May 8, 1923. 1,454,775

M. UNGER

AMUSEMENT DEVICE

Filed Feb. 9, 1921

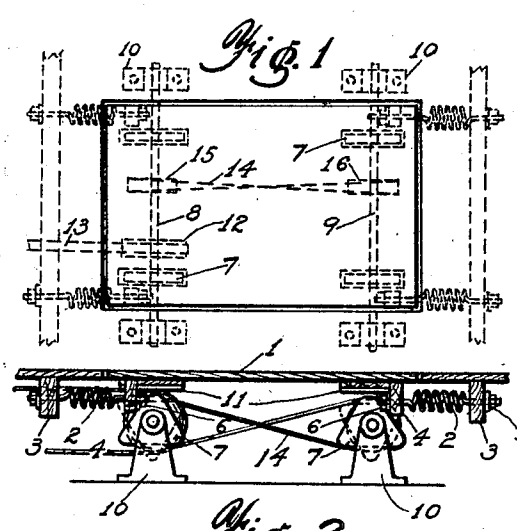

Fig. 1.

Fig. 2.

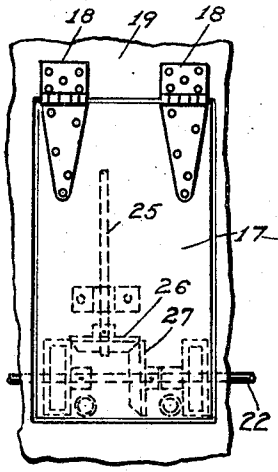

Fig. 3.

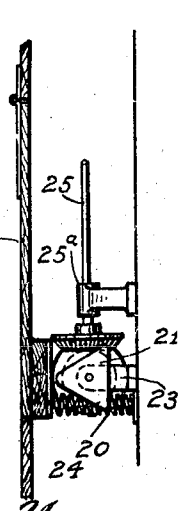

Fig. 4.

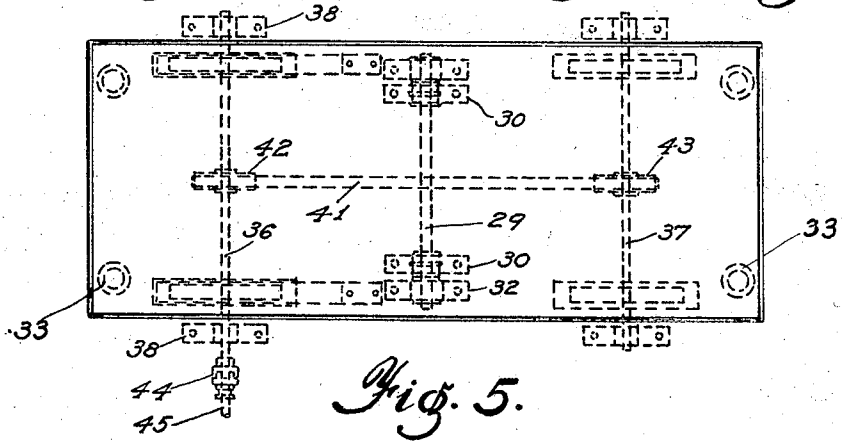

Fig. 5.

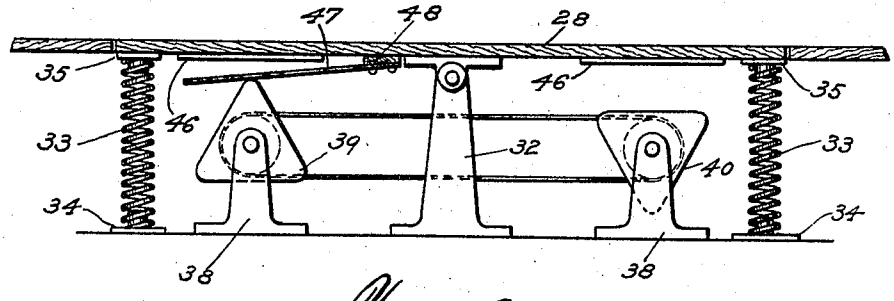

Fig. 6.

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UNITED STATES PATENT OFFICE.

MORRIS UNGER, OF PITTSBURGH, PENNSYLVANIA.

AMUSEMENT DEVICE.

Application filed February 9, 1921. Serial No. 443,523.

To all whom it may concern:

Be it known that I, MORRIS UNGER, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Amusement Devices, of which the following is a specification.

This invention relates to amusement apparatuses and more particularly to such apparatuses which provide movable floors.

One of the main objects of the invention is to provide an apparatus having simple and efficient means for producing in parts of a floor unexpected up and down reciprocating motions. A further object of the invention is to accompany these up and down reciprocating movements with the production of rattling noise. Another object of the invention is to provide an apparatus of simple construction and operation which may be installed at small cost.

In the drawings:

Fig. 1 is a top plan view showing my invention applied to a suspended floor-plate.

Fig. 2 is a side elevation of Fig. 1.

Fig. 3 is a top plan view showing my invention used in connection with a floor-plate hinged at one end.

Fig. 4 is a side elevation of Fig. 3.

Fig. 5 is a top plan view of a modified form of my invention.

Fig. 6 is a side elevation corresponding to Fig. 5.

The construction of my invention shown in Figs. 1 and 2, consists of the floor-plate 1 suspended horizontally by the four horizontal coil springs 2 secured to the floor joists 3 and the blocks 4 mounted on the underside of the suspended floor. The tension of the coil springs 2 is adjustable by means of the threaded nuts 5 and 6 placed on the threaded ends of the springs, so as to keep the floor-plate flush with the surrounding floor, when not loaded.

Two sets of triangular cams 7 are securely mounted on the two parallel shafts 8 and 9 extending transversely below the suspended floor and are rotatably mounted on suitable bearing supports 10. The underside of the suspended floor is also provided with metallic contact plates 11 placed above the cams in order to prevent undue wear of the suspended floor and to create a rattling noise when these plates come in contact with the revolving cams. The shaft 8 is rotated by means of a pulley 12 driven by a belt 13 actuated by any suitable source of power. The rotation of the shaft 8 is transmitted to the shaft 9 by means of the belt 14 running on the pulleys 15 and 16 mounted on the shafts 8 and 9 respectively. In order to counteract the forward pushing tendency of the floor-plate by the cams, the belt 14 is preferably crossed so that the two sets of cams will revolve in opposite direction, thereby annulling their respective forward push on the floor-plate.

Both cam-shafts are revolved continuously and their location is such that the cams 7 will clear the contact-plates when the floor-plate is not loaded. However, as soon as a person steps upon the floor-plate, the latter will sag, owing to the weight of the person, and the floor-plate will be forced up and down by the revolving cams; this motion being accompanied by the rattling noise caused by the striking of the cams against the contact-plates.

In the modified construction shown in Figs. 3 and 4, a floor-plate 17 is provided at one side with hinges 18, the stationary part of which is screwed to the flooring 19. The end of the floor-plate, opposite to the hinges, is supported by the vertical coil springs 20 resting on any suitable permanent base, and they are so proportioned that the floor plate will be flush with the surrounding floor when not loaded. Triangular cams 21 are securely mounted upon a shaft 22 located transversely of and below the swinging end of the floor-plate. This shaft is rotatably mounted in the vertical bearing-supports 23 and is located a sufficient distance below the floor-plate to enable the cams to rotate freely below their corresponding contact plates 24 when the floor-plate is not loaded. The shaft 22 is shown as being driven in this construction by means of a drive shaft 25, supported by the bearing 25^a, and the bevel gears 26 and 27 securely mounted on the shafts 25 and 22 respectively. When trod upon, the free end of the floor-plate will be forced down and the contact plates 24 will come into contact with the continuously rotating cams, thus giving to the floor plate a rapid up and down motion.

In the modified construction shown in Figs. 5 and 6, the floor-plate 28 is centrally mounted on a shaft 29 guided and secured in the supports 30, fastened on the under-

side of the floor-plate. This shaft is rockably mounted on the bearing supports 32 secured on any suitable stationary base. Two sets of vertical coil springs 33, guided by the end plates 34 and 35, are provided underneath and at each end of the floor-plate. The length of these springs is such as to keep the floor-plate level with the surrounding floor when not loaded. Symmetrically disposed on each side of the supports are two horizontal shafts 36 and 37 rotatably mounted on the bearing supports 38. Each shaft is provided with a set of triangular cams 39 and 40 securely mounted thereon and so disposed that when one corner of one set of cams is uppermost, the corresponding corner in the other set of cams will be lowermost.

The shafts 36 and 37 are connected together by a belt 41 running over the pulleys 42 and 43 securely mounted on their respective shafts. In Fig. 5 I have shown the shaft 36 provided with an extension and a claw-clutch 44 for the purpose of connecting this shaft to a driving shaft indicated by the numeral 45. For reasons stated before, the floor-plate is also furnished on the underside with contact-plates 46 suitably located above each cam.

In order to increase the noise produced by this device, I provide, sometimes, above one or both sets of cams, the downwardly inclined pliable strips 47 mounted upon the blocks 48 secured on the underside of the floor-plate. The cams will first strike these strips which in turn will strike the contact-plates, thus doubling the number of noise producing shocks.

As in the devices described above, the cams are able to rotate freely when the floor-plate is not weighted; but as soon as a person steps onto one end of the plate, it will be depressed and come into contact with the revolving cams whereby the floor-plate will be moved rapidly up and down. The passage over this floor-plate may be guided by a suitable railing on each side of it so that the amusement seeker will be forced to keep on moving forward. Upon passing over the center of the floor-plate the forward set of cams will come into play thereby repeating the exhilarating movements and noise.

As will be readily understood, I do not wish to restrict myself to the use of triangular cams only, but I wish to include in this application the use of all cams of polygonal or irregular shapes suitable for the purposes hereinbefore stated. Moreover it is evident that the application of polygonal cams for producing alternating movements in floor-plates may be extended almost indefinitely to different arrangements of floor-plates.

It may also be found desirable in practice to resort to slight changes in construction and arrangement of the details of my invention without departing from the field and scope of the appended claims, in this application in which the preferred forms only of my invention are disclosed.

What I claim is:

1. In an amusement device of the character described, the combination of a rockable floor-plate; revolving polygonal cams for producing up and down motions of said floor-plate; means for operating said cams; means positioned between said floor-plate and polygonal cams for increasing the noise when said floor-plate is actuated; resilient means for supporting said floor-plate above the reach of said cams when not loaded; all of said means being positioned beneath said floor-plate.

2. In an amusement device of the character described, the combination of a rockable floor-plate; revolving polygonal cams for producing up and down motions of said floor-plate; means for operating said cams; resilient means positioned between said floor-plate and polygonal cams for increasing the noise when said floor-plate is actuated; resilient means for supporting said floor-plate above the reach of said cams when not loaded; all of said means being positioned beneath said floor-plate.

3. In an amusement device of the character described, the combination of a rockable floor-plate; revolving polygonal cams for producing up and down motions of said floor plate; means for operating said cams; means for increasing the noise when said floor-plate is actuated, said means consisting of a downwardly inclined pliable strip secured at one end to the floor-plate and having the other end thereof free to vibrate and positioned between said floor-plate and polygonal cams; resilient means for supporting said floor-plate above the reach of said cams when not loaded; all of said means being positioned beneath said floor-plate.

In testimony whereof I affix my signature.

MORRIS UNGER.