E. H. BARNEY.

Skates.

No. 137,526. Patented April 8, 1873.

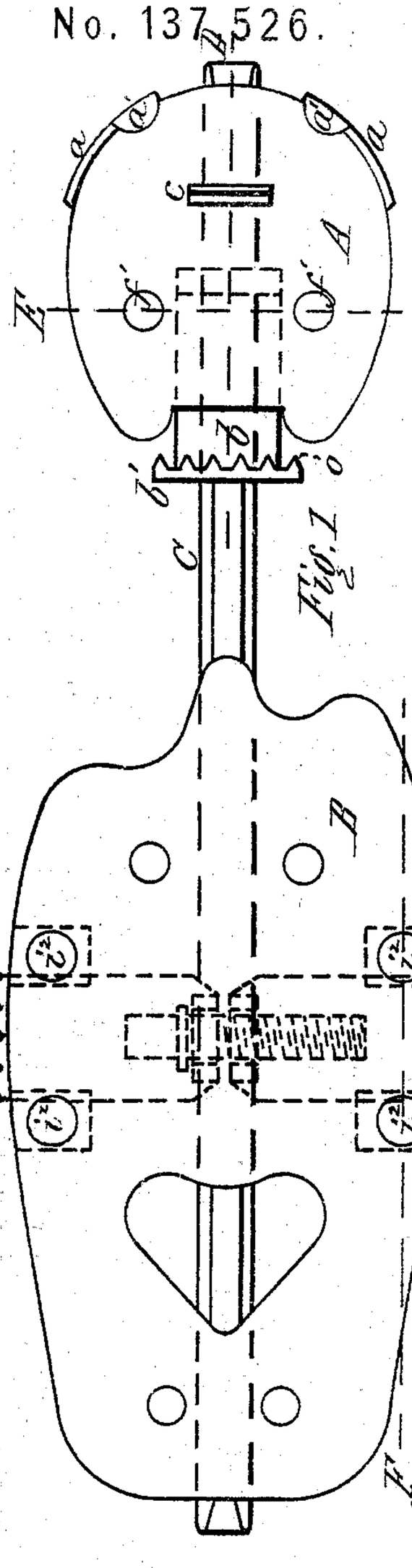

Fig. 1

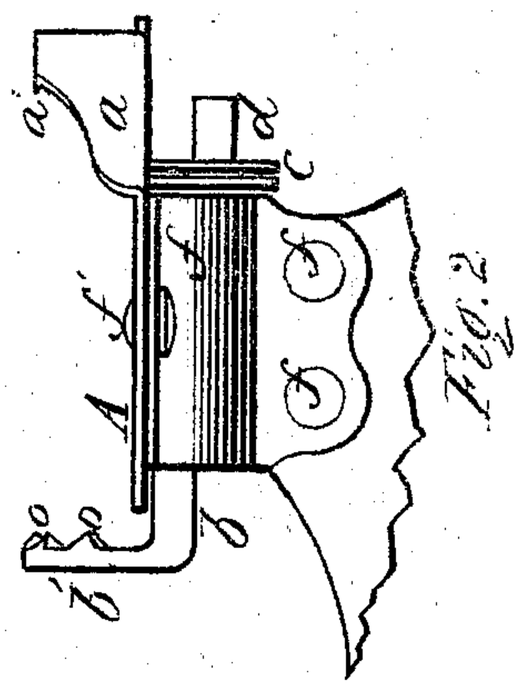

Fig. 2

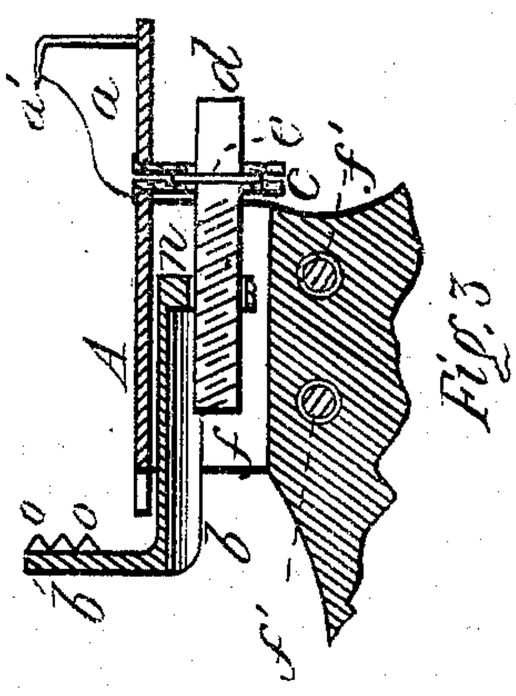

Fig. 3

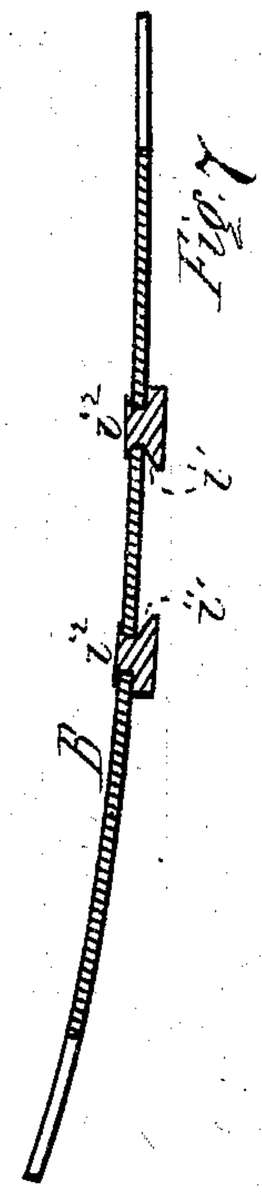

Fig. 7

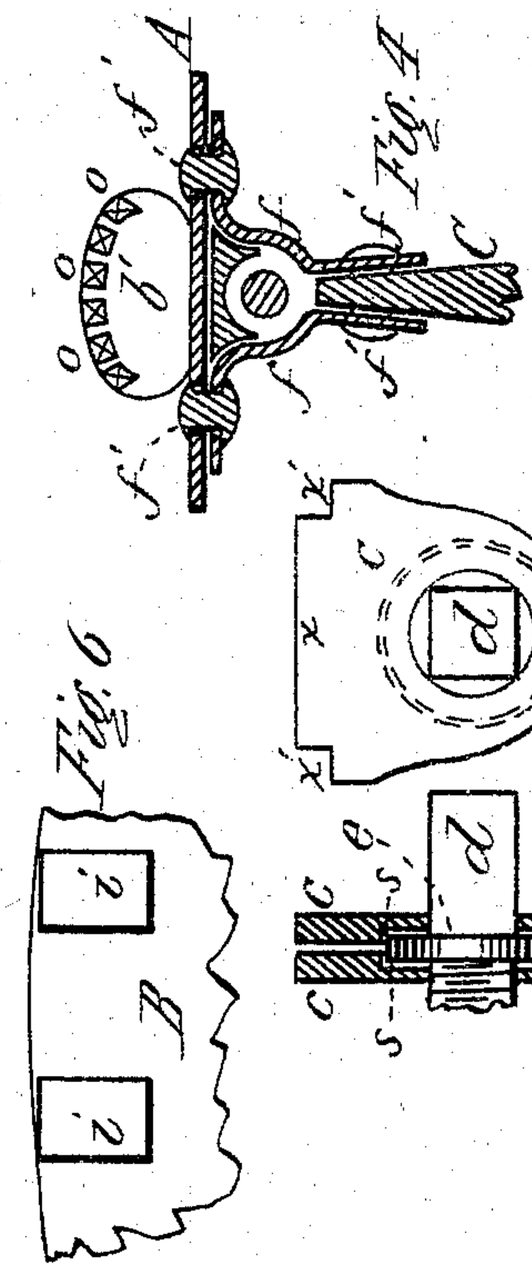

Fig. 4

Fig. 6

Fig. 5

Witnesses.

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IMPROVEMENT IN SKATES.

Specification forming part of Letters Patent No. **137,526**, dated April 8, 1873; application filed January 21, 1873.

To all whom it may concern:

Be it known that I, EVERETT H. BARNEY, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Skates; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a plan view of a skate having my improvements applied. Fig. 2 is a side view of the heel-plate and attachments. Fig. 3 is a vertical longitudinal section through line D of Fig. 1, showing the construction and arrangement of the parts. Fig. 4 is a vertical transverse section through line E of Fig. 1. Fig. 5 is an enlarged section and rear view of the bearing which secures the clamp-screw of the heel-plate in position. Fig. 6 is a reverse plan view of the clamp-bearings of the foot-plate, showing them in position upon the foot-plate; and Fig. 7 is a longitudinal vertical section through line F of Fig. 1, showing the method of securing the clamp-bearings to the foot-plate.

My invention relates to the construction of a skate wherein metallic clamps are used to secure the skate to the foot; and it consists, first, of two metallic pieces firmly secured to the skate-blade and also to the heel-plate, with a space between said pieces, which, with the heel-plate, forms a socket, within which operates, longitudinally, a clamp, the face of which operates against the heel of the boot. Two metallic plates are secured, vertically, to the heel-plate, and transversely with reference to the length of the skate, which plates are perforated, and are recessed on their inner and contiguous faces, to receive the collar of a clamp-screw, so that when the screw is inserted into the plates, with the collar placed in the recesses, and the two plates then secured to the heel-plate, the inner threaded end of the screw enters a threaded hole in a vertical ear of the clamp, and when the screw is turned it is kept by its collar within the recesses of the plates from moving out of its position, and the clamp is moved to and fro in its socket by the thread of the screw. My invention also consists of pieces to support the clamps of the foot-plate, which have a shank made upon the upper side, which shank is inserted through a hole in the foot-plate, and then headed down upon the upper end, thus making the clamp-bearings in the form of rivets in their upper part, by means of which they are thus secured to the foot-plate, and with their lower part somewhat enlarged and properly formed and shouldered to support the shank of the clamp as it is moved to and fro beneath the foot-plate.

That others skilled in the art may be able to make and use my invention, I will proceed to describe its construction and operation.

In the drawing, C represents the skate-blade, to which are firmly secured the two brackets *f*, which, above the blade, are bent, as shown clearly in Fig. 4, so as to leave a space between them, and also between the top of the blade and the heel-plate; and the upper part of the said brackets are bent so as to be parallel with the heel-plate which they support, and to which they are firmly secured. These brackets are secured to the blade, and also to the heel-plate, in a longitudinal position, with reference to the length of the skate. To the heel-plate A, and just behind the brackets *f*, are secured the plates *c*, in a position at right angles to the length of the skate. In each plate *c* is made an annular recess, *s*, and the faces in which such recesses are made are placed together when secured to the heel-plate, so that the recesses are opposite each other to form one recess, and both plates are perforated at the center of each recess *s*. Before the plates are secured to the heel-plate A each end of a common clamp-screw having an annular collar, *e*, thereon is inserted through the perforation in each of the plates *c*, and the plates are then brought together, with the annular collar *e* between the plates and within the recesses *s* of both plates.

I secure the plates *c* to the heel-plate preferably in the following manner: The upper parts *x* of the said plates are inserted through a correspondingly-shaped perforation in the heel-plate A, bringing the shoulder *x'* up against the heel-plate, and the top of the part *x* of both plates *c* is headed or riveted down, thus securing said plates *c* firmly to the heel-plate. It is obvious, however, that

the plates *c* may be secured to the heel-plate in any other desirable and convenient manner.

A clamp, *b'*, has the exterior of its shank *b* made of a corresponding form to a transverse section of the interior space between the brackets *f* and heel-plate A, so that it may operate freely, and yet retain its position within said space. This space between the brackets and heel-plate I denominate the heel-clamp socket, as the interior surface of said brackets *f* form a support for the shank *b* of the clamp; and the inner end of the shank *b* is provided with an ear, *n*, through which is made a threaded hole to receive the thread of the screw *d*. This screw has a prismatic head, upon which fits a key by which to turn the screw. The heel-plate may be stamped out of sheet-steel, or other suitable metal, with the ears *a* thereon, which are afterward bent up at nearly right angles to the heel-plate; and the extremities of these ears are again bent over to project forward a little, and are sharpened to enter the back part of the boot-heel; and the face of the clamp *b'* may be provided with sharp points *o* to enter the front part of the boot-heel. The brackets *f* are secured to the skate-blade C, and also to the heel plate A, by means of rivets *f'*, or in any other convenient manner.

Instead of using two separate brackets, *f*, I may accomplish the same result by casting one solid piece, and fitting its interior, by giving it suitable shape, to support the shank *b* of the clamp; one of the objects of this invention being to so construct the skate that the brackets *f*, or equivalent intermediate piece, which is attached to the blade and supports the heel-plate, shall also serve as a socket in which to properly support and operate the shank of the heel-clamp.

The supports for the clamps of the foot-plate are clearly shown in Figs. 1, 6, and 7, in which *i* is a metallic piece, having upon its upper side a projection, i^2, which is inserted through a correspondingly-shaped hole in the foot-plate B, and is headed down upon the upper side. The upper part or projection upon the piece *i* thus forms a rivet, by means of which the piece *i* is secured to the lower side of the foot-plate. The lower part of said piece *i* has a shoulder thereon, which comes up against the foot-plate when the upper part is headed down, so that when thus attached the piece *i* is firmly held in its position. Two of these pieces *i* are thus secured to the foot-plate, in a position opposite each other, and a little distance apart, as shown in Figs. 1, 6, and 7; and the adjacent parts beneath the foot-plate are beveled, or otherwise properly formed, to support and guide the shank of the clamp, as shown beveled at i^1 in Fig. 7, and upon these parts the clamp slides as it is operated by the clamp-screw. The lower part *i* may be of any convenient form—such as square, oblong, or circular—only that it have sufficient size to give proper support to the clamp. The double plates *c* are located just behind the pieces *f*, and contiguous thereto, so that when the clamp-screw *d* is turned by means of the key, to draw the clamp back against the boot-heel, and also the latter back against the upright projections *a* upon the heel-plate, the pressure of the collar *e* against the forward plate *c* is brought to bear against the rear end of the said pieces *f*, the latter thus furnishing a firm support for the plates *c;* and the pressure against said plates is relieved when the clamp-screw is loosened.

The operation of the heel-clamp is as follows: When the boot-heel is placed upon the heel-plate A, and the screw *d* is turned in, the clamp is drawn back against the front of the heel of the boot, and thus forces the boot-heel back against the permanent upright projections *a* upon the heel-plate, and at the same time the boot-heel is grasped firmly between the face of the clamp *b'* and the projections *a*, and both the clamp and the projections being provided with sharp points the heel is held firmly thereby.

I am aware that various devices have heretofore been made and attached to the heel-plate of skates for the purpose of securing the heel of the boot to the heel-plate in a firm manner; but I am not aware that a clamp operated by a clamp-screw, as hereinbefore described, has ever before been made or used.

Having therefore thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The brackets *f*, forming an intermediate support for the heel-plate, and made in two parts, as described, in combination with said heel-plate A, the whole forming a socket within which the heel-clamp is operated, substantially as described.

2. The combination of the double plates *c*, provided with recesses *s* and secured to the heel-plate A, with the screw *d*, having the collar *e* thereon, substantially as and for the purpose described.

3. The beveled pieces i^1, having the shanks i^2 thereon, and secured to the foot-plate of a skate, constructed and arranged substantially as shown, and serving as the bearing or guides for the foot-clamps, as herein set forth.

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