June 23, 1931. A. G. BENETATOS 1,811,532

SKATE

Filed March 17, 1930 2 Sheets-Sheet 1

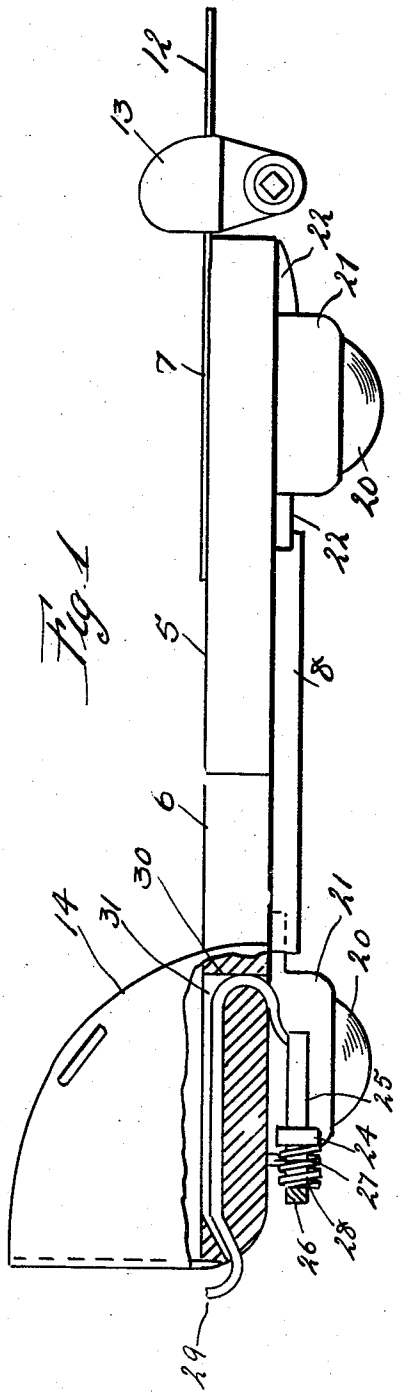


Fig. 1

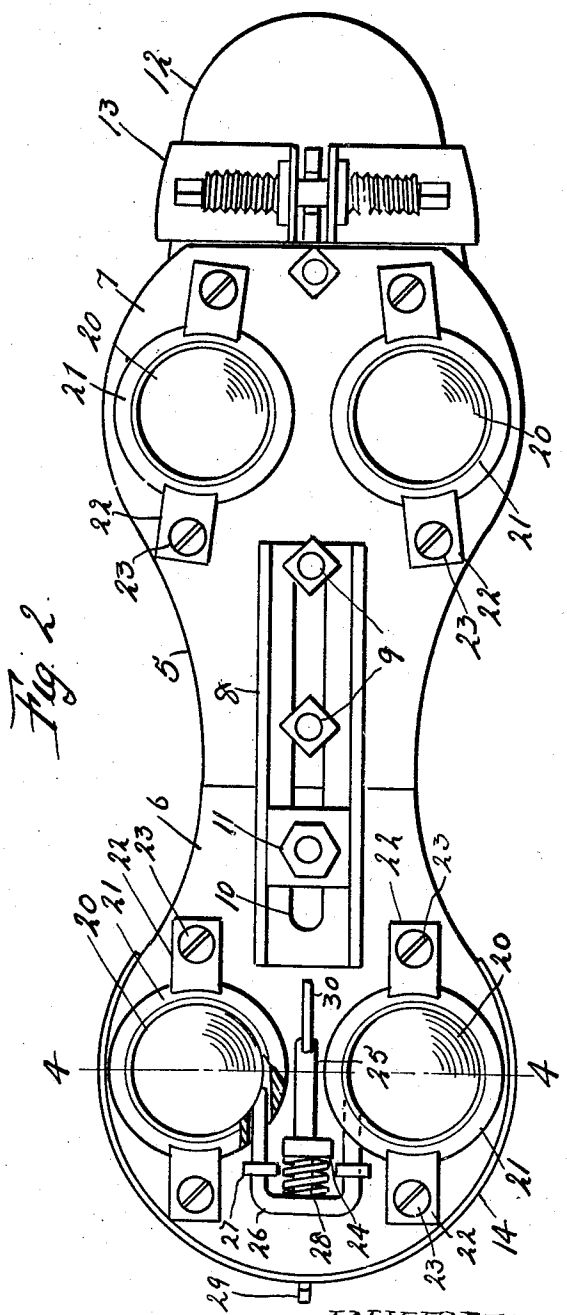


Fig. 2

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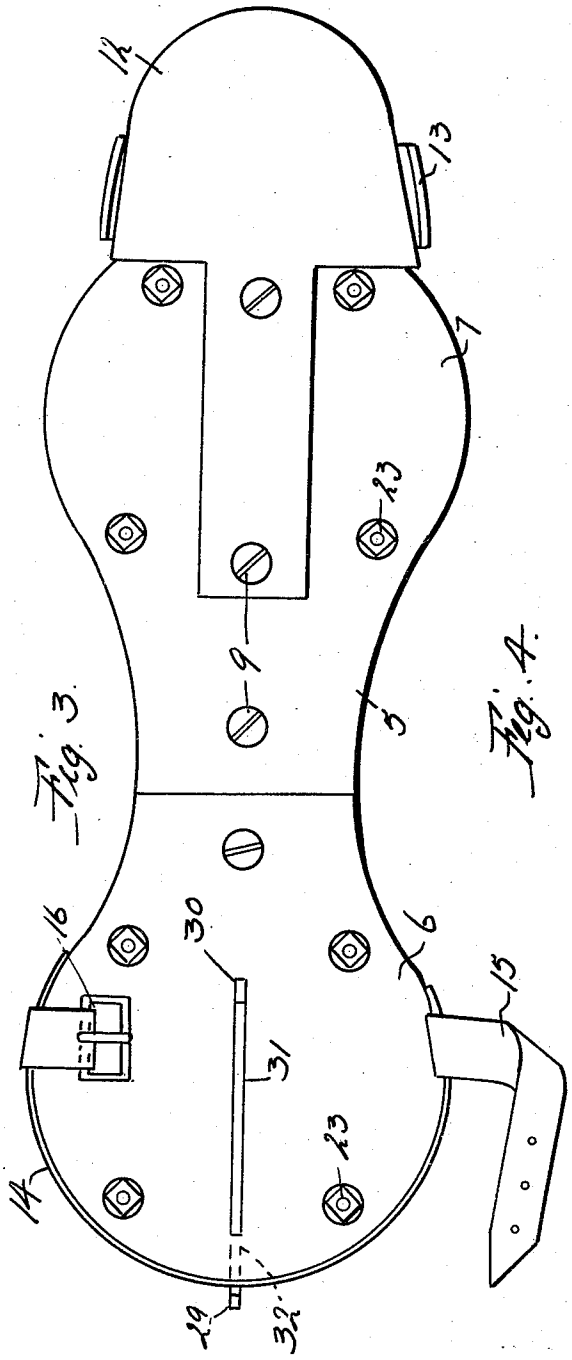


Fig. 3.

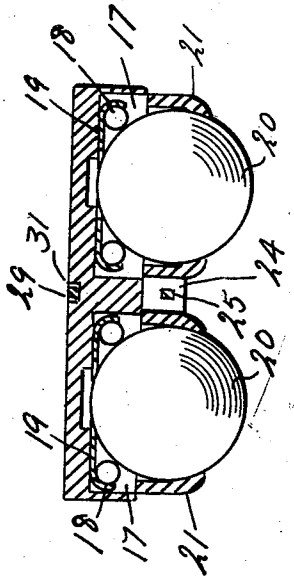


Fig. 4.

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Patented June 23, 1931 1,811,532

UNITED STATES PATENT OFFICE

ANDREW G. BENETATOS, OF NEW YORK, N. Y.

SKATE

Application filed March 17, 1930. Serial No. 436,358.

My invention relates to new and useful improvements in a skate, and more particularly to that class of skates generally known as roller skates and one of the objects of the present invention is to provide balls as the movable elements in place of the usual rollers or wheels.

Another object of the invention is to provide a skate including a foot receiving portion carrying sockets on the under side to hold relatively large balls which bear against anti-friction devices or ball bearings whereby the supporting balls may be allowed to freely revolve when in contact with a surface over which the user of the skate is traveling.

A further object of the invention is to provide simple brake means which may be actuated by the person using the skate to stop the same when necessary.

A still further object of the invention is to generally improve the construction of a device of this kind.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail, referring by numerals to the accompanying drawings, in which:—

Fig. 1, is a side elevation of a skate constructed in accordance with my invention, a portion of the rear end being broken away and shown in section to illustrate a detail of construction and the holding strap being removed.

Fig. 2, is a bottom plan view thereof.

Fig. 3, is a top plan view of the same with the brake operating member removed.

Fig. 4, is a section on the line 4—4 of Fig. 2.

In carrying out the invention as herein embodied, 5 represents the foot piece or the foot receiving part of the skate, preferably having the outline of a foot or shoe and also preferably formed in two pieces, one being the heel section 6 and the other the toe section 7. These two sections are adjustably connected together by a plate 8 secured to one of the sections, as the section 7 by suitable fastening devices 9 and projecting beyond the meeting edge of said section 7 so as to overlap the heel section 6, said plate being provided with a slot 10 for registration with a fastening device 11, such as a bolt and nut so that said nut may be loosened and after the desired adjustment has been obtained, the nut is again screwed home to maintain the adjustment.

The toe section 7 may also have an extension 12 of much thinner material than that used in the sections 6 and 7 and said extension carries a suitable clamp structure 13 to clamp the skate on the sole of a shoe. The heel section 6 is provided with an upstanding flange 14 of leather, metal or other suitable material so as to form a pocket or compartment to receive the heel of the shoe and to hold the heel of the shoe in proper relation to the skate. Such a strap 15 and its buckle 16 are carried by the flange and are adapted to pass around the instep of the user.

In the under face of the foot portion or more particularly the sections 6 and 7 thereof are formed recesses 17 preferably arranged in pairs transversely of their respective sections and within these recesses are mounted the anti-friction devices or bearing balls 18 contained within ball races 19 and against said anti-friction devices or bearing balls rest the supporting balls 20 which are relatively large. The supporting balls are held in place by socket members 21 or collars having the inner surfaces of their walls inclined or tapered so that the internal diameter of said socket members at their outer or lower ends are smaller than the greatest diameter of the supporting balls and therefore prevent displacement of said supporting balls. The socket members are provided with arms 22 through which fastening devices 23 are passed and projecting into the foot portion of the sections of the skate to hold the socket member in place.

On the under side of the foot portion of the skate and more particularly the heel section 6 of the foot portion and in proximity to the

supporting balls at the rear of the skate is a bearing 24 for the brake rod 25. To one end of this brake rod is secured the U-shaped brake member 26, the arms of which are slidably mounted in bearings 27, one on each side and preferably slightly to the rear of the bearing 24 and projecting through the retaining collars for the rear supporting balls so that under certain conditions, the ends of said arms may be moved into contact with said rear supporting balls for slackening their speed of rotation and finally bring into a stand-still. The brake member is normally held out of contact with the supporting balls by a spring 28 which is coiled about the brake rod 25 with one end engaging the bearing 24, as the stationary element and the other end engaging the brake member, as the movable element. The brake may be actuated against the action of the spring 28 by a suitable flexible pull member 29 having one end attached to the end of the brake rod 25 opposite the brake member and then passing through a hole 30 in the foot piece of the skate and then through a groove 31 in the upper face of the foot piece and finally out through a rear hole 32 to the back of the skate and this pull should be of sufficient length that the person using the skates may readily grasp the same for use whenever necessary. For instance the ordinarily free end thereof might be tied to the belt of the skate user.

In practice, a pair of skates made in this manner are used somewhat similar to ordinary roller skates but because of the relatively small contact surface of the supporting balls with the surface over which a person is traveling there is likely to be less friction and therefore it is possible for the user to make greater speed than where rollers are used.

Of couse I do not wish to be limited to the exact details of construction as herein shown, as these may be varied within the limits of the appended claims without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is:—

1. A skate consisting of a foot piece, socket members mounted on the outer surface of said foot piece, supporting balls retained by said sockets, and anti-friction devices carried by the foot piece and engaged by the supporting balls.

2. The structure set forth in claim 1 in combination with a manually operated brake coacting with the supporting balls.

3. A skate consisting of two main sections coacting to provide a foot piece, means to adjustably connect said sections, each of said sections having a pair of recesses formed in their under faces, bearing balls located within said recesses, supporting balls engaging the bearing balls, socket forming collars partially surrounding the supporting balls to prevent accidental displacement of said supporting balls, arms carried by said collars, and fastening means passing through said arms and into the sections of the foot piece.

4. The structure set forth in claim 3 in combination with bearings depending from the under side of the heel section of the foot piece, adjacent the supporting balls thereon, a brake rod slidably mounted in one of the bearings, a U-shaped brake member carried by one end of said brake rod and suitably mounted in the other bearings and projecting through the adjacent socket collars for coaction with the supporting balls in said collars, a spring normally maintaining the brake out of contact with the supporting balls and a pull secured to the opposite end of the brake rod and passing through a hole in the heel section of the foot piece and then through a groove in the upper surface and finally out through a hole in the rear of the heel section for actuating the brake against the action of the spring.

5. In a skate, a foot piece having recesses in its under face, bearing races mounted in said recesses, bearing balls in said races, supporting balls having portions projecting into the recesses for engagement with the bearing balls and socket collars having internal diameters at their outer ends smaller than the greatest diameters of the supporting balls and partially surrounding said supporting balls and fixed to the foot piece to prevent accidental displacement of the supporting balls.

6. In a skate including balls as the supporting means, a brake slidably mounted on the skate for co-operation with a ball, means to normally maintain the brake in an inoperative position, and means whereby said brake may be moved manually into an operative position against the action of the spring.

In testimony whereof, I have hereunto affixed my signature:

ANDREW G. BENETATOS.