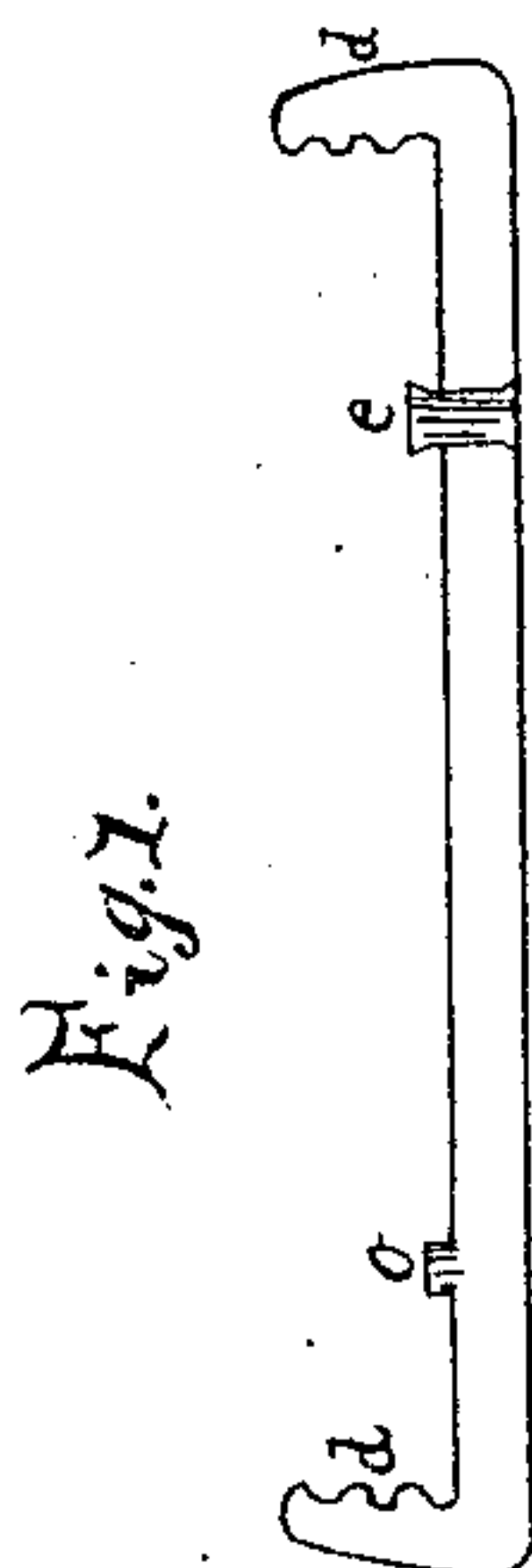
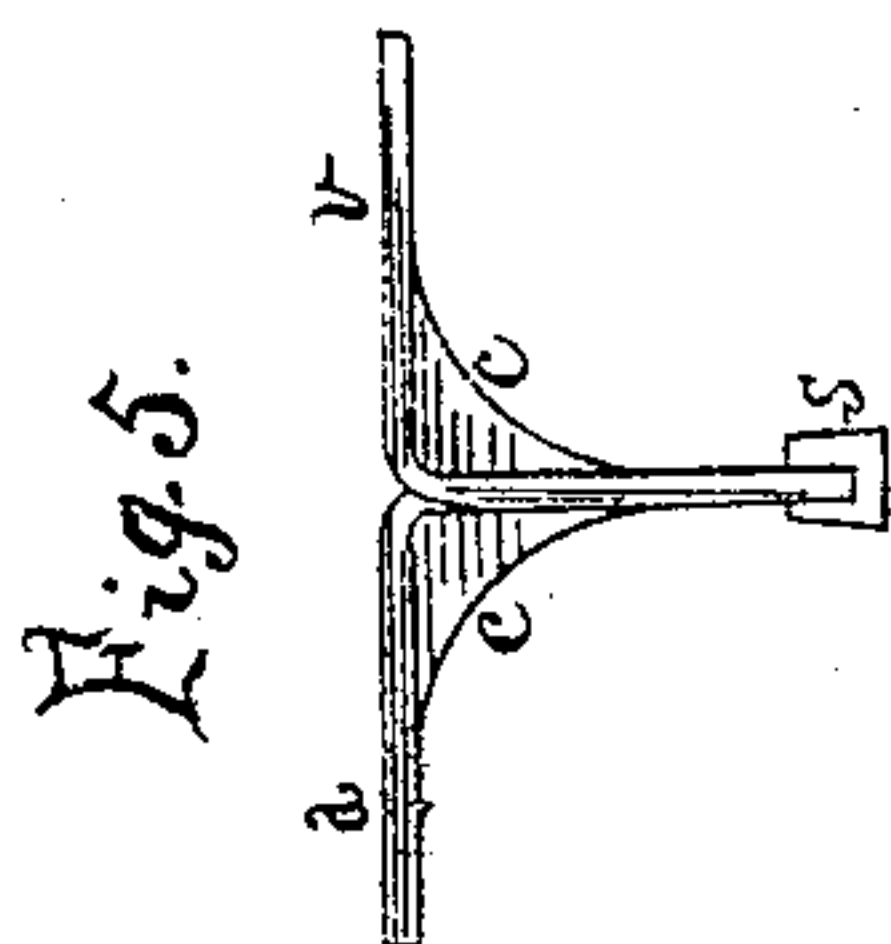
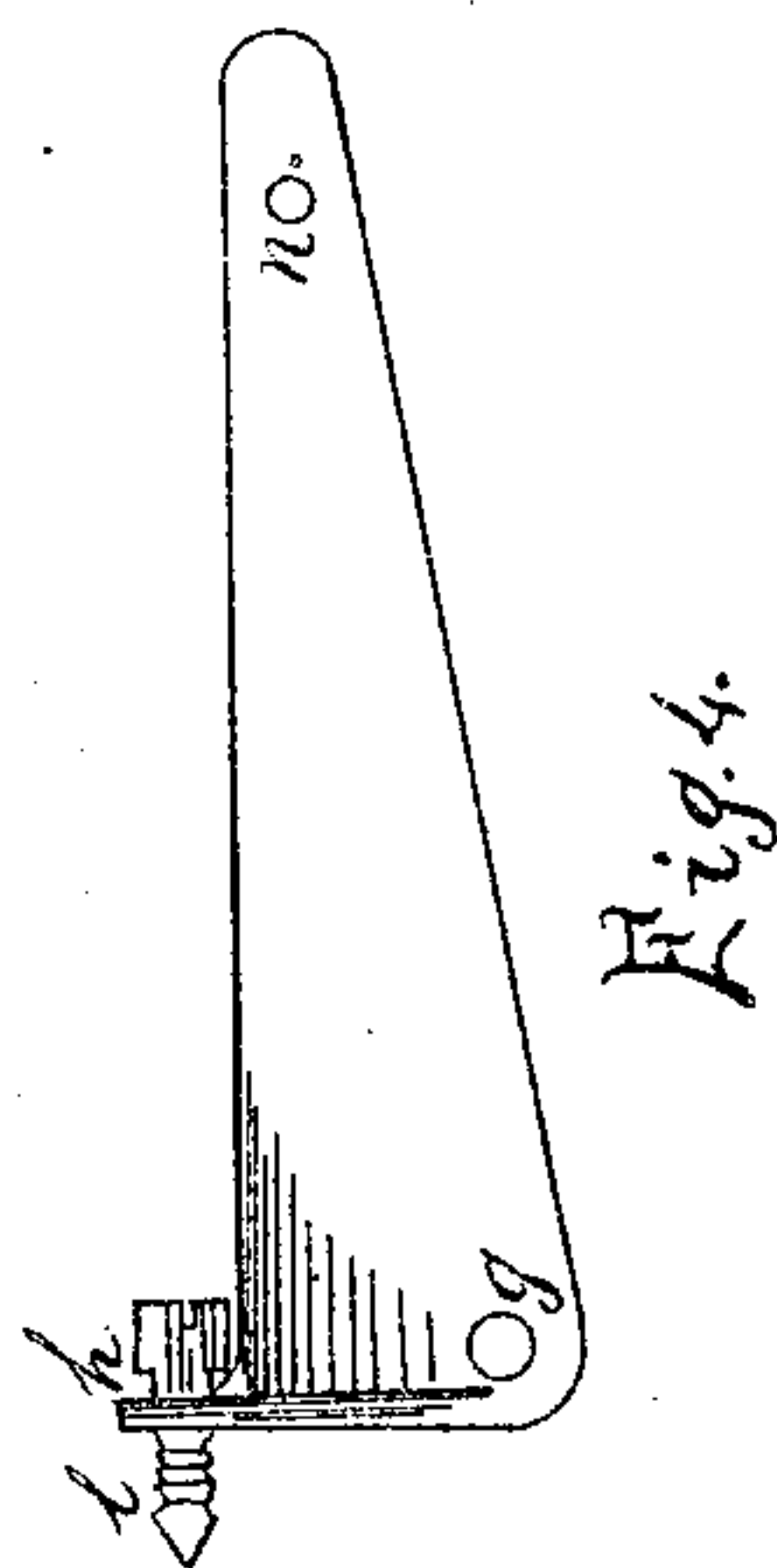
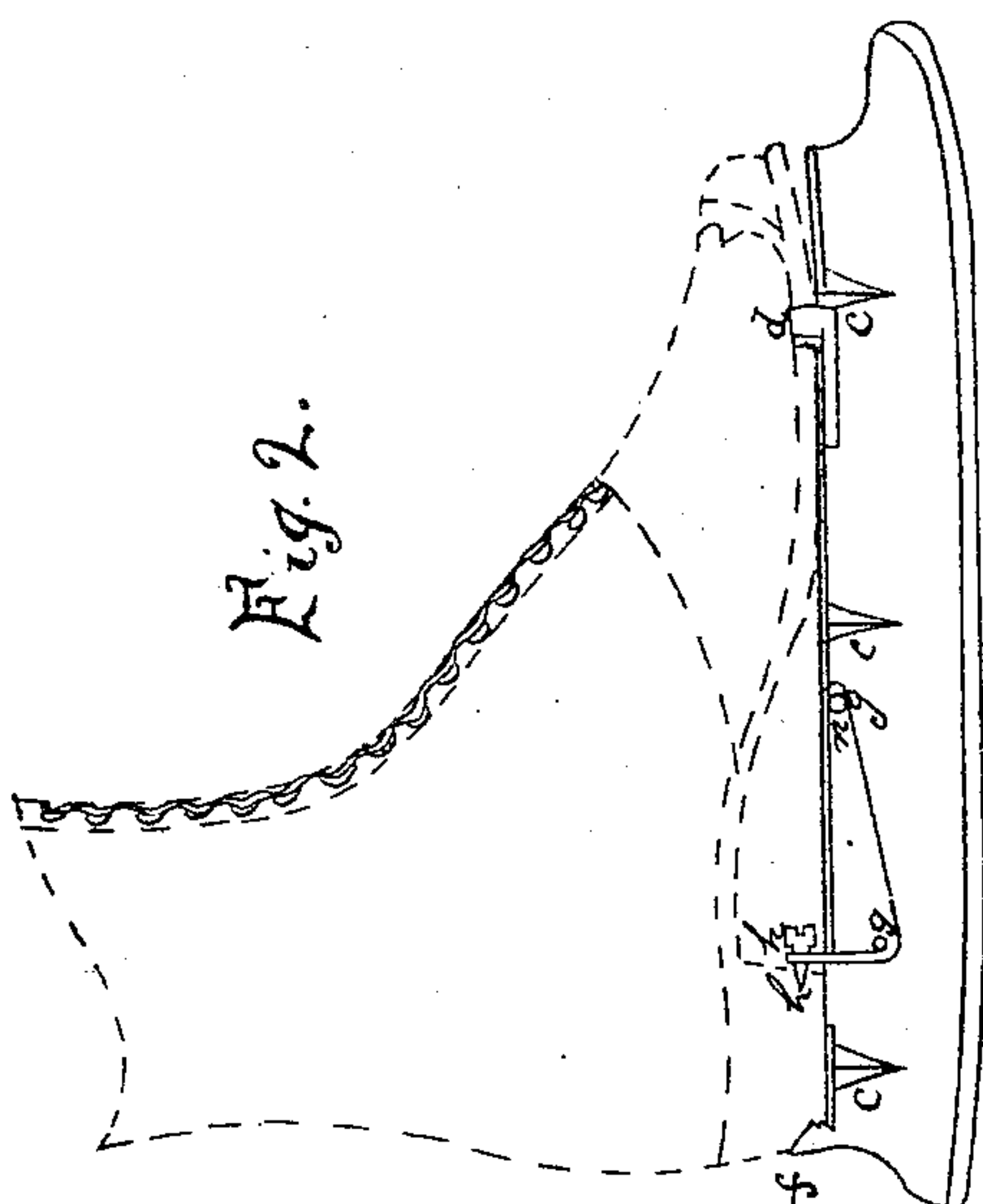
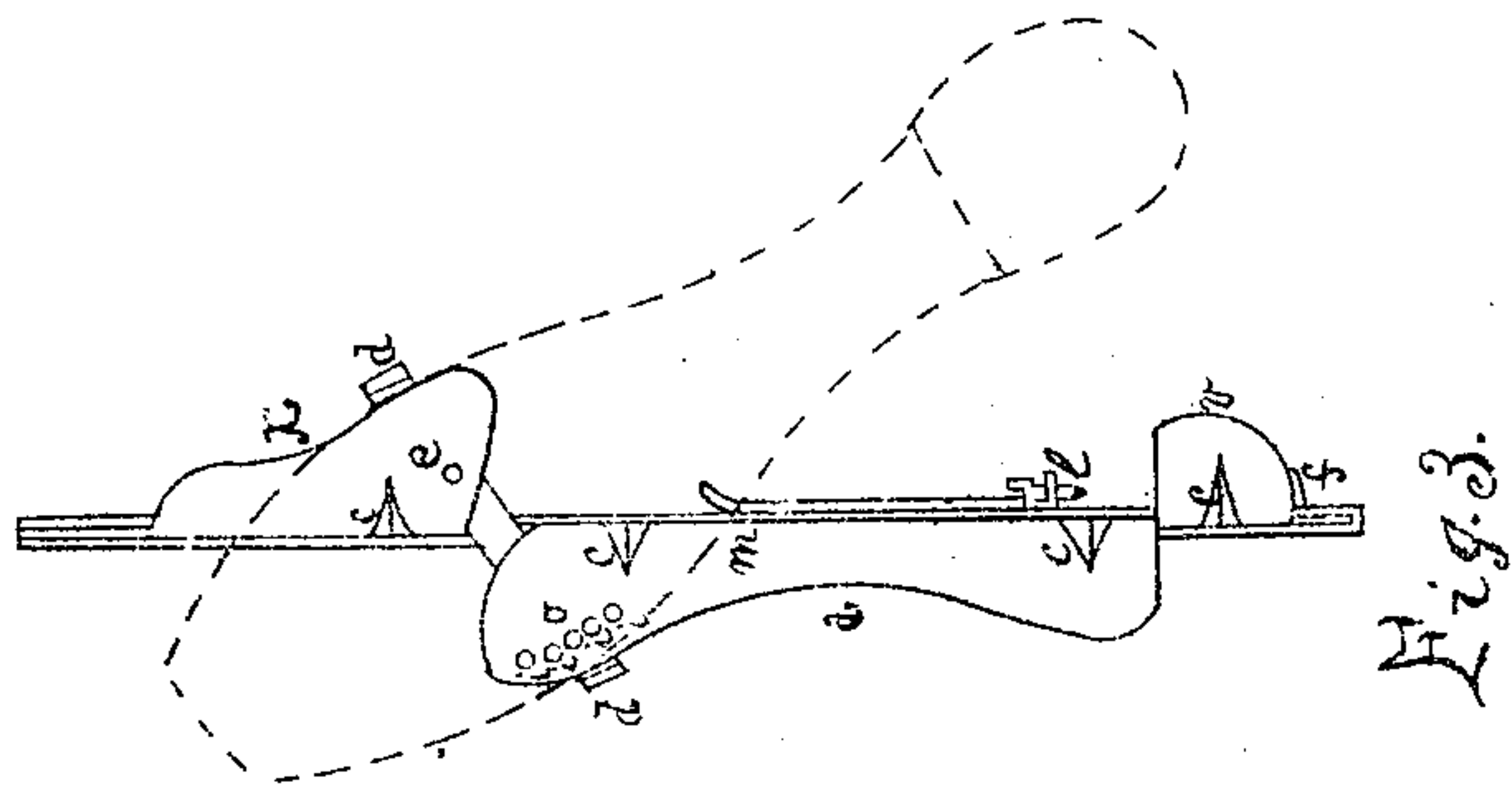


W. X. Stevens.

Skate.

N^o 73405

Patented Jan. 14, 1868.



Witnesses
L. Patton
C. Patton

Inventor
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United States Patent Office.

W. X. STEVENS, OF WATERFORD, NEW YORK.

Letters Patent No. 73,405, dated January 14, 1868.

IMPROVED SKATE.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN:

Be it known that I, W. X. STEVENS, of Waterford, in the county of Saratoga, and State of New York, have invented certain new and useful Improvements in Skates; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of the forward clutch of the skate.

Figure 2 is a side elevation of the skate.

Figure 3 is a plan view of the same.

Figure 4 is a side elevation of the heel-catch detached from the skate; and

Figure 5 is a section on the line xy , fig. 3.

The object of my invention is to produce a light, strong, and inexpensive skate, and one in which the parts by which the skate is held to the foot are so constructed and combined as to be of great simplicity and durability, at the same time that they operate effectively to hold the skate securely and tightly in position. To this end my invention consists of a skate in which the blade and sole are formed of one continuous piece of sheet metal, or its equivalent, bent or shaped, as hereinafter described, to the form desired; and it further consists in the combination, either with a skate thus made, or with one of any ordinary or suitable construction, of clutches pivoted to the skate, and arranged for operation as hereinafter described, so as to hold the skate securely both to the heel and sole of the shoe or boot to which the same is applied.

I construct the skate either of sheet metal, with a thicker strip or strips of metal S , fig. 5, fastened along the lower edge of the same, so as to form a suitable runner, or of metal thick enough at its lower edge for a runner, and worked by rolling, or other suitable process, so that the upper portion shall be thin and like sheet metal. Supposing the metal to be standing upon the edge intended for the runner, I cut from the upper edge two vertical slits, which extend downward to a line where it is intended the sole and blade of the skate should meet. One of the slits is cut near the end of the plate of sheet metal, which is intended to constitute the rear part of the skate, and in such manner as to divide about in half the metal upon which the heel of the boot is to rest. The other slit is made in the forward part of the plate, dividing the metal intended for the support of the ball of the foot. The upper portion of the metal sheet is thus divided into three parts by slits extending down to a line, which should be in the plane in which it is intended that the sole of the skate should lie. The rearmost of these parts, v , fig. 3, is then bent down, so as to be at about right angles to the blade of the skate; the middle part, a , is bent down to the same angle with respect to the blade, but in a contrary direction, so that while in the same plane with the heel-piece v , it will lie on the opposite side of the blade; and the remaining or front piece, x , is bent at a similar angle to the blade, and in the same direction as the heel v .

When the foot is placed upon the sole thus formed, it will be seen that the heel will rest upon the piece v and partly upon the middle section a , and the ball of the foot will be supported not only by the latter, but will also partially rest upon the front piece x . By this means the pressure of those parts of the foot which are principally in contact with the skate will be equally divided upon both sides of the blade. It will of course be understood that the required outline for the blade and sole may be obtained by cutting the edges of the metal to the proper shape, either before or after the sole-pieces vax are bent down. I am by this means enabled to form the blade and sole of the skate of one continuous sheet of metal, thus combining great strength with simplicity of construction and cheapness.

The number of sections of which the sole is formed may be increased by cutting a greater number of slits, the sections, or, as they may be termed, "leaves," thus formed, being turned down alternately in the one and the other direction, as above described. I prefer, however, the construction shown in the drawings, as the foot is thereby securely supported.

The middle section a serves as a stiffener or angle-iron to prevent the bending of the blade; but in order to effectually stiffen both the blade and sole, I form in such parts, and along their line of juncture, corrugations or V-shaped indentations, so as to form ribs or braces c , which extend across the angle formed by the blade with the section of the sole.

To fasten the skate to the foot, I employ devices or clutches, which will now be described, and I may here say that the clutches may be used with any skate of ordinary or suitable construction, and therefore while

describing their application to the form of skate above described, I do not limit myself to such particular application.

The clutch for griping or holding the forward part of the foot is shown detached from the skate in fig. 1. This clutch is of such length, that when placed diagonally, say at about an angle of forty-five degrees, across that portion of the sole where the ball of the foot comes, its ends will project on each side beyond the edges of the sole. The ends *d* of the clutch are bent so as to extend up above the top of the skate about the thickness of the boot-sole, and the inner surface of these ends is corrugated or roughened, so that they may the better hold the boot-sole. This clutch may be applied to the skate so as to be either above or below the sole. I prefer, however, to place it under the sole, as shown in the drawings. It is pivoted at *e* to the sole upon one side of the blade, so as to be capable of oscillating in a horizontal plane, the pivotal point upon the clutch being removed from one of the ends *d*, about one-third the length of the clutch. The clutch extends diagonally across the sole, as seen in fig. 3, and near the end, *d*, on the opposite side of the blade, it carries a stud or pin, *o*, which projects from the face of the clutch next to the skate-sole, and may be set in any one of the holes *i*, which are formed upon the arc of a circle having the point *e* for its centre. As the clutch is capable of moving upon its pivotal point, it may be set at a greater or less angle to the blade and sole, and securely held in such position by the stud *o*, which is placed in the proper hole *i*. The clutch is formed of metal, and has a certain springiness which admits of its being forced down, so as to draw out or disengage the stud *o* from any one of the holes. Of course, when the pressure is removed, the clutch will spring back and force the stud again into position.

The manner of applying the skate to the foot is shown in fig. 3. The skate is turned sideways until the boot-sole will fit between the clutch-jaws *d*, and the skate is then turned by its heel, which serves as a handle or lever, until the whole of the skate is brought under the foot. The clutch by this time will extend diagonally underneath the foot, and the boot-sole will be jammed between and tightly griped by the jaws *d*.

To adjust the clutch to boots of different width, the stud *o* may be set in any of the holes *i*. The narrower the boot the nearer must the ends *d* be brought to the blade.

The heel of the boot is fastened in the following manner: One jaw *f* of the heel-clutch is formed upon the rear of the heel-plate *v*, and is made fast thereto, and the face of the jaw which is in contact with the heel, is like the jaws *d*, corrugated or indented. The other jaw of the clutch consists of an adjustable plate or catch, shown detached in fig. 4, pivoted at *g* to the blade of the skate, so as to be capable of vibrating in a vertical plane. The highest point *h* of this catch stands above the skate-sole, and forms a bearing for a sharp gimlet-pointed set-screw, *l*, the point of which projects through the bearing *h*, and extends toward the stationary jaw *f*.

Upon the end of the catch, furthest removed from the pivotal point *g*, is a stud or pin, *n*, which, when the catch is in position, springs into a hole, *j*, in the skate-blade. The operation of the stud, and the springing of the catch-plate, are the same as above described in the case of the "sole-clutch."

When the skate has been fastened, as hereinbefore explained, to the sole of the boot, the boot-heel is pressed down firmly on the skate-sole; the lower end of the catch or arm *n*, which has been previously dropped, so as to tilt the screw *l* away from the jaw *f*, is raised until the stud *n* springs into the hole *j*, at which point the point of the screw *l* should be pressed firmly into the forward face of the boot-heel, which will be held tightly between the screw and the corrugated jaw *f*. The screw can be turned so as to increase or lessen its distance from the jaw, according to the size of the boot-heel to be held.

Having now described my invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. Forming the sole and blade of a skate from one continuous piece or sheet of metal by first slitting or cutting, and then bending the said metal sheet, substantially in the manner and for the purposes herein shown and described.

2. A combined skate-sole and blade, formed from a continuous sheet of metal, as described, and corrugated or indented at the angle formed by the sole with the blade, so as to form braces for stiffening the said parts, substantially as shown and set forth.

3. The combination, with a skate of ordinary or suitable construction, of the herein-described spring-clutch for grasping the boot-sole, the same being pivoted to the forward part of the skate, so as to extend diagonally across the sole of the same, under the arrangement and for operation as shown and set forth.

4. The combination, with a skate of ordinary or suitable construction, having a stationary jaw or equivalent bearing for the rear of the boot-heel of the pivoted catch and adjustable set-screw for holding the said boot-heel to the skate under the arrangement and for operation as herein shown and set forth.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

W. X. STEVENS.

Witnesses:

L. BUTTON,

THEO. E. BUTTON.