Aug. 11, 1925. 1,548,973

E. B. BEELER

COASTER

Filed April 14 1924

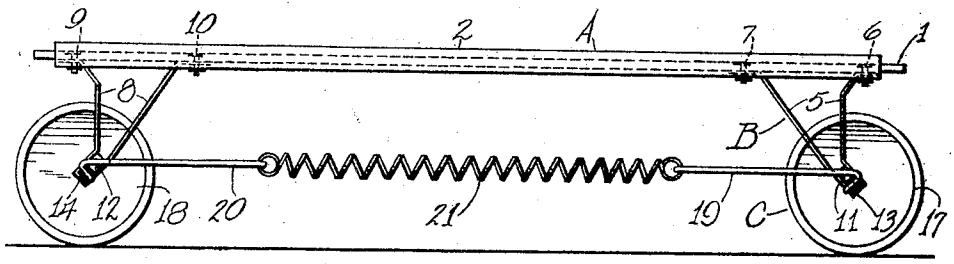


Fig. 1.

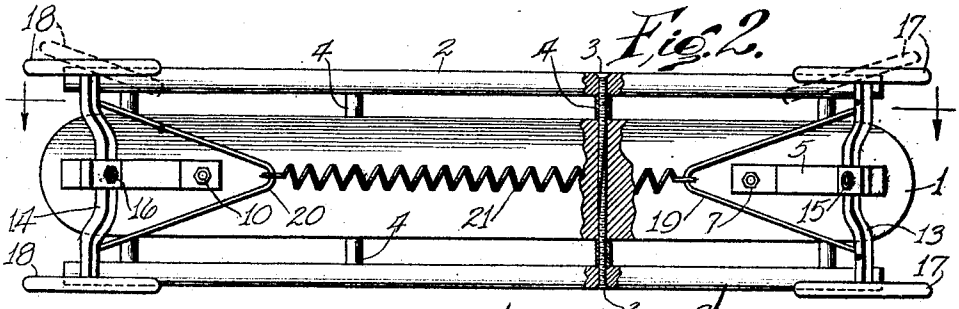


Fig. 2.

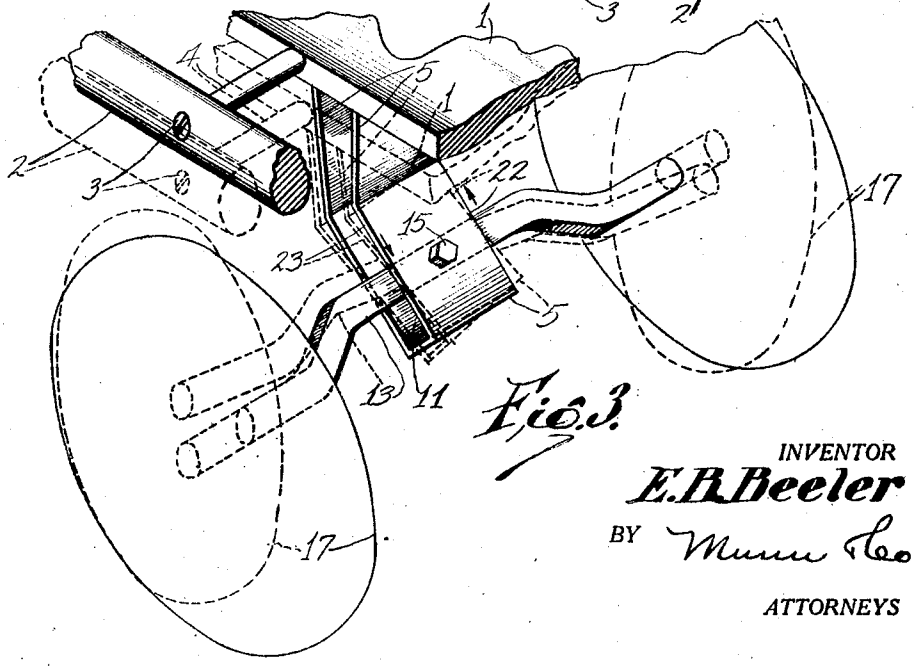


Fig. 3.

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UNITED STATES PATENT OFFICE.

ESTEN BURLEIGH BEELER, OF CHICAGO, ILLINOIS.

COASTER.

Application filed April 14, 1924. Serial No. 706,545.

To all whom it may concern:

Be it known that I, ESTEN B. BEELER, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Coasters, of which the following is a full, clear, and exact description.

My invention relates to improvements in coasters, and it consists in the combinations, constructions, and arrangements herein described and claimed.

An object of my invention is to provide a coaster in which the body is pivotally mounted and is so connected to the wheels of the coaster as to turn the wheels in one direction, when the body is swung on its longitudinal axis in one direction, and to turn the wheels in the opposite direction when the body is swung into the opposite direction.

A further object of my invention is to provide a device of the type described in which both the front and rear wheels are turned when the body is swung in either direction, thereby permitting the device to turn in a sharp curve.

A further object of my invention is to provide a device of the type described in which a spring is used for returning the wheels to normal position, this spring also keeping the body of the car in a horizontal plane.

A further object of my invention is to provide a device of the type described which is very simple in construction, durable and efficient for the purpose intended, and which is not likely to easily get out of order.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawing forming part of this application, in which

Figure 1 is a section along the line 1—1 of Figure 2.

Figure 2 is a bottom plan view of the device, and

Figure 3 is a perspective view of a portion of the device showing how the wheels are turned when the body is tilted.

In carrying out my invention I provide a coaster which consists of a body portion A, a body-supporting part B and wheels C. Figure 2 shows the construction of the body A, the bottom of a plank 1 and hand gripping rods 2. The rods 2 are secured to the body 1 by means of screws 3 and are spaced from the body by means of sleeves 4. The sleeves are disposed on the screws 3 and bear against the plank 1 and rods 2. In Figure 2 I also show a novel means for locking the screws 3 to each other so as to prevent instant removal of the screws. The screws 3 on each side of the plank 1 are alined with each other and are then screwed into place. The screws are long enough to overlap each other. In securing the screws to the plank the screws will first strike each other and thereafter a continued rotation of the screws will cause the screws to pass each other, the threads of each screw engaging with the threads of the other screws whereby the screws are locked in place and cannot be removed by a direct outward movement. The rods 2 are spaced from the plank 1 so as to permit the person using the coaster to readily grasp the rods.

The body A is mounted upon the wheels C by means of the body supporting structure B. It will be noted from Figures 1 and 3 that the structure B consists in the present instance, of a strip of metal 5, which has one of its ends secured to the plank 1 by means of a bolt 6 and which has its other end secured to the plank 1 by a bolt 7. In the present form of the device I have used what is commonly known as elevator bolts. A strip 8 of the same shape as the strip 5 is also secured to the plank by means of bolts 9, and 10. In Figure 1 I have shown how the lower ends of the strips 5 and 8 are bent at an angle with respect to the plank 1, so as to provide inclined guide ways 11 and 12. Axles 13 and 14 are disposed in the guide ways 11 and 12 and are pivotally secured to the strips 5 and 8 by means of bolts 15 and 16. The bolts 15 and 16 permit the axles 13 and 14 to swing in the guide ways 11 and 12. The wheels 17 and 18 are rotatably mounted upon the axles 13 and 14 and are preferably provided with ball bearings, not shown, so as to permit the coaster to run easily. Tongues, consisting in the present instance of wire loops 19 and 20 are secured to the axles 13 and 14 and secured to each other by means of a spring 21.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. In Figure 3 I have shown a perspective view of the supporting member 5 and have also

shown by the dotted lines how the wheels 17 are turned with respect to the coaster, when the body A is tilted on its longitudinal axis. The bolt 15 secures the axle 13 at a point substantially midway of the guide channel 11. Assume that the person using the coaster wishes to turn the wheels so as to guide the coaster in the direction he desires, he turns the wheels by bearing on one side of the plank 1 so as to cause the plank to swing into the dotted line position, shown in Figure 3. If the person, usually a boy, is lying upon the plank he merely has to rock his body so as to throw his weight on one side of the plank and to cause the plank to tilt into the dotted line position.

Since the body 1 is pivoted at 15 it will swing the strip 5 into the dotted line position. As heretofore stated the guide way 11 is tilted at an angle with respect to the body 1. It will therefore be apparent that when the strip 5 is swung about the bolt 15 as a pivot due to the tilting of the body 1, it will cause the edges 22 and 23 to move into the direction of the arrows in Figure 3 with respect to the axle 13. Since the guide way 11 is inclined this movement will cam the axle 13 so as to swing the axle into the dotted line position. The wheels 17 are carried by the axle 13 and are also swung into the dotted line position, i. e. into the position that is at an angle with respect to the longitudinal axis of the body A. In this way the wheels are turned with respect to the body so as to cause the coaster to turn.

As clearly shown in Figure 1, the guide way 12 extends in the opposite direction from the guide way 11 and will therefore turn the wheels 18 in the opposite direction to the wheels 17.

In Figure 2 I have shown how the wheels 17 and 18 are turned with respect to each other when the body A is tilted in one direction. The coaster is adapted to take a far shorter turn when both wheels are swung, than when only the front wheels are swung as is usually the case. In this way the boy who is coasting is able to turn the coaster in a short radius as to permit the coaster to turn a corner in one of the cities bocks.

The spring 21 and tongues 19 and 20 keep the wheels 17 and 18 in normal position. When the wheels 17 and 18 are swung in to the dotted line position shown in Figure 2, the wires 19 and 20 will be swung about the bolts 15 and 16 as a pivot and will lengthen the spring 21. As soon as the boy shifts his weight so as to bring the plank 1 back into normal position, the spring 21 will return the wheels to normal position. It will be apparent from the foregoing description that the plank 1 cannot be tilted on its longitudinal axis without turning the wheels. The spring 21 therefore is not only adapted to swing the wheels 17 and 18 into normal position, but will also swing the plank 1 into normal position, and will keep it there. The wheels 17 and 18 will be turned when the plank 1 is tilted, whether the spring 21 is employed or not. The spring 21 is needed however so as to keep the plank in a horizontal position when the device is not being used. If it were not for the spring the wheels would turn into the dotted line position shown in Figure 2 and would permit the body A to swing out of the horizontal position.

Another feature of this device is that the wheels will not be readily turned when they strike a rock or other obstruction. This will be clearly evident from the fact that the body A has to be tilted in order to permit the wheels 17 and 18 to swing with respect to the body. If, therefore, one of the wheels hits a rock the wheel would have to be swung and also the body. This requires so great a force that the wheels will jump the rock instead, and will not be turned.

A still further advantage of the device lies in the fact that the plank 1 is banked and thus obviates the tendency of the coaster to overturn when taking a sharp turn at a rather high speed. The boy in order to take the turn must shift his weight to tilt the plank 1. This shifting of the boy's weight shifts the center of gravity so as to overcome the tendency of the coaster to overturn.

The coaster will work just as efficiently if the axles are secured to one strip instead of two strips as shown in Figure 1. In other words, if the guide ways 11 and 12 were done away with, and the axles 13 and 14 were secured to a single strip which was bent at an angle with respect to the plank 1, the device would operate just as efficiently. The device may be used for all ordinary coasting purposes and strongly may it withstand the ordinary shocks to which such a device is subjected. The device is extremely simple in construction and will not get out of order easily.

I claim:

1. A coaster comprising a body portion, supports for said body portion, said supports having a portion inclined with respect to the vertical, axles pivotally secured to the inclined portion of said supports, wheels carried by said axles, tongues secured to each of said axles and projecting toward the opposite axle, and a single spring member having its end secured to said tongues whereby the central axes of said tongues are kept in normal alignment.

2. A coaster comprising a body portion, supports secured to said body portion near each end thereof, each of said supports consisting of a strip of metal having a body por-

tion thereof inclined at an angle to the vertical, axles secured to said inclined portions pivot pins for said axles extending perpendicular to the plane of the inclined portion, tongues secured to said axles and projecting toward each other, and a single spring connected to said tongues for holding the central axes of the tongues in normal alignment.

3. A coaster comprising a flat body portion, supports at each end of said body portion, each of said supports comprising a single strip of metal secured at its opposite ends to the body portion, the central portion of the strip being bent to form guideways inclined to the vertical and inclined with respect to the guideway of the opposite support, an axle disposed in each of said guideways, a pivot pin for each of said axles, said pivot pins being perpendicular to the plane of the guideways, a tongue for each axle, each of said tongues extending toward the center, and a single spring connected to the ends of the tongues for maintaining the central axes of the tongues in normal alignment.

ESTEN BURLEIGH BEELER.