

G. E. NEUBERTH.

SKATE.

APPLICATION FILED JAN. 20, 1909.

945,795.

Patented Jan. 11, 1910.

3 SHEETS—SHEET 1.

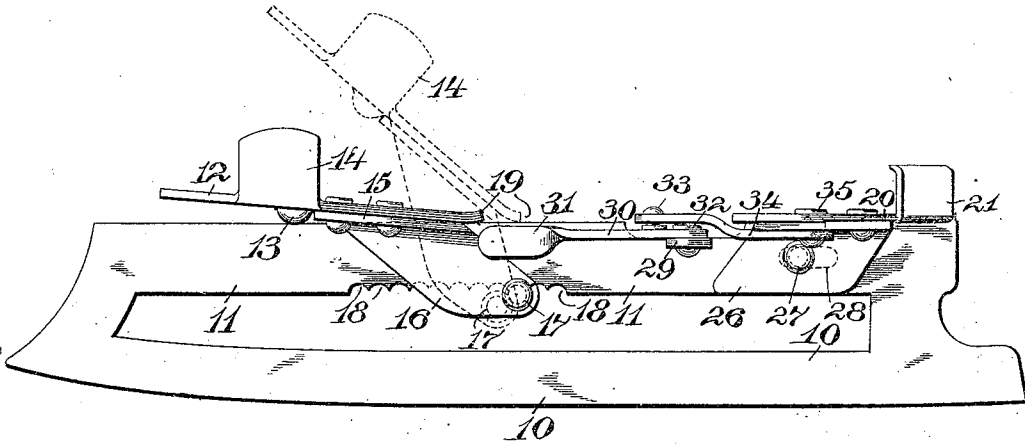


Fig. 1

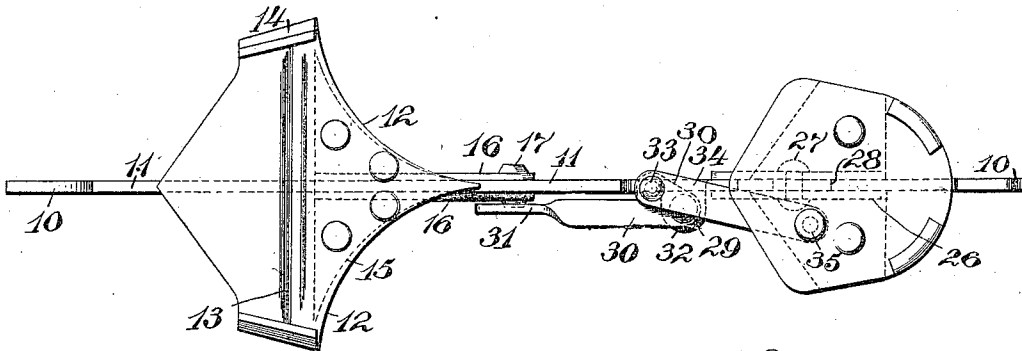


Fig. 2

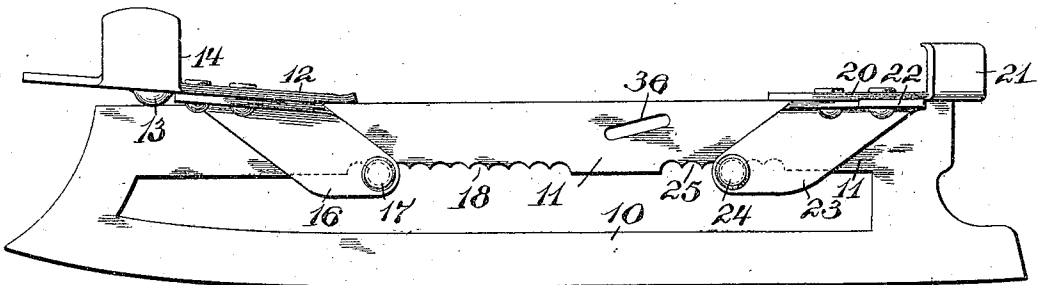


Fig. 3

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3 SHEETS—SHEET 2.

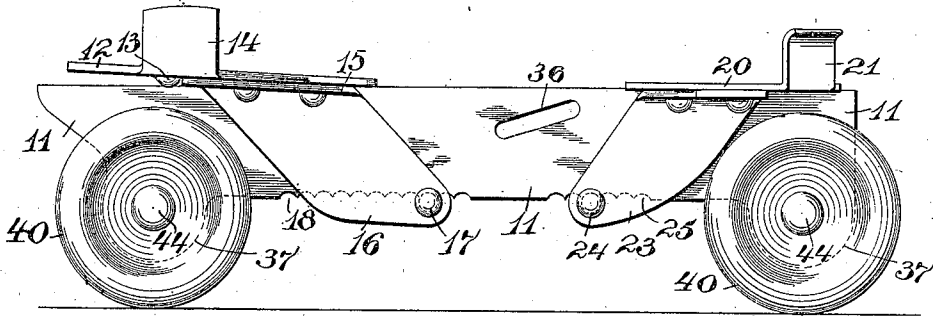


Fig. 4

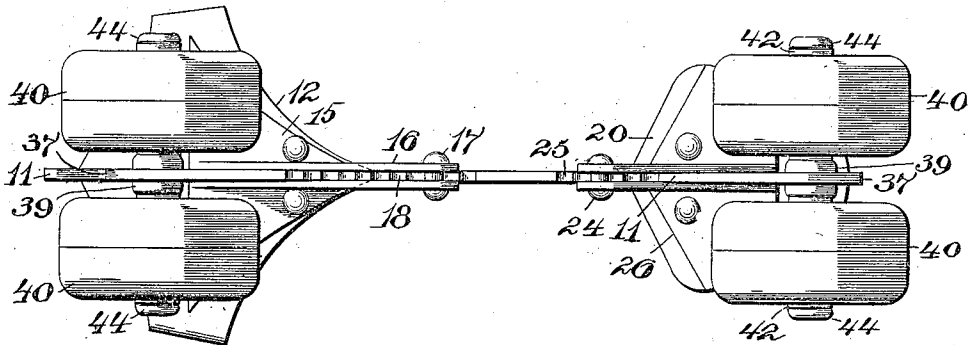


Fig. 5

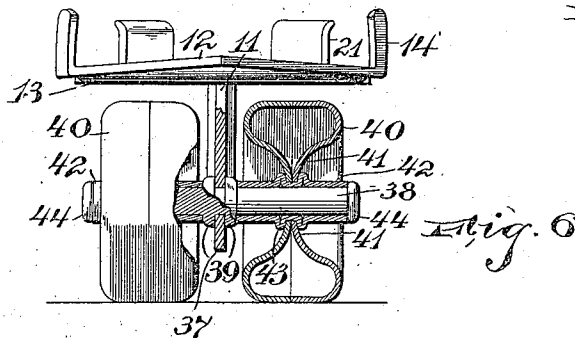


Fig. 6

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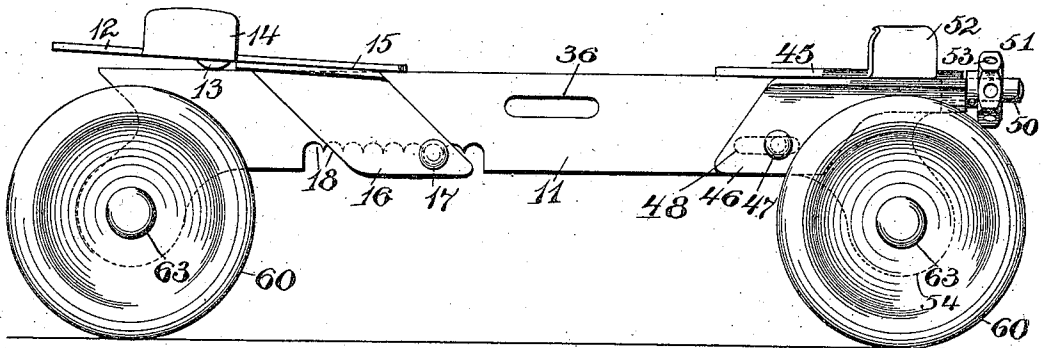


Fig. 7

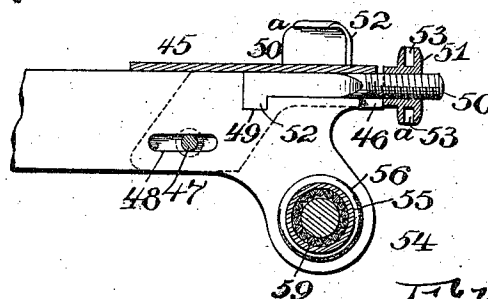


Fig. 8

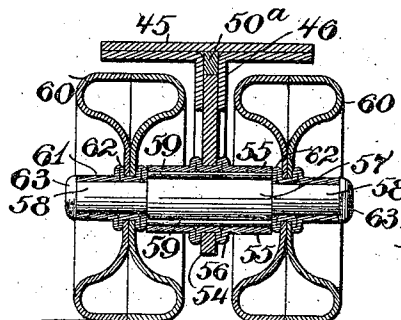


Fig. 9

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SKATE.

945,795.

Specification of Letters Patent. Patented Jan. 11, 1910.

Application filed January 20, 1909. Serial No. 473,221.

To all whom it may concern:

Be it known that I, GEORGE E. NEUBERTH, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Skates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to a skate, and refers particularly to the adjustment thereof, the skate having a supporting plate of metal which runs longitudinally underneath the center of the foot and has foot-pieces thereon, one foot-piece being a toe-plate, and the other a heel-plate, and these being adjustable toward and from each other along the supporting plate so that the skate can be made to fit different shoes, these foot-pieces having a gripping portion thereon to insure the fastening of the skate to the shoe.

One feature of this construction is its economy of manufacture, combined with its simplicity, there being an absence of screw-threaded parts which cuts the cost of production down very much.

This skate is also designed to have a range of adjustment greater than other forms of skate, since both the toe-plate and the heel-plate can be adjusted on the supporting plate, and therefore the distance between their extremes of adjustment is greater.

The invention further consists in certain improvements in the rollers and method of attaching them when the skate is used as a roller-skate.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the improved skate, and Fig. 2 is a top view thereof. Fig. 3 is a side view of a slightly modified form. Fig. 4 is a view similar to Fig. 3, but showing the skate as a roller-skate, and Fig. 5 is a bottom view of Fig. 4. Fig. 6 is a front view showing the rollers and the supporting plate partly in section. Fig. 7 is a side view of still another modified form, showing the alternative way of adjusting the heel-plate. Fig. 8 is a detail section of the adjusting means of the construction shown in Fig. 7,

and Fig. 9 is a section through one of the axles in Fig. 7, and illustrating a roller-bearing as incorporated in the skate.

The skate comprises a body portion which has means for its being propelled along the surface, in an ice-skate comprising the runner 10 as shown in Figs. 1, 2 and 3, the body portion also comprising a supporting plate 11 which is preferably made of metal and is vertically disposed so that it forms a stiff support for the shoe and is adapted to run substantially central thereof. On the supporting plate are arranged foot-pieces, these foot-pieces being adjustable toward and from each other, and consisting of a toe-plate and a heel-plate. The toe-plate is constructed with the floor plate 12 which is provided with a strengthening rib 13 which rests on the top of the supporting plate to give the floor plate the proper angle, and also serves to stiffen the floor plate transversely so that it will not bend, and the floor plate also has the clamping fingers 14 adapted to grip the sole of the shoe. Secured to the under side of the floor plate are the plates 15, one on each side of the supporting plate and being bent into the parallel vertical plates 16, these plates flanking the supporting plate and extending down to its bottom edge where they are securely connected by a rivet 17 or its equivalent. This rivet also coöperates to adjust the toe-plate, since the supporting plate, on its bottom edge, is provided with a series of recesses 18, to any one of which the rivet 17 can fit.

When the toe-plate is to be adjusted it is tilted as shown in dotted outline in Fig. 1, and it is then in a position, having swung on the end 19 of the floor plate as a fulcrum, to be slid any way along the supporting plate, and when set down into any of the recesses 18 it is securely held in place, when the floor plate is again swung down into the position to support the sole of the shoe. The vertical flanking plates 16 are adapted to fit somewhat tightly against the sides of the supporting plate so that the movement of the toe-plate is not too free and it will not swing about without being manually manipulated. The heel-plate can be made as shown in Fig. 3, having the floor plate 20 with the clamping fingers 21 to grip the sides of the heel, and having the plates 22 which are in turn bent into the flanking plates 23, and having a rivet 24 that will fit in any of the indenta-

tions or recesses 25, and in this way the heel-plate can also be adjusted along the supporting plate. The extremes of adjustment are far apart, and this skate can be made to fit a
 5 great many different sizes of shoe and can be used by a number of children successively without any loss of time in adjustment, since the adjustment can be made almost instantly. Another form of heel-plate is shown in Figs.
 10 1 and 2 where the floor plate 20 and its clamping fingers 21 have the same function of supporting and grasping the heel, and the floor plate has the two plates 25 secured thereto, which form the flanking plates 26,
 15 and a rivet 27 holds these plates against the sides of the supporting plate and passes through a slot 28 in the supporting plate, as shown in Figs. 1 and 2. I provide the supporting plate with a bracket 29 which is
 20 bent over from the supporting plate and preferably integral therewith, and a lever 30, with a finger-piece 31, swings on the pivot 32 and has a stud 33 thereon which is eccentrically arranged to the pivot 32 and is
 25 so disposed that a link 34, which is pivotally secured to the stud on one of its ends and pivotally secured as at 35 on its other end to the heel-plate, locks the heel-plate by reason
 30 of its two ends being on the same side of the pivotal pin 32, thus locking the heel-plate in position. This latter construction forms a means for locking the heel-plate to the shoe, after the skate is on the shoe, but the construction shown in Fig. 3 provides for ad-
 35 justing the skate, then placing the toe of the shoe in position between the clamping fingers 14 and then forcing the heel down by standing on the skate so that it engages the finger 21. In this latter construction I prefer to
 40 provide the supporting plate with a slot 36 through which a suitable strap can pass, which strap is adapted to fit over the instep of the foot and prevent the skate from accidentally coming off.
 45 In Figs. 4 and 5 is shown a construction similar to that shown in Figs. 2 and 3, but applied to a roller-skate. In this form the supporting plate has perforated ears 37. A cylindrical bar or rod 38, shown in Fig. 6 is
 50 passed through the perforation in the ear and then pressed up to form a shoulder 39, on each side, so as to lock the bar in position and thus form an axle. I form the wheels
 55 of metal, and consisting of the halves 40 which abut and have the flanges 41 joined and held in place by the sleeves 42 which are forced up as at 43 to form the shoulders on each side thereof, and at the same time the sleeves form a wide bearing for the
 60 wheel on the axle. The rods or axles are then headed as at 44 to prevent the wheels coming off, and thus a strong, simple and cheap method of putting the wheels on the skate is provided.

In Figs. 7, 8 and 9 I illustrate a skate and
 still another means of regulating the heel-plate, and also illustrating a form of roller-bearing which can be used in the skates to form a better rolling skate and one that is
 more easily run. In this construction I
 70 prefer to make the toe-plates as in the previous ones, and adjusted in the same manner. The heel-plate has a floor plate 45, and this in turn has the flanking plates 46
 75 as in the previous constructions, and a rivet 47 passes through the slot 48 to limit the movement of the heel-plate and also to insure the tight fit of the flanking plates to the supporting plate. The supporting plate
 is provided with a notch 49 and a bolt 50 is
 80 flattened out at 50^a, the same width as the supporting plate, and has a nose 52 to enter the notch 49 and thus make a flat unbroken surface, but provide against the withdrawal
 of the bolt 50. The flanking plates 46 ex-
 85 tend back as at 46^a on each side of the bolt 50, and a nut 51 is adapted to form means for forcing the heel-plate forward so as to compel the clamping fingers 52 to tightly
 90 grip the heel of the shoe on which it is placed. The nut 51 can be provided with perforations or recesses 53, whereby a nail or other tool can be used to force the nut
 around if it becomes covered with dirt or is hard to work. The supporting plate has
 95 perforated ears 54, and in each perforation is placed a sleeve 55, which is compressed to form the shoulders 56 to lock the sleeve in the perforation of the ear. A shaft 57,
 100 with the reduced portions 58, is placed in the sleeve, and rollers 59, preferably made of lengths of steel wire, fit in between the sleeve 55 and the shaft 57, which shaft forms
 the axle, and thus a roller-bearing is provided that makes the running of the skate
 105 very easy. The wheels are formed as in the previous construction, that is, of the two metal halves 60. These wheels have their halves connected by the sleeve 61 having the shoulders 62 thereon, the inner shoulder
 110 of each wheel abutting against the ends of the rollers to prevent their displacement. The shaft or axle is headed as at 63 to lock the wheels on the axle and cause both wheels
 115 to turn with the axle so that the axle itself will in turn rotate on the rollers 59.

All these constructions make up a skate that is preferably made entirely of metal, is graceful in outline, has stability, and at the same time one whose operation is simple
 120 and therefore positive. It will also be noticed in most of the constructions there is an absence of screw-threaded parts or portions that require tapping, and thus the cost of manufacture is brought down to a point
 125 where the skate can be placed on the market at a low figure, to the advantage of the public.

Having thus described my invention, what I claim is:—

1. A skate having a body portion comprising a supporting plate, a foot-piece adapted to slide on the supporting plate and arranged to tilt thereon, and co-acting means on the supporting plate and the foot-piece acting to lock the foot-piece when the foot-piece is placed in operative position, said co-acting means being rendered inoperative when the foot-piece is tilted so as to release the latter.

2. A skate having a body portion comprising a supporting plate, a foot-piece adapted to loosely rest on the supporting plate, flanking plates secured to the foot-piece and loosely embracing the supporting plate, the flanking plates permitting the foot-piece to be tilted on the supporting plate, and co-acting means on the supporting plate and the foot-piece to lock the foot piece when it is in operative position, said co-acting means being rendered inoperative when the foot-piece is tilted so as to release the latter.

3. A skate having a body portion comprising a supporting plate with recesses therein, and a foot-piece loosely mounted on said plate and having an element adapted to be seated in one of the recesses when the foot-piece is in operative position to lock the same, said element being released from the recesses and rendered inoperative when the foot-piece is tilted.

4. A skate having a body portion comprising a vertically arranged supporting plate, a foot-piece loosely mounted on said plate, flanking plates secured to the foot-piece and loosely arranged on both sides of the supporting plate, and a rivet connecting the flanking plates, the supporting plate having a series of recesses with which the rivet is adapted to engage.

5. A skate having a body portion comprising a supporting plate, the supporting plate having a series of recesses on its lower edge, a foot-piece adapted to loosely rest on the top edge of the supporting plate, clamping fingers on the foot-piece, flanking plates secured to the foot-piece and loosely arranged on either side of the supporting plate, and a rivet connecting the flanking plates and arranged to lie in any one of the recesses when the foot-piece is in operative position to lock the same.

6. A skate having a body portion comprising a supporting plate, a foot-piece arranged to slide and to tilt on the supporting plate, co-acting means between the foot-piece and the supporting plate to lock the foot-piece in position when it is in operative position and a second adjustable foot-piece on the supporting plate, flanking plates on the second foot-piece, a rivet connecting the flanking plates, the supporting plate having a slot through which the rivet passes, and manu-

ally operated means for sliding and locking the second foot-piece on the supporting plate.

7. A skate having a body portion comprising a supporting plate, a foot-piece loosely mounted thereon, flanking plates extending on each side of the supporting plate, a rivet connecting the flanking plates, the supporting plate having a series of recesses with any one of which the rivet is adapted to engage when in operative position to lock the same, a second foot-piece having flanking plates projecting on each side of the supporting plate and adjustable thereon, the supporting plate having a slot therein, a rivet connecting the flanking plates of the second foot-piece, the said rivet passing through the slot in the supporting plate, and manually operated means for sliding and locking the second foot-piece.

8. A skate having a body portion comprising a vertically arranged supporting plate of sheet metal, a foot-piece comprising a sheet metal floor plate loosely mounted thereon, a pair of sheet metal flanking plates secured to the floor plate and loosely embracing the supporting plate, a rivet connecting the flanking plates, a series of recesses on the supporting plate with which the rivet is adapted to engage when the foot-piece is in operative position to lock the same, a second foot-piece adjustable on the supporting plate and comprising a floor plate, sheet metal flanking plates extending therefrom, a rivet connecting the flanking plates of the second foot-piece, the supporting plate having a slot through which the rivet of the second foot-piece passes, a bracket integral with the supporting plate, a lever swinging on the bracket, and a link pivotally connected on one end of the lever and pivotally connected on its other end to the second foot-piece.

9. A skate having a sheet metal supporting plate, a foot-piece loosely mounted thereon consisting of a floor plate and flanking plates, a rivet connecting the flanking plates, the supporting plate having a series of recesses with which the rivet is adapted to engage when the foot-piece is in operative position to lock the same, and clamping fingers on the floor plate, the supporting plate having a slot therein for the reception of a strap.

10. A skate having a body portion comprising a supporting plate, a toe-plate adjustable on the supporting plate, means for securing the toe-plate in its different positions, an adjustable heel-plate having clamping means thereon, and a manually operated means for forcing the heel-plate toward the toe-plate to lock the same in its adjusted position.

11. A skate having a supporting plate, a toe-plate adjustable longitudinally along the supporting plate, means for securing

the toe-plate in its adjusted position, a heel-plate having clamping fingers thereon, the heel-plate being slidably arranged on the supporting plate, and manually operated means on the supporting plate for moving the heel-plate along the supporting plate and locking it in position.

12. A skate having a supporting plate, a toe-plate having flanking plates on each side of the supporting plate and loosely mounted thereon, a rivet connecting the flanking plates, the supporting plate having recesses with which the rivet is adapted to come in register when the toe-plate is in operative position to lock the same, a heel-plate slidably arranged on the supporting plate, and manually operated means for moving the heel-plate along the supporting plate and locking it thereto.

13. A skate having a supporting plate, a

toe-plate having flanking plates on each side of the supporting plate and loosely mounted thereon, a rivet connecting the flanking plates, the supporting plate having recesses with which the rivet is adapted to come in register when the toe-plate is in operative position to lock the same, a heel-plate slidably arranged on the supporting plate, a heel-plate adjusting lever adapted to swing on the supporting plate, and a link pivotally connected on one end to the heel-plate and pivotally connected on its other end to the lever eccentric of the lever's fulcrum.

In testimony, that I claim the foregoing, I have hereunto set my hand this 14th day of January 1909.

GEORGE E. NEUBERTH.

Witnesses:

WM. H. CAMFIELD,
E. A. PELL.