

(No Model.)

T. W. GROSVENOR & W. B. GRAY.

ROLLER SKATE.

No. 322,371.

Patented July 14, 1885.

Fig. 1.

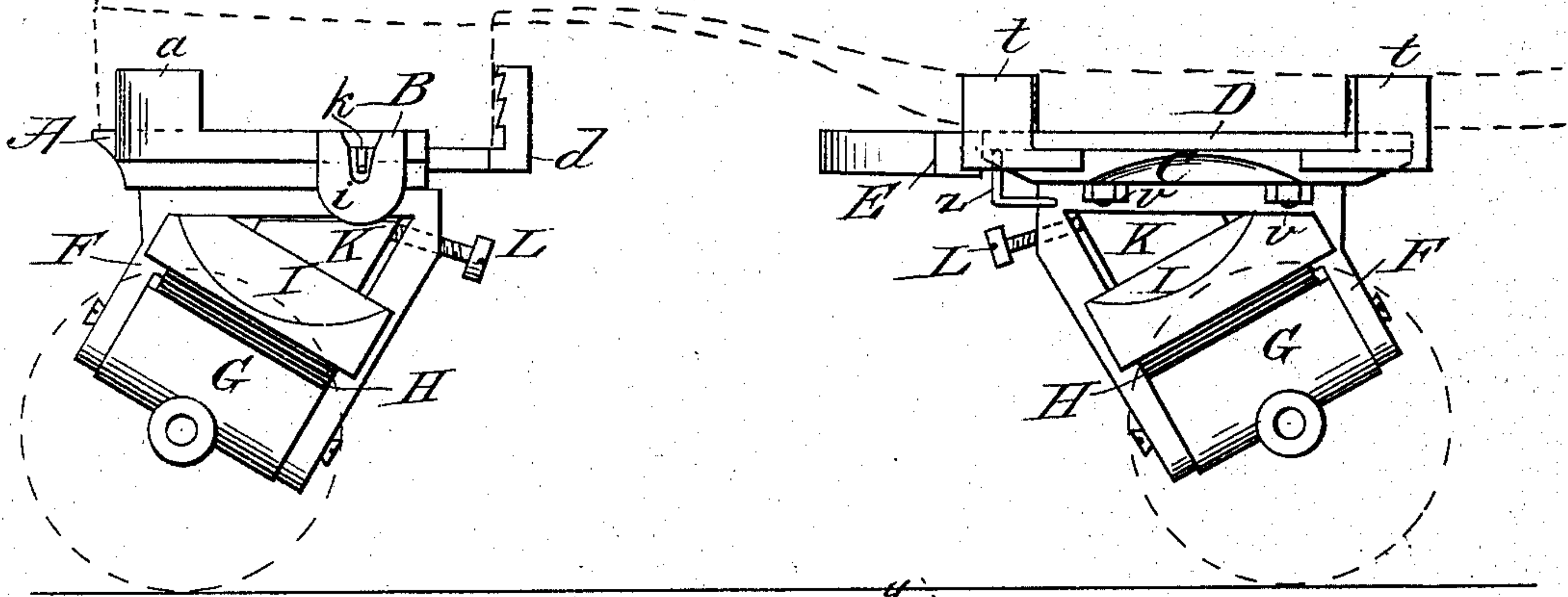


Fig. 2.

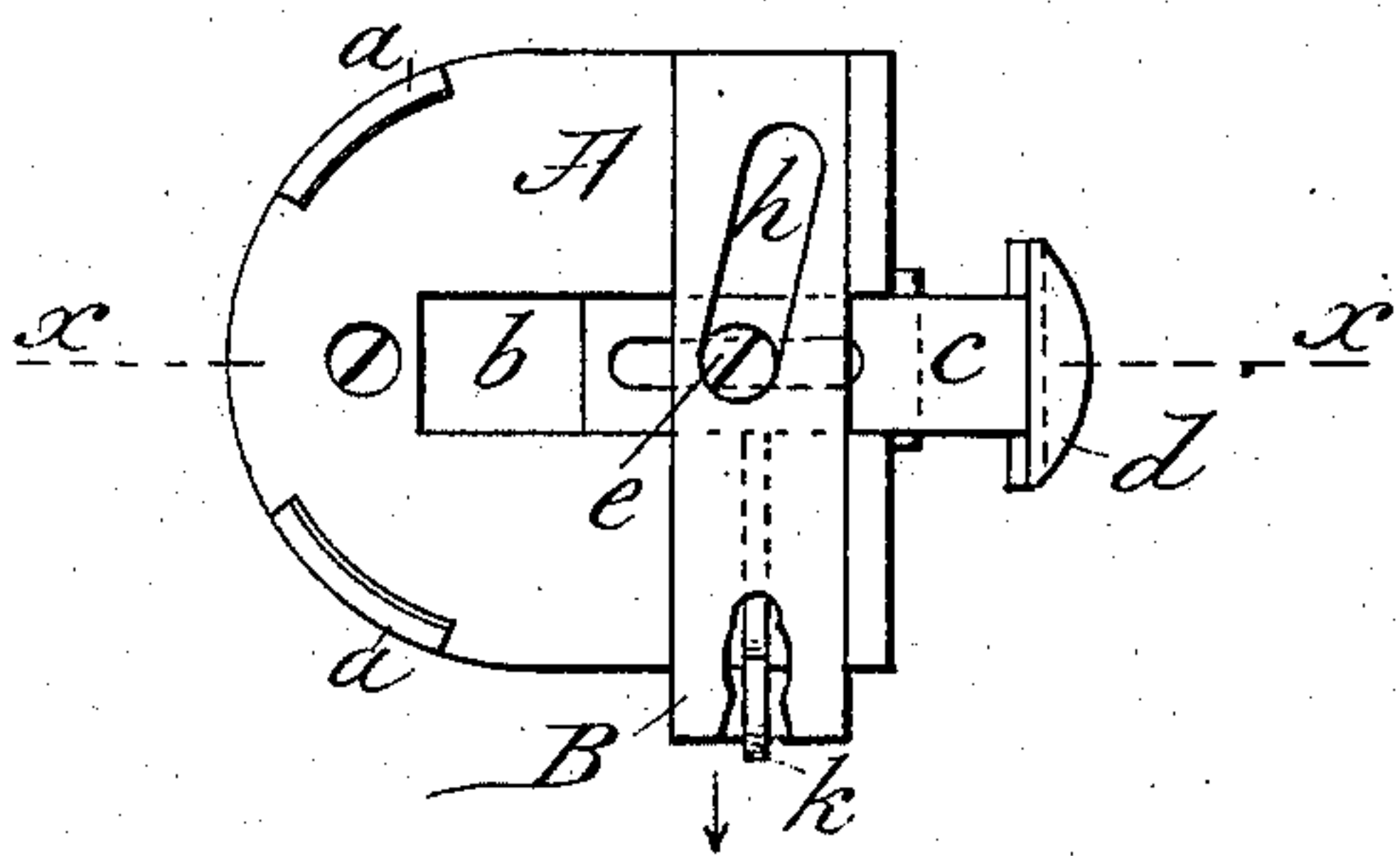


Fig. 3.

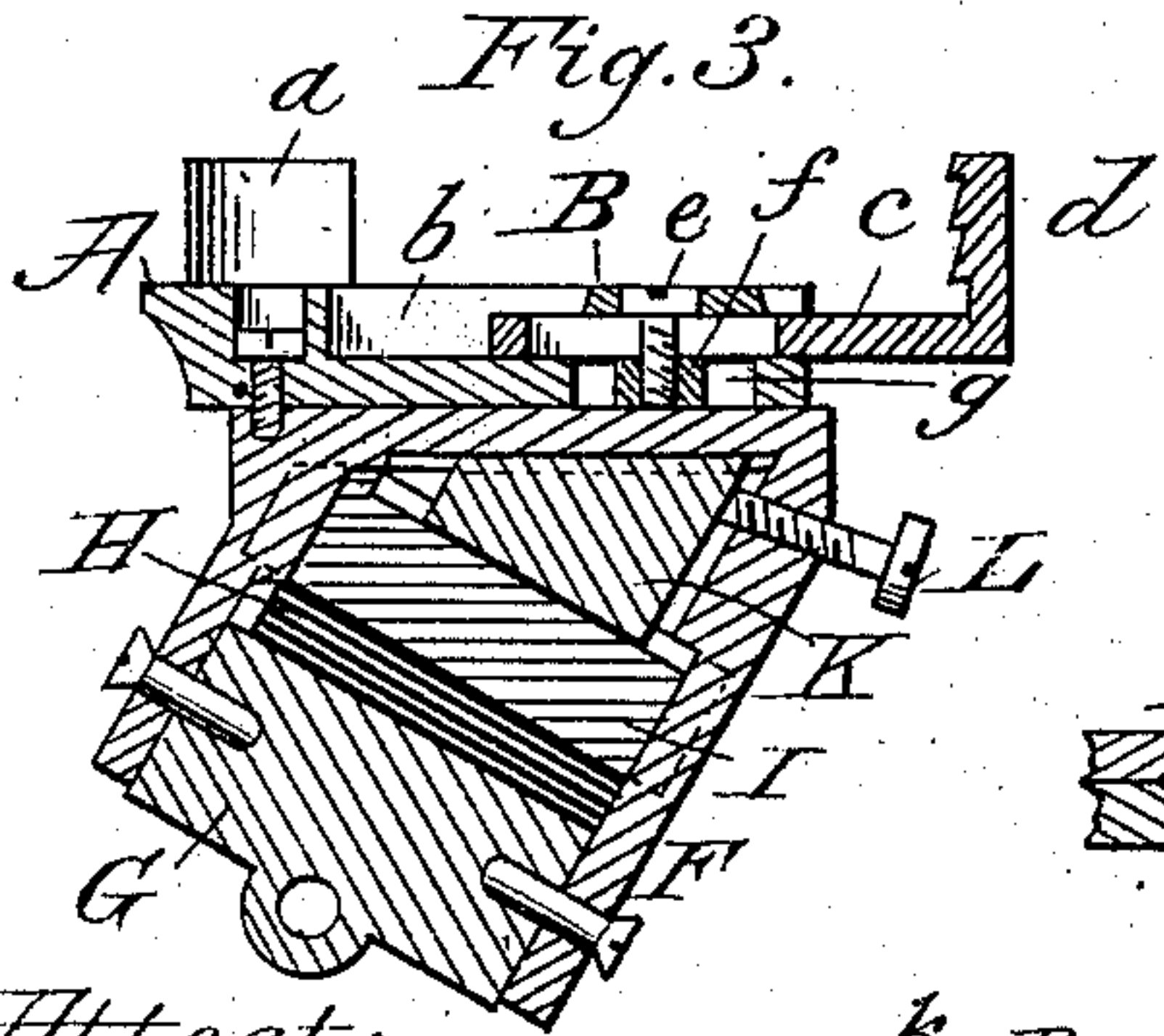


Fig. 6.

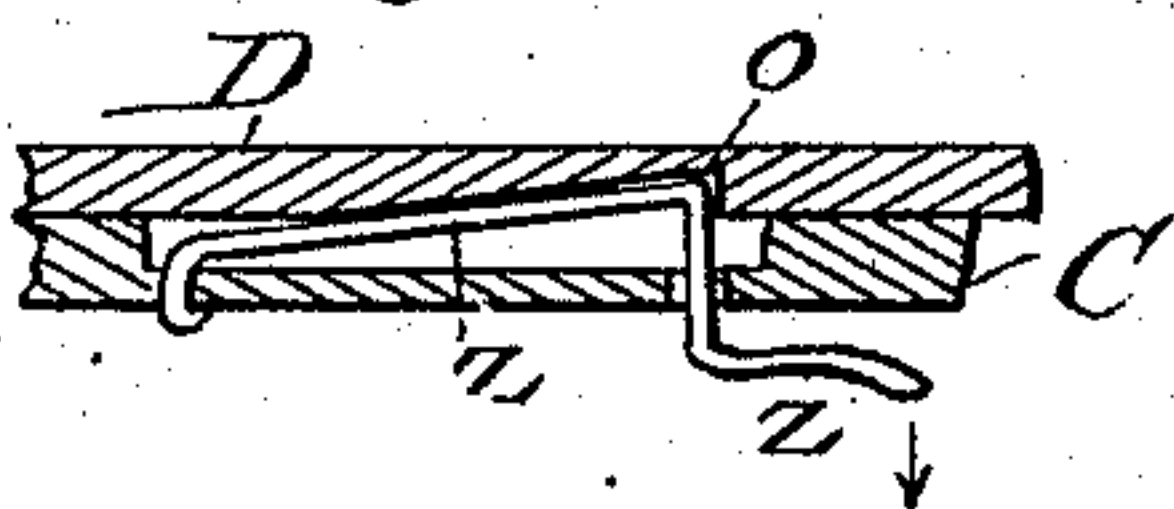


Fig. 4.

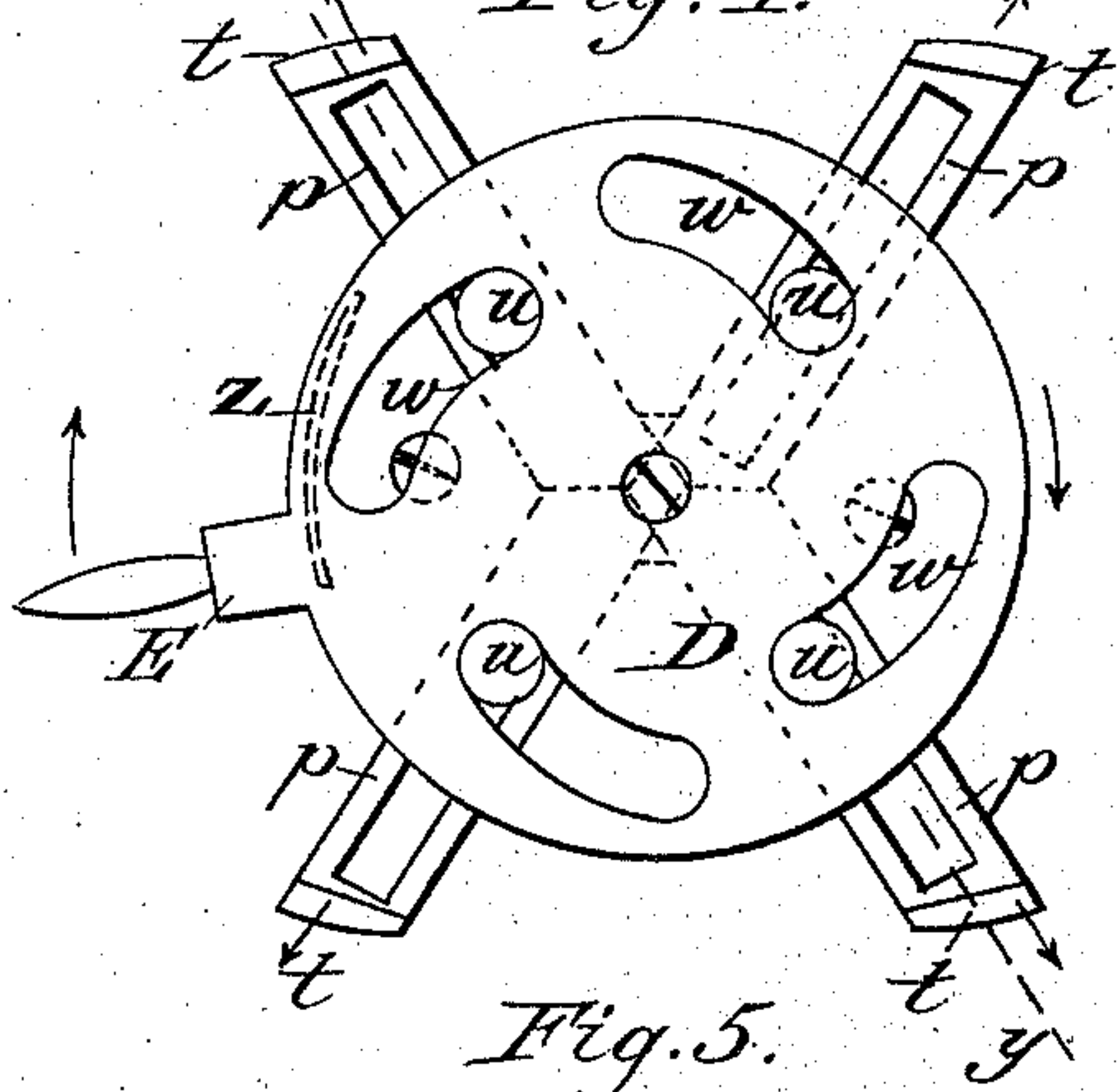
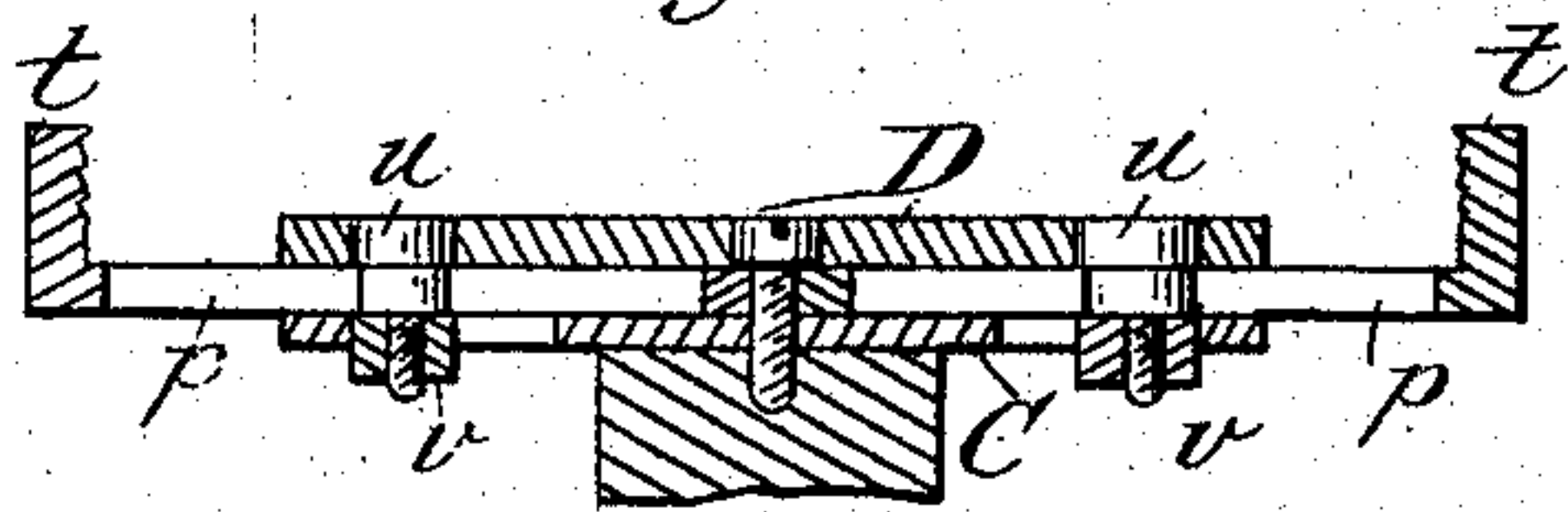


Fig. 5.



Attest:

J. H. Schott
A. R. Brown

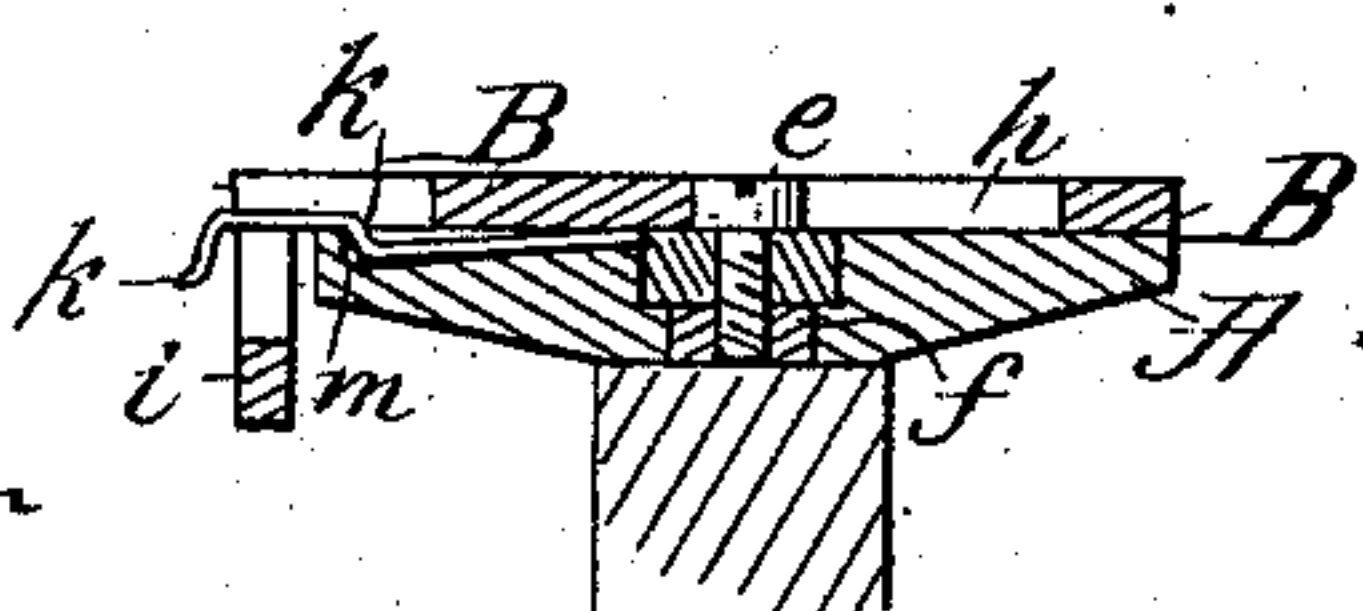


Fig. 7. Thomas W. Grosvenor
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Inventor:

UNITED STATES PATENT OFFICE.

THOMAS W. GROSVENOR, OF HERKIMER, AND WILLIAM B. GRAY, OF
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ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 322,371, dated July 14, 1885.

Application filed February 17, 1885. (No model.)

To all whom it may concern:

Be it known that we, THOMAS W. GROSVENOR and WILLIAM B. GRAY, citizens of the United States, residing at Herkimer and Utica, respectively, in the counties of Herkimer, and Oneida, and State of New York, have invented certain new and useful Improvements in Roller-Skates; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to an improved roller-skate, the object being to provide a roller-skate that can be used without injurious strain to the muscles and ligaments of the foot, and with less than ordinary fatigue, after continued use.

The invention consists of a two-part or sectional roller-skate, or one in which the heel and sole portions are made on separate frames, each carrying a roller or rollers for locomotion.

The invention also consists in certain peculiarities in the construction and arrangement of parts, whereby a greater flexibility of movement, and a more secure, simple, and readily operated means of attachment are attained.

In the annexed drawings illustrating the invention, Figure 1 is a side elevation of our two-part or sectional roller-skate applied to a boot. Fig. 2 is a top view of the adjustable heel-plate. Fig. 3 is a vertical longitudinal section of the heel-plate and roller-bearing on the line *xx* of Fig. 2. Fig. 4 is a top view of the sole-plate and connections. Fig. 5 is a section of the same on the line *yy* of Fig. 4. Figs. 6 and 7 are sectional detail views.

Like letters of reference designate like parts in the several views.

The rear portion of our sectional roller-skate embraces a heel-plate, *A*, having on its rear edge two upwardly-projecting lugs, *a, a*. The upper face of this plate is formed with a central longitudinal groove, *b*, for receiving the slotted shank *c* of an adjustable clamp, *d*, which, in connection with the lugs, *a, a*, serves

to secure the rear portion of the skate to the boot-heel of the wearer. The clamp *d* may be adjusted to any desired position before attachment of the skate to the boot, by means of a screw, *e*, that passes through the slotted shank *c*, and carries on its lower end a nut, *f*, that rests in a countersunk portion, *g*, of the groove *b*, as shown in Fig. 3. A slide, *B*, is dovetailed in a transverse guideway or shallow groove that intersects the longitudinal groove *b* near the front edge of the heel-plate. This slide *B* is provided with a diagonal cam-slot, *h*, that embraces the head of the screw or bolt *e*, as shown in Fig. 2, in such a manner that when the slide is drawn out or pushed in a corresponding movement will be imparted to the clamp *d*, thereby enabling the heel part of the skate to be readily attached or removed, as desired. One end of the slide *B* is provided with a downward-projecting lug or handle, *i*, by which it is moved in and out. When forced inward, the slide *B* is held in place by means of a spring, *k*, attached to its under side, and which is arranged to normally bear against a shoulder, *m*, at the end of a groove in the guideway, as shown in Fig. 7. The end of this spring *k* projects through a perforation in the handle end of the slide *B*, and may be pressed upward by the finger, so as to become disengaged from the shoulder *m*, and thus enable the slide to be withdrawn, so as to detach the heel-plate from the foot.

The sole-plate *C*, that supports or carries the forward portion of the two-part or sectional roller-skate, is nearly or quite circular in form, and is provided on its upper face with radial slotted grooves for receiving the slotted shanks *p p* of the adjustable clamping jaws or lugs *t t*, by which the forward part of the skate is secured to the sole of the boot. The shank of each clamp *t* is adjustably secured in one of the radial grooves (indicated by dotted lines in Fig. 4) by means of a headed bolt or screw, *u*, and a nut, *v*, as shown in Fig. 5. By these screws and nuts the clamps *t t* can be adjusted as required, according to the size of boot to which the skate is to be attached.

A rotary plate, *D*, is pivoted to the top of the sole-plate *C* at its center, and above the slotted shanks *p p* of the clamps *t t*. This ro-

tary plate is provided with curved cam-slots *w w*, that engage the heads of the screws or bolts *u*, so that by partially rotating the plate D the clamps *t t* will be projected or withdrawn. The forward section of the skate is thus readily secured to or detached from the sole of the boot or shoe. The rotary plate D is moved by a handle, E, that is formed on one side in a convenient position for use. After having been turned so as to draw the clamps *t t* inward or toward each other, the plate D is securely held from slipping backward by means of a spring, *z*, attached to the sole-plate C and arranged to engage in a groove, *o*, in the under side of the rotary plate D, as shown in Fig. 6. The heel-plate A and sole-plate C are each secured, by screws or otherwise, to an inclined frame, F, in the lower end of which is detachably pivoted a rocker-bearing, G, for the roller-journal. Above and in contact with the rocker-bearing G is a rubber spring or buffer plate, H, held down by a cross-head, I, having a guide-groove in each end, and adjustable up and down in the frame F by means of a wedge or incline, K, that is actuated by a set screw, L, as shown in Figs. 1 and 3.

The construction and arrangement of the frame F and parts supported thereby enables the spring or rubber buffer H to be readily adjusted to impart any desired degree of elasticity to the lateral swing or roll of the frame on the journal-bearing G, while the simple manner of connecting the parts, as shown, admits their being readily detached and replaced when worn.

A two-part roller-skate, or one in which the front and rear rollers are journaled in bearings connected to separate attaching-plates, possesses many obvious advantages over a skate in which both rollers are attached to the same frame. Those roller-skates having only one frame for both front and rear rollers are often the cause of painful and severe strain on the muscles of the foot and leg, the free

action of which is greatly impeded by the unyielding structure of the skate-frame.

By making a roller-skate in two or more sections, one of which is attached to the heel of a boot or shoe and another to the sole, a natural and unrestrained action of the muscles, especially those in the hollow of the foot, is permitted, and the skater is also enabled to avail himself of the elasticity and flexibility of his boot or shoe at its shank. This construction will also be found of great value in fancy or figure skating by permitting the use of one or more sections of the skate at a time, as required.

The manner of attaching the skate or its heel and sole sections to the foot is simple and secure, and the attaching devices are capable of being manipulated with speed and convenience, so that the skate can be readily adjusted to the size of the foot and attached and removed in an instant.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a sectional roller-skate, the heel-plate A, having fixed lugs *a a*, an adjustable clamping-lug, *d*, provided with a slotted shank, *e*, the screw *e*, nut *f*, and slide B, having cam-slot *h* and spring *k*, substantially as described.

2. In a sectional roller-skate, the radially-slotted sole-plate C, having adjustable clamps *t t*, substantially as described.

3. In a sectional roller-skate, the radially-slotted sole-plate C, having adjustable clamps *t t*, provided with slotted shanks *p p*, screws *u*, nuts *v v*, rotary plate D, provided with cam-slots *w w*, and spring *z*, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

THOS. W. GROSVENOR.
WM. B. GRAY.

Witnesses:

M. G. BRONNER,
GEO. W. SEARLES.