Jan. 31, 1967 G. SICHERMAN 3,301,555

TUG OF WAR GAME APPARATUS

Filed Dec. 13, 1963

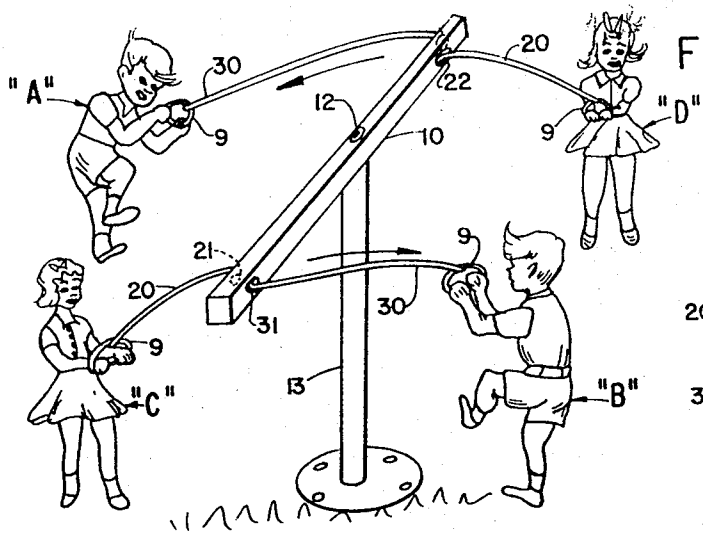


FIG. 1

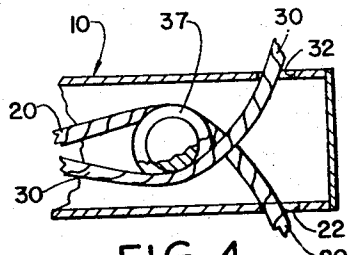


FIG. 4

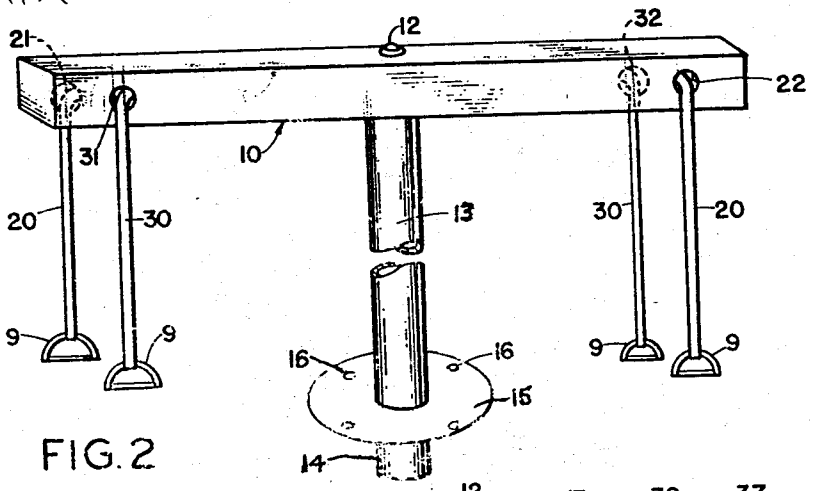


FIG. 2

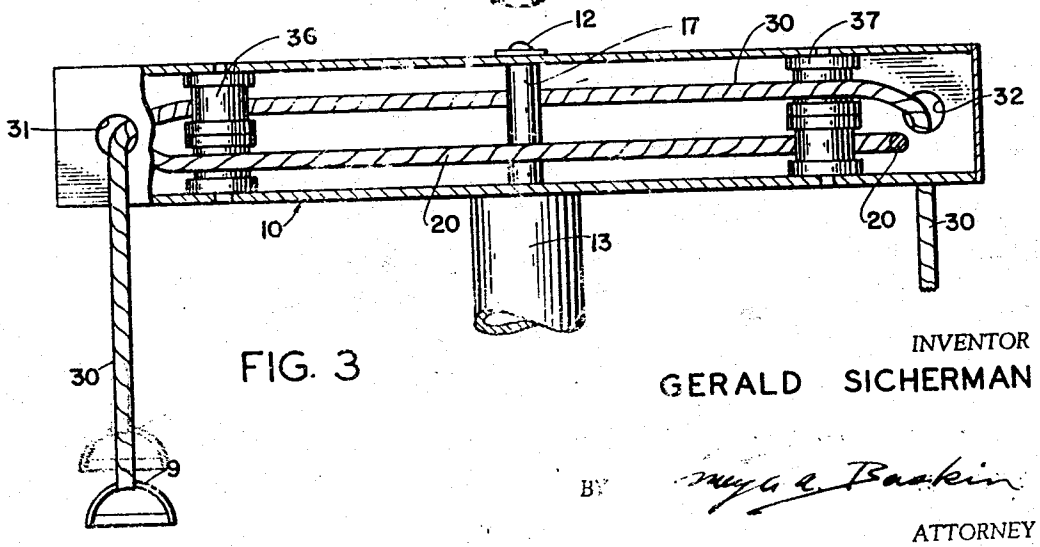


FIG. 3

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TUG OF WAR GAME APPARATUS

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This invention relates to a game and exercise mechanism and relates more particularly to improvements in apparatus for playing the game of "tug of war."

The game or contest, generally known as "tug of war," involves the use of a rope or its equivalent and is played by two or more opposing individuals each seeking to pull the other past a given point. Apparatus has been provided in the past for indicating the amount of straight pull progress and to indicate the distance of travel of the rope along a straight line.

It is an object of this invention to provide an improved and novel variation in the old well-known game and novel apparatus therefor.

The principal object is to provide playground type apparatus which is novel, sturdy in construction, easy to use, and which rotates about a central pivot point in the direction of the strongest pull or "tugging" effort.

Another object is to provide a "tug bar" apparatus which can be used in playing the game by two opposing players or by two pairs of opposing players as is desired.

A further object of this novel invention is to provide apparatus enclosing a pair of tugging ropes which includes a system of pulleys that transfer the straight line pulling force of the participants into a rotary motion which causes the "tug bar" to rotate about a central axis in the direction of the strongest pulling or "tugging" effort.

A still further object is to provide a tugging rope arranged around a system of pulleys contained within the "tug bar" housing in a manner to cause rotation of the "tug bar" in the direction of the strongest pulling force having a gripping handle fixed to each end of the single rope in a manner whereby one player can grasp the handle in his hand or hands on one side of the "tug bar" and a second player can grasp the opposing handle which is attached to the same rope in his hand or hands and so the players oppose each other by pulling or tugging on the rope against each other to cause the "tug bar" to rotate in the direction of the strongest pulling force.

Another object is to provide a pair of tugging ropes similarly arranged around the system of pulleys whereby opposing teams of two players each may grasp one of the gripping handles and achieve the same result as a team.

Further objects and advantages will be apparent from a reading of the following description in connection with the accompanying drawings disclosing this invention in which:

FIGURE 1 is a perspective diagrammatic illustration of the "tug bar" of this invention showing two opposing teams of two players each in their respective playing positions;

FIGURE 2 is a perspective side view of the "tug bar" of this invention shown mounted on its supporting central pivot post and showing the pull ropes and hand grips;

FIGURE 3 is an enlarged cross sectional side view of the "tug bar" showing the pair of pull ropes and the end pulleys about which they rotate and the central pivot member on which the "tug bar" is rotatably mounted; and

FIGURE 4 is an enlarged detail plan view of one end

of the "tug bar" illustrating the manner in which the ropes engage one of the pulleys.

Referring now to the drawings in detail in which like numerals designate like parts throughout the several views, the numeral **10** indicates, in general, the "tug bar" and the pedestal **13** upon which it is pivotally mounted.

In FIGURE 1 there is illustrated the situation wherein two opposing teams of two players each oppose each other. Player A is partner of player B, and oppose the team of players C and D as will be hereinafter described.

"Tug bar" **10** comprises an elongated hollow box-like structure, which may be made of wood, metal, fiber glass or any other desirable material, which is pivotally mounted at its exact center at **12** to the top of a post **13** which may be of metal, wood or any other desirable material.

If the "tug bar" apparatus is to be used outdoors, in a children's playground or public park, for example, the lower end **14** of the post **13** is mounted in a suitable manner such as a post hole in the ground which may be encased in concrete in a well-known manner for rigid support.

If the "tug bar" is to be used indoors, as in a gymnasium, or play room, the supporting post **13** may be fixed to the floor by means of a flange **15** of wide circumference having bolt holes **16** or in any other well-known manner.

The "tug bar" box **10** is pivoted at **12**, as has been described by means of a vertically extending axle rod or pin **17** which is fixed to the top of post **13**, as well shown in FIGURE 3, in a manner permitting "tug bar" box **10** to rotate in either direction depending on the pulling or tugging action of the players as will be hereinafter described.

A pair of ropes **20** and **30** are provided which extend through the hollow "tug bar" box **10**, see FIGURE 3 in particular.

Apertures **21** and **22** are provided near the opposite ends of box **10** and on the opposite vertical sides of the box to accommodate the passage of rope **20** through the box.

Apertures **31** and **32** are provided near the opposite ends of box **10** and on the opposite vertical sides of the box to accommodate the passage of rope **30** through the box **10**.

A vertically disposed double grooved pulley **36** is rotatably mounted in any suitable manner within the box **10** adjacent one end thereof and an identical vertically disposed rotatably mounted pulley **37** is suitably mounted adjacent the opposite end of box **10** as shown in the drawings.

Rope **30** is passed through side aperture **31** in box **10**, see FIGURE 3, and around the back side of the upper groove of pulley **36**, as viewed in said FIGURE 3, and rope **30** is further extended lengthwise through box **10** and around the near side of the upper groove of pulley **37**, as viewed in FIGURE 3, and on out through aperture **32** at the other end of box **10**. It is thus apparent that the rope **30** may be pulled from the right to left and from left to right through the "tug bar" box **10** by the tugging and pulling force exerted on the rope by the players.

This pulley and side hole arrangement transmits the direction of the pulling force applied to the rope by the players from a straight line to a rotary motion which will cause the "tug bar" **10** to rotate on its pivot point **12** and central shaft **17**, in the direction of the greatest applied force. It is readily apparent that as the rope **30** moves longitudinally in the "tug bar" box **10**, it will cause the pulley to be pulled toward its repsective

side hole because the far side of the pulley is opposite to the side hole and will direct the pulling force transversely crosswise of the "tug bar" **10** through the related side hole.

Rope **20** is passed through side aperture **21** and around the front side of the lower groove of pulley **36**, as shown in FIGURE 3, and rope **20** is further extended lengthwise through box **10** and around the back or far side of the lower groove of pulley **37** and on out through hole **22**, see FIGURES 1, 2 and 4, at the other end of box **10**. It is thus apparent that the rope **20** may be pulled back and forth lengthwise of box **10** by the tugging and pulling force exerted on rope **20** by the players to rotate towards them in the direction of the arrow.

Operation

If only two players oppose each other with the ropes passing around the pulleys **36** and **37** as shown in FIGURE 3, one player pulls on rope **20** and his opponent pulls on rope **30**. Handles **9** act as stops against the sides of box **10**.

If four contestants wish to play they form two teams of two players each. As illustrated in FIGURE 1, A's partner will be B and C's partner will be D. The team A and B will pull together using rope **30** as hereinbefore described attempting to cause a counterclockwise rotation of the "tug bar" box **10**. The opponent team C and D respectively will pull together using rope **20** attempting to cause a clockwise rotation of box **10**. The combined tugging force of each team of partners will thus be pitted against the other team. The "tug bar" **10** will be caused to rotate either clockwise or counter clockwise dependent on which team exerts the most tugging power.

The inventor contemplates an alternative arrangement of the ropes **20** and **30** respectively. By merely passing rope **20**, as viewed in FIGURE 3 particularly so that it passes on the front side of the lower half of roller **37**, in the same fashion as it passes the front side of roller **36**, a different pulling arrangement can be effected. That is to say, the players will assume different stations or positions in the playing of the game. In such a situation rope **30** would pass on the front side of the upper portion of roller **36** in the same fashion as that shown similar to the way it is shown passing the upper portion of roller **37** in FIGURE 3.

Thus it is contemplated that ropes **20** and **30** may be criss-crossed exactly as shown in the drawings in relation to pulleys **36** and **37** to obtain one effect, or each of the ropes **20** and **30** can be arranged on the same side of pulleys **36** and **37** respectively and require a different placement of the opponents, whether two or four participate, providing variety although the same fundamental "tug of war" game results.

It is to be understood that various changes may be made in the form, details, materials used, arrangement and proportions of the parts disclosed without departing from the scope of applicant's invention and modifications are contemplated in carrying out the objects set forth in this description.

The claims:

1. A tug of war game and exercise device including a vertical pedestal supporting means, an elongated horizontally disposed hollow housing member pivotally mounted for free rotation at its center on said pedestal, means for causing said elongated housing member to be rotated including a pair of pulling ropes, a pair of pulleys, one pulley being pivotally arranged at each end of said housing, a pair of apertures formed in opposite sides of the housing adjacent each pulley, one of said pulling ropes being inserted through one of said apertures and passed around in operative contact with one side of the first pulley nearest said aperture and extended lengthwise through the housing and passed around in operative contact with the opposite side of the pulley arranged at the other side of said housing, said rope being passed out of the housing through the aperture therein adjacent the second described pulley, the other pulling rope being inserted through the aperture formed in opposite side of the housing opposite the aperture through which the first rope was inserted into the housing, said second rope being passed around the opposite side of the first plIley to that of the first rope and extended lengthwise through the housing crisscrossing the first described rope within the housing and passing in operative contact with the opposite side of the second pulley to that on which the first rope contacted said second pulley, said second rope being passed out of the housing through the aperture adjacent the second pulley and on the opposite side of the housing through which the first rope was passed out of the housing.

2. A tug of war game device as described in claim **1** in which each of the rope actuated pulleys is divided centrally by a flange adapted to separate the two ropes in their respective horizontal planes.

3. A tug of war game device as described in claim **1** wherein grip handles are provided at ends of each rope.

4. A tug of war game device as described in claim **1** including a radially outwardly extending flange secured to said pedestal supporting means adjacent its lower end, and a plurality of bolt holes formed through said flange.

5. A tug of war game device as described in claim **1** in which each of the pair of ropes run parallel to the other and bear on the same sides of the respective pulleys.

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