

[54] **INDEPENDENTLY ROTATABLE INDICIA DISCS AND BRAKING MECHANISM THEREFOR**

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[51] Int. Cl. .... **A63f 5/04**

[58] Field of Search ..... **273/142 H, 142 HA, 142 J, 273/142 JB**

[56] **References Cited**

**UNITED STATES PATENTS**

629,046	7/1899	Osman .....	273/142 HA UX
2,165,145	7/1939	Mahawash .....	273/142 HA
2,283,583	5/1942	Singer .....	273/142 HA
3,633,916	1/1972	Thomas .....	273/142 HA

**FOREIGN PATENTS OR APPLICATIONS**

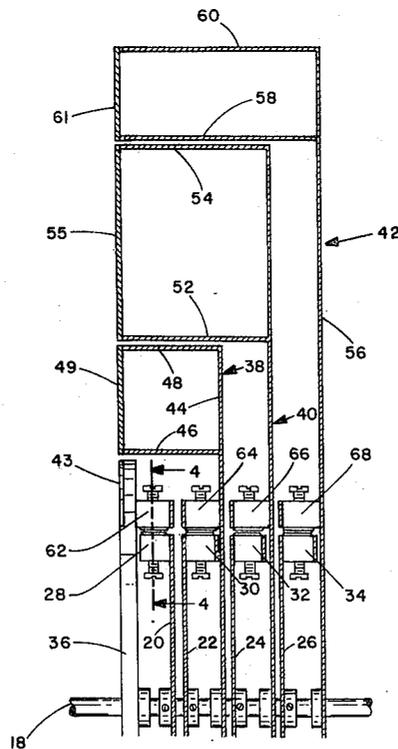
390,763	8/1965	Switzerland .....	273/142 HA
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[57] **ABSTRACT**

An amusement device comprising a plurality of rotatable wheels that can be rotated independently of one another either clockwise or counterclockwise. Each wheel is divided into sectors and each sector bears different indicia. Braking mechanism is provided and constructed so that all of the sectors of one wheel are aligned with all of the sectors of another wheel or with all of the sectors of the other wheels at the time the wheels have ceased moving. The braking mechanism is in the form of first brake shoes attached to the respective wheels and second fixed brake shoes which are radially aligned with respective first brake shoes when the indicia sectors are aligned. The first and second brake shoes have cooperating contoured surfaces, are resiliently radially biased into engagement with each other, and are provided magnets to aid in the alignment of the indicia sectors.

**6 Claims, 4 Drawing Figures**



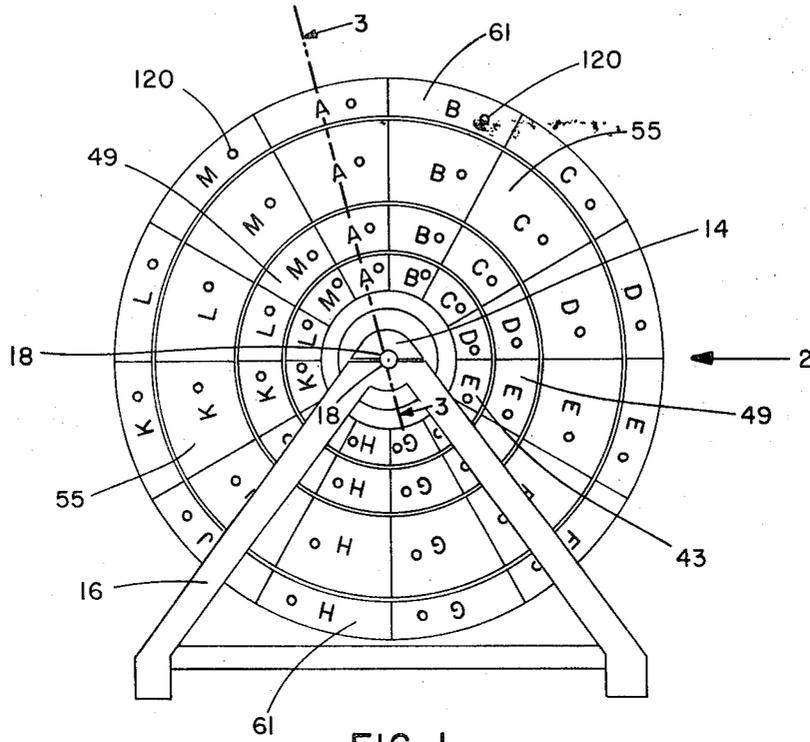


FIG. 1

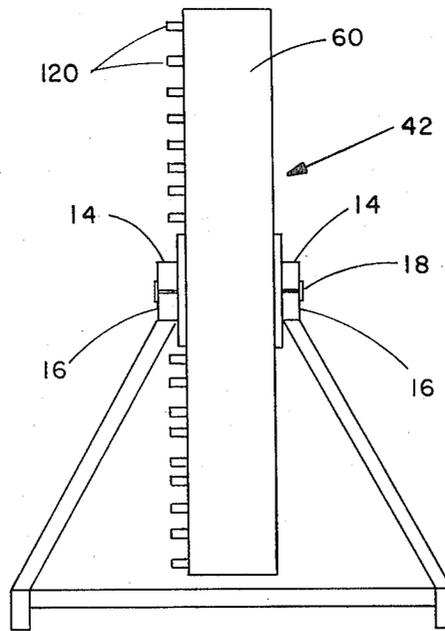


FIG. 2

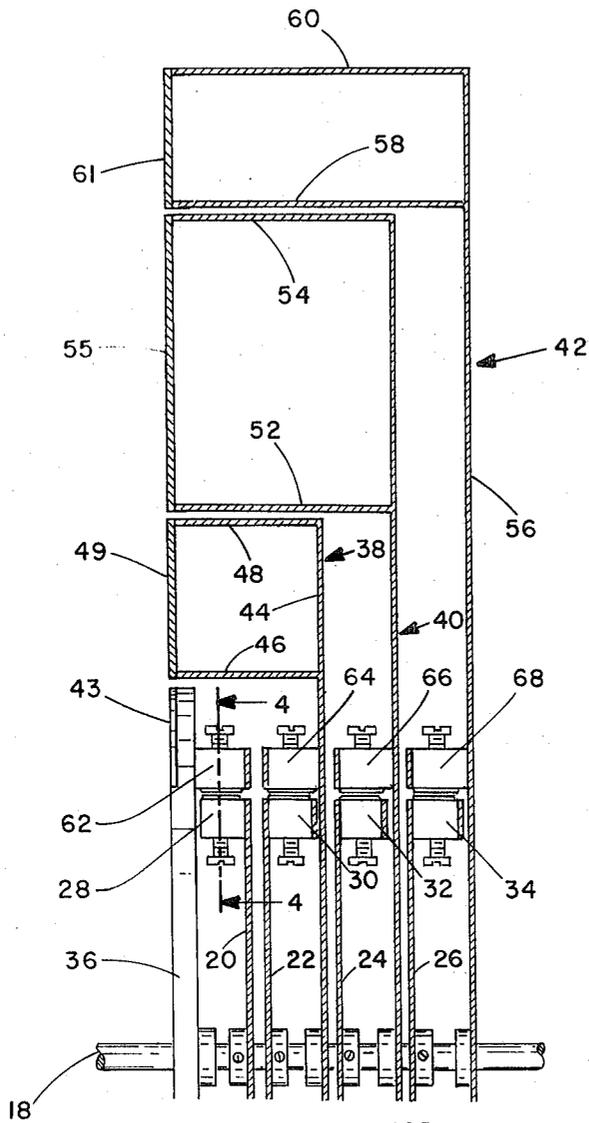


FIG. 3

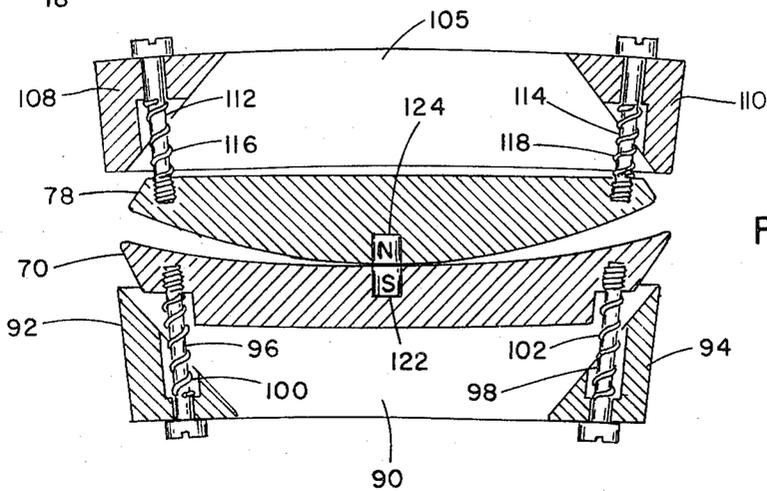


FIG. 4

# INDEPENDENTLY ROTATABLE INDICIA DISCS AND BRAKING MECHANISM THEREFOR

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

The field of the invention is directed to amusement devices in which spinning wheels have sections, which sections are visible and aligned at the conclusion of the spinning of the wheels.

### 2. Description of the Prior Art

The prior art known to applicant comprises devices in which only one section of each wheel is visible at the conclusion of the turning action of the wheels of the type having a plurality of sections.

## SUMMARY OF THE INVENTION

The amusement device includes two or more wheels that can be rotated clockwise or counterclockwise. The upper portions of the wheels are in telescopic relationship and the face side of the wheels are in the same plane. Each wheel is divided into sectors, the wheels all having the same number of sectors, and adjacent sectors of the face of a wheel having different indicia thereon. The wheels are manually rotated independently of one another.

The device includes braking mechanism that is constructed so that all sectors of a wheel are in respective alignment with all sectors of another wheel and with all sectors of a third wheel (if three wheels are employed) at the time the wheels have ceased moving.

Other features and the advantages of the present invention will be apparent from the following description, reference being made to the accompanying drawings wherein a preferred embodiment of the invention is illustrated.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front view of the amusement device;

FIG. 2 is a side view looking in the direction of arrow 2 of FIG. 1;

FIG. 3 is a fragmentary sectional view taken along line 3—3 of FIG. 1 showing slightly more than the upper half of the device; and

FIG. 4 is a sectional view taken along line 4—4 of FIG. 3, but on a larger scale.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

The device 10 includes a support 12 having horizontally spaced upper sections 14 and lower sections 16. These sections have a removable shaft 18 fixed thereto. Four circular disks 20, 22, 24 and 26 extend radially from and are affixed to the shaft 18 in any suitable manner. These circular disks are spaced horizontally from one another. The outer ends of each of the disks carry four equally spaced brake shoe guides 28, 30, 32 and 34, respectively.

Four radially extending frames in the form of wheels 36, 38, 40 and 42 are journaled for rotation on the shaft 18. Wheel 36 is in the form of a disk disposed at the front side of the device 10. Twelve sectors 43 of equal dimensions form the front of wheel 36. Wheel 38 includes a circular disk 44 to which two forwardly extending circular collars 46 and 48 are attached. These collars terminate parallel with the front face of wheel 36. Collar 48 surrounds collar 46. Twelve sectors 49 of

equal dimensions are suitably affixed to the front ends of collars 46 and 48. Wheel 40 includes a circular disk 50 to which two forwardly extending circular collars 52 and 54 are attached. Collar 54 surrounds collar 52. The collars terminate parallel with the front face of the wheel 36. Twelve sectors 55 of equal dimensions are suitably affixed to the front ends of collars 52 and 54. Wheel 42 includes a circular disk 56 to which two forwardly extending collars 58 and 60 are affixed. Collar 60 surrounds collar 58 and the front ends thereof terminate parallel with the face of wheel 36. Twelve sectors 61 of equal dimensions are suitably affixed to the front end of collars 58 and 60.

Each wheel 36, 38, 40 and 42 carries four equally spaced brake shoe guides 62, 64, 66 and 68, respectively. Each guide 28, 30, 32 and 34 receives a brake shoe 70 (see FIG. 4); and each guide 62, 64, 66 and 68 receives a brake shoe 78. Thus, 16 pairs of brake shoe guides and brake shoes are employed.

It is necessary that upon cessation of the rotary movement, the sectors of all wheels be aligned radially with one another. Any suitable means may be adopted to attain that function. An example would be the use of permanent magnets, one of a cooperating pair of shoes having a north pole of a permanent magnet confrontable with the south pole of a permanent magnet on the other shoe. Thus, should a wheel tend to stop before passing alignment of the confronting ends of sectors or tend to stop after passing alignment of the confronting ends of sectors, the magnets will attract one another to move these sectors into radial alignment.

In the embodiment illustrated, as shown in FIG. 4, each brake shoe guide 28, 30, 32 and 34 includes front side wall 90 and rear side wall (not shown), and opposite end walls 92 and 94. The end walls 92 and 94 are drilled radially to receive pins 96 and 98. The outer ends of pins 96 and 98 are fixed to an inner brake shoe 70. Resilient and flexible means in the form of two springs 100 and 102 surround pins 96 and 98, respectively, and urge the inner brake shoe radially outwardly. The inner ends of the pins 96 and 98 limit the radial movement of the shoe by the heads of the pins that abut the inner ends of end walls 92 and 94. Thus, the guides and springs provide a pivotal support for the brake shoe on an axis substantially parallel with the axis of the shaft.

Likewise, each of the guides 62, 64, 66 and 68 include a front side wall 105 and a rear side wall (not shown) and opposite end walls 108 and 110. The end walls are drilled to receive pins 112 and 114, the inner ends thereof being fixed to an outer brake shoe. Resilient and flexible means in the form of two springs 116 and 118 surround pins 112 and 114 and urge the outer brake shoe inwardly. The heads of the pins limit radial inward movement of the outer shoe.

The confrontable surfaces of a pair of shoes, for example, shoes 78 and 70, are designed so that outer shoe 78 will move into the pocket formed by the confronting surface of shoe 70.

The compression of the sixteen springs of the four pairs of shoes and the contour of the confronting surfaces of the stationary shoes and the movable shoes is such that, when the momentum of a wheel is decreased to substantially a certain value, it will continue to rotate until the moving shoes engage the stationary shoes. Thus, the stopping of the wheel is assured. At times the momentum of a wheel, upon engagement of shoes, is

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such that it continues to move the wheel beyond total alignment of the shoes. At that position, due to the contour of the confronting faces of the shoes and due to the rockable motion of the shoes, the rotation of the wheel will be reversed to the extent of perfect alignment of shoes and the sectors. Too, should the momentum of that wheel be expended at the time the shoes are in braking relationship, yet not fully aligned, the contour of the confronting surfaces of the four pairs of shoes and the four springs of each pair of shoes will continue the movement of the wheel until the sectors carried thereby are aligned with the sectors of an adjacent radially extending wheel or wheels.

Under certain circumstances, permanent magnets 122 and 124 are employed as substitutes for the contour functions of the confronting surfaces of the cooperating shoes, or as a supplement as shown in FIG. 4.

As a general rule, in playing a game utilizing the present amusement device, all wheels are turned independently of one another during the starting of the play. For that purpose, each of the wheels has a pin or, preferably, a plurality of pins 120 by which the player turns the wheels. Obviously, the highest number of points would be when all like indicia of the four wheels are aligned. Other values would be computed downwardly in the order of probable occurrence.

Having described my invention, I claim:

1. An amusement device comprising in combination:

- a support,
- a shaft fixed to said support,
- a plurality of radially disposed wheels rotatable carried by said shaft, and said wheels being rotatable independently of one another and having radially disposed display faces,
- said display faces being divided into a plurality of sections carrying distinctive indicia,
- braking means for each wheel for braking said wheels

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to a stop and aligning the then adjacent sections of said wheels into radial alignment,

said brake means comprising first brake shoes circumferentially fixed with respect to each of said wheels and having contoured surfaces,

a plurality of second brake shoes fixed to said support, one of said second brake shoes being in radial alignment with each of said first brake shoes when the indicia carrying sections are radially aligned, said second brake shoes having surfaces contoured for generally complementary engagement with said first brake shoes,

said first and second brake shoes being supported for guided biased radial movement into engagement with each other.

2. An amusement device as defined in claim 1 wherein:

said first and second brake shoes are resiliently biased toward one another.

3. An amusement device as defined in claim 2 wherein:

said brake shoes are guided toward one another by pins received in holes in a guide support.

4. An amusement device as defined in claim 3 wherein:

said holes in said guide support have sufficient clearance to permit a rocking rotation of said guide shoes,

said rocking rotation being about an axis which is parallel to the axis of said shaft.

5. An amusement device as in claim 2 wherein: the complementary contoured surfaces of said brake shoes comprise a concave and a convex surface.

6. An amusement device as defined in claim 5 further including:

magnets imbedded in the surface of said shoes in substantially the center thereof and with opposite poles facing.

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