June 4, 1940. J. R. FOLEY 2,203,278

SKATE

Filed Feb. 25, 1939

Fig. 1.

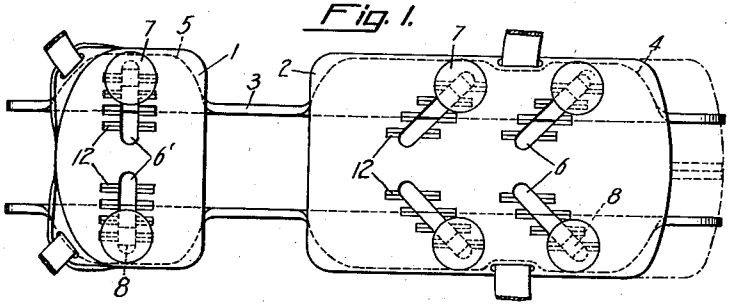


Fig. 2.

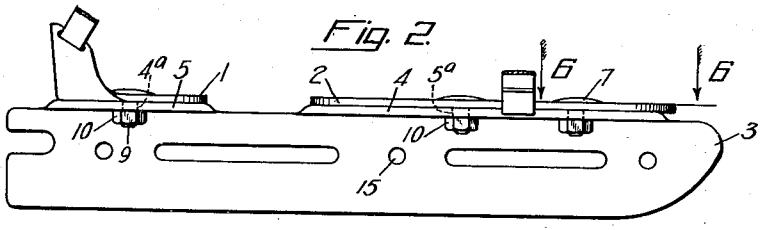


Fig. 3.

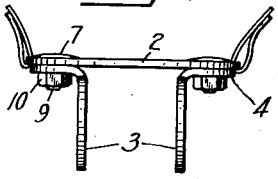


Fig. 5.

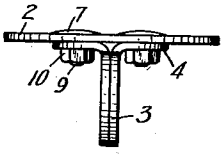


Fig. 4.

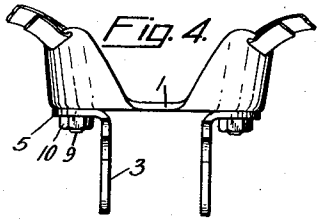


Fig. 6.

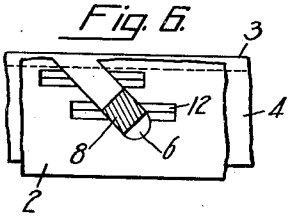


Fig. 7.

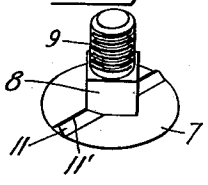
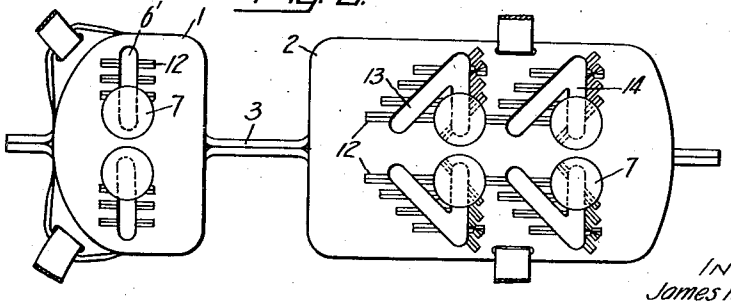


Fig. 8.



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2,203,278

SKATE

James R. Foley, Manchester, Conn.

Application February 25, 1939, Serial No. 258,489

18 Claims. (Cl. 280—11.12)

My invention relates to skates.

It has among its objects to provide an improved skate and one especially adapted for use by beginners. A further object of my invention is to provide such an improved skate which is adjustable from a sled skate to a single runner skate as the user learns to skate. Another object is to provide improved means whereby a sled skate may be adjusted as to length from season to season as a child grows while learning to skate. A still further object of my invention is to provide improved adjusting means for a sled skate whereby the same may be adjusted as to effective length in the same operation whereby the runners are adjusted transversely, in such manner as thereby to extend the possible use of the skate as the child learns and while both simplifying the structure and the process of adjusting the skate to the needs of the child. A further object of my invention is to provide an improved skate having an improved structure whereby adjustments may be made to meet the varying needs of the child, including lateral adjustments of the runners and also adjustments as to length while using the skate as either a sled skate or a single runner skate. Still other objects of my invention are to provide such improved adjusting means wherein the adjustments may be readily made and act to hold the parts in any desired position of adjustment, while producing not only a strong structure, but one adapted to be inexpensively produced. These and other objects and advantages of my improved construction will, however, hereinafter more fully appear.

In the accompanying drawing, I have shown for purposes of illustration, two embodiments which my invention may assume in practice.

In the drawing,

Figure 1 is a plan view of a skate equipped with one form of my improvement, the parts also being shown in dotted lines in their maximum adjusted relation;

Fig. 2 is a side elevation of this skate;

Fig. 3 is an end view of the front end of the skate when functioning as a sled skate;

Fig. 4 is a like view of the rear end of the skate when functioning as a sled skate;

Fig. 5 is a view similar to Figure 3 but showing the parts adjusted to function as a single runner skate;

Fig. 6 is a detailed sectional view on line 6—6 of Figure 2;

Fig. 7 is a detail view of one of the clamping bolts, and

Fig. 8 is a view similar to Figure 1 showing a modified construction.

Referring first to the construction shown in Figures 1 to 7, it will be noted that I have shown a skate having heel and toe plates 1 and 2 equipped with usual straps and carried on spaced runners 3 to form a sled skate; improved adjusting means hereinafter described being provided whereby both the spacing of the runners 3 and the effective length of the skate may be varied in an improved manner.

Referring more particularly to this construction, it will be observed that the runners 3 are narrow and each provided with a laterally extending integral flange at their top, the flanges on opposite sides of the longitudinal center line extending oppositely laterally as illustrated. Herein, such flanges 4 are provided on the front portions of the runners under the toe plate 2, and these flanges extend substantially throughout the length of that plate along each side thereof. Also, like but shorter flanges 5 are provided on the runners under the heel plate 1, these flanges 5 herein being spaced rearwardly from the flanges 4 by unflanged portions of the runner. Further, it will be observed that one or more angularly disposed slots 6 are provided in the toe plate 2 on each side of the longitudinal center line of the latter, two such slots 6 herein being shown parallel to each other on each side of that center line. Herein, these slots are disposed at an angle of substantially 45° to the longitudinal center line, and the two slots on each side of the latter extend away therefrom so as to be disposed substantially at right angles to each other. Also, it will be observed that corresponding slots 6′ are provided in the heel plate 1 on opposite sides of the longitudinal center line thereof, these slots 6′ however being transversely disposed. As shown, suitable holes 4*a* and 5*a* are also provided in the flanges 4 and 5 and adapted to be disposed in different positions under the slots 6, 6′ in different positions of the runners 3 laterally relative to the plates 1 and 2.

As shown, improved connecting and clamping means pass through these slots 6, 6′ and holes 4*a*, 5*a* and connect the plates 1 and 2 with the runners 3. Herein, each clamping means is in the form of a bolt having a large shallow head 7 and an adjacent smaller square shoulder portion 8 adapted to fit in a slot 6 or 6′, a threaded shank 9 also being provided which is adapted to be extended through any of the holes 4*a*, 5*a* and to receive a usual nut 10. Further, it will be noted that the inner faces of the heads 7 of these bolts

are provided with oppositely disposed raised lugs 11, herein triangular in cross section and having a longitudinal edge 11'; these lugs 11 being adapted to be received in and positioned by corresponding depressions or recesses 12 in the plates 1 and 2 on opposite sides of each slot 6, 6'. As shown, four of these recesses 12 are provided in the toe plate 2 along each slot 6 therein, and all of these recesses 12 are arranged at right angles to the slots 6 and parallel to each other. In the heel plate 1, four like recesses 12 are provided at right angles to the transverse slots 6'. Thus, when any bolt is disposed as shown with its head 7 resting flat on its plate 1 or 2, and its shoulder 8 projecting through its slot 6 or 6' and its threaded portion 9 through the suitable hole in the flange 4, the parts can be clamped together in any of the four possible positions of the lug 11 in the recesses 12, by tightening the nut 10.

In the use of this construction, it will be evident that when the skate is first used by the child, the parts will be adjusted into the relation shown in Figure 1, wherein the runners 3 are spaced apart to form a usual sled skate. For the average child, this will serve entirely satisfactorily for the first winter. However, at the beginning of the next winter, it is found that the child's foot has grown and, of course, the child is more familiar with skating. Accordingly, the several nuts 10 are loosened and the runners 3 adjusted toward each other as necessary, at the same time automatically adjusting the toe plate 2 and runners 3 relative to one another longitudinally in such manner as simultaneously to adjust the plates 1 and 2 for growth of the child's foot. With the average child, an adjustment from the outermost slot 12 to the next inner slot will be sufficient throughout the next winter, while with other children, an even greater adjustment will be made, but it will be apparent that the four positions provided make a wide range of adjustment possible. After adjustment of the runners 3 relative to the plates 1 and 2, merely tightening the nut 10 will again prepare the skate for use by the child, both as regards spacing of the runners, and as regards effective length of the skate. This process may thus be continued until the runners 3 are brought into the abutting relation shown in Figure 5 when the full length adjustment will be also taken up, this ordinarily occurring after several winters' use and the child then being ready to graduate normally into the use of standard single runner skates.

In Figure 8, I have shown a modified construction generally similar to that heretofore described, save that each slot 13 corresponding to a slot 6, is provided with a lateral slotted extension 14 at its front end disposed transversely to the portion 13 and herein at right angles to but spaced from the center line of the plate 2. In this construction, obviously, adjustment may be made in the slots 13 to effect simultaneous adjustment of the runners toward each other and in the effective length of the skate as heretofore, but it will also be noted herein that if the child should acquire skating skill more quickly, the slot extensions 14 may be used so that the runners 3 may be brought together at any time. Thus, a single pair of skates may be adapted either for several winters' use of the average beginner, or for use by a child whose development is unusually rapid. Further, it will be observed that while still providing only the connected slots 13 and 14 and using the same bolts in either set of slots, it is also possible to adjust for length in a single runner skate by transferring the bolts from the inner ends of the slots 14 to the inner ends of the slots 13, thereby increasing the possible length of use of the skate.

As a result of my improved construction, it is made possible very substantially to extend the possible life of a beginner's skates and thereby reduce the number of pairs of skates which have to be bought in the course of learning to skate. Further, the adjustment provides a source of interest and incentive for the child during the process of learning. At all times, it will also be observed that a sturdy skate is provided, due particularly to the provision of the flanges on the runners and the clamping means between the same and the toe and heel plates. Also, though not necessary, the runners 3 may, if desired, be bolted together when in single runner relation as by connecting suitable bolts in registering apertures 15 in the blades. Further, the various positions of fixed adjustment provided by the lugs 11 and recesses 12 markedly facilitate the process of adjustment, and insure not only quite exact adjustment in any of the desired positions, even by a child, but definite holding of the parts in any position. Moreover, it will be evident that the construction is exceedingly simple and such as to enable the skates to be inexpensively manufactured. These and other advantages of my improvements will, however, be clearly apparent to those skilled in the art.

While I have in this application specifically described two embodiments which my invention may assume in practice, it will be understood that these forms are shown for purposes of illustration, and that the invention may be modified and embodied in various other forms without departing from its spirit or the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. In a skate, foot supporting means, a plurality of runners thereon, and means for effecting longitudinal adjustment of said runners relative to the front end of said foot supporting means while effecting relative lateral adjustment of said runners.

2. In a skate, foot supporting means, a plurality of runners thereon, and means on opposite sides of the longitudinal center line of said supporting means for effecting longitudinal adjustment of said runners relative to the front end of said foot supporting means while effecting relative lateral adjustment of said runners.

3. In a skate, foot supporting means, a plurality of runners thereon, and means including adjustable clamping connections therebetween for effecting longitudinal adjustment of said runners relative to the front end of said foot supporting means while effecting relative lateral adjustment of said runners.

4. In a skate, foot supporting means, a plurality of runners thereon, and means including slot and bolt connections therebetween for effecting longitudinal adjustment of said runners relative to the front end of said foot supporting means while effecting relative lateral adjustment of said runners.

5. In a skate, foot supporting means, a plurality of runners thereon, and means including slot and bolt connections therebetween and interlocking positioning means thereon presenting a plurality of fixed positions of adjustment, for effecting longitudinal adjustment of said runners relative

to the front end of said foot supporting means while effecting relative lateral adjustment of said runners.

6. In a skate, foot supporting means including separate heel and toe plates, a plurality of runners thereon, and means for effecting relative longitudinal adjustment between said runners and one of said plates while adjusting said runners laterally relative to both plates.

7. In a skate, foot supporting means including separate heel and toe plates, a plurality of runners thereon, and means for effecting relative longitudinal adjustment between said runners and said toe plate while maintaining their longitudinal relation to said heel plate and adjusting said runners laterally relative to both plates.

8. In a skate, separate toe and heel plates, a plurality of runners, and means including transverse slots in said heel plate, angularly disposed slots in said toe plate, and cooperating clamping connections in both slots, for effecting relative longitudinal adjustment between said runners and toe plate while adjusting said runners laterally relative to both plates.

9. In a skate, foot supporting means, a plurality of runners, and operative connections between said supporting means and said runners including forwardly and laterally inclined slots in said foot suporting means for effecting relative longitudinal adjustment between said runners and foot supporting means while adjusting said runners laterally relative to the latter.

10. In a skate, separate toe and heel plates, a plurality of runners, and means on opposite sides of the center line of said plates, including angularly disposed slots in said toe plate substantially at right angles to each other and spaced transverse slots in said heel plate for effecting relative longitudinal adjustment between said runners and toe plate while adjusting said runners relative to both of said plates.

11. In a skate, foot supporting means, a plurality of runners, and operative connections between the latter and said foot supporting means including means for adjusting said runners from spaced relation into abutting relation and means for changing the extent of projection of said runners beyond the front end of said foot supporting means in the latter relation of said runners.

12. In a skate, separate heel and toe supporting plates, a plurality of runners, means between said heel plate and runners for effecting relative lateral adjustment of said runners, and means including angularly disposed and transversely disposed connecting slots in said toe plate for selectively adjusting the runners laterally, or both laterally and longitudinally, relative to said toe plate.

13. A skate having foot supporting means comprising relatively longitudinally adjustable portions, a plurality of runners laterally adjustable relative to one another and said portions, and operative connections for said portions and said runners acting to maintain said portions and runners in operative relation in the selected position of adjustment.

14. A skate having foot supporting means comprising relatively longitudinally adjustable portions, a plurality of runners laterally adjustable relative to one another and said portions and having one of said portions in fixed longitudinal relation to said runners and the other portion longitudinally adjustable relative to said runners, and operative connections for said portions and said runners acting to maintain said portions and runners in operative relation in the selected position of adjustment.

15. A skate having foot supporting means comprising relatively longitudinally adjustable portions, a plurality of runners laterally adjustable relative to one another and said portions and having one of said portions in fixed longitudinal relation to said runners and the other of said portions either laterally or longitudinally adjustable relative to said runners, and operative connections for said portions and said runners acting to maintain said portions and runners in operative relation in the selected position of adjustment.

16. In a skate, a plurality of runners having oppositely extending top flanges, foot supporting means, and lateraly adjustable operative connections between said flanges and said foot supporting means.

17. In a skate, a plurality of runners having oppositely extending top flanges, foot supporting means longitudinally spaced from one another, and laterally adjustable operative connections between said flanges and each of said foot supporting means.

18. In a skate, a plurality of runners having oppositely extending top flanges, foot supporting means longitudinally spaced from one another, and laterally adjustable operative connections on opposite sides of the center line of said foot supporting means and between said flanges and each of said foot supporting means.

JAMES R. FOLEY.