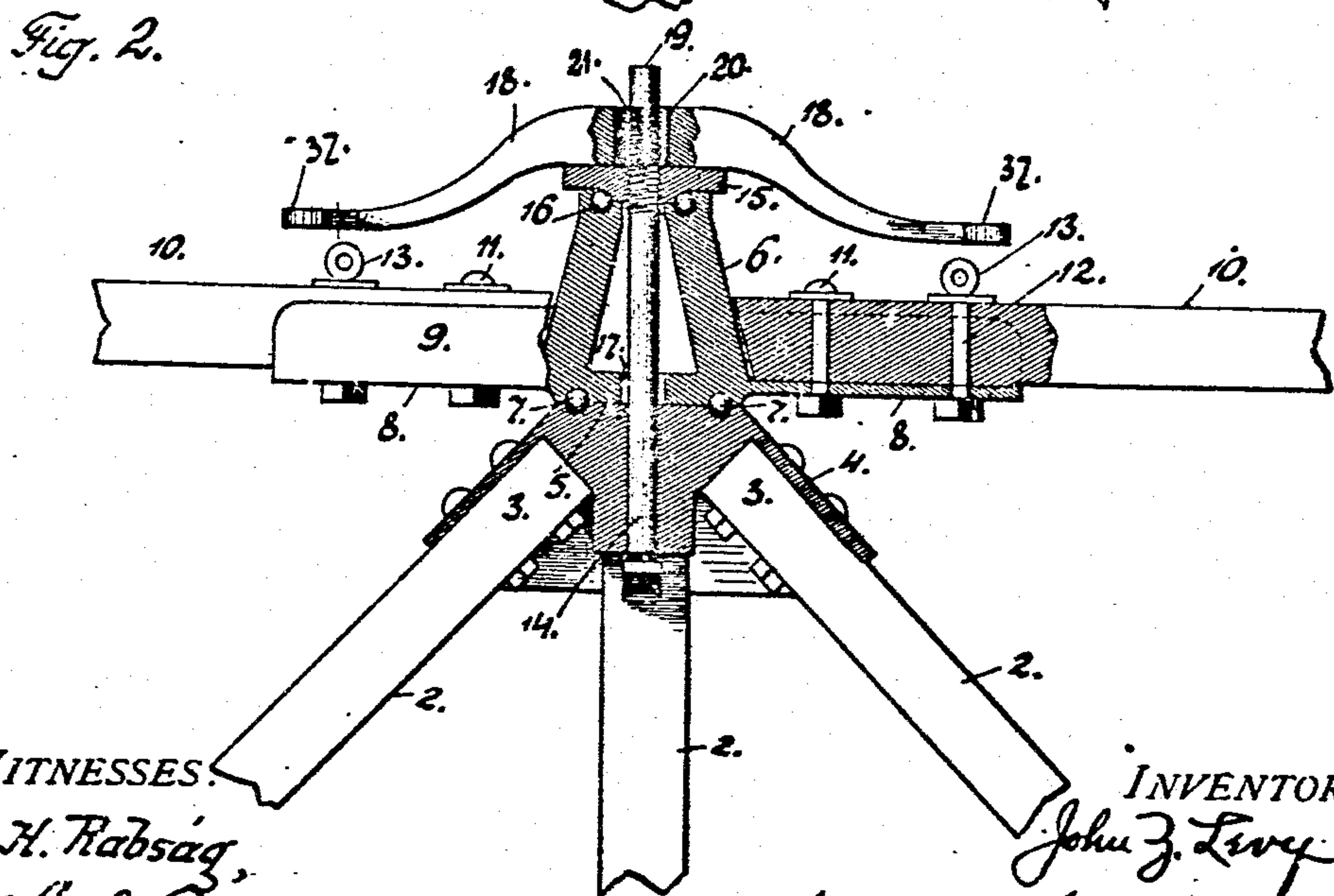
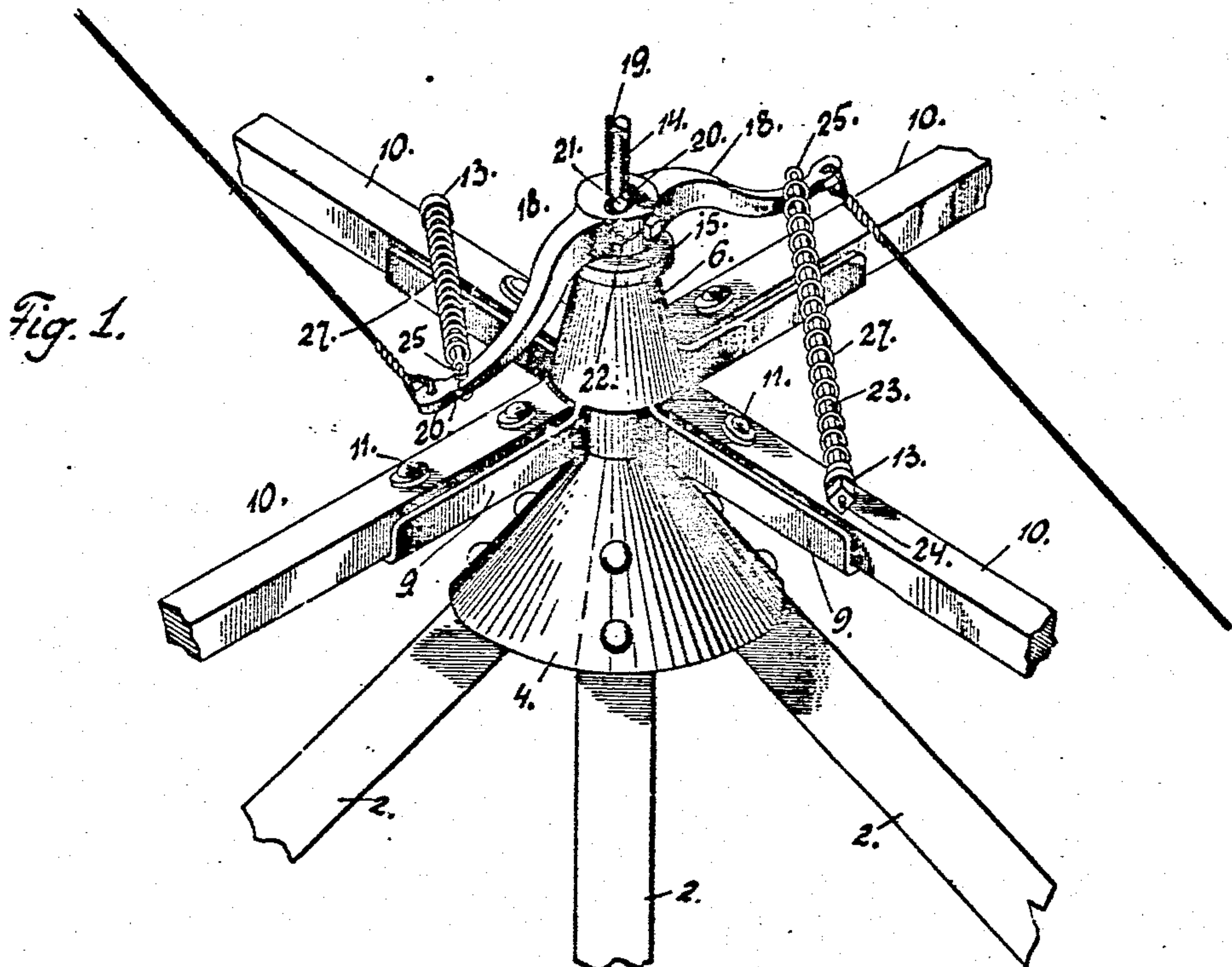


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AMUSEMENT APPARATUS.  
APPLICATION FILED MAY 14, 1907.

899,172.

Patented Sept. 22, 1908.

2 SHEETS—SHEET 1.



WITNESSES.

A. H. Rabsig,

A. H. Butler

INVENTOR

John Z. Levy

By H. B. Everett & Co.

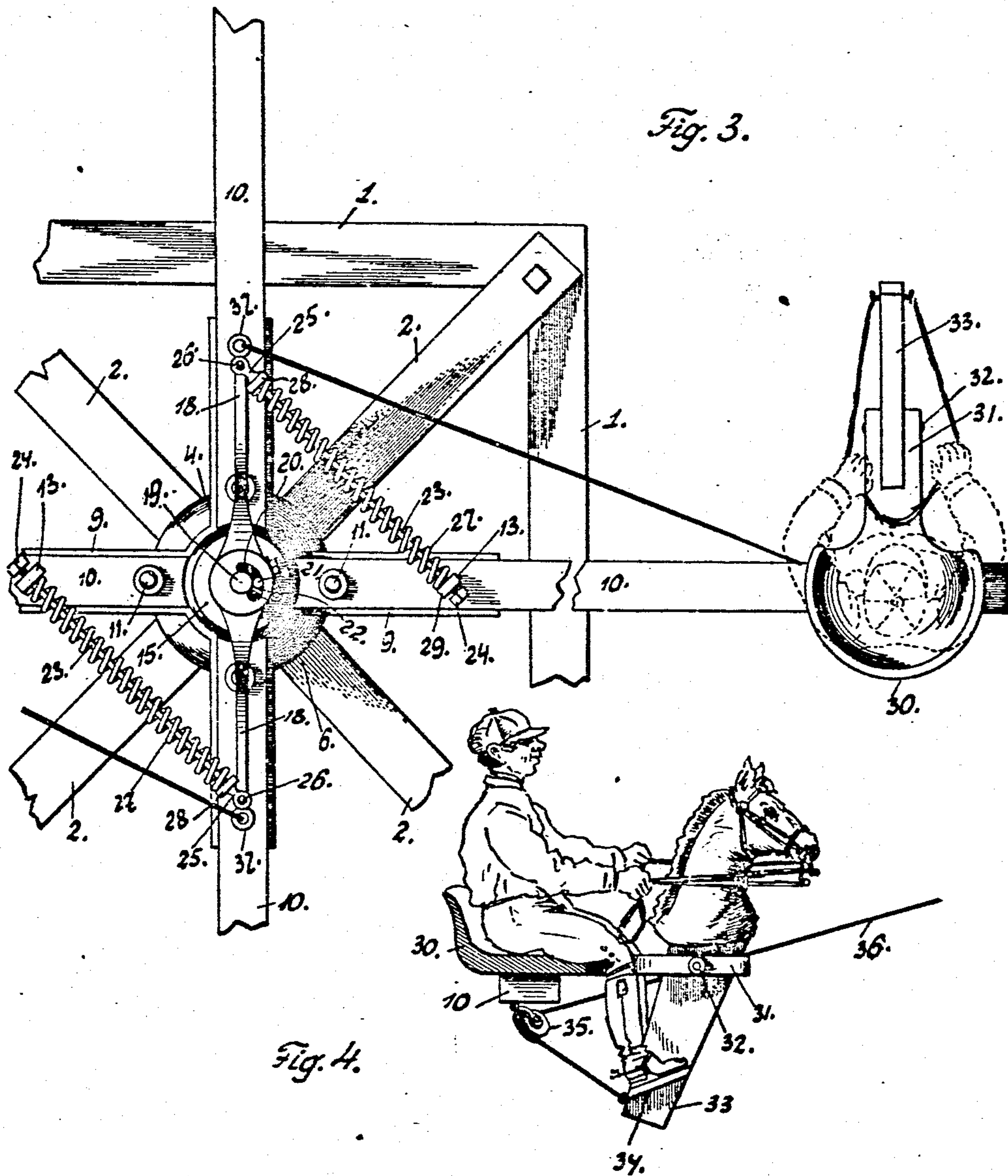
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# UNITED STATES PATENT OFFICE.

JOHN Z. LEVY, OF PITTSBURG, PENNSYLVANIA.

## AMUSEMENT APPARATUS.

No. 899,172.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed May 14, 1907. Serial No. 373,553.

*To all whom it may concern:*

Be it known that I, JOHN Z. LEVY, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Amusement Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to amusement apparatus, of the class known as merry-go-rounds, and its primary object is to provide a device of this character adapted to be propelled by the riders, thus obviating the necessity of  
15 employing power-driven mechanism for revolving the apparatus.

A further object of the invention is to provide an apparatus of the class indicated which will be noiseless in operation, and capable of  
20 being propelled by slight effort on the part of the riders.

With these objects in view, the invention consists of a merry-go-round of the novel construction hereinafter described, in connection with the accompanying drawings, which  
25 form a part of this specification, and particularly set forth in the appended claim.

In the drawings, Figure 1 is a view in perspective of the upper portion of the apparatus, Fig. 2 is a central vertical section of the same, Fig. 3 is a top plan view with parts  
30 broken away, and Fig. 4 is a side elevation partly in vertical section, of one of the riders' seats, and its attachments.

35 The reference numeral 1 designates a supporting base, preferably of rectangular form, and adapted to rest upon the ground or upon a suitable platform.

From the base 1 rise a series of inclined  
40 beams or braces 2, the lower ends of which are firmly secured to the base, while their upper ends 3 are bolted to a central cap 4, of truncated conical form, and having sockets on its under side to receive the upper ends of  
45 the inclined braces 2.

The flat upper surface 5 of the central cap serves as a table or support for a revoluble conical hub 6, and said upper surface 5 and the under surface of the hub 6 are each  
50 grooved to provide a ball-race to receive anti-friction balls 7.

From the lower portion of the conical hub 6 project a series of equidistant radial arms 8, each provided with upwardly projecting side  
55 flanges 9 forming sockets to receive the inner ends of radially extending beams 10, which

are secured by hold-fast devices such as bolts 11 and 12 to the radial arms of the hub. The bolts 12 of two alining beams 10 are eye-bolts, the eyes 13 of which serve a purpose  
60 which will be explained hereinafter.

The hub 6 is supported upon the central cap 4, by means of a spindle 14, and a supporting member 15 rests upon the upper end of the hub 6, said spindle being secured to  
65 the cap 4, and said hub and supporting member having openings through which the spindle extends. This spindle 14 is screw threaded at a point adjacent to the upper end of the hub, and the supporting member  
70 15 is formed with a central threaded opening for its attachment to the threaded portion of the spindle. The upper surface of the hub, and the under surface of the supporting member 15 are recessed to provide a race-  
75 way for anti-friction balls 16.

The opening 17 in the lower end of the hub through which the spindle extends, is of greater diameter than said spindle to permit of a rotary movement of the hub and radial  
80 beams 10 independently of the supporting member 15, which as above explained and as clearly shown in Fig. 2 is secured to the spindle 14.

The spindle projects above the supporting  
85 member 15, and serves as a pivotal support for a cross-head 18, said cross-head resting on the supporting member 15 and having a central circular opening 19 to receive the spindle, and a cam-shaped slot 20 communi-  
90 cating with said central opening.

A vertically-disposed pin 21 is confined within the slot 20 and is limited in its movement therein by a spring 22 secured at one end to the central portion of the cross-head,  
95 and extending through an opening therein into the slot 20 to limit the passage of the pin 21 into the wider end of the slot.

Through each of the eyes 13 extends the threaded end of a rod 23 secured by a nut 24,  
100 and provided at its opposite end with a bifurcated head 25, which heads embrace the arms of the cross-head near the outer ends thereof and are secured thereto by pivot pins 26.

Surrounding each of the rods 23 is a coil spring 27, one end of each of said springs bearing against a collar 28 on the bifurcated head of the rod, and the other against an adjusting nut 29 on the threaded end of the rod.  
110

It will be noted that the two springs 27 are disposed parallel to each other but tangen-



tial to the circular path of movement of the cross-head, thus insuring a simultaneous action of said springs.

Upon the outer end of each of the beams 10 is secured a rider's seat 30, each of said seats having a bifurcated forward extension 31, between the forks of which is fulcrumed upon a cross-pin 32, a lever 33. The upper ends of these levers are preferably made in the form of horses' heads, and near the lower end of each of the levers are secured foot-rests 34, one on each side of the lever.

To the under side of the outer end of each of the beams 10 below the seat 30 is suspended a pulley 35 over which passes a rope or cable 36.

One end of the cable is secured to the lower end of the lever 33 and its opposite end is attached to an eye 37 at the adjacent end of the cross-head 18.

The horse's head of each seat is equipped with a bridle as shown in Fig. 4.

The operation of the apparatus constructed as thus described, will be readily understood. The downward pressure of the feet of the rider upon the foot rests 34 accompanied by a pull upon the bridle rein, pushes the lower end of the lever 33 forward, thus pulling upon the cable 36 and turning the cross-head upon its pivotal support to compress the springs 27. When pressure upon the foot-rests is relieved, the springs 27 will expand, thus forcing the beams 10 and hub 6 around a part of a revolution, and by continuing the tilting movement of the lever 33 a continuous and rapid revolution of the beams and riders is effected.

It will be observed that the cam-shaped slot 20 and pin 21 limit the movement of the cross-head permitting it to move only far enough to compress the springs, and only in one direction, the movement of the cross-head in the opposite direction being prevented by the binding or clutch action of the pin 21 within the contracted portion of the cam slot.

An important characteristic of the invention is that the contraction and expansion of the springs is effected without noise or jar, and the ball-bearing supports of the hub and the supporting member 15 insure an easy and noiseless rotation of the rotary beams, friction being reduced to the minimum.

What I claim and desire to secure by Letters Patent, is:—

A merry-go-round comprising a base, a plurality of inclined supports connected at their lower ends to said base, a truncated cone-shaped cap mounted upon and secured to the upper ends of said supports, a hub rotatably-mounted on said cap, a spindle extending through the cap and hub, a supporting member engaging the hub and secured to the spindle, bearing balls interposed between the supporting member and hub, bearing balls interposed between the hub and the cap, a shiftable cross head having an enlarged intermediate portion mounted upon said spindle, said enlarged portion of the cross head provided with a cam slot, a vertically-extending pin mounted in said slot, and adapted in connection with the spindle and wall of the slot to limit the shifting movement of the cross head and for connecting the cross head to the spindle when its movement is arrested, radially extending angle-shaped arms formed integral with the lower portion of the hub, beams mounted upon said arms, a plurality of vertically-extending hold-fast devices for securing each beam to an arm, each of the outer hold-fast devices provided with an eye at its top, headed bars extending through said eyes, said bars further provided with a shoulder and an apertured end, means for pivotally connecting the apertured ends of the bars to the ends of the cross head, springs mounted upon the bars and interposed between said shoulders and the eyes of the hold-fast devices, seats mounted upon the outer ends of the beams and each provided with a forward extension, a foot-operated lever fulcrumed to each of said extensions and depending below the same, a foot rest secured to the lower end of each of the levers, pulleys depending from said seats, and cables passing over said pulleys and secured at one end to the lower ends of said levers and at their opposite ends to the ends of the cross head.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN Z. LEVY.

Witnesses:

M. E. LAWSON,

MAX H. SROLOVITZ.