May 4, 1926. 1,583,114

A. S. BIERLY

SKATE

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Fig. 1.

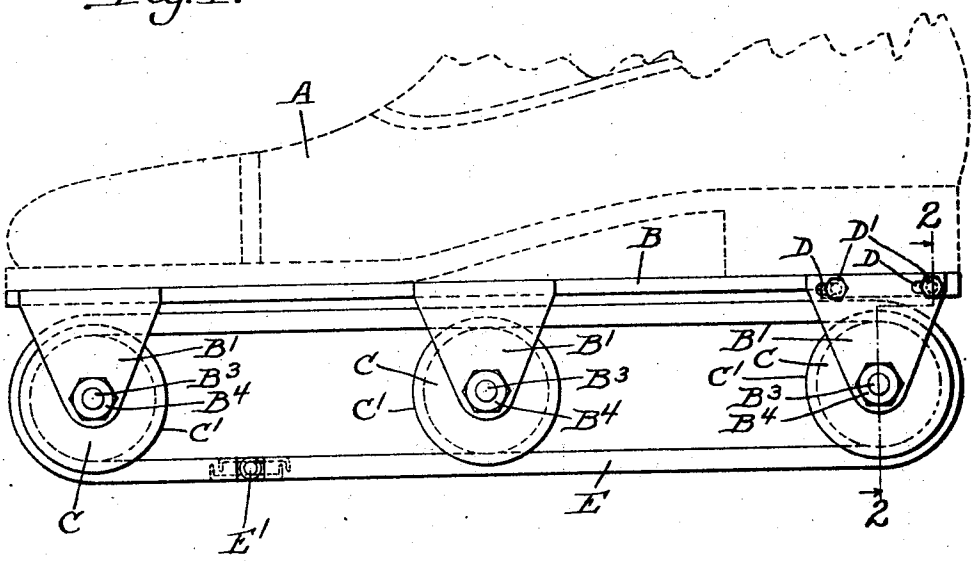


Fig. 3.

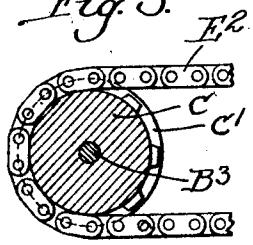


Fig. 2.

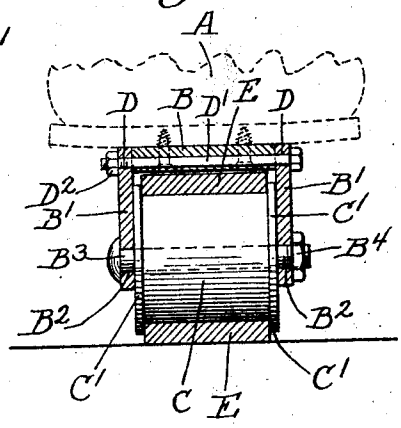
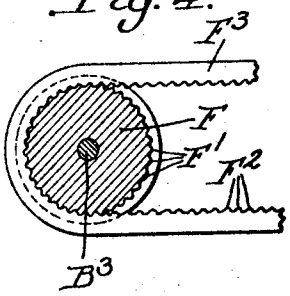


Fig. 4.



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Fig. 5.

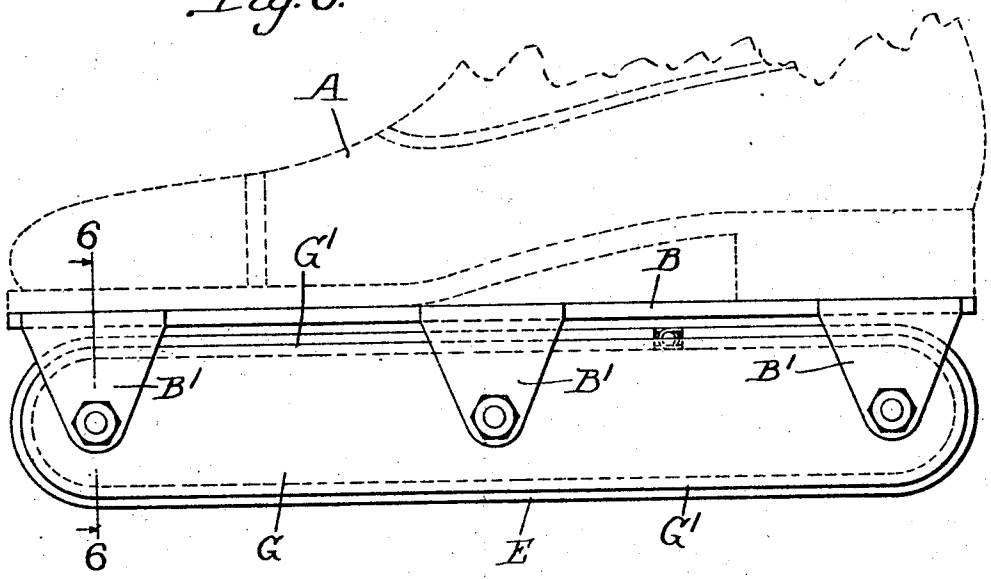


Fig. 6.

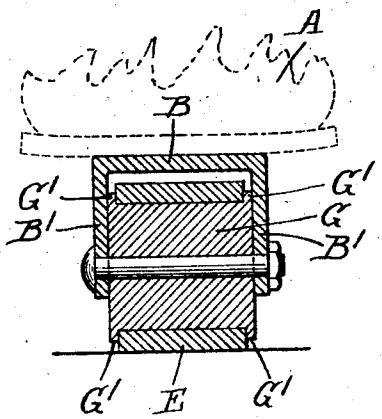
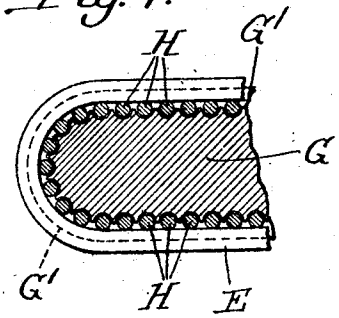


Fig. 7.



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Patented May 4, 1926. 1,583,114

UNITED STATES PATENT OFFICE.

ALBERT S. BIERLY, OF CHICAGO, ILLINOIS.

SKATE.

Application filed May 18, 1922. Serial No. 561,846.

To all whom it may concern:

Be it known that I, ALBERT S. BIERLY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Skates, of which the following is a specification.

My invention relates to an improvement in roller skates and particularly to a roller skate in which the caterpillar traction principle is employed. Other purposes will appear from time to time in the course of the specification and claims. I illustrate my invention more or less diagrammatically in the following drawings, wherein:

Fig. 1 is a side elevation of my invention;

Fig. 2 is a section on the line 2 2 of Fig. 1;

Fig. 3 is a detail section of a variant form;

Fig. 4 is a similar section of another variant form;

Fig. 5 is a view similar to Fig. 1 of a form in which the belt rides on a continuous track;

Fig. 6 is a section on the line 6 6 of Fig. 5 and

Fig. 7 is a detail section of a variation of the structure of Fig. 5.

Like parts are indicated by like letters and numbers throughout the drawings.

A is a diagrammatic illustration of a shoe, secured to the sole and heel of which is the skate plate B from the sides of which depends the ears B′, perforated as at B^2 to receive pins or bolts B^3 which are secured in place, for example, by the nuts B^4.

Rotating on the pins B^3 are rollers C which may be of any suitable material, such as hard wood or hollow metal, and are preferably provided with flanges C′ at each end. Obviously any form of roller bearing might be used, such as are now constantly in use in the manufacture of roller skates, and the flanges may be dispensed with.

One pair of ears, preferably the rear one is mounted for longitudinal adjustment along the skate plate. Any suitable form of adjustment may be used, but I illustrate the ear as perforated near the top by a slot or slots D through which pass bolts or pins D′ which may be tightened, for example by the nuts D^2 to secure the ears against motion along the skate plate, if desired, the opposed surfaces of skate plate and ear may be corrugated.

Obviously the pair of ears might be joined at their upper ends by a small plate adjustable along the main skate plate, and the form illustrated is merely diagrammatic.

Mounted to ride about the rollers is the belt E, which is illustrated in Fig. 1 as a smooth belt secured in the usual manner as at E′ by any suitable belt fastener. If desired, a leather link belt E^2, such as shown in Figure 3, may be substituted.

I have illustrated the rollers as smooth surfaced and in general a smooth surfaced roller is thoroughly satisfactory, but under some circumstances it may be desirable to corrugate the roller and make it virtually a sprocket. Therefore I illustrate in Figure 4 a roller F with the peripheral corrugations, F′ adapted to engage similar corrugations F^2 on the belt F^3.

In Figure 5 and following, a form of skate is shown wherein the belt instead of being mounted to ride about the rollers, is mounted on a continuous, preferably smooth, track G, and may, if desired, be provided with a flange G′ about each edge thereof. The track member is secured to the skate plate by downwardly depending ears and bolts such as have already been described. It may in some cases be desirable to provide the smooth track surface with ball or roller bearings such as are shown at H in Figure 7, which may be mounted in any suitable way in the track surface, in order to reduce the friction of the belt on the track to a minimum.

It will be realized that while I have illustrated an operative device, the description and drawings are to be taken as in a large sense diagrammatic. In particular, two rollers may be used on a short or child's skate, and any suitable number may be used on a larger skate, the strength and elasticity of the plate, and the weight of the user being the controlling factors.

Obviously any type or material of belt may be used or, if desired, a plurality of

parallel belts, in order to extend the bearing surface. Similarly a plurality of non-rotating members may be used as belt guides and supports, in the place of the single track or the plurality of rollers.

The use and operations of my invention are as follows:

I provide a skate plate which may be screwed directly to the sole of the shoe or may be strapped or bolted to it in any manner now used for attaching roller skates. Mounted beneath this plate are two or more rollers of any suitable material, such as hard wood or hollow metal, the wear to which the rollers are exposed being relatively slight. About these rollers passes a belt which is held against side slipping by flanges on the rollers. This belt operates like the belt or track of a caterpillar tractor, passing around the rollers and serving as the track or surface on which they rest.

In the variant forms described, the rollers may be replaced by a plurality of non-rotating supports or by the continuous track shown in Figure 5.

When a skate of this type is used it is possible to skate over a relatively rough surface without inconvenience, the belt serving at once as a cushion and as a distributor of the weight of the foot over a relatively large area. The result is a reduction of the jolts and jars of the ordinary roller skate and it is possible to skate smoothly over a relatively broken surface.

The belt is easily tightened by the adjustment of the rear roller and it is easily removed for repair or replacement when necessary. For a long skate the intermediate roller or rollers furnish additional support and ease the strain on the belt. The belt will not stretch to the same degree on the continuous track form, but it also may be made adjustable as to length if desired.

I claim:

1. As a new article of manufacture, a skate comprising a foot supporting member, a plurality of elongate rollers positioned therebeneath and longitudinally spaced therealong, and a broad endless tractor belt of relatively flexible material passing about said rollers.

2. As a new article of manufacture, a skate comprising a foot supporting member, a plurality of elongate rollers positioned therebeneath and longitudinally spaced therealong, and a broad endless tractor belt of relatively flexible material passing about said rollers, and means for adjusting the tension of said belt comprising means for adjusting the distance between the axes of rotation of said rollers.

Signed at Chicago, county of Cook and State of Illinois, this 13th day of May, 1922.

ALBERT S. BIERLY.