

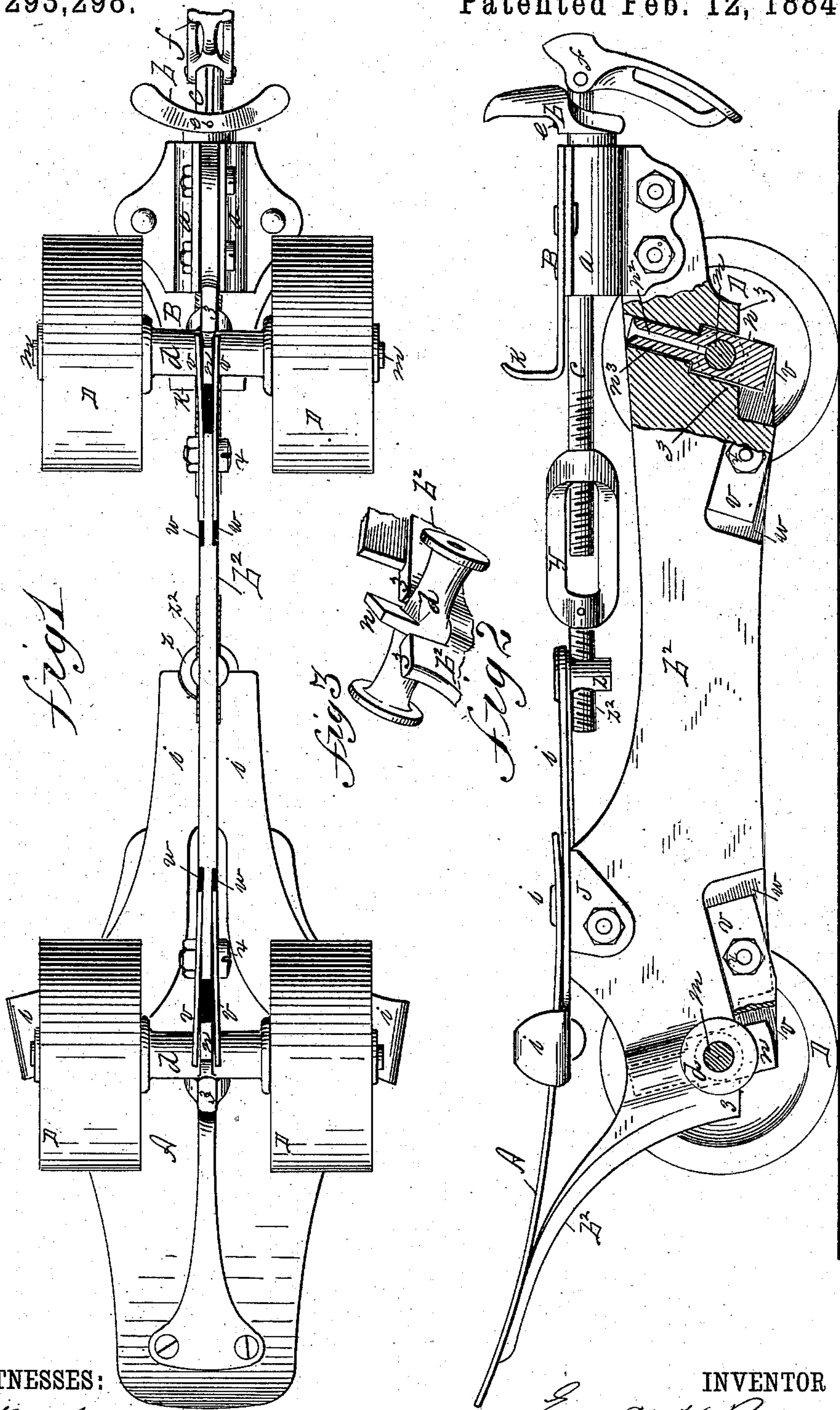
(No Model.)

E. H. BARNEY.

ROLLER SKATE AND SKATE FASTENING.

No. 293,298.

Patented Feb. 12, 1884.



WITNESSES:

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ROLLER-SKATE AND SKATE-FASTENING.

SPECIFICATION forming part of Letters Patent No. 293,298, dated February 12, 1884.

Application filed December 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, EVERETT H. BARNEY, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Roller-Skates and Skate-Fastenings, of which the following is a specification.

This invention relates to improvements in roller-skates, and in devices for fastening skates to the shoe of the wearer, the object being to provide improved journals and means for securing the latter to the skate-frame; to provide improved means for bringing the journals and axles back to a position at right angles to the frame after they shall have been swung around to direct the skate in a curved track, and for preventing the journals from swinging too far; to provide improved means for lubricating the journals and axles and the journal-post from a common source, and to provide in a skate a non-rotating draw-bar having a heel-clamp movably secured thereto, the latter being operated by a cam-lever, and double or other acting screw-adjustment between said draw-bar and sole-plates.

In the drawings forming part of this specification, Figure 1 is a bottom plan view of a skate embodying my improvements. Fig. 2 is a side elevation, partly in section; and Fig. 3 is a perspective view of the under side of the journal and a section of that part of the frame with which it is directly connected.

In the drawings, b^1 is the frame of the skate, consisting of a thin metallic bar of suitable width, having an extension upon one end reaching forward under the foot-plate A, the latter being properly secured thereto. The foot-plate is otherwise secured to the frame by a bracket, J, secured on each side of the frame and to said plate. The sole-clamps i are of a well-known construction, having their rear ends united by a single pivot-bolt, z , and the latter is tapped to receive the screw z^2 on one end of the link-nut y , the opposite end of the latter being tapped to receive the screwed end of the draw-bar c . Two shell-brackets, a , are secured to the rear end of the frame b^1 , having the heel-plate B secured to their upper edges, whereby is formed a chamber under the latter to receive the trough-shaped shank of the heel-clamp b , as in my patent of

February 20, 1877. The forward end of the heel-plate is bent up at right angles to form the heel-abutment k . The draw-bar c , as in my said patent, passes through the rear part of the heel-clamp and between the sides of its shank under the heel-plate, and screws into the rear end of the link-nut y . In the drawings the screw on the draw-bar c is made right-handed, and that on the part z^2 , which is attached to the nut y , and which screws into the pivot z , is made left-handed. This arrangement of right and left handed screws for adjusting the clamps to the size of the boot-sole in the usual way facilitates said adjustment. The draw-bar c has a transverse slot through it near its rear end, of some length, as shown. A pin, e , passes through the rear portion of the heel-clamp and through the said slot in the draw-bar, thereby locking the clamp and draw-bar one to the other, but allowing the clamp to slide on the bar to the extent of the length of the said slot in the latter, and preventing the draw-bar from being rotated, as it has been heretofore in similar constructions.

The cam-lever f , as in my said patent, is pivoted to the end of the draw-bar, and is, as there described, adapted to be swung upward to carry its cam against the rear of the heel-clamp, forcing the latter against the boot-heel, and then, after having its upper end carried against the boot, so completing the locking of the skate by drawing bar c rearwardly and forcing the sole-clamps against the opposite edges of the sole. When the sole and heel clamps are to be adjusted to the size of the boot, nut y is operated to lengthen or shorten the connection through bar c , between the sole and heel clamps. In this adjustment the said bar and the heel-clamp move substantially together back and forth, and when the skate is placed on the boot and held by one hand, the cam-lever is seized by the other and turned upward, first striking the clamp b , and sliding it against the boot, and finally having its cam carried against it with increased force to lock it. By making a sliding connection between the heel-clamp and draw-bar, the necessity of moving each one separately in many of the adjustments is avoided, for when the bar is moved (the pin being against either end of the slot in the latter) the clamp moves with it. The

frame b^2 is made of sufficient thickness near each end to permit of boring two journal-post bearings in it quite through it from its lower to its upper edge. At the lower end of said bearing the frame is provided with a recess, as shown in Fig. 3, within which the journal d vibrates, the parts 3 3 of the frame being journal-stops. The said journal-bearings are bored at an incline of about fifteen degrees, and are of proper cylindrical form. The journal d is provided with a journal-post, n^3 , extending up through said bearing in the frame, and having its axial line intersecting that of the journal and of the axle m within the latter, at right angles. Beneath the journal d , under the post n^3 , and in a line with it, is a flat-sided stud, n , on the opposite sides of which two flat springs, v , which are bolted to frame b^2 , are made to bear, and whereby the journal is held by a yielding force in a position at right angles to the frame, and also is held in its place in the latter, and is prevented from any disagreeable rattling. The sides of the frame where the springs v are secured to it are slightly recessed at w , as shown, and the springs, when bolted to the frame by the bolts x , have their upper edges brought against the upper edges of said recesses, and thereby the springs are rigidly held, and cannot swing downward when any force of the journal is brought against their ends. The journal-post n^3 has an oil-passage, n^2 , from its upper end to the axle-bearing in the journal d . The axle m passes through and may freely revolve in the journal d , and has secured to it in any suitable manner the rollers D . The journal and axle are lubricated by applying oil at the upper end of post n^3 , whence the oil flows to the journal-center and along the axle toward its ends and to the interior of the rollers D , affording them such lubrication as they may require.

It will be seen that the weight upon the skate is brought to bear on the upper side of each journal around the base of the post n^3 , and in order that there may be no friction at that point to interfere with the easy vibratory movement of the journals and axles a little oil is allowed to run down the sides of the post n^3 when oil is applied, as above described, thereby sufficiently oiling the post-bearing.

As above described, the degree of the incline of the journal-posts is about fifteen degrees, while that usually given in roller-skates is ordinarily twenty or twenty-five degrees more than that, and, as aforesaid, the axial lines of posts n^3 and the axles intersect. These last-named two features of this construction conduce to render the necessary vibratory movement of the journals and axles very easy to produce by a slight depression of one side of the skate, thereby making it very easy to skate thereon and easily guide it to any desired curve of motion. Furthermore, the manner of applying the spring force to the journals, as above described, is one in which very great ease of

spring motion is the result, as well as an increasing force at all points in the vibratory path after the journal begins to swing.

What I claim as my invention is—

1. A roller-skate frame, substantially as described, having therein inclined cylindrical journal-bearings, one at each end, an axle-journal, substantially as described, for each of said bearings, having a journal-post fitting said bearings, and having on its side opposite to said post a flat-sided stud, and springs, substantially as described, secured to the frame, which bear upon the opposite sides of said stud under the journal, combined and operating substantially as set forth.

2. In a roller-skate, the frame b^2 , having the journal d pivoted and adapted to vibrate therein, and having portions 3 3 thereof extending in the front and rear of said journal to constitute axle-stops, substantially as set forth.

3. A roller-skate frame, substantially as described, having therein inclined cylindrical journal-bearings, one at each end, an axle-journal, substantially as described, for each of said bearings, having a journal-post fitting the latter, which post is provided with an oil-passage from its upper end to the interior of the journal, and having on its opposite side to said post a flat-sided stud, and springs, substantially as described, secured to the frame, which extend under the journal and bear against the opposite sides of said stud, combined and operating substantially as set forth.

4. A roller-skate frame, substantially as described, having an inclined cylindrical journal-bearing therein, a journal to receive and support that part of the axle between the rollers having a post thereon to fit said bearing, whose axial line intersects the longitudinal center line of the journal, and a flat-sided stud thereon opposite said post, and two springs secured on each side of the frame and bearing against the opposite sides of said stud, combined and operating substantially as set forth.

5. In a skate-fastening, the combination, with a non-rotating draw-bar, and with the sole-clamp pivot, of an adjusting-screw, substantially as described, connecting the said pivot and draw-bar, a heel-clamp secured to and having a sliding movement on the draw-bar, and a locking cam-lever pivoted to the latter in the rear of the heel-clamp, substantially as set forth.

6. The combination, with a non-rotating draw-bar, and with a locking cam-lever pivoted thereto, of a heel-clamp secured to said draw-bar by means substantially as described, but having a sliding movement thereon, substantially as set forth.

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Witnesses:

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