in a loosely fitting sleeve member 19 so as to prevent the spring from buckling; at the same time the sleeves are large enough so as not to cause the springs when under actuation to be frictionally interfered with by the said sleeve 19. The sleeves 19 are, substantially, shorter than the full length of the springs as shown in order to provide ample clearance for the seesaw element in its maximum limit of "throw" or movement in operation.

The structure 10 is made up of three rods designated 20 and as indicated in Figure 5, they are secured thru the figures 24 in the manner indicated, in a manner so as to position the top rod element 20, substantially, clear of the gravitational or spherical member 31, in order not to, frictionally, contact the same, thus providing the ball 31 with but two points of contact, or tangency with the lower rods 20, minimizing friction to the greatest possible extent, the ball 31 being cradled between the two lower rods 20 permitting the ball to operate therebetween.

The knife edge structure 14 is, preferably, recessed as at 35 in order to furnish ample clearance for the rolling and operation of the ball. The figures 24 are suitably drilled to receive the rods 20 and are held in place by the plate mem-

bers 22 and the nuts 21. To the middle of figures 24 or approximately thru the abdomen portion as indicated in Figure 4 they are suitably drilled in order to receive the impeller element having a knob portion 25, and a shoulder portion 26 to limit motion, a body portion 27 slidable within the said abdominal recesses in the element 24, and a disc element 29 having a spherically recessed portion 30; the spring element 28 being confined between the abdomen portion of the figure 24 and the disc 29.

The dotted lines indicate the limit of motion so that from either end the device may be set in motion by impelling the ball with the impeller knob 25 compressing the spring 28 and then releasing the same so as to impart motion to the ball 31, causing it to travel in the opposite direction, the impeller element springs then assuming normal position act as added buffers or impellers when the ball strikes the said spring 28 thus maintaining the force imparted to the ball accentuating the same so that the ball will be given an opportunity to travel the longest period of time possible, and until its momentum is completely dissipated. The springs 32 are mounted below the figures 24 and are provided to give added impelling action and contribute to the impelling action of the springs 28 as well as the springs 18.

In mounting the device, and in order to insure a substantial holding arrangement between the structure 10 and the structure 9 in normal position as shown in Figure 1, the springs 18 are shorter than the distance spanned between the element 23 and 17, in other words, the springs are mounted under tension so that when the device is caused to lower itself on the right side, the right spring 18 will have a tendency to draw it down, whereas the spring on the opposite side or the left handed spring will be increased in tension and thus the springs will alternately lengthen and decrease in size depending on the direction of movement of the ball 31. Thus it can be seen that this device can be used both as an article for amusement purposes, and also that it requires the element of skill in requiring the one starting the device in operation, to exercise proper care in imparting the smoothest possible action to the ball 31 at the initial operation of the toy. This toy if properly built should be able to function for a period of about a minute or a minute and a half with a force imparted thereto and partly returned by the proper spring action cooperating with the said force.

I believe I have described rather succinctly the nature and operation of the structural elements of my invention, and inasmuch as it may

be susceptible of many modifications, alterations, and improvements, I reserve the right to all such modifications, alterations, and improvements coming within the scope of the accompanying drawings, and within the purview of the foregoing description; my invention to be limited only by the subjoined claims.

Having thus described and revealed my invention what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character described, seesaw means comprising, three cylindrical members, securing means adapted to secure the said cylindrical members permitting a spherical element to contact only two of said cylindrical elements, notched means in said two cylindrical elements adapted to cooperate with knife edge means to effect a teeter totter action, and spring means adapted to secure the said seesaw means to said knife edge means.

2. In a device of the character described, seesaw means comprising, three cylindrical members, securing means adapted to secure the said cylindrical members permitting a spherical element to contact only two of said cylindrical elements, notched means in said two cylindrical elements adapted to cooperate with knife edge means to effect a teeter totter action, knife edge balancing means, and spring means securing the said seesaw means to the said knife edge means.

3. In a device of the character described, seesaw impeller means, comprising, seesaw means, spring actuated impeller means secured to opposed ends of a seesaw structure, spherical means confined rollably in said seesaw structure and adapted to receive momentum imparted to it by said spring actuated impeller means, and knob means secured to the said spring actuated impeller means.

4. A device of the character described comprising, knife edge balancing means, seesaw means provided with notched means adapted to be balanced on the said knife edge balancing means, spring means securing the said knife edge balancing means to the said seesaw means, gravitational means alternately movable within the confines of the said seesaw means, and spring actuated impeller means secured to each end of the said seesaw means.

5. In a device of the character described, having seesaw means provided with resilient impeller means, knob means secured to the said impeller means adapted to permit initial impelling movement to a rollable member supported on the said seesaw means.

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