H. HARTMAN.

AMUSEMENT DEVICE.

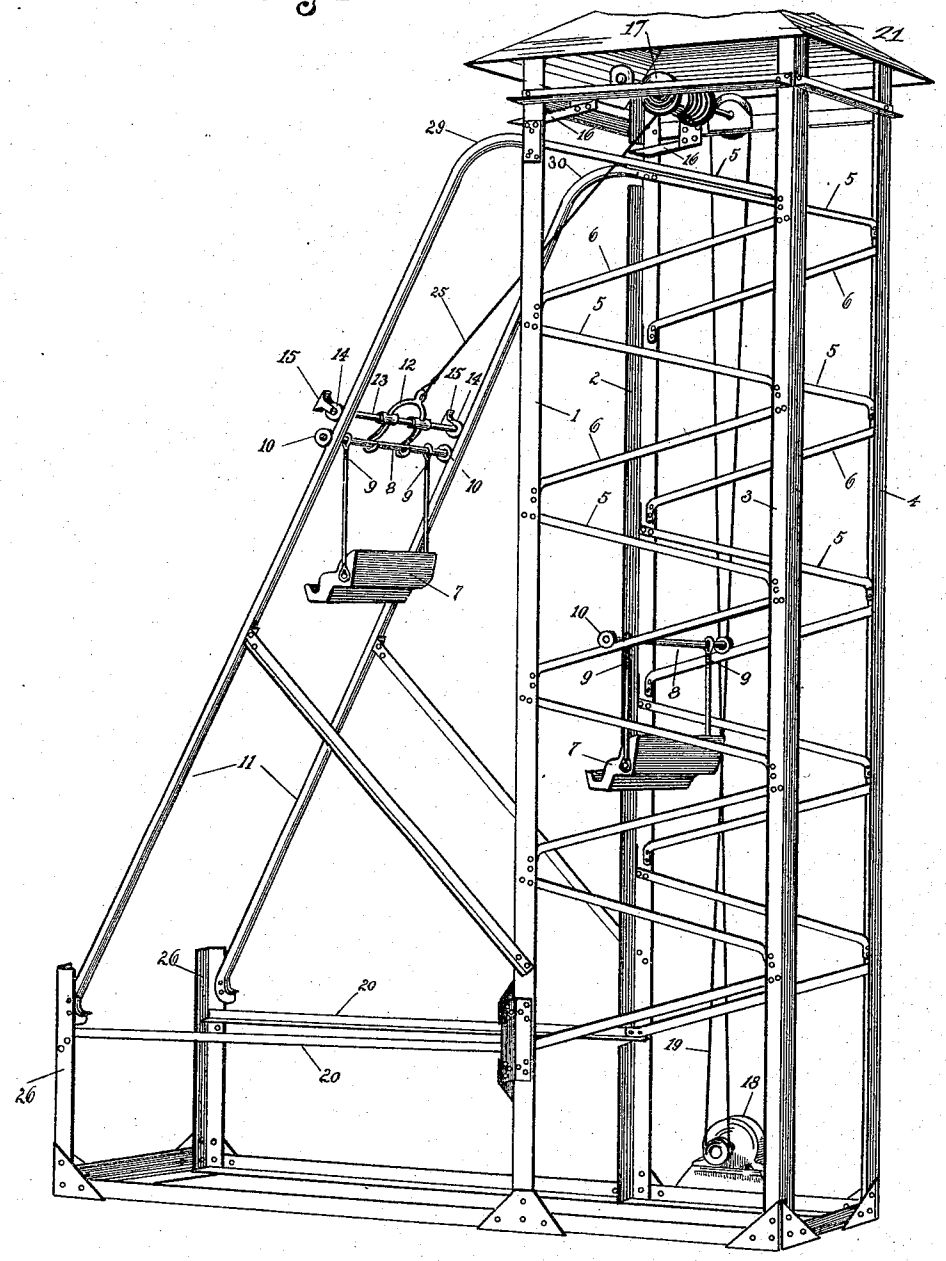
APPLICATION FILED MAR. 26, 1915.

1,167,170.

Patented Jan. 4, 1916.

3 SHEETS—SHEET 1.

Fig. 1



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3 SHEETS—SHEET 2.

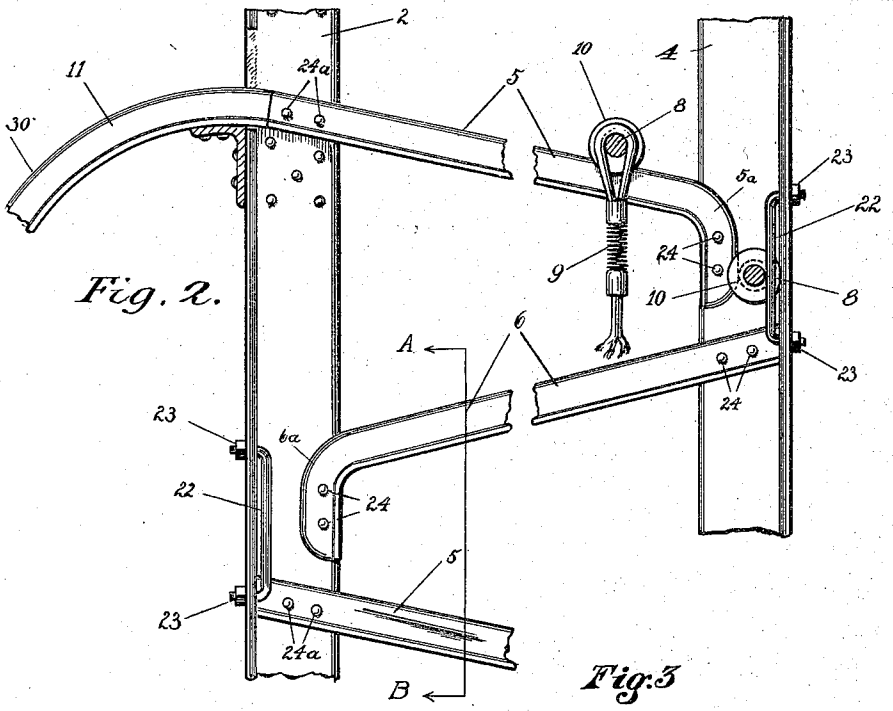
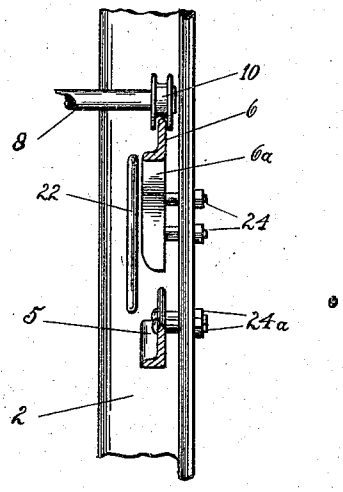


Fig. 2.

Fig. 3



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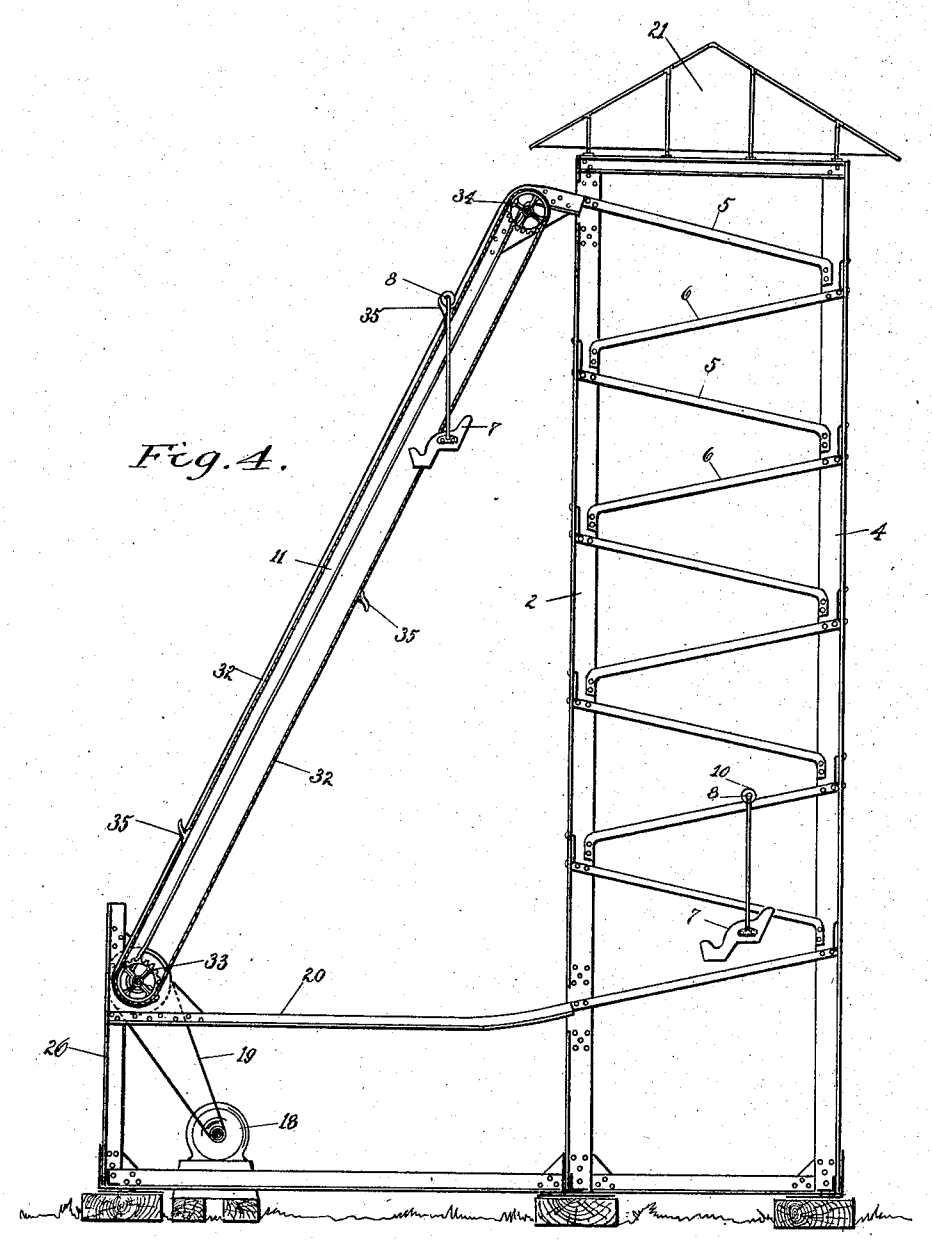
3 SHEETS—SHEET 3.

Fig. 4.



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AMUSEMENT DEVICE.

1,167,170. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed March 26, 1915. Serial No. 17,223.

To all whom it may concern:

Be it known that I, HANS HARTMAN, a subject of the Emperor of Austria-Hungary, and resident of 1147 Broadway, New York, in the county of New York and State of New York, United States of America, have invented certain new and useful Improvements in Amusement Devices, of which the following is a specification.

My present invention relates to amusement devices and more particularly to such devices which give pleasure to patronizers through the novel manner in which they are drawn in traveling seats about a predetermined path of rolling, dropping and swinging movement.

The object of this invention is to provide a new and improved amusement device of the aforesaid kind whereby suspended seats, accommodating one or more persons are lifted by a hoist or other suitable means to a certain height from which they descend by gravity, traveling over series of inclined rails, which are arranged one pair above the other in a vertical zigzag line in such manner, that the traveling seats are brought suddenly to a stop at the lower ends of each pair of parallel running rails, drop a certain, predetermined distance upon the next lower pair of rails and travel then along such rails in the opposite direction downward until they reach in such zigzag line the lowest pair of rails.

A further object of the invention is to provide in addition to the downward zigzag traveling and dropping movement also a swinging movement which is obtained at the sudden, temporary stops by the living force of the traveling, suspended seats.

The present invention is illustrated by way of example in the accompanying drawings forming a part of this specification, in which drawings:

Figure 1 is a perspective view of the amusement device, Fig. 2 is a sectional view of a detail of the device. Fig. 3 is a vertical section on the line A—B in Fig. 2. Fig. 4 illustrates in a sectional view a modification of a part of the device.

Similar characters of reference refer to similar parts throughout the several views.

The amusement device consists of a towerlike structure, preferably constructed of steel, iron, wood or other suitable material, whereby four angle-iron uprights 1, 2, 3, 4, which are substantially connected by means of steel or iron framing at their extreme ends, are supporters of a vertically arranged zigzag rail track which consists mainly of a series of rails 5, 6, running in parallel pairs inside the towerlike structure and fastened to the angle-iron uprights 1, 3, and 2, 4, by means of bolts 24, 24ª, in such manner as to allow a certain clearance between the rails and the uprights at the connecting points, whereby the lower ends of each pair of rails are bent to form sharp downward curves 5ª 6ª leading upon the next lower arranged pair of rails, which run in opposite direction. A series of such inclined and parallel running pairs of rails, each pair arranged above the other in the same vertical line constitutes a zigzag track as shown perspectively in Fig. 1, wherein the lowest pair of rails by means of extension rails 20 is leading to the top portion of the structure over hoisting rails 11 where the latter are connected in a suitable manner with the highest pair of rails of the zigzag track, thus making for the suspended, traveling seats 7 a circular way. The angle-irons 26, 26 are supporting the inclined hoisting rails 11 connecting them substantially with the lower part of the whole structure.

A hoist 17, suitably arranged under a roof 21 and operated by a motor 18, which may be an electric motor by means of a transmission 19 is provided for the purpose to lift the suspended traveling seats 7 from the extension rails 20 over the hoisting rails 11 up to the highest pair of inclined rails 5 which form the first section of the downward leading zigzag track.

The suspended traveling seats 7 are connected by shock-absorbing intermediary springs 9 with horizontally arranged shafts 8 bearing at both ends small wheels 10 fitted with flanges to keep them safely on the rails. A traveling hoisting shaft 13 bearing similar wheels 14 is connected to the rope 25 of the hoist 17 and is provided with a suitable hook 12 to engage the shaft 8 which carries the suspended seat 7 and with a pair of sledges 15 adapted to slide upon a pair of guides 16 when the traveling seat 7 is hoisted high enough to assume by gravity a downward movement along the zigzag track over the highest pair of rails 5 after it has passed the curves 29, 30 at the top of the hoisting rails 11. The sledges

15, when passing over the guides 16 will turn the hoisting shaft 13 sufficiently to allow the traveling shaft 8 to be released from the hook 12 or this may also be obtained by a backward movement of the motor 18, thus lowering the hoisting shaft 13.

In Fig. 4 I show a modification of the hoist, consisting of an endless chain-carrier 32 running at both extremities of the hoisting rails 11 over a drum or pulley 33, 34, whereby the pulley 33 at the lower end of the hoisting rails 11 is rotated by the motor 18. The endless carrier 32 is fitted with hooks 35 which engage the shafts 8 of the seats 7 and carry such seats up to the highest pair of inclined rails 5 where they travel out of the hooks 35 and continue the predetermined path down the zigzag track.

I do not limit myself to these two kinds of hoists, as the traveling seats 7 may be carried to the top of the zigzag track by other suitable means.

A further object of my invention is to provide in connection with the downward traveling of the suspended seats 7 also swinging and dropping movements. The swinging movement is simply obtained by the living force of the traveling seats when the downward movement is suddenly brought to a temporary stop at the lower ends of each pair of rails which constitute the zigzag track and the dropping movement results from arranging the curved ends 5^a, 6^a, of each pair of rails at a certain distance above the next following lower pair of rails as shown in Fig. 2 and Fig. 3, thus causing a sudden drop of the shaft 8 and of the seat 7, suspended from said shaft whereby the sudden shock is partly absorbed by the intermediary springs 9.

To secure the wheels 10 against jumping off the rails, special guides 22 are provided at each point where the shaft 8 drops from a higher arranged pair of rails upon the next lower pair. The rails 5, 6, are fastened with bolts 24, 24^a, in such manner to the uprights 1, 3, and 2, 4, as to allow sufficient clearance between the rails and the uprights for the passage of the rims or flanges with which the wheels 10 are provided. In the place of wheels 10 only simple sledges may be used to obtain a sliding instead of a rolling movement such sledges in simplest form would be obtained by attaching the wheels 10 not turnable upon the shaft 8. I do not limit myself to use wheels only.

A combination of two or more of such amusement devices may be constructed whereby the single structures could be substantially connected with each other and the same motor used for lifting the seats up to the starting points of the zigzag tracks. It is obvious that various modifications can be made in the construction of my amusement device, especially if other material than iron and steel is used.

The *modus operandi* of the device is as follows: The occupied suspended seat 7 Fig. 1 is hoisted from the end poles 26 by means of the motor 18 and the hoist 17 until it has safely passed the curves 29 and 30 of the hoisting rails 11 and assumes the tendency to roll down the rails 5, 5, by gravity, when the hook 12, owing to a turning of the shaft 13 produced by the sliding of the sledges 15 upon the guides 16 or the backward movement of the hoist releases the seat-supporting shaft 8. The released shaft 8, resting with its wheels 10 upon the highest pair of rails 5, 5, starts by gravity a downward traveling movement with the seat 7 suspended perpendicular thereon. At the lower ends of the parallel running rails 5 this movement comes to an abrupt, temporary end, the shaft 8 drops freely along the curves 5^a, upon the lower pair of rails 6 stopping causes the suspended seat 7 to swing by its living force forward and when the seat swings backward, the shaft 8 again starts to travel downward upon the pair of rails 6 drops again at the lower, curved ends 6^a of such pair of rails upon the next following rails 5 and so repeatedly until it reaches the lowest pair of rails and traveling by its living force over the extension rails 20 it reaches the starting point at the end poles 26. From there it can be lifted up again by the hoist.

With a proportionate arrangement of the length and inclination of the rails 5, 6, which constitute the zigzag track and the length of the suspended seats 7 an increasing swinging movement of such seats with the progressing downward traveling can be obtained.

While I have shown and described one embodiment of my invention, it is obvious that it is not restricted thereto, but is broad enough to cover all structures that come within the scope of the annexed claims.

Having thus described my invention, what I claim is:

1. An amusement device having an upright frame structure, a carriage, rails on which said carriage descends in a zig-zag path, hoisting means for the carriage, a track on which the carriage is hoisted, one of said rails being a part and continuation of said track, and means to release the carriage from the hoisting means at the junction of said track with the last mentioned rails.

2. An amusement device having an upright frame structure, a carriage, rails on which said carriage descends, hoisting means for the carriage having a device to detachably engage the carriage, a track on which the carriage is hoisted, and friction reducing means on said device movable on said track.

3. An amusement device having an upright frame structure, a carriage, rails on which said carriage descends in a zig-zag path, said rails at their lower ends being overlapped by the upper ends of the next rails so that the carriage will successively slide and fall from one rail directly onto the next rail and means to prevent displacement of the carriage during the falling or transfer of the carriage from rail to rail.

4. An amusement device having an upright frame structure, a carriage, rails on which said carriage descends in a zig-zag path, said rails at their lower ends being overlapped by the upper ends of the next rails so that the carriage will successively slide and fall from one rail directly onto the next rail, means to prevent displacement of the carriage during the falling or transfer of the carriage from rail to rail, such means being in the nature of guide elements, said carriage having a wheel to extend between said guide elements, and an axle for said wheel movable on one of said guide elements.

5. An amusement device having a frame structure provided with an upright having a flange, a guide member adjacent and spaced from the flange, a carriage, rails on which said carriage descends in a zig-zag path, said rails at their lower ends being overlapped by the upper ends of the next rails so that the carriage will successively slide and fall from one rail directly onto the next rail, and a wheel for said carriage to travel intermediate the said flange and guide member during the falling or transfer of the carriage from rail to rail.

Signed at New York city in the county of New York and State of New York this 23d day of March A. D. 1915.

HANS HARTMAN.

Witnesses:
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