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D. H. MARX

2,021,316

ROLLER SKATE AND ACCESSORY THEREFOR

Filed June 27, 1934

Fig. 1.

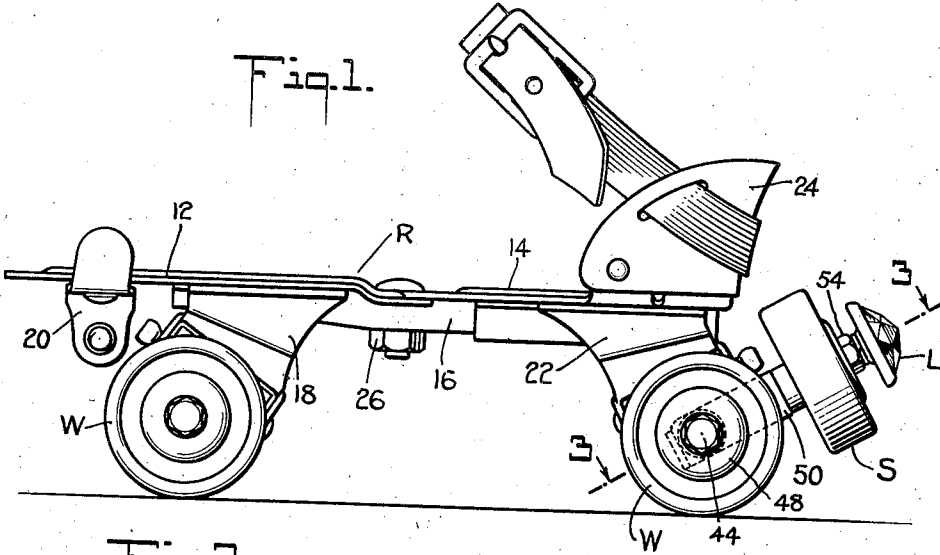


Fig. 2.

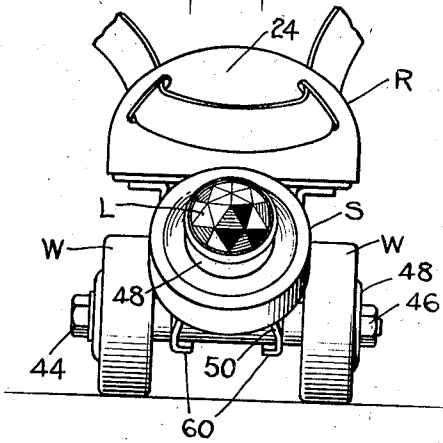


Fig. 3.

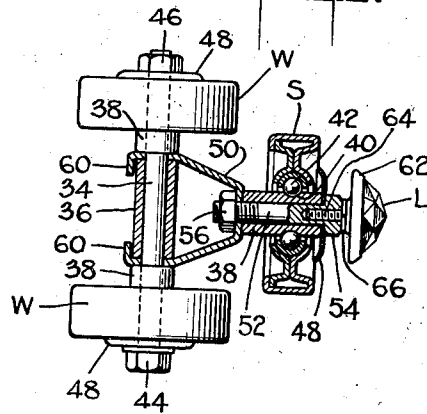


Fig. 4.

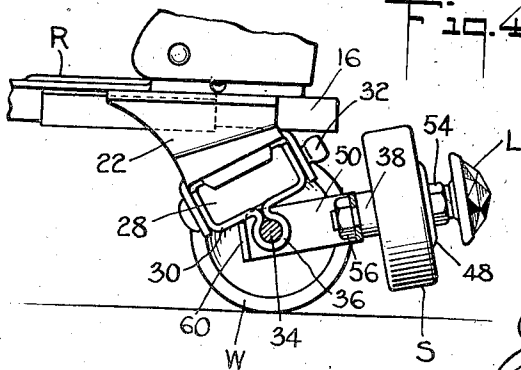
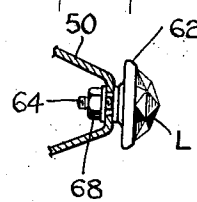


Fig. 5.



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ROLLER SKATE AND ACCESSORY
THEREFOR

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18 Claims. (Cl. 208—173)

This invention relates to roller skates, and more particularly to accessory equipment therefor.

Roller skates are in wide use, and, because of the excellent pavements available, are employed for long distances on traffic-laden roads. The primary object of my invention is to generally improve roller skates, with a view to better adapting the same to modern conditions.

It is a common occurrence for one wheel of the skate to wear out before the others, ordinarily the inner front or rear wheel, depending upon the characteristics of the particular skater. In accordance with one object and feature of my invention, each skate is provided with a spare wheel detachably mounted on the skate and adapted for ready replacement of the worn-out wheel. The mounting is preferably made so that the regular skate key is the only tool needed for the wheel-changing operation.

At night the skater is subjected to particular danger on an open highway, and in accordance with a further object of my invention this danger is minimized by the provision of tail lights on the skates. Because of the inconvenience and short life of battery electrical equipment, I prefer to employ tail lights of the reflector type. These lights are efficient in taking advantage of any direct or stray illumination, and are conspicuous enough to greatly increase the safety of the skater.

Still another object of my invention resides in the provision of the aforesaid elements in a suitable structural unit adapted to be sold separately as an accessory which may be readily mounted on practically all standard roller skates.

To the accomplishment of the foregoing and other objects which will hereinafter appear, my invention consists in the roller skate and accessory elements, and their relation one to another, as hereinafter are more particularly described in the specification and sought to be defined in the claims. The specification is accompanied by a drawing in which:

Fig. 1 is a side elevation of a skate embodying my invention;

Fig. 2 is a rear elevation of the same;

Fig. 3 is a section taken in the plane of the line 3—3 of Fig. 1;

Fig. 4 is a partially sectioned elevation showing a detail of the spare wheel and tail light mounting; and

Fig. 5 shows the tail light applied directly to the bracket.

Referring to the drawing, my invention in-

cludes a spare wheel S identical with the skate wheels W and detachably mounted at the rear end of a generally conventional roller skate R. The invention further comprehends the provision of a tail light L at the rear of the skate, this light preferably being supported by the same bracket or mounting that is used to support the spare wheel S.

Considering the mechanism in greater detail, the skate R comprises telescopically related toe and heel plates 12 and 14 strengthened by a subadjacent slidably related channel bar 16. A front wheel hanger 18 as well as toe clamps 20 are mounted on toe plate 12. A rear wheel hanger 22 as well as a heel flange 24 are mounted on heel plate 14. The length of the skate is held to adjusted dimension by a nut 26.

The hangers 18 and 22 may be of conventional type and in the present case comprise a rubber cushioning block 28, best shown in Fig. 4, interposed between the upper part of the hanger and a lower part 30, the upper and lower parts being nested together and joined by a riveted spindle 32 preferably disposed longitudinally of the skate or transversely of the axle 34. Axle 34 passes through a tubular housing 36. Referring to Fig. 3, the wheels W, like the wheel S, are permanently mounted on stationary tubular hubs 38. The hubs are recessed at 40 to receive a series of ball bearings 42. The axle 34 is in reality merely a stationary mounting bolt provided with a head 44 at one end and threaded at its opposite end to receive a nut 46. The axle is passed through hubs 38 and hanger 36, and nut 46 is tightened to lock the parts in assembled relation. As is customary, a cover plate or dirt shield 48 may be placed at the ends of hub 38 when assembling the parts together.

While the specific form of wheel hanger may vary greatly in different makes of skates, substantially all terminate in means to receive an axle bolt, such as the axle 34, which locks in place stationary wheel hubs on which the wheels rotate. I take advantage of this fact by the provision of a generally U-shaped bracket 50 the ends of which are perforated to receive the axle 34. Bracket 50 is placed astride the wheel hanger when mounting the rear wheels on the skate. It will be evident that when nut 46 is tightened, the hanger 50 is held securely in place.

Spare wheel S with its hub 38 is mounted directly upon the bracket 50 by a short bolt 52 having a head 54 and threaded at its opposite end to receive a nut 56. The head 54 and nut 56 are preferably made similar to the nut 26 and the

head 44 and nut 46 of the wheel axle, so that the regular skate key ordinarily provided with the skate may be used to release the spare wheel and the regular wheels, and to substitute the spare wheel for a worn-out wheel. A cover plate 48 is shown at spare wheel S, this being desirable to improve the appearance of the assembly and to protect the ball bearings from dirt.

In the particular form here shown, the ends of the bracket 50 are turned inwardly to form stop lugs 60 which bear against the lower side of the hanger and limit the permissible downward movement of the bracket. Referring to Fig. 4, it will be noted that the lugs 60 are preferably slightly trimmed away at the upper edge thereof, thus permitting the bracket to be lowered from the position shown in Fig. 1 to the position shown in Fig. 4. This is desirable with the particular form of skate here illustrated, for when the skate is telescoped to its smallest size, the channel bar 16 projects rearwardly from the heel plate. The lowered position of the spare wheel avoids interference between the wheel and the channel bar. Because of the tension of the axle bolt 34 the bracket is rather securely held in any desired position, and, if elevated to the position shown in Fig. 1, retains that position.

The tail light L is preferably of the reflector type. It is made of red glass and is faceted with a large number of angularly related facets. The inner surface of the glass is coated with a mirror-like coating of a suitable reflecting material or metallic foil. The lens is held by the flange 62 of a metallic base which is further provided with a mounting screw 64. The head 54 of bolt 52 is counterbored and threaded to receive the screw 64. If desired, a lock washer 66 may be interposed between the reflector light and the bolt head 54. The light is readily mounted in place by simply screwing the same in the bolt head. Because of its alignment with the spare wheel, the assembly is attractive in appearance and the glass lens is to a large extent protected against breakage. It will be understood, however, that the spare wheel may be employed without the tail light, and, conversely, that the tail light may be used without the spare wheel. For the latter purpose the screw 64 is passed directly through the bracket 50 and a nut 68 tightened on the screw, as shown in Fig. 5.

It is believed that the mode of constructing and using, as well as the many advantages of my improved roller skate or/and the spare wheel and tail light accessory therefor, will be apparent from the foregoing detailed description. The spare wheel is available for replacement of a prematurely worn-out wheel. It also improves the appearance of the skate. If desired, it may be used as a brake and as an aid against falling, and, with skilled skaters, may be used to assist in the performance of stunts. However, its primary purpose is, as aforesaid, for replacement of a prematurely worn-out wheel. The tail light is mounted in place with the utmost of simplicity, yet renders substantial protection against traffic at night. The complete spare wheel and tail light mechanism may be made up and sold as an accessory which is readily added to standard roller skates.

It will be apparent that while I have shown and described my invention in preferred form, many changes and modifications may be made in the structure disclosed, without departing from the spirit of the invention, defined in the following claims.

I claim:

1. A ball bearing roller skate including a spare wheel support, and a spare wheel including a stationary tubular hub and ball bearings between the wheel and hub, all identical with the skate wheels, detachably mounted on said support.
2. A roller skate having four wheel assemblies, each including a wheel, a stationary hub, and ball bearings therebetween, a bracket attached thereto at the rear end thereof, and a spare wheel assembly identical with the skate wheel assemblies detachably mounted on said bracket.
3. A roller skate including a rear wheel hanger, a bracket attached thereto, and a spare wheel identical with the skate wheels detachably mounted on said bracket by means releasable by the conventional skate key, whereby said wheel may be used to replace one of the skate wheels.
4. A roller skate including a rear wheel hanger, an axle passing therethrough, wheel assemblies on said axle, each assembly including a wheel, a stationary hub, and ball bearings therebetween, a support having holes on opposite sides receiving the axle, and a reflector type tail light mounted on said support.
5. A roller skate including a rear wheel hanger, a bracket detachably attached thereto as an accessory, and a reflector type tail light detachably mounted on said bracket.
6. A roller skate including a support at the rear end thereof, a spare wheel identical with the skate wheels detachably mounted on said support, and a reflector type tail light also supported by said support.
7. A roller skate including a rear wheel hanger, a bracket attached thereto, wheel assemblies thereon each including a wheel, a stationary hub, and ball bearings therebetween, a spare wheel assembly identical with the skate wheel assemblies detachably mounted on said bracket, and a reflector type tail light mounted in back of said spare wheel assembly.
8. A roller skate including a rear wheel hanger, a bracket detachably attached thereto, a spare wheel identical with the skate wheels detachably mounted on said bracket by means releasable by the skate key, and a reflector type tail light detachably mounted on said spare wheel assembly.
9. A roller skate including toe and heel plates, a rear wheel hanger mounted on the heel plate, rear wheels, an axle passing through said wheels and hanger for mounting the wheels on the hanger, a U-shaped bracket the ends of which are received on said axle between the wheels and hanger, a spare wheel, and means securing the same to the bracket.
10. A roller skate including toe and heel plates, a front wheel hanger mounted on the toe plate, a rear wheel hanger mounted on the heel plate, wheels permanently mounted on stationary tubular hubs, axles passing through said hubs and hangers for mounting the wheels on the hangers, a U-shaped bracket the ends of which are received on the rear axle between the hubs and the rear hanger, a spare wheel and hub assembly, and a bolt passing through said spare wheel assembly and securing the same to the bracket.
11. A roller skate including relatively adjustable toe and heel plates with a channel bar therebeneath, a front wheel hanger mounted on the toe plate, a rear wheel hanger mounted on the heel plate, wheels permanently mounted on stationary tubular hubs, axles passing through said hubs and hangers for mounting the wheels

on the hangers, a U-shaped bracket the ends of which are received on the rear axle between the hubs and the rear hanger, a spare wheel and hub assembly, a bolt passing through said spare wheel assembly and securing the same to the bracket, said bolt having a head similar in size to the head of the axle, said bracket being limitedly oscillatable on the axle, the forward ends of said bracket being turned inwardly and dimensioned to act as stop lugs to limit the movement of the bracket.

12. A roller skate including toe and heel plates, a rear wheel hanger mounted on the heel plate, rear wheels, an axle passing through said wheels and hanger for mounting the wheels on the hanger, a U-shaped bracket the ends of which are received on the rear axle between the wheels and the hanger, a reflector type tail light, and means mounting said tail light on said bracket.

13. A roller skate including toe and heel plates, a front wheel hanger mounted on the toe plate, a rear wheel hanger mounted on the heel plate, wheels permanently mounted on stationary tubular hubs, axles passing through said hubs and hangers for mounting the wheels on the hangers, a U-shaped bracket the ends of which are received on the rear axle between the hubs and the rear hanger, a spare wheel and hub assembly, a bolt passing through said spare wheel assembly and securing the same to the bracket, said bolt having a head similar in size to the head of the axle, and a reflector type tail light including a mounting screw, the head of the bolt being counter-bored and threaded to receive the mounting screw of the tail light.

14. A roller skate including relatively adjustable toe and heel plates with a channel bar therebeneath, a front wheel hanger mounted on the toe plate, a rear wheel hanger mounted on the heel plate, wheels permanently mounted on stationary tubular hubs, axles passing through said hubs and hangers for mounting the wheels on the hangers, a U-shaped bracket the ends of which are received on the rear axle between the hubs and the rear hanger, a spare wheel and hub assembly, a bolt passing through said spare wheel assembly and securing the same to the

bracket, said bolt having a head similar in size to the head of the axle, said bracket being limitedly oscillatable on the axle, the forward ends of said bracket being turned inwardly and dimensioned to act as stop lugs to limit the movement of the bracket, and a reflector type tail light including a mounting screw, the head of the mounting bolt being counter-bored and threaded to receive the mounting screw, whereby the tail light may be mounted at the rear of the spare wheel.

15. An accessory adapted to be mounted on standard roller skates, said accessory including a bracket, a spare wheel assembly, means mounting said spare wheel assembly on the bracket, a reflector type tail light, and means mounting the tail light on the spare wheel assembly.

16. An accessory adapted to be mounted on standard roller skates, said accessory including a generally U-shaped bracket the ends of which are perforated to receive the rear axle of the roller skate while straddling the rear wheel hanger, a reflector type tail light, and means mounting the tail light on the bracket.

17. An accessory adapted to be mounted on standard roller skates, said accessory including a generally U-shaped bracket the ends of which are perforated to receive the rear axle of the roller skate while straddling the rear wheel hanger, a spare wheel assembly, and a bolt passing therethrough and mounting said spare wheel assembly on the bracket, whereby said spare wheel may be attached at the rear of a roller skate.

18. An accessory adapted to be mounted on standard roller skates, said accessory including a generally U-shaped bracket the ends of which are perforated to receive the rear axle of the roller skate while straddling the rear wheel hanger, a spare wheel assembly, a bolt passing therethrough and mounting said spare wheel assembly on the bracket, a reflector type tail light having a mounting screw, the aforesaid bolt being counter-bored and threaded to receive the mounting screw of the tail light, whereby said spare wheel and tail light may be attached at the rear of a roller skate.

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