

Sept. 28, 1937.

R. HEIMERS

2,094,536

BALL GAME

Filed Aug. 7, 1934

3 Sheets-Sheet 1

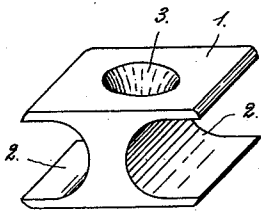


Fig. 1.

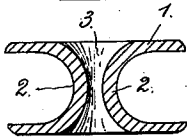


Fig. 2.

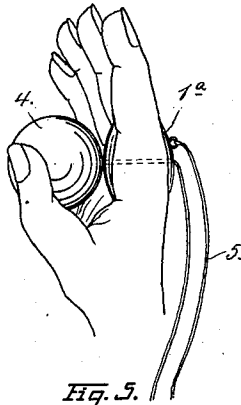


Fig. 5.

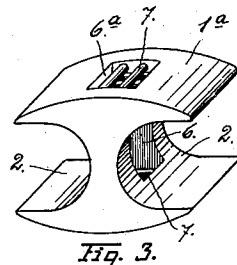


Fig. 3.

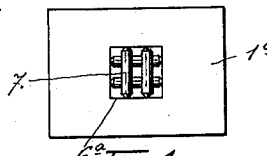


Fig. 4.

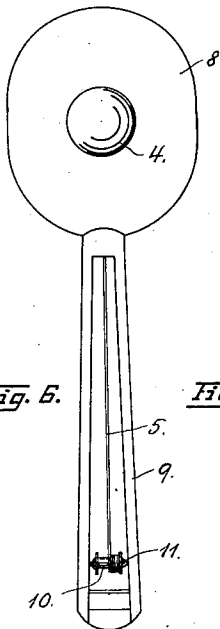


Fig. 6.

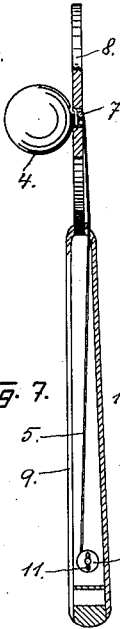


Fig. 7.

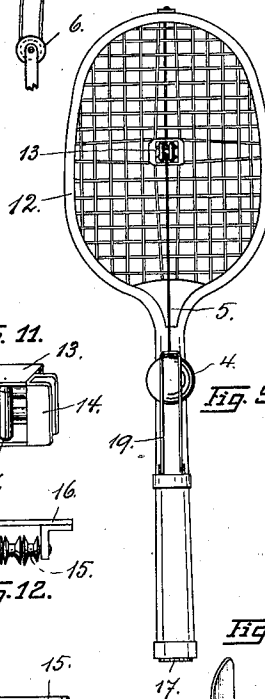


Fig. 9.

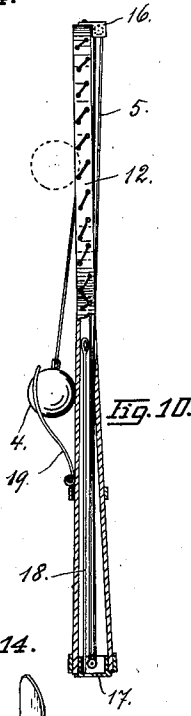


Fig. 10.

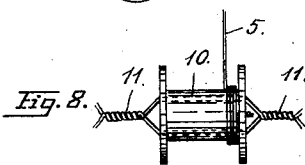


Fig. 8.

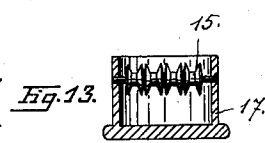


Fig. 13.

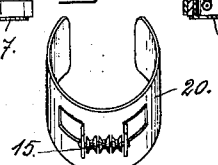


Fig. 14.

Inventor:

RUDOLF HEIMERS,

Carl A. Hellmann,
ATTORNEY.

Sept. 28, 1937.

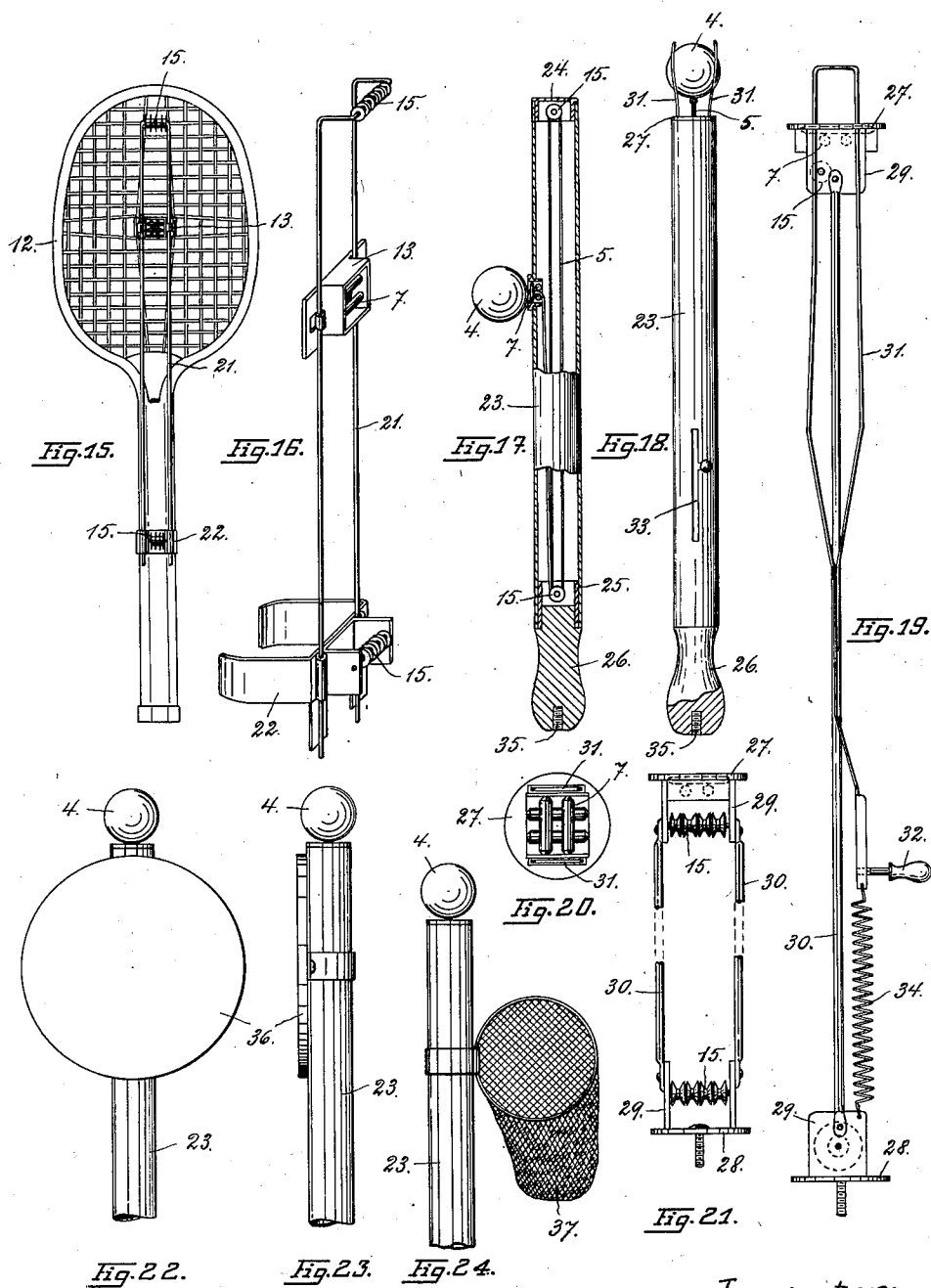
R. HEIMERS

2,094,536

BALL GAME

Filed Aug. 7, 1934

3 Sheets-Sheet 2



Inventor:
RUDOLF HEIMERS,

Carl A. Hellmann,
ATTORNEY.

Sept. 28, 1937.

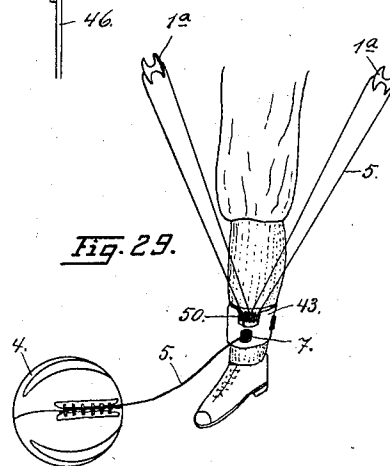
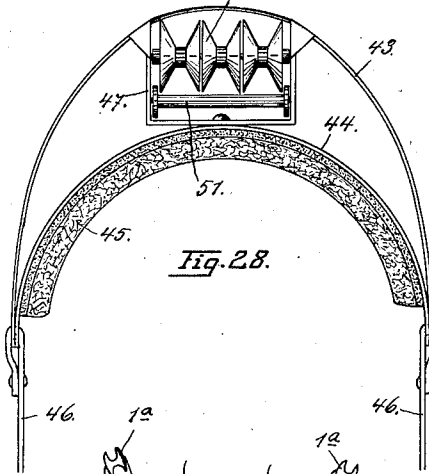
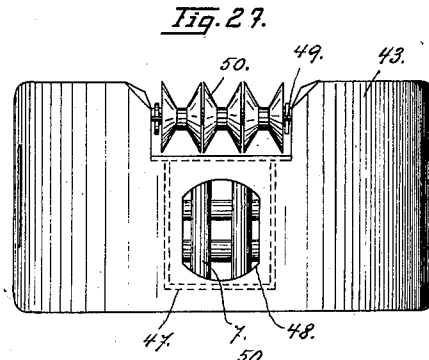
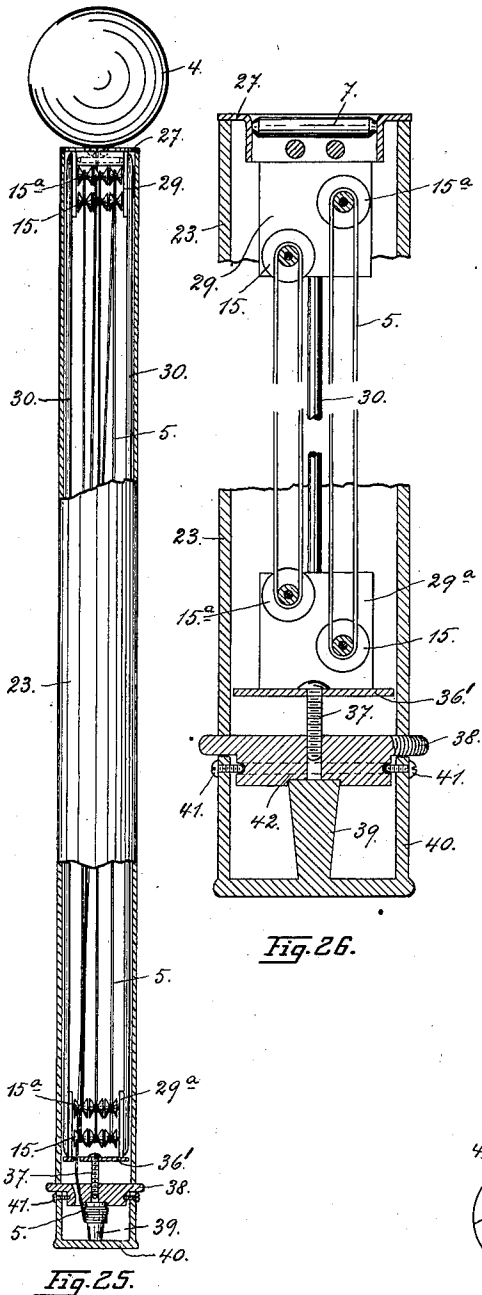
R. HEIMERS

2,094,536

BALL GAME

Filed Aug. 7, 1934

3 Sheets-Sheet 3



Inventor:
RUDOLF HEIMERS,
Carl A. Hellmann,
ATTORNEY.

UNITED STATES PATENT OFFICE

2,094,536

BALL GAME

Rudolf Heimers, Mexico, D. F., Mexico

Application August 7, 1934, Serial No. 738,876
In Mexico August 11, 1933

4 Claims. (Cl. 273—97)

The invention relates to ball games, and more especially to games in which the ball is attached to an elastic string and after being thrown returns automatically towards the throwing or striking surface. The new feature of the invention consists in passing the elastic string through friction-reducing means provided in the striking or throwing surface, and in using a longer elastic, so as to enable the player to throw the ball at a much greater distance with the same ease than with a shorter elastic.

The invention has for its object to provide means whereby the length of the elastic may be adapted to the skill of the player, so that the ball may either remain separated for a greater or lesser distance from the striking or throwing surface after it has returned through the contraction of the elastic, or may be forced to return completely into contact with said surface, whichever may be the length of the elastic or the force with which the ball was thrown, but always permitting the ball to be thrown at a much greater distance due to the greater length of the elastic string.

The features of the invention comprising friction-reducing means located in the striking or throwing surface for enabling the elastic string to pass without excessive friction, and means for attaching a long elastic to the body of the player or housing it in the throwing implement itself, it will be readily understood that these features may be applied to a variety of differently shaped throwing devices, such as bats, rackets, palettes and others, providing a great diversity of games based on the same principle.

In the accompanying drawings, in which several preferred embodiments of the invention are shown:

Figure 1 shows a simple device to be held between the fingers for throwing the ball, having a friction-reducing opening.

Figure 2 is a cross-section through the device shown in Figure 1.

Figure 3 is a similar device, also to be held between the fingers, provided with improved friction-reducing means.

Figure 4 is a top view of the device shown in Figure 3.

Figure 5 shows how either one of these devices is held in the hand and how the elastic is attached to a part of the body.

Figure 6 is a front view of a palette with the elastic rolled upon a wheel with twisted axle.

Figure 7 is a transversal vertical cross-section of the device shown in Figure 6.

Figure 8 is a detailed view of the wheel with twisted axle.

Figure 9 shows a tennis racket provided with a friction-reducing attachment and with the elastic housed in the handle.

Figure 10 is a side view of the racket, with the handle shown in cross-section.

Figure 11 is a detailed view of the detachable friction-reducing attachment.

Figure 12 shows the bracket with wheels attached for the top of the racket.

Figure 13 is a sectional view of the hollow cover with wheels entering the lower extremity of the racket handle.

Figure 14 shows an outer attachment for the handle with wheels around which the elastic is wound.

Figure 15 is a back view of another tennis racket with a detachable frame holding the wheels and the friction-reducing device.

Figure 16 is a detailed view of this frame.

Figure 17 shows a tubular bat with the friction-reducing device on one side and the elastic housed within.

Figure 18 shows a different type of tubular bat, with the ball bearing against the top.

Figure 19 shows the inside mechanism of the bat illustrated in Figure 18.

Figure 20 is a view of the top of said bat.

Figure 21 shows the inner top and bottom wheels of said bat.

Figure 22 shows the bat provided with a circular striking surface.

Figure 23 is a side view of the device shown in Figure 22.

Figure 24 shows the same bat provided with a catching net.

Figure 25 shows another tubular bat with winding mechanism for shortening the elastic.

Figure 26 is a detailed view, in cross-section, of the upper and lower ends of the bat shown in Figure 25.

Figure 27 is a front view of a device for playing football with the ball attached to an elastic.

Figure 28 is a top view of the device represented in Figure 27.

Figure 29 shows the football device attached to the leg and the elastic passing through holders of the type shown in Figure 3.

In its simplest embodiment, the device for throwing the ball consists in a relatively thick square piece of wood, metal or other material (1), Figure 1, with two lateral recesses 2 permitting it to be held between two fingers of the throwing hand, as shown in Figure 5. Through

the center of the holder 1 passes a hole 3 flaring towards both sides. The ball 4, attached to a round elastic 5, is held in the hand, preliminary to being thrown, with the elastic 5 passing through the hole 3 and the extremity of said elastic fastened to the back of the holder 1. The elastic 5 is relatively long and passes around a wheel or roller 6 which may be attached to the upper arm or to any other part of the body so as to take up the slack. Several rollers 6 may also be used, one for instance attached to a leg and the other to an arm, so as to provide a greater length of elastic and permit the ball to be thrown for a greater distance. The shape of the hole 3 reduces the friction of the elastic on passing through it when the ball is thrown and when it returns. Several yards of elastic may be used with this device and the ball thrown to a distance of approximately six times the length of said elastic.

Figures 3 and 4 show a similar type of holder 1^a, having a square hole through it. At both extremities of said hole is provided an improved friction-reducing device comprising two pairs of rollers 7, with one pair placed at right angle to the other, said rollers turning on conical points entering the sides of the hole 6 or of a separate casing introduced into said hole. As the elastic 5 passes through the central opening of said pairs of rollers, the friction is greatly reduced by the revolving rollers.

The following devices to be described all make use of the friction-reducing rollers 7 and of some means either attached to the device or housed therein, for permitting the use of a long elastic.

In the device shown in Figures 6 and 7, an oval board 8 is attached to a hollow handle 9. The friction-reducing rollers 7 are located within the center of the board 8 and the elastic 5, attached to the ball 4, passes back of the board 8 into the handle 9 and is wound around a spool 10 provided in the lower part of said handle. The spool 10 has two elastic strings 11 passing through it (Figure 8) which are already twisted to keep the elastic stretched and which twist themselves more tightly as the elastic is unwound from the spool, rotating therefore in an opposite direction the spool on which the elastic winds itself as the ball returns after having been thrown by the board 8.

Figures 9, 10 and 15 show the friction-reducing rollers 7 attached to a tennis racket 12. The rollers 7 are housed in a casing 13 (Figure 11) provided on opposite sides with U-shaped channels 14 into which enter two of the central strings of the racket. The elastic 5 passes between said rollers 7 to the back of the racket, and from there is led upward and downward in several turns around two sets of wheels or rollers 15, the upper set of which is fixed to a bracket 16 attached to the upper part of the racket, and the lower set is placed on a transversal axle in a hollow cover 17 which closes the open lower extremity of the hollow racket handle. A wire 18 having an upper eye is also secured with its lower extremity inside of said cover 17 and serves to pull the end of the elastic through the handle when a new string is being inserted. The ball 4 may be held against the handle of the racket by a spring 19 when the racket is to be used for playing with a free ball, but may be instantly released when it is desired to use the ball attached to the elastic.

Figure 14 shows a spring clip bracket 20 carrying the lower set of rollers 15, which may be slipped on the handle of a racket instead of using the hollow handle shown in Figure 10. The two attachments 7 and 20 may therefore be used on

any tennis racket for practice purposes, and the only other attachment 16 for the upper set of rollers 15 may be held by a thumbnut or other detachable means, the relatively great length of the elastic stretched between the rollers 15 being sufficient for permitting the ball to be thrown a great distance and at different angles.

In Figure 15, the upper rollers 15 are placed on the upper part of a wire frame 21 to which are also slidably attached the casing 13 for the friction reducing rollers 7 and a bracket 22 similar to bracket 20 and supporting the lower set of rollers 15. This frame is held in place by the bracket 22 and the casing 13, and may also be attached to any tennis racket and taken off at will.

Figures 17, 18, 22, 23, 24 and 25 represent bats containing the friction-reducing device and rollers for holding the turns of a relatively great length of elastic. The bat shown in Figure 17 comprises a tube 23, with the friction rollers 7 disposed in one side of the tube, towards its upper extremity. The elastic 5 passes around two sets of rollers or spools 15, one placed in the hollow top cover 24 and the other held in a short tube 25 attached to the handle 26 and entering the tube 23, permitting the whole device to be taken apart for inserting the elastic.

Figure 18 shows a similar tube 23 with the friction-reducing rollers 7 placed in a cover 27 closing the top of the tube, and the handle 26 screwed to the lower cover 28 bearing against the lower extremity of the tube 23. Both covers 27 and 28 have inwardly extending brackets 29, united by stiff wires 30. The two sets of rollers 15 extend between the upper and lower brackets 29. Two bent wires 31 pass through slots in the cover 27 when pushed upward by means of a small handle 32 extending through a longitudinal slot 33 in the tube 23, against the tension of a spring 34, and serve to grip the ball 4 between them, preliminary to throwing it, or for picking it up from the ground. The spring arms formed by the wires 31 are held in an outside position by turning the handle 32 into a transversal slot opening into the slot 33. When it is desired to release the spring arms 31, the handle 32 is turned around and the spring 34 pulls them down into the tube 23. The handle 26 of all the bats described may be provided at its outer extremity with a threaded hole 35 permitting it to be screwed horizontally or vertically to the wall or to the ceiling, so that the ball 4 may hang down on the elastic 5 and be struck by another bat, for practice purposes. To the bat may be attached a round striking board 36, as shown in Figures 22 and 23, or a catching net 37, as in Figure 24, for playing variations of the ball game.

The bat illustrated in Figures 25 and 26 is provided with means whereby the elastic may be shortened or lengthened as desired. The outer tube 23 is closed at the top by a disc or cover 27 from which extend downwardly two brackets 29 supporting the axles of two sets of rollers 15 and 15^a. The brackets 29 are connected by wires 30 with other brackets 29^a fastened to a disc 36' of a diameter smaller than the inside of the tube 23, said brackets 29^a supporting the axles of another two sets of rollers 15 and 15^a. Through the lower disc 36' passes a screw 37 which enters into a circular cover 38 closing the lower extremity of the tube 23. By turning this cover, the screw 37 pulls the disc 36 and with it the wires 30 and the upper cover 27 downwardly, fitting the upper cover 27 tightly against the tube 23. The elastic 5 attached to the ball 4 passes first through

the friction-reducing rollers 7 located in the upper cover 27, and from there is led back and forth around the upper and lower rollers 15 and 15^a, as shown in Figure 25, and finally passes through a hole in the circular cover 38 and is wound on a conical shaft 39 fastened parallel with the axis of the bat inside of a second hollow cover 40 surrounding a projecting ring of the cover 38 and being held thereto by screws 41 entering a circular groove 42 in said ring. By turning therefore the outer cover 40, the elastic is stretched or its slack is taken up by being wound on the shaft 39, and by turning it in an opposite direction, the elastic is lengthened or its stretch lessened, according to the tension it is desired to give to the elastic. The same bat may further be provided with the ball gripping arms 31 shown in Figure 19.

Finally, Figures 27 and 28 show a device adapted to be attached to the leg of the player and enabling him to play football with a ball attached to an elastic. This device comprises a curved front metal plate 43 and another less curved back plate 44 connected with the front plate along its edges, the curve of the back plate 44 being such that it fits the front part of the leg, above the ankle. The inside of the plate 44 is preferably cushioned with felt or leather 45, and two straps 46 attach it to the leg. In the space between the plates 43 and 44, towards the front, is placed a box or casing 47 containing the friction-reducing rollers 7, back of an opening 48 in the front plate 43, and above these rollers, in a recessed portion of the plate 43, is placed the shaft 49 carrying the rollers 50. Back of these rollers there is a rotating shaft or long roller 51 preventing the elastic from leaving the grooves of the wheels 50.

The elastic 5 attached to the ball 4 passes through the central opening of the rollers 7 and is led upwardly, preferably into one of the holders 1 or 1^a shown in Figures 1 and 3 and held in one hand of the player. From there it passes around one of the wheels 50, is led upward again into a second holder 1 or 1^a held in the other hand of the player, and from there back again to the third wheel 50, where its extremity is attached. This provides a sufficiently great length of elastic to enable the ball to be kicked to a

considerable distance, and its return may be hastened by raising the arms and stretching thereby the elastic. It is also possible to pass the elastic through rollers 6 (Figure 5) fastened to any part of the body, so as to leave the hands free.

In order to overcome the frictional resistance increasing towards the last turns of the elastic and which impedes its quick and complete contraction, said elastic may preferably be made gradually thicker towards its end, or the elastic may only be made thicker in its last turns.

What I claim is:

1. A ball game, comprising a tubular batting member, friction-reducing means provided in the wall of said member, a ball, an elastic attached to said ball, and passing through said friction-reducing means into said tubular member, and rotatable means housed within said tubular member for winding upon them a relatively great length of said elastic.

2. A ball game, comprising a tubular bat, an upper cover closing said bat, friction-reducing means mounted in said cover, a ball, an elastic attached to said ball and passing through said friction-reducing means, rollers provided within and at the ends of said tubular bat, said elastic passing around said rollers in a plurality of turns, and retractable arms protruding from said upper cover for gripping the ball.

3. A ball game, comprising a tubular batting member, friction-reducing means including pairs of crossed rollers provided in the top of said tubular member, a ball, an elastic attached to said ball and passing through said friction-reducing means, a frame housed within said tubular member and supporting upper and lower sets of rollers, said elastic passing around said upper and lower rollers.

4. A ball game, comprising a tubular batting member, friction-reducing means provided in said member, a ball, an elastic attached to said ball, and passing through said friction-reducing means into said tubular member, and rotatable means housed within said tubular member for winding upon them a relatively great length of said elastic.

RUDOLF HEIMERS.