

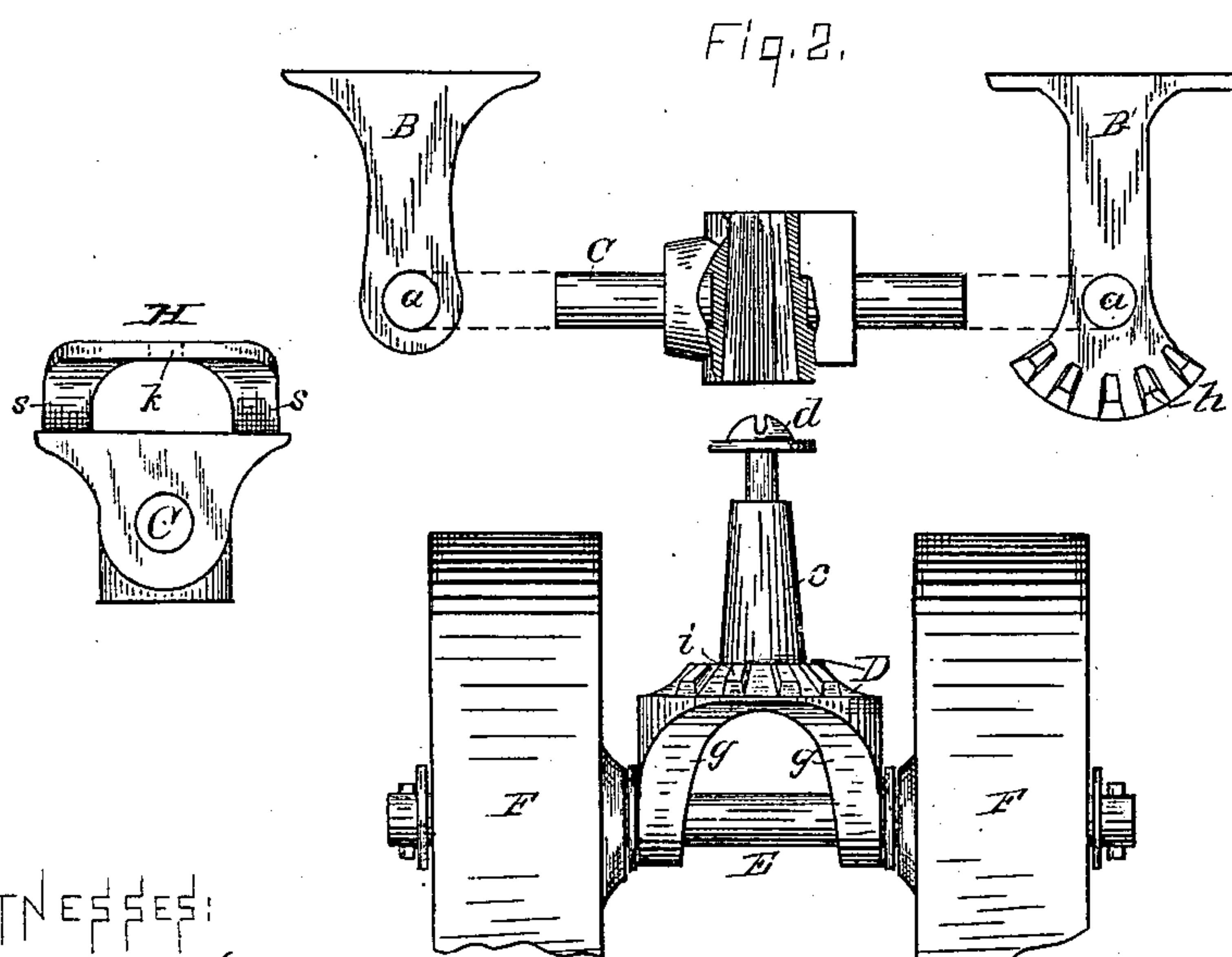
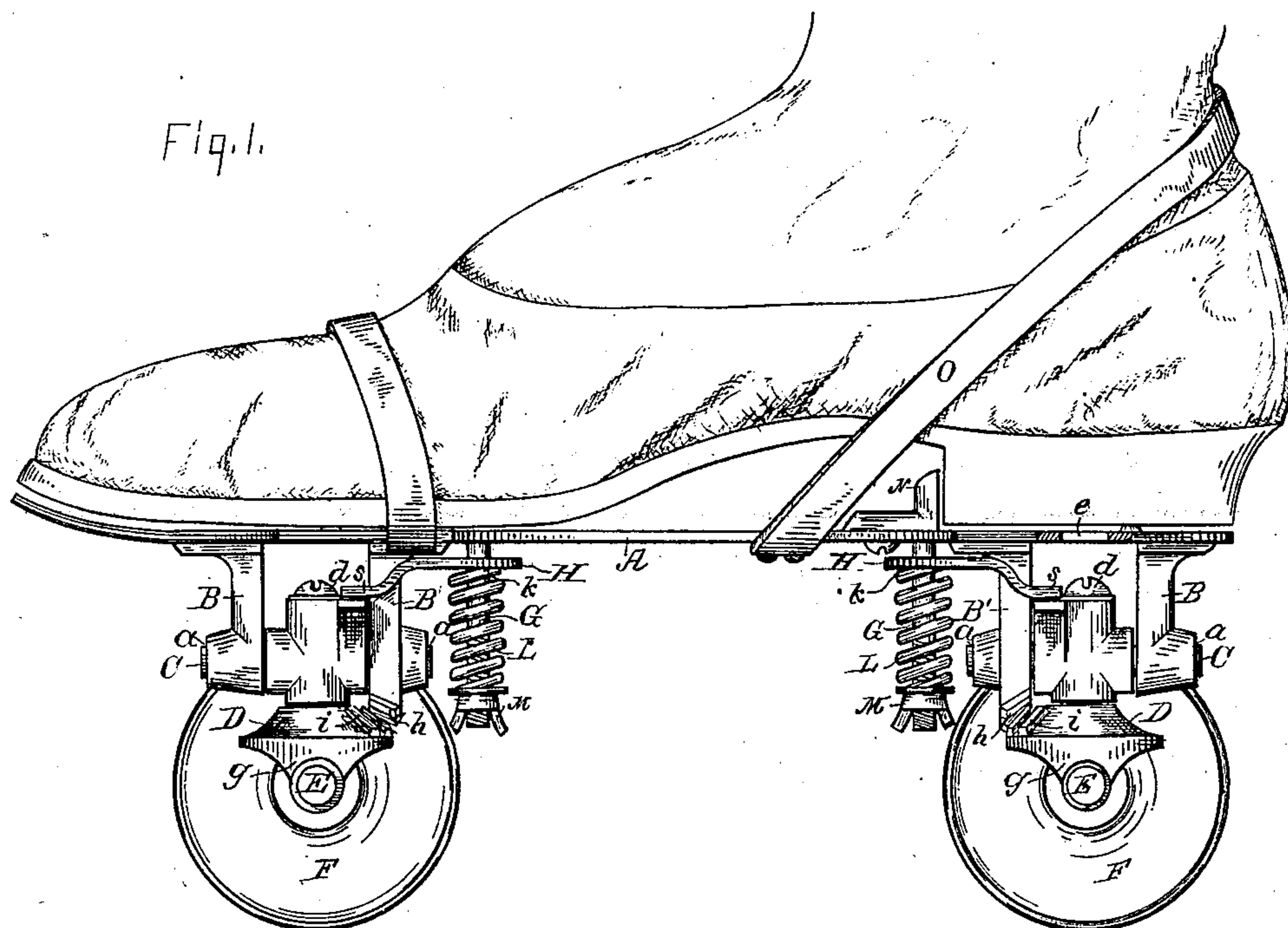
(Model.)

F. DRIFFILL.

ROLLER SKATE.

No. 316,342.

Patented Apr. 21, 1885.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FREDERICK DRIFFILL, OF STERLING, ILLINOIS, ASSIGNOR TO HEATON J. BRESSLES, OF SAME PLACE, AND GEORGE A. REYNOLDS, OF TOLEDO, OHIO.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 316,342, dated April 21, 1885.

Application filed July 30, 1884. (Model.)

To all whom it may concern:

Be it known that I, FREDERICK DRIFFILL, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Roller-Skates; and I do hereby 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention has reference to improvements in roller-skates, and pertains more especially to certain novel mechanism by which the side pressure of the foot of the skater will deflect the respective pairs of wheels in opposite directions from a direct line, and means for automatically returning such wheels to a direct line after such pressure is removed, as hereinafter described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a skate embodying my invention, with the nearer wheels removed to show the interior parts. Fig. 2 is a view in detail of the parts employed.

A is the foot-plate having rigidly attached on its lower face in pairs the downwardly-extending posts B and B'. In the lower ends of the posts B and B' are formed horizontal sockets *a*, in which is journaled the longitudinal rock-shaft C.

The shaft C is provided at its center and between the posts B and B' with a bolster-base, and is pivotally seated thereat on the bench D by means of a stud, *c*, formed on the upper surface at the center of such bench, and extending upward nearly or quite through the shaft C, and held in place by a screw, *d*, having its head seated on the upper face of the shaft C, and its thread passed downward into a corresponding thread cut in the upper end of the stud *c*. A hole, *e*, in the plate A, directly over the screw *d*, affords ready access to the latter.

The lower end of the bench D is suitably supported by the axle E of the carrying-wheels

F, passing transversely through the legs *g* thereof. The wheels F rotate upon the axle E.

It will be observed that the construction heretofore described will permit the oscillation in a horizontal plane of the axle E, and also of a lateral oscillation of the shaft C. These motions are essential to accomplish movements in curved lines, and also to permit all of the wheels to remain on the floor in the different positions and oscillations of the skater's foot. To limit the flexibility in this regard, and also to automatically restore the skate to both a vertical and right-line position, I supplement the following mechanism.

On the outer face of the lower end of each inner post, B', is formed the rigid segmental bevel-gear *h*, which rests in and engages a corresponding gear, *i*, on the inner upper edge of the bench D. By this provision the skater, by a lateral oscillation of his foot, shared by the plate A, through the medium of the gear *h* on the post B', forces the axle E, and with it the wheels F, a corresponding degree from a right line in either direction, as may be desired.

To return the skate to a perpendicular and right-line position, I rigidly affix a downwardly-extending post, G, to the lower face of the plate A, inside of and in a line with each pair of posts B and B'.

A bifurcated plate, H, having a hole, *k*, in its end, is placed with its bifurcated ends *s* resting respectively on the top of the shaft C, one of such ends passing on each side of the inner post, B', and such hole *k* passed up on the post G to nearly the under surface of the plate A. The plate H is bent vertically near its longitudinal center, and such bent portion rests as a fulcrum on the flattened or flanged base of the post B'. The latter post serves as a guide for the plate H, and to prevent the lateral oscillation or turning of the latter.

A coiled spring, L, placed on the post G, abutting at its upper end against the inner end of the plate H, and held adjustably by means of a washer and a thumb-screw, M, at the lower end of the post G, holds the outer and bifurcated ends, *s*, of the plate H flexibly down upon the shaft C at points on the latter outside of its axis or center of motion. The ends

s of the plate H are at all times in a line parallel with the plate A. Therefore, when the shaft C is oscillated laterally, that side of the latter shaft which rises alone presses against the plate H and compresses the spring L, and, as soon as the lateral pressure of the skater's foot is removed, such spring operates to return the shaft C to a position in which both ends s of the plate H rest thereon, that being the normal position of such shaft C.

The turning upon the skates is more readily accomplished if each pair of wheels F is deflected in opposite directions. This is effected in my invention by placing the segmental gear h on the post B', each of the latter standing inward from its correlative post, B, the operation of the lateral roll of the foot being thereby communicated to different sides of the respective axles E. The return movement of the skater's foot acts positively, through the gear h, to assist the spring L to restore the skate to the direct position.

One advantage of the use of the plate H over rubber springs as heretofore used is, that in the rock of the shaft C but one side of such plate presses upon such shaft when the latter is rocked from its normal position, and therefore there is nothing on the opposite side of such shaft to oppose its return, while in the case of rubber springs the side of the spring relieved expands with some degree of force against the receding plate and resists the return of such plate, and, the opposing sides of such spring being necessarily of equal elasticity, the expansion of the one side fails to sufficiently compress the other by the amount of power required to move the mechanism operated upon. In other words, of two sides of a spring having equal expansive force one is required to compress the other and exert a sufficient additional power to move the at-

tached devices. It is obvious that the result under such circumstances must be incomplete. Also in my invention the tension of the spring L can be changed.

N is a stud affixed to the upper face of the plate A, and having a vertical rear face against which the front of the heel-tap of the skater abuts.

O is a strap suitably attached to the plate A, slightly forward of the stud N, and adapted to pass diagonally backward and upward and be fastened over the foot, over the counter of the boot, and behind the ankle. In this position the strap O draws directly toward the stud N and fastens the rear of the skate to the foot, thus dispensing with a strap over the instep, which latter is objectionable as destroying the spring in the arch of the foot. The bench D may be integral with the axle E.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a roller-skate, the combination of the plate A, posts B and B', shaft C, provided with a bolster-base, the bifurcated plate H, the post G, and spring L, substantially as shown, and for the purpose mentioned.

2. In a roller-skate, the combination of the plate A, posts B and B', the latter provided with the gear h, the shaft C, having a bolster-base, the bench D, provided with the gear i, the axle E, the post G, the bifurcated plate H, and the spring L, substantially as shown, and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK DRIFFILL.

Witnesses:

WALTER N. HASKELL,
WILLIAM MANAHAN.