

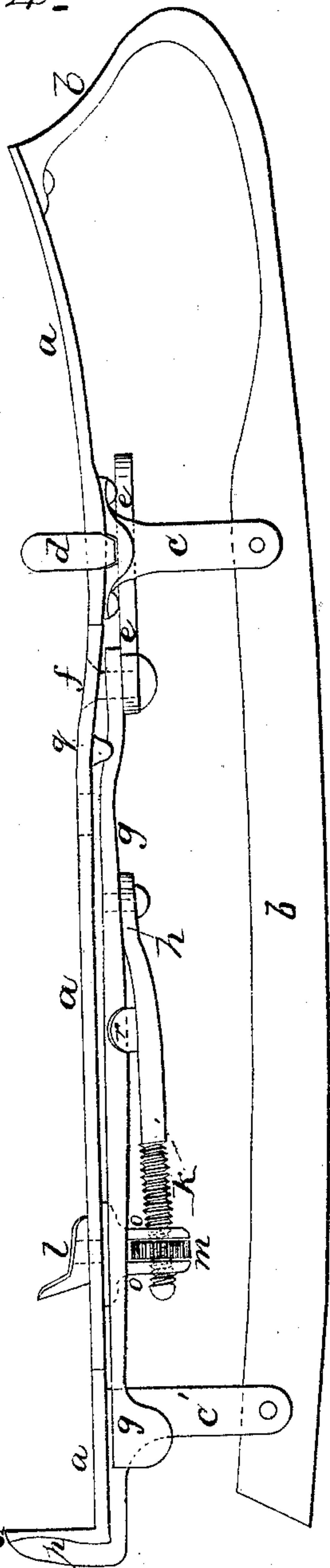
*E. Murray,*

*Skate,*

*N<sup>o</sup> 45,674.*

*Patented Dec. 27, 1864.*

*Fig. 2.*

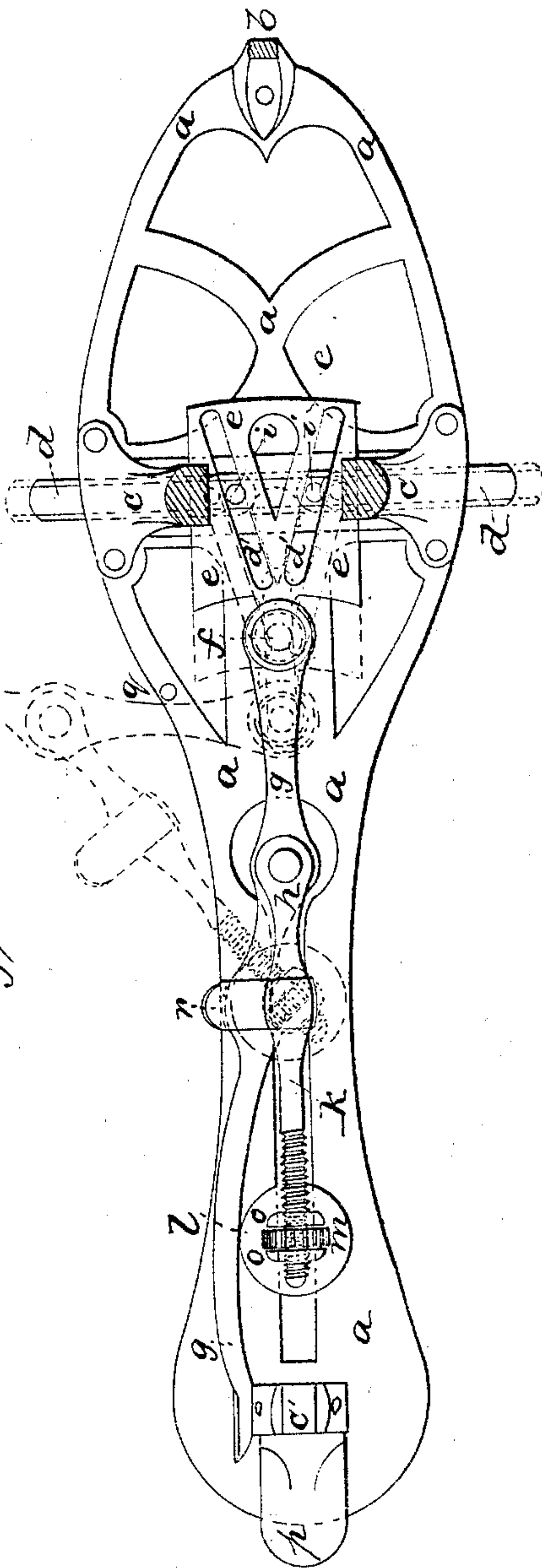


*Witnesses*

*Lemuel W. Lurell*

*Thos. Geo. Harold*

*Fig. 1.*



*Inventor,*  
*Edgar Murray*



# UNITED STATES PATENT OFFICE.

EDGAR MURRAY, OF NEW YORK, ASSIGNOR TO CHAS. W. DUNLAP, OF  
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## IMPROVEMENT ON SKATES.

Specification forming part of Letters Patent No. 45,674, dated December 27, 1864.

*To all whom it may concern:*

Be it known that I, EDGAR MURRAY, of the city and State of New York, have invented, made, and applied to use a certain new and useful Improvement in Skates; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawings, making a part of this specification, wherein—

Figure 1 is an inverted plan of the improved skate with the runner removed, and Fig. 2 is a side elevation of said skate.

Similar marks of reference denote the same parts.

Skates have heretofore been made with clamps grasping the heel, and also the sides, of the sole of the boot or shoe.

The nature of my said invention consists in an adjustable toggle-joint heel-clamp, whereby the heel can be gripped with great force and different sizes of heels easily accommodated; and I employ a peculiarly-formed clamp to take the sides of the sole, which clamp is actuated simultaneously with the heel-clamp.

In the drawings, *a* is the body or foot piece of the skate, which should be of metal, and formed with the desired openings, that render the same sufficiently light and at the same time ornamental. *b* is the skate-runner, connected to the body *a* at the toe and by the supports *c c'*. These parts may be of any desired character.

*d d* are clamps for the sides of the sole, set to slide in a groove provided for them in the support *c*, their ends being turned up and slightly inward to prevent their slipping off the sole. At the inner ends of these slide-clamps *d* are pins *i i*, entering grooves *d' d'* in the longitudinally-sliding plate *e*. These grooves diverge so that the clamps are drawn together when the plate *e* is moved in one direction and pressed apart when it is moved the other way, and this plate *e* slides in a space provided for it crosswise of the support *c*, and is guided by a stud at *f* entering a longitudinal slot in the plate *a*. (See dotted lines in Fig. 1.) At this stud *f* the lever *g* is connected and extends toward the heel of the skate, and is jointed at *h* to a screw-link, *k*, that passes through flanges *o o* on the heel-clamp *l*, and between said flanges is the nut *m*, by means of which the distance between the clamp *l* and stud *f* can be adjusted. The object of this adjustment is to allow for different sizes of heels, because the stud *f*, when the clamps *d d* are closed firmly to the edges

of the sole, becomes immovable, and the toggle-joint has to be straightened in order that it may firmly press the clamp *b* upon the boot-heel, and so that the lever will not be liable to turn and disconnect the parts while in use. The fixed heel-piece *p* taking the back of the boot-heel may be of any desired shape.

The operation is as follows: The skater applies the skate to his boot with the parts in the position shown by red lines in Fig. 1. He then turns the lever *g* back toward its normal position, which causes the clamp *l* to press against the heel and bind the same between itself and the heel-piece *p*. At the same time the plate *e* is forced forward by the toggle-joint action between *o, h*, and *f*, and the clamps *d* are drawn tightly against the sides of the sole of the boot or shoe. If the skate is not clamped tight enough when the lever *g* is brought to the position shown by full lines in Fig. 1, the bar *k* is lengthened, which causes greater compression on the heel, and a corresponding increased clamping-force by the clamps *d*. If the lever *g* cannot be turned back to its place, the length of the bar *k* is to be shortened. The nut *m* allows for this adjustment.

A latch on the bar *k* at *r* receives the lever *g* to hold the same in place, and, if desired, the parts may be so shaped that the center *h* of the toggle-joint *o h f* passes slightly beyond the straight line between *o* and *f*, so that the lever *g* will be kept to its place while the skate is in use.

A stud is provided at *q*, that forms a fulcrum, against which the lever *g* acts in drawing back the plate *e* and releasing the clamps *d*.

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

1. The combination of the heel clamp *l*, adjustable bar *k*, and lever *g*, whereby the heel-clamp *l* is actuated by the toggle-joint formed between *f, h*, and *o*, substantially as specified.

2. The toggle-joint *k* and lever *g*, in combination with the plate *e*, and clamps *d*, for grasping the edges of the sole of the boot or shoe, as set forth.

3. The pin *q*, forming a fulcrum for the toggle-joint lever *g* in drawing back the plate *e* and releasing the clamps *d*, as set forth.

In witness whereof I have hereunto set my signature this 27th day of September, 1864.

EDGAR MURRAY.

Witnesses:

LEMUEL W. SERRELL,  
THOS. GEO. HAROLD.