

(No Model.)

H. HEINZE.
SKATE.

No. 577,027.

Patented Feb. 16, 1897.

FIG.1

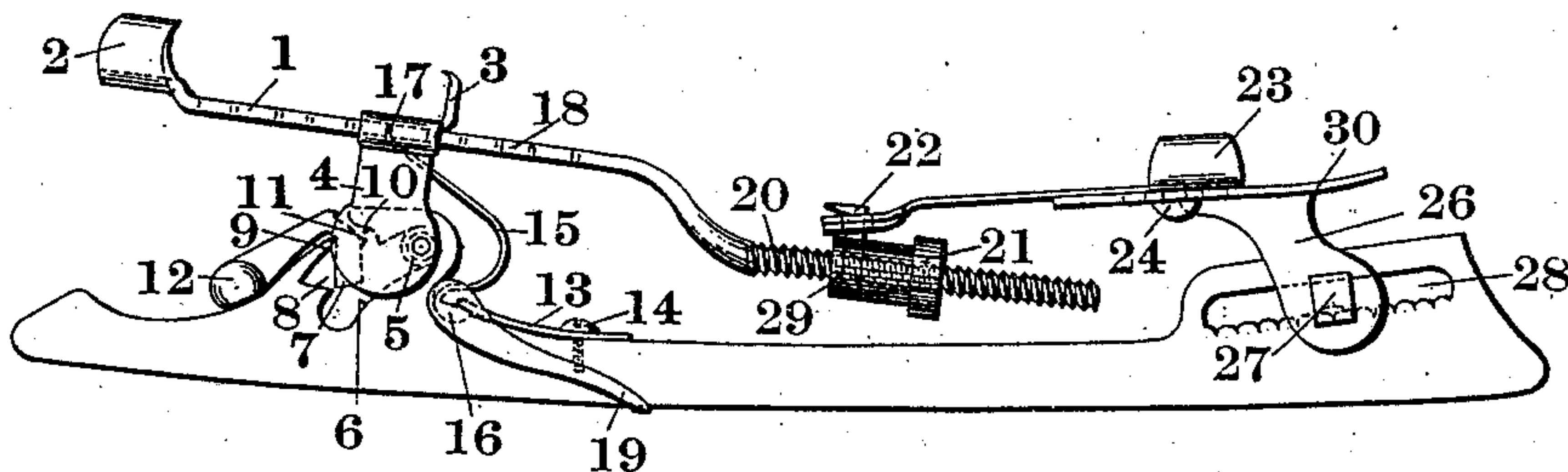


FIG.2

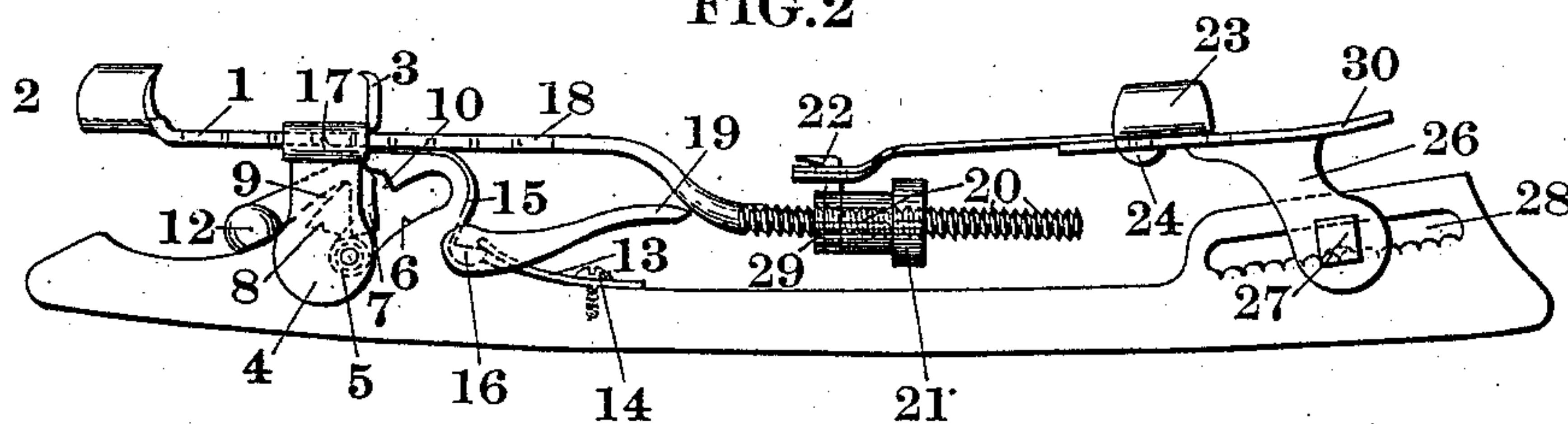
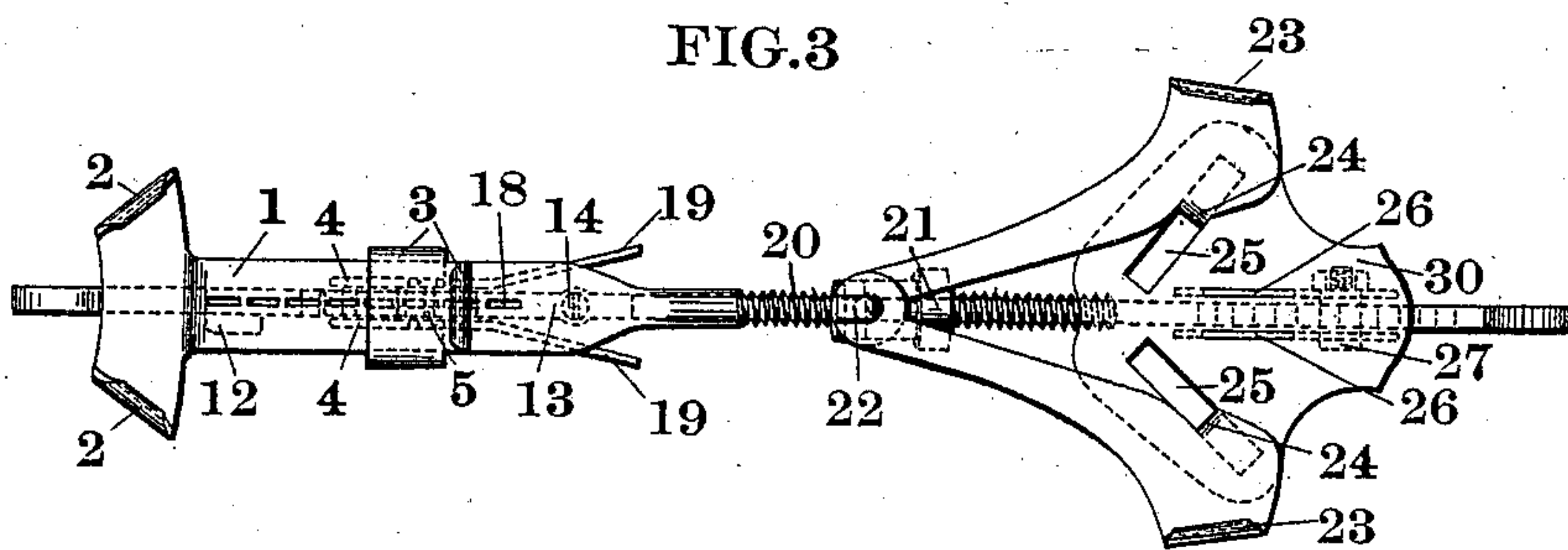


FIG.3



WITNESSES :

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INVENTOR:

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BY *Wm R Rummel*
his ATT'Y

UNITED STATES PATENT OFFICE.

HERMANN HEINZE, OF CHICAGO, ILLINOIS.

SKATE.

SPECIFICATION forming part of Letters Patent No. 577,027, dated February 16, 1897.

Application filed April 13, 1896. Serial No. 587,288. (No model.)

To all whom it may concern:

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

My invention relates to skates, and particularly to clamping mechanism therefor. Its objects are, first, to provide a clamping mechanism for a skate in which the clamp-support or clamp-seat is vertically movable, and by a change in its vertical position operates the clamps so as to engage or release the sole of a shoe placed between same; second, to provide improved means for adjusting the skate to different sizes; third, to provide an improved latch adapted for securing the clamps, and, fourth, to provide means for holding the skates in a fixed position on the ice or floor, so that the same may be secured to the shoe without the use of the hands.

The accompanying drawings illustrate an ice-skate constructed according to my invention in which the rear clamp-seat or heel-support of the skate is vertically movable and operates to spread the clamps apart when in a raised position and to lock same for engaging a shoe-sole when in a lower or depressed position.

Figure 1 is a side elevation with the movable clamp-seat raised to its normal position, with the clamps spread apart for receiving the shoe. Fig. 2 is a side elevation of same with the movable clamp-seat depressed and the parts in their proper position when engaging a shoe. Fig. 3 is a top plan of Fig. 1.

For convenience in description I will refer to the position of the parts as shown in Figs. 1 and 3 as the "open" position and that shown in Fig. 2 as the "closed" position.

1 is the movable clamp-seat; 2, a pair of clamp-jaws rigidly secured to same; 3, a movable clamp-jaw slidingly attached to the seat 1; 4, a pair of arms extending down on either side of the clamp 3, rigidly secured to same and having pivoted therein the roller 5. The roller 5 runs upon the curved way 6, which is formed in the lower portion of the skate-frame, the parts forming same being integral with the skate-runner in the construction shown. A dog or cam lever 7 11 12 rests nor-

mally upon the fulcrum 9 when the clamping mechanism is in the open position forming a gravity-latch, and rests between the roller 5 and the shoulder 10 when the clamping mechanism is in the closed position.

13 is a spring secured at 14 and operating upon the lower end of the curved arm 15, which at its upper end has the tooth 17, engaging one of the perforations 18. The arm 15 has a pivotal bearing in the skate-frame at 16.

The front clamps 23 are pivotally attached to the nut 21, seated on the threaded extension 20 of the rear clamp-seat 1. The pin 22 has a loop or collar at its lower end which encircles a reduced portion of the nut 21, and is held upon the nut by the collar 29.

By means of the nut 21 the distance between the forward clamp-jaws 23 may be adjusted. The clamps are guided by the pins 24 in the slots 25, formed in the forward clamp-seat 30, sliding in said slots and operating to draw the jaws toward each other or spread same apart, as shown.

The tooth 17 may be changed to different perforations 18 for regulating the distance between the rear clamp-jaws 2 and 3.

The forward clamp-seat 30 is secured to the support 26. The bolt 27 is formed with ridges or teeth along its sides for engaging the toothed or corrugated portion of the slot 28. The bolt is secured by a nut, as shown in Fig. 3. By means of this device the clamping portion of the skate and the clamp-seats may be adjusted for shoes of different lengths.

The operation of the device is as follows: The clamping mechanism is first regulated as before indicated. To secure the skate upon the shoe, the skate is placed upon the floor or ice, being supported in an upright position by the arms 19, which are rigidly secured to the arm 15. The heel of the shoe is then placed between the rear clamps 2 and 3, the bottom slightly touching the clamp-seat 1 and the forward part of the sole resting upon the forward clamps and clamp-seat between the clamp-jaws 23. The foot is then pressed firmly down upon the skate. When the clamp-seat 1 moves downwardly, the roller 5 runs back and down along the way 6, strikes against the inner arm of the lever, thus forcing same into the recess 8 and permitting the roller to pass

into the lower portion of the way. The weight of the outer arm of the lever then forces same into the position shown in Fig. 2, the inner arm resting with its upper end 11 against the shoulder 10 and its lower end 7 upon the roller 5, thus locking the mechanism, as shown in Fig. 2. The roller in passing along the way 6 draws the clamp-jaw 3 along the clamp-seat 1. It will be seen that when the clamp-seat 1 is pressed downwardly, owing to its connection to the arm 15, it draws upon the forward clamps, thus urging same together. These should be adjusted by means of the nut 21, so as to firmly engage the forward sole of the shoe before the roller 5 reaches the lower end of the way. The jaw 3 moves back with the seat 1 not sliding on same, and thus not clamping the heel during the first part of the downward pressure. As the downward pressure of the clamp-seat 1 is continued the clamp-jaw 3 slides back upon its seat, so that the clamp-jaws 2 and 3 engage the heel of the shoe. It will be seen that the clamp-jaw 3 moves back to the same position relative to the way 6, regardless of the perforation in which the tooth 17 is inserted, so that when this is in a perforation near the clamp-jaws 2 the adjustment will be for a small heel, the arm 15 limiting the backward movement of the clamp-seat 1.

To remove the skate, the outer arm of the lever is lifted by means of the knob 12 on same, the inner arm being thus turned into the recess 8 and releasing the roller 5. The arm 15 being acted upon by the spring 13 at once raises the clamp-seat 1, when the roller is released by the lever, and the clamp-jaws are thereby again caused to spread to their open position, as shown in Figs. 1 and 3. It will be seen that a similar clamping mechanism may be applied to roller-skates.

I am aware that a vertically-movable clamp-seat is old, and I do not therefore claim this feature broadly.

What I claim, and desire to secure by Letters Patent, is—

1. In a skate, the combination of a frame therefor; a clamp-seat vertically movable thereon; a pair of clamp-jaws on said clamp-seat, one of which is urged toward the other by the downward movement of the clamp-seat; and a lever adapted to catch and hold the clamp-seat in the lowered position, thereby

securing the clamp-jaws in the closed or shoe-engaging position, said lever having a shifting fulcrum permitting the movement of the lever into locking and releasing positions, substantially as described.

2. In a clamping mechanism for a skate, the combination of a clamp-seat having a threaded extension; an oppositely-threaded adjusting-nut engaging the extension; a collar on the nut permitting the nut to be turned therein independent of the collar; a pair of clamp-jaws having arms pivotally engaging the collar; and another clamp-seat adapted to support and guide said pair of clamp-jaws.

3. In a skate, the combination of a frame therefor; a clamping mechanism; a prop secured to the skate adapted to rest upon the floor or ice, so as to support the skate in an upright position, and actuated by the clamping mechanism, so as to be withdrawn free from the floor or ice when the clamps are in the locked or shoe-engaging position.

4. In a skate, the combination of a frame therefor; a clamping mechanism having a vertically-movable clamp-seat; a prop secured to the skate, adapted to rest upon the floor or ice, so as to support the skate in an upright position, and actuated by the downward movement of said clamp-seat to withdraw free from the floor or ice.

5. In a skate, the combination of a frame therefor; a clamp-seat vertically movable thereon; a clamp-jaw slidably attached to the clamp-seat; an arm secured to the jaw and adapted to move same on its seat, said arm being moved in the way by vertical movement of the clamp-seat; and a lever adapted to catch and hold the arm at the other end of the way, said lever having a shifting fulcrum permitting the movement of the lever into locking and releasing positions, substantially as described.

6. In a clamping mechanism for a skate, the combination of a frame therefor having the way 6, recess 8, fulcrum 9 and shoulder 10, a lever supported on the fulcrum, an arm adapted to operate in the way and to be engaged by the lever, and a pair of clamp-jaws adapted to be operated by the arm.

HERMANN HEINZE.

Witnesses:

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R. W. McCULLOCH.