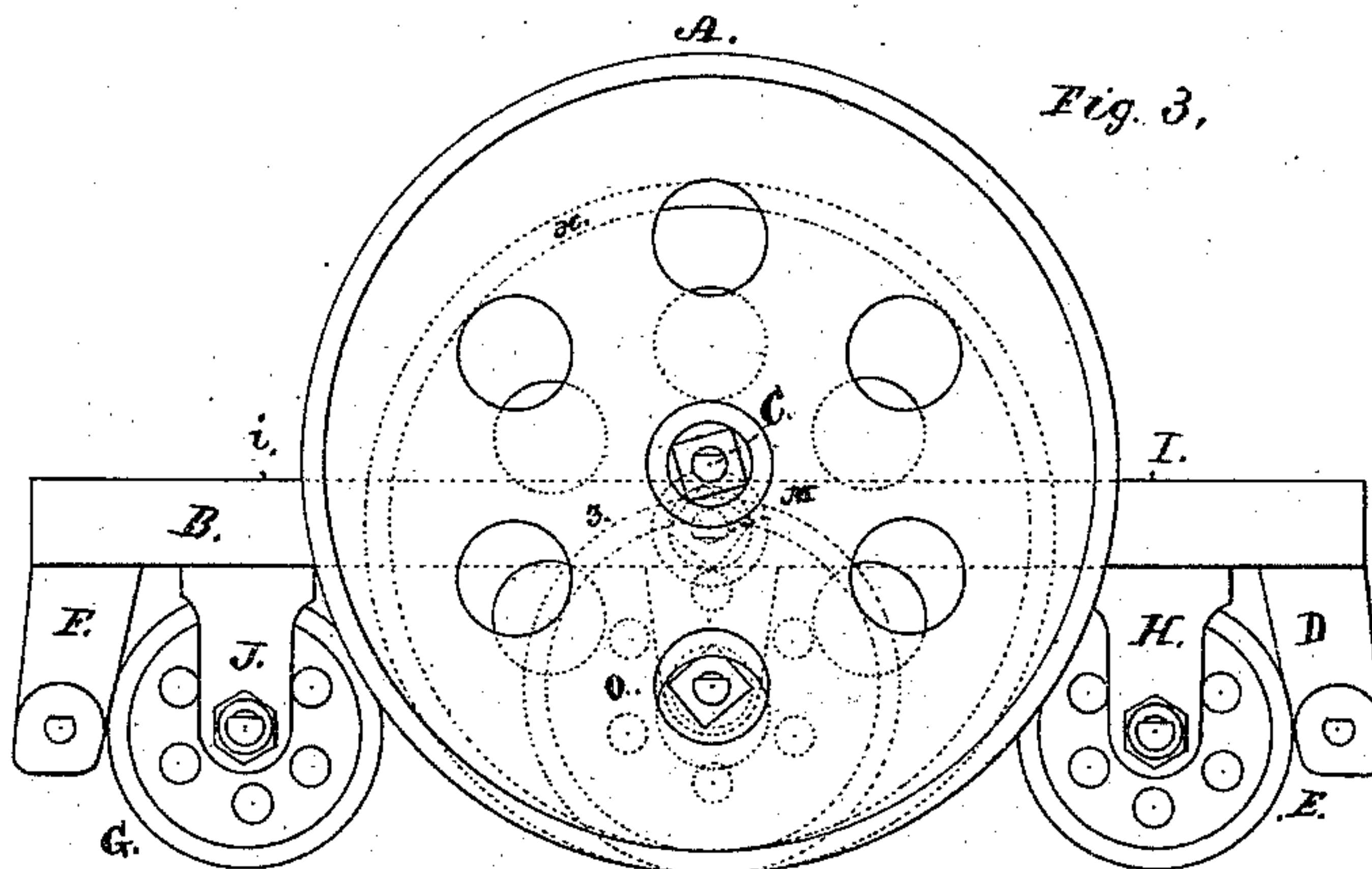
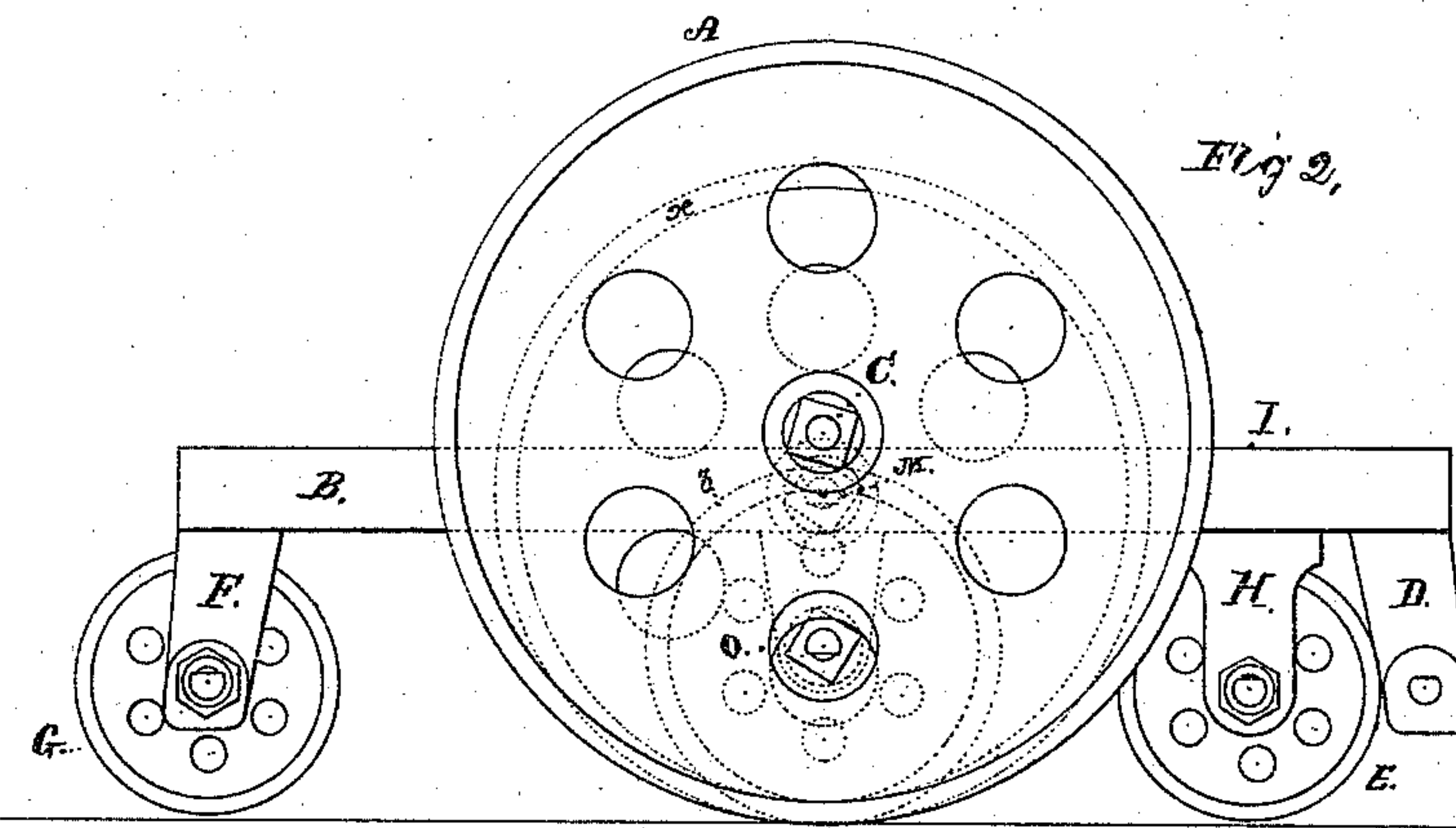
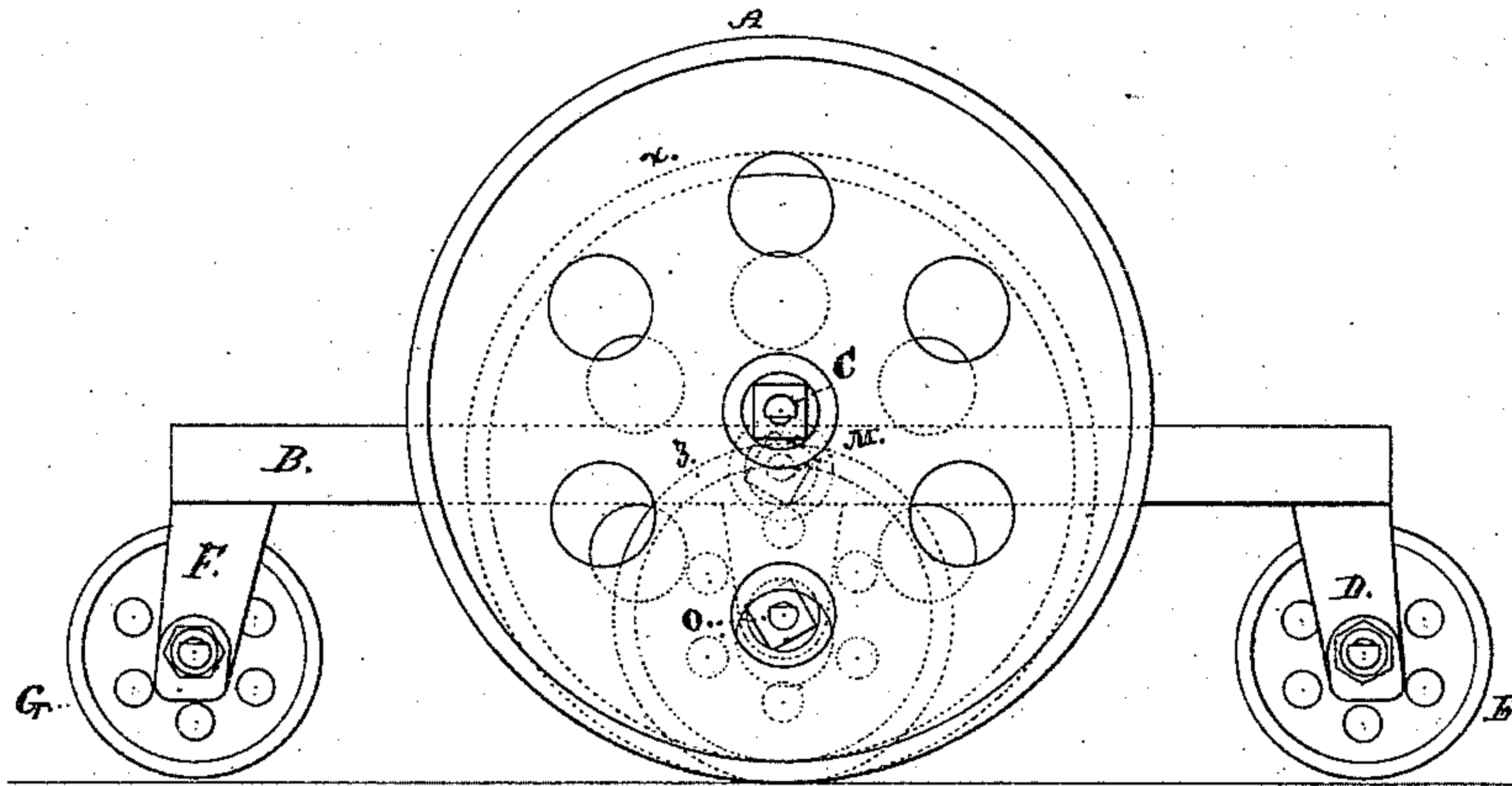


W. P. GREGG.  
Roller-Skates.

No. 153,946.

Fig 1.

Patented Aug. 11, 1874.



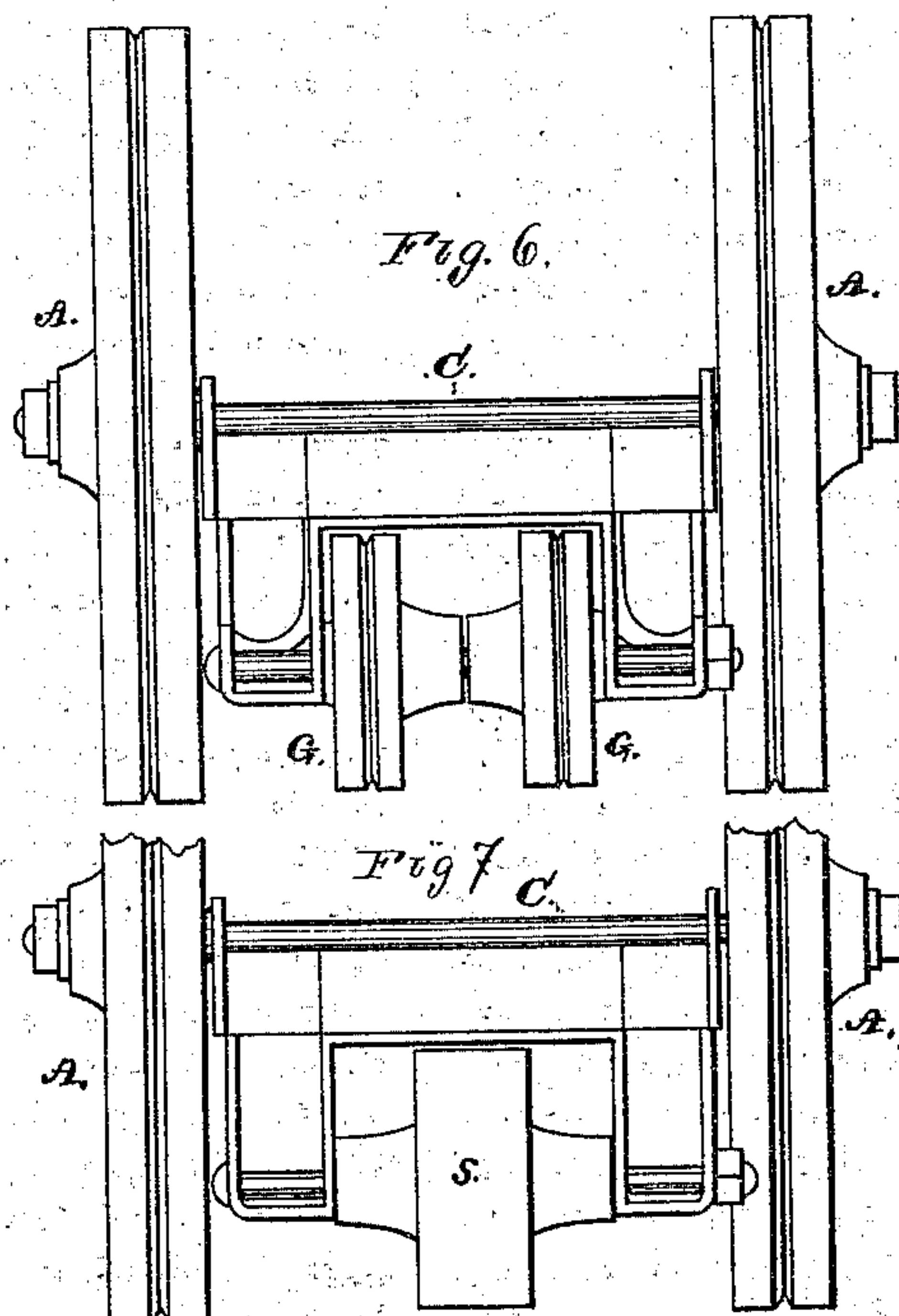
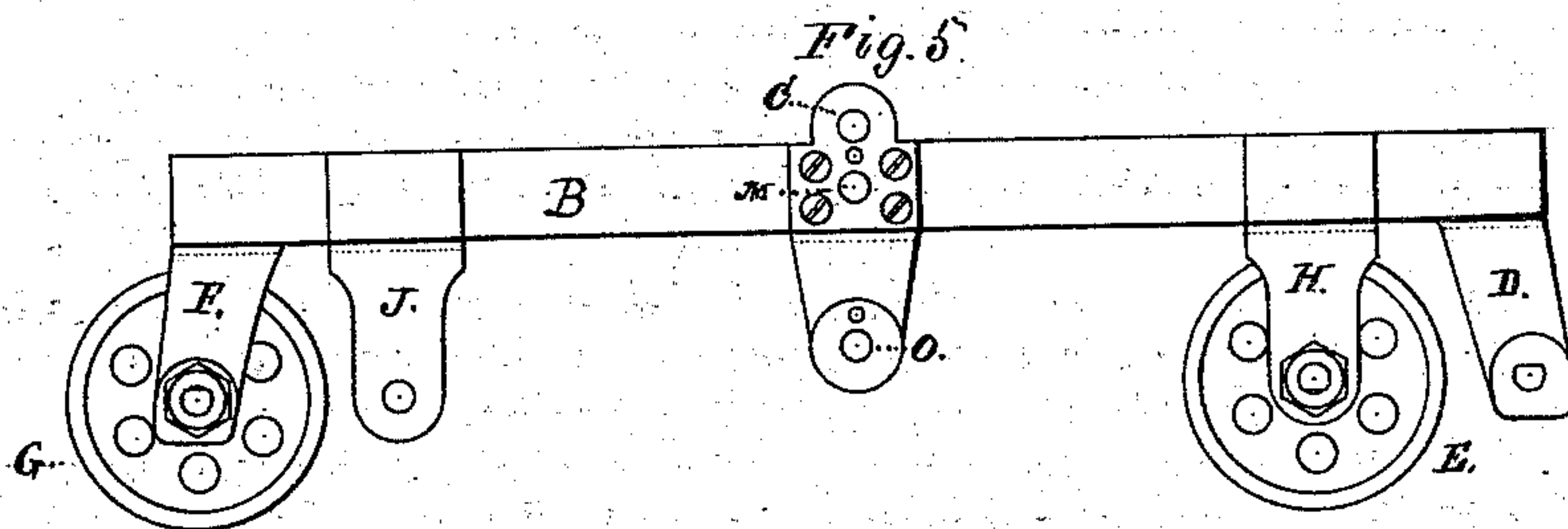
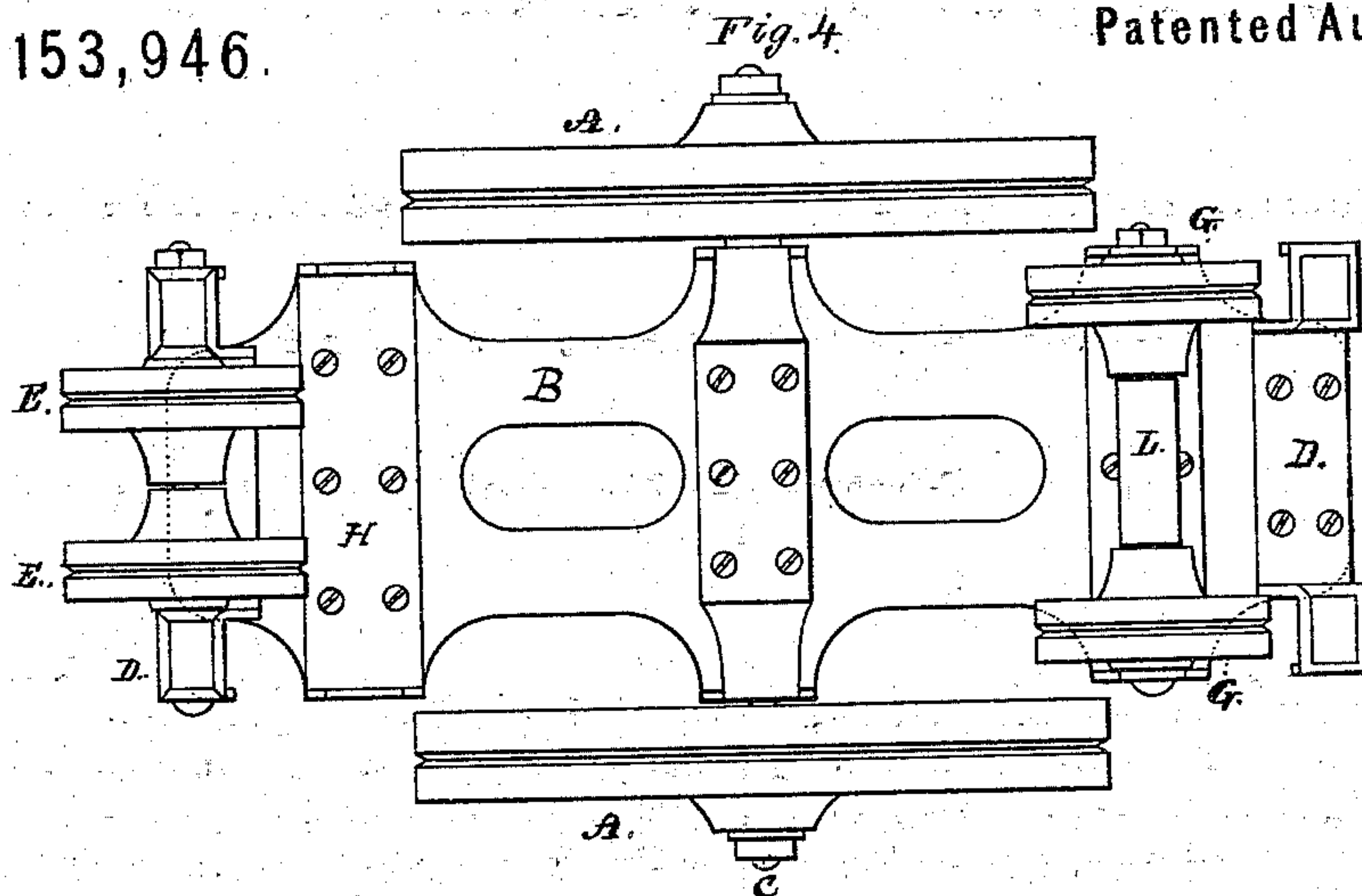
Witnesses  
*J. P. Hale*  
*John R. Baker*

Inventor  
*Washington P. Gregg*

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# UNITED STATES PATENT OFFICE.

WASHINGTON P. GREGG, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN ROLLER-SKATES.

Specification forming part of Letters Patent No. **153,946**, dated August 11, 1874; application filed June 15, 1874.

*To all whom it may concern:*

Be it known that I, WASHINGTON PARKER GREGG, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Roller-Skates; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

In the said drawings, Figure 1 is a side view of the stock, one of its two outside driving-wheels, their axle across the stock, one of its two rollers partially under the toe, and one of the two partially under the heel, and dotted circles X and Z showing outside wheels of different diameters. Fig. 2 is a side view of the same stock, outside wheel, and axle, one of the two rollers under the front of the ball, and one of the two partially under the heel, and the same dotted circles X and Z. Fig. 3 is a side view of the same stock, outside wheel, and axle, one of the two rollers under the front of the ball, and one of the two under the rear of the front of the heel, and the same dotted circles X and Z. Fig. 4 is a bottom view of the stock, its two outside wheels, the axle-holder for the central axle under the stock, the axle-holders for the rollers under the stock, two rollers partially under the toe, and two under the rear of the front of the heel, and spool between the latter. Fig. 5 is a side view of the stock, its side wheels being removed, its front and rear axle-holders, one of its two small wheels under the front of the ball, and one of its two partially under the heel, an axle-hole above the stock for one set of drivers, another through the stock for a set less in diameter, and another through the brackets or axle-holder under the central part of the stock for a set still less in diameter. Fig. 6 is an end view of the stock, its two driving-wheels and their axle, and two of its rollers partially under the heel of the stock, Fig. 7 is an end view of the stock, its axle, and two driving-wheels, with one small supporting-roller under the toe.

My invention consists mainly in having two

driving-wheels, one on an outer axle at or near the middle of each side of the stock, in combination with four smaller rollers, two under each end of the stock or foot-rest, also in having two removable axles for the rollers under the stock, as hereinafter described.

In my patent of July 25, 1865, reissued December 23, 1873, I employ two driving-wheels outside of the stock, and also use them with one roller partially under the toe and another partially under the heel, as therein set forth. As useful as I deem skates made under this patent, yet when the wheels are very large and the stocks very long I prefer more support at the heel and toe, such as is provided in this present invention.

In carrying out my present invention, I arrange two driving-wheels, A A, one at or near the middle of each side of the stock B, upon an outer axle, C, extending across it. I also arrange on an axle in an axle-holder, D, two smaller rollers, E E, partially under the toe, and on an axle in another axle-holder, F, two such other rollers G G, partially under the heel of the stock, and then use said four rollers so arranged in combination with said two outside driving-wheels. When, as sometimes it is desirable to vary the position of the rollers under the stock, I withdraw the rollers E E and their axle from their position partially under the toe, and place their axle with them on it, in a third axle-holder, H, so that said rollers E E shall be under each side of the front of the ball I of the stock, as shown in Fig. 2, and then use said rollers E E with the two other rollers G G arranged partially under the heel, in combination with said two driving-wheels, one at each side of the stock, as aforesaid. With its wheels and rollers arranged as last described, the stock may be reversed and used either end first.

To make another desirable variation, I withdraw the rollers G G and their axle from their position partially under the heel, and place their axle with them on it in a fourth axle-holder, J, so that said rollers G G shall be under each side, i, of what I term the rear of the front of the heel of the stock, as shown in Fig. 3, and then I use the said rollers G G with the other two rollers, E E, under each side of the rear of the front of the ball, in com-



bination with said two driving-wheels, one at each side of the stock, as aforesaid.

Instead of employing two rollers under the toe end of the stock, I use for some of the shorter skates one small roller under the toe end, with two small rollers under the heel end, of the stock, in combination with said two driving-wheels, one at each side of the stock, as aforesaid, such single roller being shown in Fig. 7. When placed under the front of the ball and under the rear of the front of the heel, the small roller may be kept by a spool, L, Fig. 4, wider apart than when partially under the toe and heel, and if furnished with longer axles may be used outside of the stock, but not in combination with drivers so large as to interfere.

The smallest and largest outside driving-wheels practicable, it will be perceived, can be used with these skates, as their axles may be placed either in the sides of the stock, or below, or above it, according to the diameter of the wheels.

When desirable, as it often is, to have the axle through the sides of the stock, I make an axle-hole, M, as shown in Fig. 3, to receive the axle, and affix to each of the ends of said axle a driving-wheel, as shown in the dotted circle X, less in diameter than the two drivers for the axle across the stock, and then use said lesser driving-wheels in combination with said rollers under the stock at will, in each or any of the positions designated for them, as aforesaid; and when it is desired to have the axle of the outside driving-wheels below the plane of the upper surface of the stock, I make an axle-hole, O, through the axle-holder under the central part of the stock for the axle, affix to each of its ends a driving-wheel, less in diameter, as shown in the dotted circle Z, than the wheel for the axle through the sides of the stock; and then use said third set of drivers, in combination with said rollers under the stock, at will, in each or any of the positions designated for them, as aforesaid.

I consider the cheapest to be that with one set of outside drivers, in combination with two small rollers partially under the toe and heel ends of the stock, or in the other positions under the stock herein designated for them; but I construct some of these skates with more than one set of two outside drivers for one and the same stock, each set to be used by itself, at will, without the other sets, in combination with said wheels under the stock in each or any of the positions designated for them, as aforesaid. To do this, I provide two driving-wheels, A A, for the axle extending across the stock, two less in diameter, as shown in the dotted circle X, for the axle through the sides of the stock, and two still less in diameter, as shown in the dotted circle Z, for the axle through the central axle-holder under the stock. Thus, it is seen, that while provision is made for additional support at the ends, as set forth, the skater can

avail himself of the advantages of exercising with different sets of two driving-wheels on one and the same stock, as aforesaid, beginning, for instance, with the two smallest outside drivers, and, after practicing sufficiently with this set, in combination with the rollers under the stock, taking the next set of drivers, and so on.

When several sets of drivers are provided for one stock, a single long axle is sufficient for them all, as only two drivers are used at a time, in combination with said rollers under the stock.

Said small rollers may be provided with an axle for each of their axle-holders or positions. I prefer the two movable axles. I likewise prefer that the bearing-surfaces of the driving-wheels should be lower down than those of the other wheels or rollers, the better for turning, and that the riding may be the more on the outside wheels.

Said combinations, with the rollers partially under the toe and heel, are intended more for beginners and general wheel-skating, the other combinations more as variations for experts and athletes.

When the exercises are to be confined for any considerable time to the skate, the axle of whose drivers are through the sides, or above the stock, such fixtures as are not necessarily required therewith, may, for the time, be laid aside.

The axle of the drivers, when held in place by a small screw through its washer into the stock, is, on the withdrawal of the screw, readily transferred from one axle-hole to another, when wanted for another set of drivers when there is more than one set for one stock.

The stocks or foot-rests, wheels, axles, and other parts may be of any materials, size, or description suitable for wheel-skating, and said wheels and other parts may be fitted to the foot-rest, and fastened on by any convenient means.

What I herein claim for roller-skating purposes is as follows:

1. A skate-stock or foot-rest having one driving-wheel on an outer axle at or near the middle of each side of the stock, and two smaller rollers partially under each end of the stock, substantially as described and shown.

2. A skate-stock or foot-rest having one driving-wheel on an outer axle at or near the middle of each side of the stock, and four smaller rollers, two under each side of the ball, and two partially under the heel of the stock, substantially as described and shown.

3. A skate-stock or foot-rest having one driving-wheel on an outer axle at or near the middle of each side of the stock, and four smaller rollers, two under each side of the front of the heel and two under each side of the front of the ball, substantially as described and shown.

4. A skate-stock or foot-rest having one driving-wheel on an outer axle at or near the



middle of each side of the stock, and one smaller roller under the toe, and two such rollers under the heel of the stock, substantially as described and shown.

5. In a skate-stock or foot-rest having one driving-wheel on an outer axle at or near the middle of each side of the stock, whether in combination with two smaller rollers under each end, or two under the rear and one under the front end of the stock, the outside driving-wheels, arranged so that the upper portions of their peripheries shall extend above the plane of the lower surface of the stock.

6. In each of the several specified combinations covered by the foregoing claims, the

side wheels attached to the stock in such positions that their tread shall be on a plane lower than that of said smaller rollers.

7. A skate-stock or foot-rest provided with axle-holding devices or brackets for supporting the axle of the two outside driving-wheels at different altitudes with respect to the stock, substantially as shown and described.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

WASHINGTON PARKER GREGG.

Witnesses:

F. P. HALE,

JOHN R. BAKER.