

(No Model.)

J. C. CROPPER.
ROLLER SKATE.

No. 332,189.

Patented Dec. 8, 1885.

Fig.1.

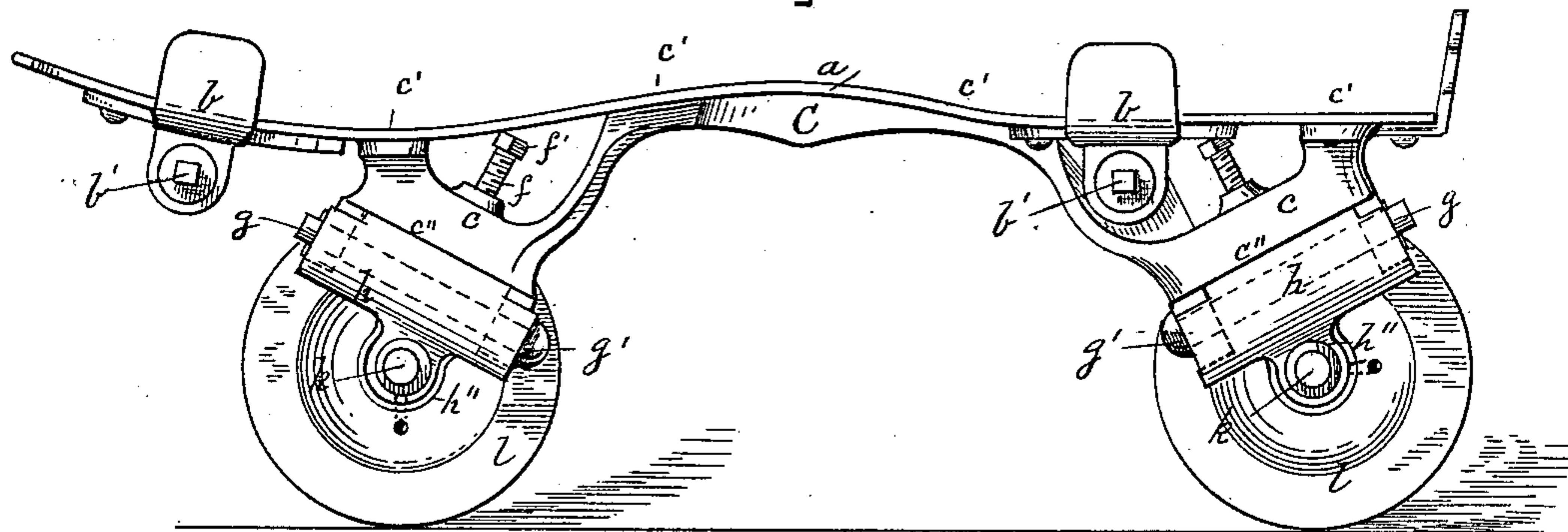


Fig-2.

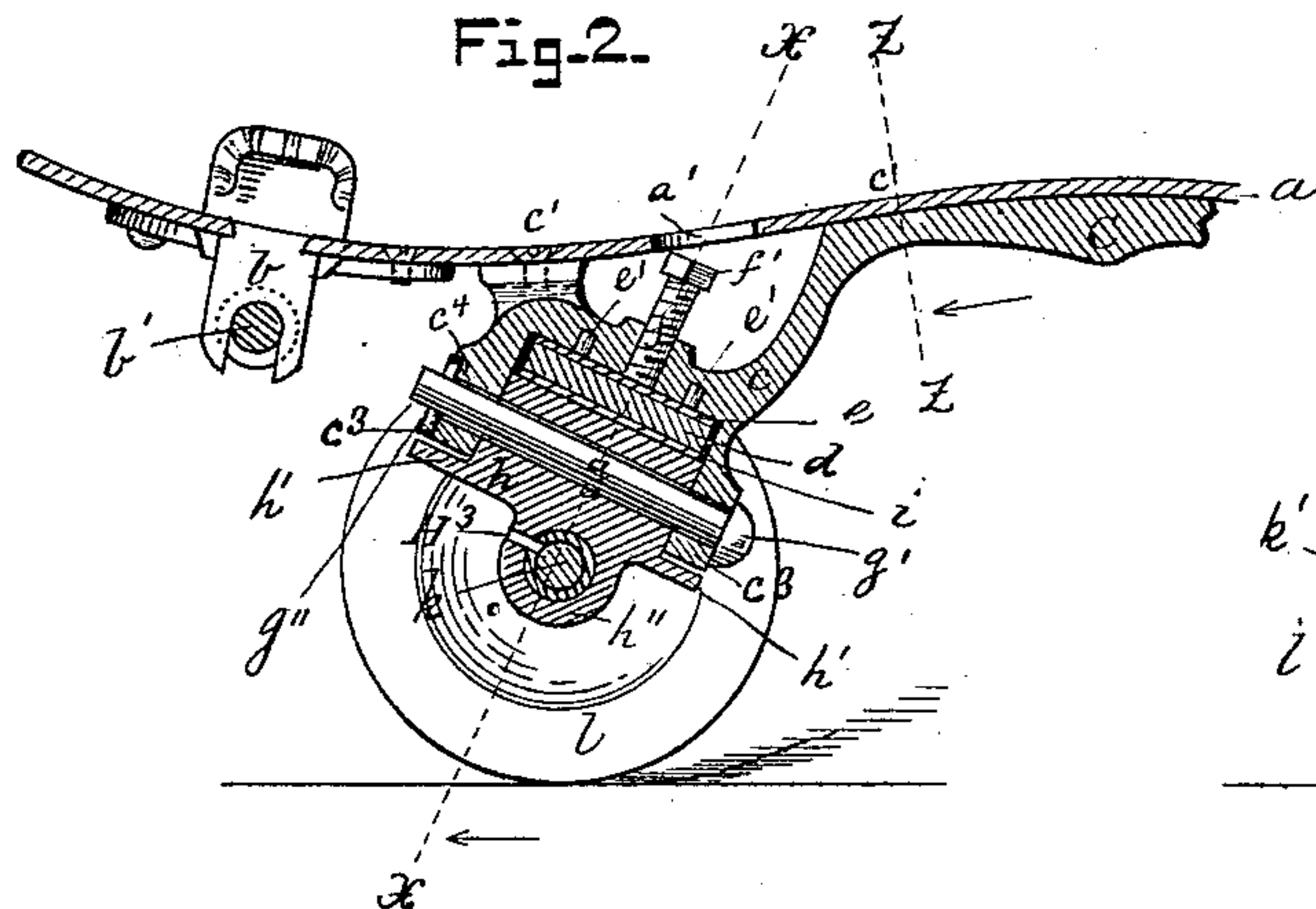


Fig-3.

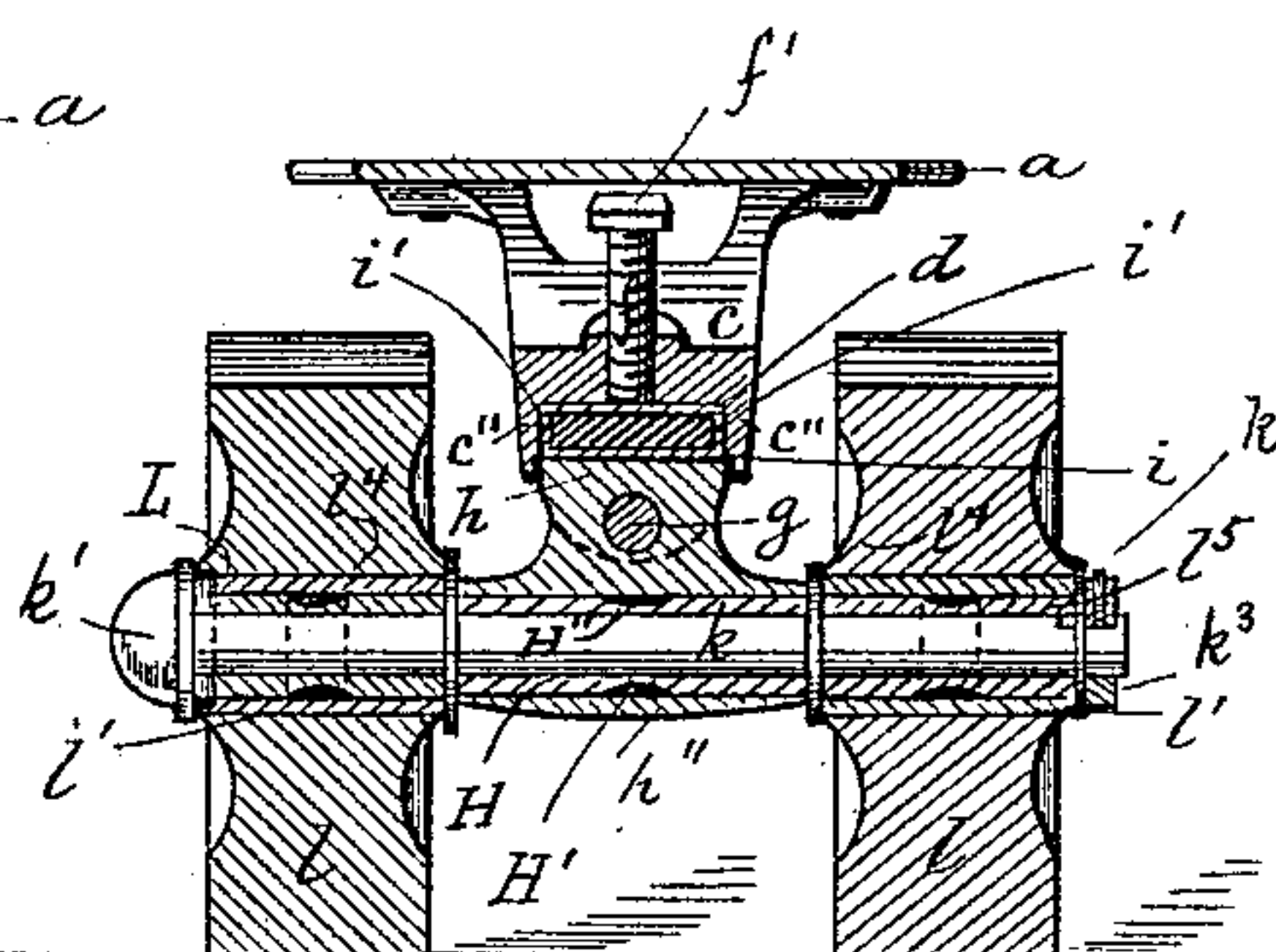


Fig-4-

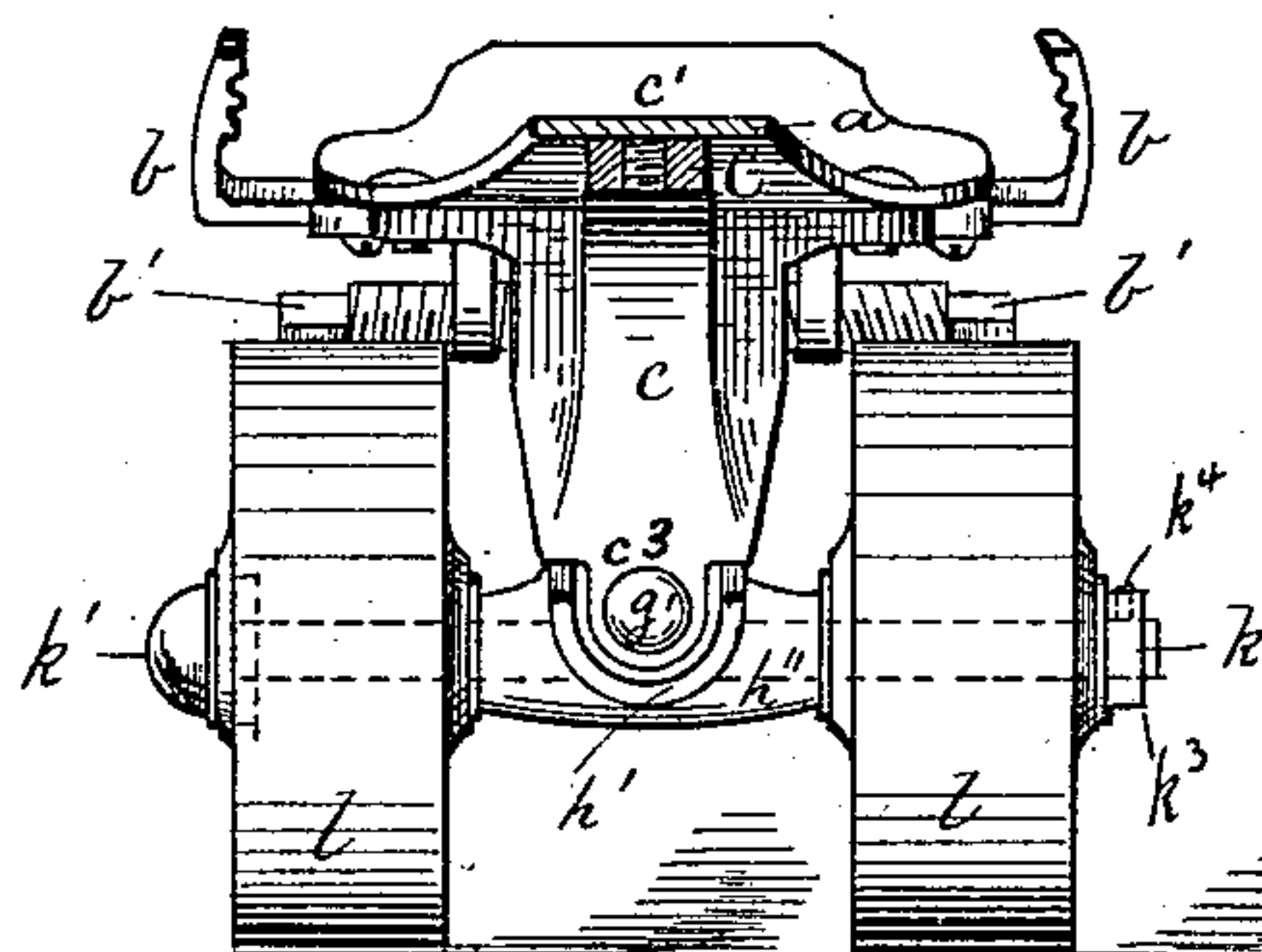


Fig. 5.

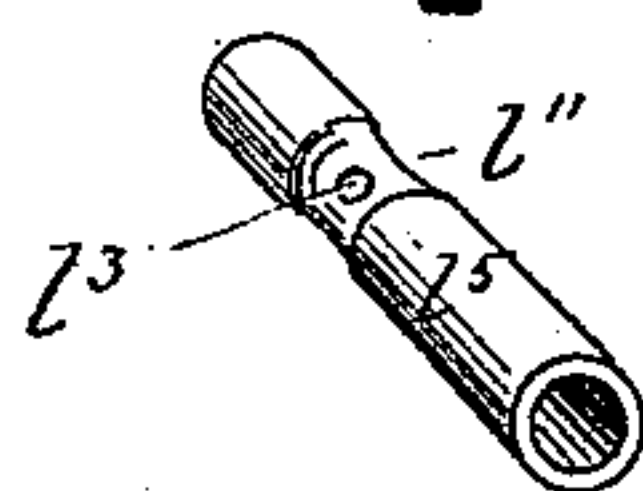


Fig.6.

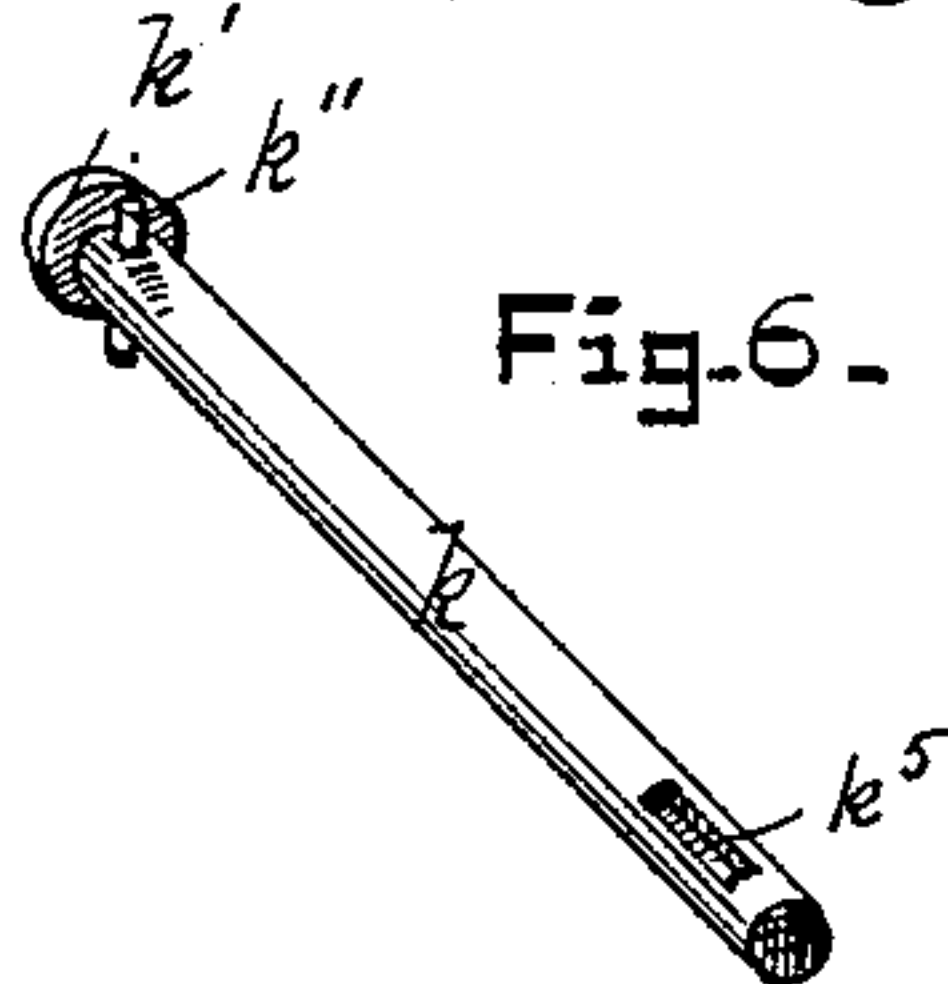
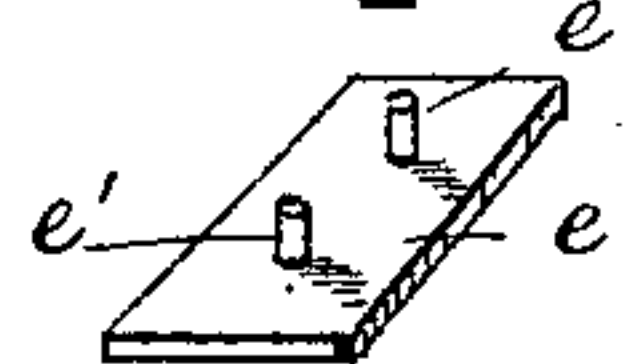


Fig 7.



Witnesses.
Francis Allen.
Henry Chadbourne.

Inventor.
Joseph C. Cropper.
by Abraham Gudrien
his atty.

UNITED STATES PATENT OFFICE.

JOSEPH C. CROPPER, OF CEDAR FALLS, IOWA.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 332,189, dated December 8, 1885.

Application filed April 27, 1885. Serial No. 163,585. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH C. CROPPER, a citizen of the United States, residing at Cedar Falls, in the county of Black Hawk and State of Iowa, have invented certain new and useful Improvements in Roller-Skates; and I do hereby declare that the same are fully described in the following specification, and illustrated in the accompanying drawings.

This invention relates to improvements in roller-skates, and it is carried out as follows, reference being had to the accompanying drawings, where—

Figure 1 represents a side elevation of the improved roller-skate, with the rollers on one side thereof shown as removed. Fig. 2 represents a longitudinal vertical section of one of the hangers and a portion of the sole-plate to which it is secured. Fig. 3 represents a cross-section on the line X X shown in Fig. 2. Fig. 4 represents a cross-section on the line Z Z, also shown in Fig. 2. Fig. 5 represents a perspective view of one of the metallic sleeve-bearings located in the center of each roller. Fig. 6 represents a perspective view of one of the roller shafts or pins, and Fig. 7 represents a perspective view of one of the pressure-plates on which the adjustable pressure-screw acts in each of the hangers.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

a is the sole-plate, preferably made of metal, and provided with the usual laterally-adjustable clamps, *b b*, and right-and-left-handed clamp-screws *b' b'*, well known in the art; but I wish to state that I do not confine myself in my improved roller-skate to such metal sole-plate and screw-clamps, as these may be varied without departing from the essence of my invention.

c c represent the front and rear hangers, which are connected together by means of the longitudinal metal bar *C*, cast in one piece with or otherwise secured to said hangers *c c*, by which arrangement the proper relative position of one hanger in relation to the other is permanently maintained, as well as great strength imparted to said hangers. The connecting-bar *C* also acts as a vibrating spring to impart ease and comfort to the skater. The connecting-bar *C*, as well as the hangers *c c*, are secured to the sole-plate *a* by means of screws

c' c' or rivets, as shown in Figs. 1, 2, 3, and 4. The under side of each hanger *c* has downwardly-projecting side lips *c'' c''* and semicircular ears *c³ c³* in its ends, as shown in Figs. 2, 3, and 4, by means of which a box or cavity is formed to contain the elastic cushion or spring *d*, preferably made of india-rubber or other elastic material, as shown in Figs. 2 and 3. Between the upper side of the rubber cushion *d* and the under side of the hanger is interposed a metal plate, *e*, having upwardly-projecting pins *e' e'* on its upper side, as shown in Fig. 7, fitting loosely in corresponding recesses or holes in the hanger, as shown in Fig. 2, so as to serve as a guide for said plate when the latter is pressed more or less against the elastic cushion *d* by means of the regulating-screw *f*, that is screwed through a screw-threaded perforation in the top of the hanger *c*, as shown in Fig. 2, and has its lower end resting on top of pressure-plate *e*. The upper end, *f'*, of screw *f* is made square, or of the same size and shape as the ends of the clamping-screws *b' b'*, so that one key only may be needed for securing the sole-plate to the foot and to turn the regulating-screws *f f*. A perforation, *a'*, is made in the sole-plate *a* above each screw *f*, through which the key is to be inserted when it is to desired to regulate the pressure on cushions *d*.

The semicircular ears *c³ c³* in the ends of each hanger *c* are perforated for the reception of the inclined hinge-pin *g*, (shown in Fig. 2,) that also passes through the rocker *h*, the upper side of which is flat, as shown in Figs. 2 and 3, and has between its upper flat side and the under side of the elastic cushion *d* interposed the metal plate *i*, provided with upwardly-projecting side lips *i' i'*, (shown in Fig. 3,) to prevent the elastic cushion *d* from spreading sidewise when compressed between the hanger and its rocker. Below the semicircular ears *c³ c³* on the hanger *c* are made on the front and rear ends of the rocker *h* semicircular or concave lips *h' h'*, (shown in Figs. 1, 2, and 4,) adapted to serve as rests for the semicircular ears *c³ c³* on the hanger *c*, when an increased pressure is made to bear downward on the sole-plate *a*, and thus relieve the pin *g* from an undue and excessive strain when the skate is in use. Said semicircular lips *h' h'* also serve as stops between the rocker and hanger. To permit such vertical yield-

ing motion of the rocker in relation to its hanger, I make the perforations in the said parts through which the bolt or pin *g* passes a little larger than the diameter of such pin, as shown in Fig. 2. Pin *g* has in one end a head, *g'*, as usual. The other end is perforated for the reception of the pin *g''*, which is made to rest in a recess, *c⁴*, on the outside of one of the ears *c³*, as shown in Fig. 2, and thus prevent the said pin *g* from turning around its axis in the perforated ears *c³*, and thereby saving it from unnecessary wear. In one piece with the rocker *h* is cast the bearing-sleeve *h''*, through which the pin or bolt *k* is inserted, as is usual on roller-skates.

l l are the skate-rollers, which are bored out centrally to receive the metal bearing-sleeve *l'*, that is driven firmly into the bored-out central portion of roller *l*, as shown in Fig. 3. Within the bearing-sleeve *l'* is located the anti-friction sleeve *l^b*, which is free to turn in said bearing-sleeve and surrounds the pin or spindle *k*, as shown in Fig. 3.

l'' is an annular groove or recess on the exterior of the anti-friction sleeve *l^b*, and *l³* is a perforation through the said sleeve *l^b* at this place.

l⁴ is a perforation through the skate-roller *l*, leading from the inside of said roller through a hole in bearing-sleeve *l'* to the annular groove *l''* on the metal anti-friction sleeve *l^b*, as shown in Fig. 3, by which arrangement the lubricant can easily be fed to the interior of sleeve *l'* and spindle *k*, as shown in Fig. 2, without allowing the lubricant any access to the exterior or outside portion of the said roller, thereby preventing the lower portions of ladies' garments from being soiled. One end of the pin or bolt *k* has a head, *k'*, as usual, to prevent the roller nearest to it from getting off said spindle *k*. Near the said head *k'*, I make a transverse perforation through the pin or spindle *k*, in which is loosely inserted the locking-pin *k''*, adapted to rest in a recess, *L*, on the outside of one of the rollers *l*, as shown in Fig. 3, so as to lock one of the rollers *l* to said spindle *k*, while the opposite roller is made to run loose on said pin or spindle *k*, causing the skate to run easier, as compared with skates in which both rollers are loose on the pin. If, however, a skater should prefer to have both rollers loose on pin *k*, its locking-pin *k''* may easily be removed from its recess *L* on the outside of one of the rollers *l*.

Instead of a split pin in the opposite end of spindle *k*, which is liable to tear and injure ladies' dresses, I use an adjustable collar, *k³*, (shown in Fig. 3,) which is slipped loosely over the outer end of spindle *k*, and secured in place on such spindle on the outside of one of the rollers *l* by means of set-screw *k⁴*, screwed through such annular ring or collar *k³*, and having its inner end pressing against the bottom of a groove, *k⁵*, made longitudinally on the spindle *k*, near its outer end, but not extending wholly to the end of said spindle *k*, as shown in Fig. 5, so as to prevent said

collar and its set-screw from getting off from the end of spindle *k* in case the set-screw *k⁴* should accidentally be loosened a little. 70

The anti-friction sleeve *l^b*, that surrounds the spindle *k* and has its bearing in the metal-bearing sleeve *l'*, that is secured centrally within roller *l*, is a very essential feature in my improved roller-skate, and by its use and construction the skate is run almost noiseless, and with the least amount of frictional resistance possible. To still more reduce the frictional resistance in the running-gear of the skate, I locate within the bearing-sleeve *h''*, around the pin *k*, the loosely-running anti-friction sleeve *H*, provided with an annular groove, *H'*, and perforation *H''* in a similar manner to those located within the rollers *l l*. 75

H³ is a perforation through one side of bearing-sleeve *h''*, communicating with the annular groove on the anti-friction sleeve *H*, through which perforation the lubricant is introduced. 80

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim— 90

1. In a roller-skate, the combination, with the hanger *c*, having the side lips *c'' c''* and downwardly-projecting ears *c³ c³*, hinged by pin *g* to the rocker *h*, of the lower dish-plate, *i*, with upwardly-projecting side lips *i' i'*, the upper plate, *e*, having guide-pins *e' e'*, fitting in corresponding recesses in the body of the hanger, and the interposed elastic cushion *d*, substantially as described. 95

2. In a roller-skate, the combination, with the hanger having downwardly-projecting side lips *c'' c''* and end ears, *c³*, forming a box or receptacle for an elastic cushion, *d*, said ears projecting below the lips *c'' c''*, of the rocker *h*, having a plain upper side bearing against the cushion *d*, and semicircular or curved end lips, *h' h'*, adapted to serve as rests for the ears *c³ c³*, and the hinge-pin *g*, passing through ears *c³ c³* and rocker *h*, substantially as described. 100

3. In a roller-skate, the hanger *c* and rocker *h*, hinged together, as described, and having the yielding cushion *d* interposed between them, in combination with the dish-plate *i i'*, upper plate, *e*, having guide-pins *e' e'*, and the regulating-screw *f*, as and for the purpose set forth. 105

4. In a roller-skate, the rocker *h*, combined with the internal loosely-fitted anti-friction bearing-sleeve *H*, having annular groove *H'* and perforation *H''*, as and for the purpose set forth. 110

5. In a roller-skate, the herein-described roller *l* and its central bearing-sleeve, *l'*, combined with the loosely-fitted anti-friction sleeve *l^b*, having annular groove *l''* and perforation *l³*, as and for the purpose set forth. 115

In testimony whereof I have affixed my signature in presence of two witnesses. 120

Witnesses: JOSEPH C. CROPPER.

ALBAN ANDRÉN,

HENRY CHADBURN.