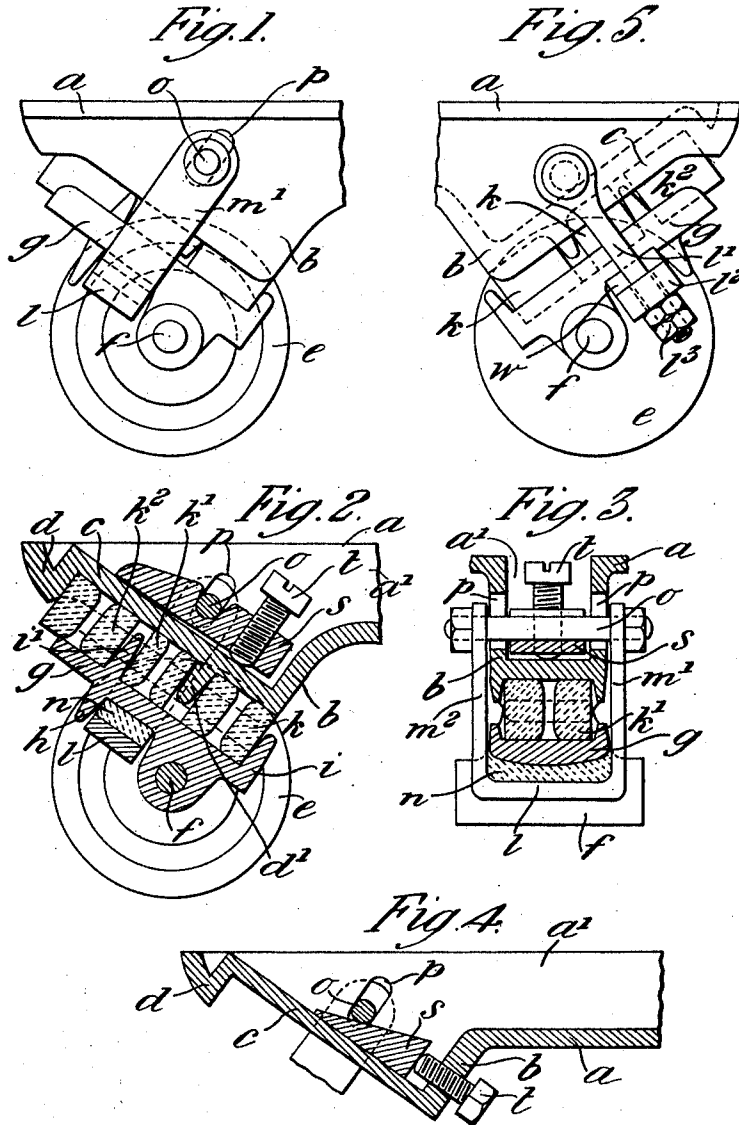


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 ROLLER SKATE.
 APPLICATION FILED FEB. 13, 1911.

1,002,729.

Patented Sept. 5, 1911.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM MILLS, OF SUNDERLAND, AND JOHN HODGSON MILLS, OF BIRMINGHAM,
ENGLAND.

ROLLER-SKATE.

1,002,729.

Specification of Letters Patent.

Patented Sept. 5, 1911.

Application filed February 13, 1911. Serial No. 608,410.

To all whom it may concern:

Be it known that we, WILLIAM MILLS and JOHN HODGSON MILLS, both subjects of the King of Great Britain, residing, respectively, at Atlas Works, Bonners Field, Sunderland, in the county of Durham, England, engineer, and Atlas Aluminium Works, Grove street, Birmingham, in the county of Warwick, England, manager, have invented certain new and useful Improvements in Roller-Skates, of which the following is a specification.

This invention relates to an improved construction of roller skate, so arranged that the wheels are attached to the base plate of the skate in such a manner as to obtain greater freedom from vibration and lessen the risk of sudden shocks. To effect these objects the wheels are mounted on a separate base plate which is affixed to the foot plate by means of a swinging strap or straps, cushions of indiarubber being interposed between the wheel base plate and the foot plate and held in position by projecting ribs on the two plates, and indiarubber is also interposed between the wheel base plate and the swinging strap, so that there is no actual metallic contact between the two plates.

It has been previously proposed to connect the foot plate and the base plate by a strap with an interposed rubber cushion by which an elastic material may be interposed between these parts to diminish the jars due to passing over obstacles, but the present invention differs from such previous arrangements by the fact that the strap is pivoted, so as to be able to swing laterally and by the disposition of the rubber cushions which interpose an elastic material capable of yielding in any direction and consequently reduce to a minimum the vibrations not only in one direction but in any.

The invention will be more fully described referring to the accompanying drawings, in which—

Figure 1 is a side elevation, Fig. 2 a longitudinal section, and Fig. 3 a transverse section of a mounting for the front or hind pair of wheels affixed to the foot plate of a skate according to the present invention, and Figs. 4 and 5 show modifications.

The foot plate *a* of the skate as shown in the drawing consists of a casting and is pro-

vided with a central hollow channel *a'* terminating at each end with a downwardly projecting bracket or pocket *b* having an inclined part *c* the two parts at the heel and toe respectively being preferably inclined in opposite directions. The upper end of the inclined part is formed as a stop *d* and toward the lower end it is provided with an outwardly projecting rib *d'*. Obviously this foot plate could be made up of stamped steel pieces riveted together.

The wheels *e* are mounted in ball bearings in the usual manner on the ends of the axle *f* fixed in or forming part of a base plate *g* provided with an outwardly projecting rib *h* and two inwardly projecting ribs *i* *i'*. Blocks of rubber *k* *k'* *k''* having been interposed between the wheel base plate *g* and the part *c* of the bracket *b*, the wheel base plate *g* is affixed to the inclined part *c* of the foot plate bracket *b* by means of a swinging strap *l* which passes around the under side of the plate *g*, being prevented from moving sidewise by the projecting rib *h* and the projecting part of the bearing of the axle *f*, or if the axle bearing is on another part of the wheel base plate by providing another projecting rib. The arms *m'* *m''* of this strap extend up on each side of the bracket *b* and are pivoted to the foot plate of the skate by means of a bolt *o* which passes through holes in the upper part of the arms of the strap and through slotted holes *p* provided in the sides of the channel *a'*. A strip of indiarubber *n* is interposed between the strap *l* and the base plate *g*. In order to adjust the resiliency of the skate to suit different weights and pressures, the indiarubber blocks *k*, *k'*, *k''*, which may be made with holes as shown—to make them more resilient—are more or less compressed, and this is preferably effected by means of a block *s* which is placed under the bolt *o* in the hollow of the bracket *b*. The block *s* is provided with a set screw *t* by the adjustment of which the block *s* is more or less raised, thus raising the bolt *o* and the strap *l* and so more or less compressing the rubber blocks *k* *k'* and *k''*. The arrangement of the stop *d* and the projecting rib *d'* acting in combination with the projecting ribs *i* *i'* retains the indiarubber cushions in position and gives resiliency in either the inclined, upward or downward direction, as the strap

7, being pivoted by bolt *o*, is capable of a swinging motion and so accommodates itself to any pressure in either of these directions. It will be seen that the rubber blocks *k* and *k*² take the main strain and the block *k*¹ in the center the return or rebound, and thus lessens vibration. The strap *l* being affixed to the bolt *o* which works in the slotted holes *p* is capable of movement up and down or rocking sidewise so as to give the necessary resiliency in the vertical direction and to permit of the usual canting for steering purposes.

Obviously the adjustment can be effected in various ways, for instance as shown in Fig. 4, when it is desired to be able to effect the adjustment without having to remove the skate from the foot the block *s* can be formed as a wedge which can be forced more or less under the bolt *o* by means of the set screw *t* operated from underneath the skate. Or the adjustment could be effected by a set screw in the under part of the strap *l*. Furthermore, instead of there being a single strap *e*, two straps may be employed mounted in a similar manner on each side of the wheel axle.

According to the modification shown in Fig. 5, the base plate *g* can be affixed to the inclined part *c* of the bracket *b* by means of screw threaded links or rods *l*¹ in place of the strap *l*, these links or rods having a cross-head *l*² under the base plate *g* which can be adjusted by the lock nuts *l*³, a cushion of indiarubber *w* being interposed between the crosshead *l*² and the base plate *g*. Instead of a single set of links and crosshead there may be two sets one at each end of the base plate.

Having thus described the nature of our said invention and the best means we know of carrying the same into practical effect, we claim:—

1. A wheel mounting for roller skates, comprising in combination, a skate foot-plate provided with slots, a base-plate having bearings for a wheel axle, a resilient medium interposed between the foot-plate and base-plate, and a member pivotally supported in the slots of the foot-plate, said member being adapted to connect the two plates together and to allow relative movement between them.

2. A wheel mounting for roller skates, comprising in combination, a skate foot-plate provided with slots, a base-plate having bearings for a wheel axle, a resilient medium interposed between the foot-plate and base-plate, a member pivotally supported in the slots of the foot-plate, said member being adapted to connect the two plates together and to allow relative movement between them, and means for adjusting the resiliency of the resilient members for the purpose described.

3. A wheel mounting for roller skates, comprising in combination a skate foot plate, a base plate having bearings for a wheel axle, resilient cushions interposed between the said plates, a swinging link pivotally and detachably supported from the foot plate and adapted to embrace the base plate and retain it in coöperative position with respect to the foot plate, and a resilient medium interposed between the link and the said base plate.

4. A wheel mounting for roller skates, comprising in combination a skate foot plate, a base plate having bearings for a wheel axle, resilient cushions interposed between the said plates, a swinging link pivotally and detachably supported from the foot plate and adapted to embrace the base plate and retain it in coöperative position with respect to the foot plate, a resilient medium interposed between the link and the said base plate, and means for adjusting the resiliency of the said cushions.

5. A wheel mounting for roller skates, comprising in combination a skate foot plate, a base plate having bearings for a wheel axle, resilient cushions interposed between the said plates, a swinging link pivotally and detachably supported from the foot plate and adapted to embrace the base plate and retain it in coöperative position with respect to the foot plate, a resilient medium interposed between the link and the said base plate, means comprising abutments and projecting ribs attached to said plates for retaining the said resilient cushions and medium in operative position, and means for adjusting the resiliency of the said cushions.

6. A wheel mounting for roller skates, comprising in combination a skate foot plate having a downwardly projecting bracket part with slotted holes therein, a base plate having bearings for a wheel axle, hollow resilient cushions interposed between the said plates, a pin movably mounted in the slotted holes of the foot plate bracket, a device pivotally supported from the pin and adapted to embrace and retain the base plate in coöperative position relatively to the foot plate, means for holding the cushions in operative position between the plates, and means for shifting the pin along the slotted holes and thereby adjust the resiliency of the cushions.

7. A wheel mounting for roller skates, comprising in combination a skate foot plate having a downwardly projecting bracket part with slotted holes therein, a base plate having bearings for a wheel axle, hollow resilient cushions interposed between the said plates, a pin movably mounted in the slotted holes of the foot plate bracket, a device pivotally supported from the pin and adapted to embrace and retain the base plate in coöperative position relatively to the foot

plate, means for holding the cushions in operative position between the plates, and means operable externally of the said plates for shifting the pin along the slotted holes
5 and thereby adjust the resiliency of the cushions.

In testimony whereof we have signed our

names to this specification in the presence of two subscribing witnesses.

WILLIAM MILLS.

JOHN HODGSON MILLS.

Witnesses:

CHAS. EDWARD ROSE,

WM. H. HITCHCOCK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."