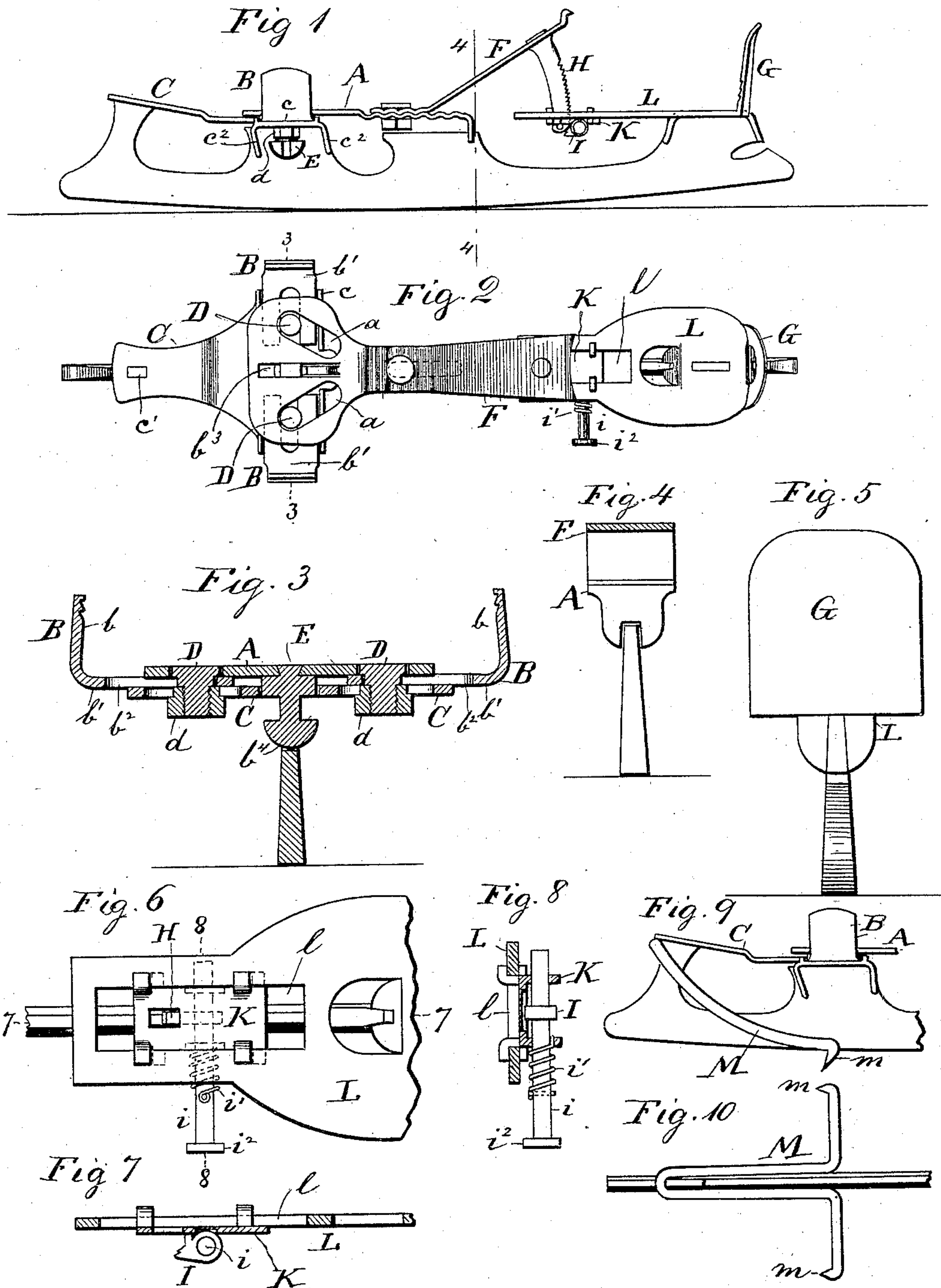


(No Model.)

H. HEINZE.  
SKATE.

No. 433,467.

Patented Aug. 5, 1890.



Witnesses  
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# UNITED STATES PATENT OFFICE.

HERMANN HEINZE, OF CHICAGO, ILLINOIS.

## SKATE.

SPECIFICATION forming part of Letters Patent No. 433,467, dated August 5, 1890.

Application filed November 26, 1889. Serial No. 331,696. (No model.)

*To all whom it may concern:*

Be it known that I, HERMANN HEINZE, a subject of the Emperor of Germany, 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, reference being had therein to the accompanying drawings.

The objects of my invention are to automatically fasten a skate upon the foot of the skater; to insure the secure retention of the skate upon the foot so long as may be desired; to permit the skate to be readily put on and removed by a person upon the ice without using the hands, and to provide certain novel and improved details in skate fastening or locking devices.

To the attainment of the foregoing and other useful ends, my invention consists in matters hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 represents in side elevation a club-skate embodying my invention. Fig. 2 is a top plan view of said skate. Fig. 3 is a cross-section, on a slightly larger scale, on line 3 3 in Fig. 2. Fig. 4 is a sectional elevation on line 4 4 in Fig. 1. Fig. 5 is a rear end elevation of the skate. Fig. 6 is a top plan of a portion of the skate with the spring-locking plate removed for convenience of illustration. Fig. 7 is a longitudinal vertical section on line 7 7 in Fig. 6. Fig. 8 is a vertical cross-section on line 8 8 in Fig. 6. Fig. 9 shows in elevation a portion of the skate with a hook device for holding the skate against slip on the ice applied. Fig. 10 shows in plan the hook device illustrated in the preceding figure.

Corresponding letters of reference in the several figures of the drawings designate like parts.

The sole-plate A is adjustable longitudinally—that is to say, in a direction coincident with the length of the skate. The movable side clamps or jaws B are arranged to receive the sole of the boot or shoe of the skater between their gripping-faces *b*, and are adjustable transversely to the length of the skate. Their gripping-faces are also preferably serrated, so as to more securely hold the sole when they are forced into engagement there-

with. These side clamps lie upon and are guided by the rear portion of the toe-plate C, which is formed with a transversely-arranged extension having a guideway *c* for the flat horizontal portions *b'* of the side clamps. The top plate is shown secured upon the blade at its forward end by a mortise-joint, as at *c'*, and is at its rear end held upon the blade by downwardly-projecting lips *c''*.

As a means for adjusting the side clamps laterally to and from the longitudinal adjustment of the sole-plate, the latter is provided with obliquely-arranged slots *a*, and the clamps are provided with studs D, which engage in said slots. The studs D are adjustably held by nuts *d* in slots *b''*, formed in the shank portions *b'* of the side clamps, so that the movement of the side clamps can be predetermined in accordance with the width of the foot of the skater.

The sole-plate is guided by a stud E, which engages in a slot *b'''* in the sole-plate. This stud engages in the top plate, as in Fig. 3, and has on its lower end a head *b''''*, which is countersunk on the blade. This stud can be in one piece, or it can be formed of a screw and nut. The rear end of the sole-plate A is bent downwardly, so as to engage the blade with which, however, it has a sliding connection at such point, formed, for example by notching the end of the plate so as to receive the upper edge portion of the blade.

The sole-plate is provided with a rear extension F, consisting of a spring, which is at its forward end adjustably secured to the sole-plate. The rear end of spring F is normally elevated, as in Fig. 1, and is adapted for engaging the forward portion of the heel of the boot or shoe of the skater. When the foot is brought down upon the heel of the skater's boot or shoe will slide down the upturned heel-guard G, while the spring which is engaged by the forward portion of the heel will, while being depressed, be of necessity pushed forward, and thereby cause the sole-plate to move forward and the side clamps to move toward one another.

As a locking device, the spring F is provided with a downwardly-extending rack H, which is engaged by a spring-controlled pawl I. The spindle *i* for this spring-controlled



pawl has its bearings in a slide K, which is supported upon the heel-rest or heel-plate L. The heel-plate L is provided with a slot *l*, and the slide or adjustable carrier K for the pawl is provided with lips which engage the heel-plate. The spring *i'*, surrounding the pawl-spindle *i*, is so arranged that it will provide a torsional force to such spindle as well as a lateral shifting force to the same, both combined, tending to hold the pawl in engagement with the rack. The rack passes through a slot in the slide or pawl-carrier, by which arrangement the pawl-carrier will move forward and backward simultaneously with the forward and backward movement of the sole-plate, and hence keep the pawl in engagement with the rack. The pawl locks the rack down, but can be released therefrom so as to allow the rack to rise, and to such end the pawl-spindle may have at one end a knob *i''*, which can be pushed sideward by the skater with the other foot when it is desired to unfasten the skate. The heel-guard can be toothed along its inner side and can be secured in any suitable way.

M represents a yoke having spurs or hooks *m*. This yoke can be applied, as in Fig. 9, so that its hooks will catch in the ice, and hence hold the skate while it is being put on. By simply placing the sole of the shoe upon plate A, with the forward side of the heel against the rear end of spring F and the rear of the heel against guard G, and then pressing downward until the heel rests upon plate L, the jaws B will engage and clamp the edges of the sole simultaneously with engaging and holding the heel between guard G and spring F, the latter being locked by its rack H engaging pawl I, and with pushing

the pawl I sidewise by the other foot to release rack H the spring F will release its hold on the heel, and simultaneously the jaws B will be opened to release the sole, when the skate will drop off.

What I claim as my invention is—

1. The combination, with the front plate C and heel-plate L with heel-guard G, both plates being rigid with the skate, of side clamps B, laterally guided on plate C, longitudinally-sliding plate A, so connected with clamps B that a forward movement of such plate will contract clamps B, spring F, secured to plate A and rearwardly extending in an inclined direction for grasping the heel of the shoe, and a suitable locking device for spring F after having been depressed, all substantially as described, to operate as specified.

2. The combination, with the front plate C and heel-plate L with heel-guard G, both plates being rigid with the skate, of side clamps B, laterally guided on plate C, longitudinally-sliding plate A, so connected with clamps B that a forward movement of such plate A will contract clamps B, and spring F, secured to plate A and rearwardly extending in an inclined direction for grasping the heel of the shoe, and provided with a ratchet-bar H, engaging a spring-controlled pawl I for locking spring F, after being depressed, all substantially as described, to operate as specified.

In testimony whereof I affix my signature in presence of two witnesses.

HERMANN HEINZE.

Witnesses:

WM. H. LOTZ,  
OTTO LUEBKERT.