

(No Model.)

F. E. VANDERCOOK.  
ROLLER SKATE.

No. 305,644.

Patented Sept. 23, 1884.

Fig. 1

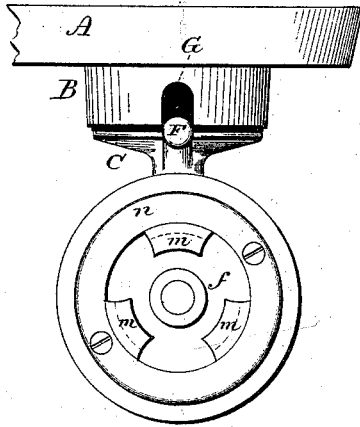


Fig. 2

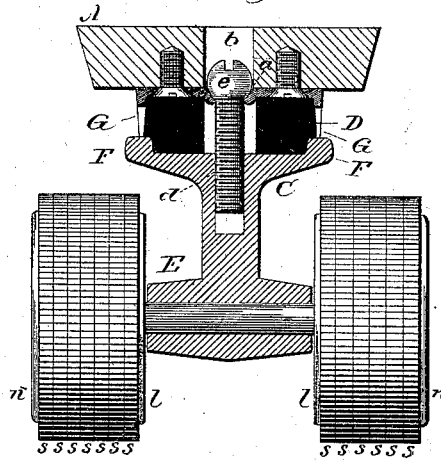


Fig. 3

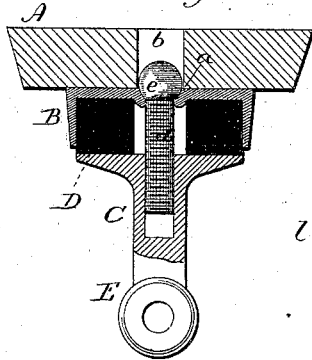


Fig. 4

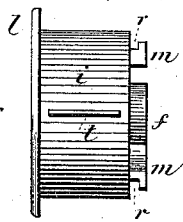


Fig. 5

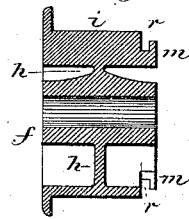


Fig. 6



Fig. 7

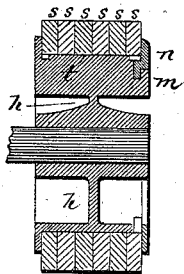
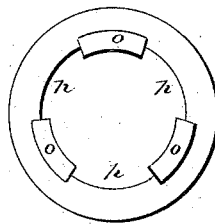


Fig. 8



Witnesses.  
J. H. Shumway  
J. C. Clark

Frank E. Vandercook  
Inventor  
By Atty.  
J. C. Clark

# UNITED STATES PATENT OFFICE.

FRANK E. VANDERCOOK, OF ANSONIA, CONNECTICUT, ASSIGNOR OF ONE-HALF TO HENRY C. COOK, OF SAME PLACE.

## ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 305,644, dated September 23, 1884.

Application filed April 18, 1884. (No model.)

### *To all whom it may concern:*

Be it known that I, FRANK E. VANDERCOOK, of Ansonia, in the county of New Haven and State of Connecticut, have invented a new  
5 Improvement in Roller-Skates; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same,  
10 and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of a portion of the foot-piece, showing one of the saddles; Fig. 2, a transverse section through the saddle; Fig. 3,  
15 a vertical section at right angles to the section of Fig. 2; Figs. 4, 5, 6, 7, and 8, detached views of the roller, illustrating its construction.

This invention relates to an improvement  
20 in the construction of roller-skates, with special reference to the method of hanging the rollers, whereby a certain amount of elasticity is introduced between the axle and the foot-piece, and also in the construction of the rollers;  
25 and the invention consists in the construction, as hereinafter described, and more particularly recited in the claims.

In illustrating the method of hanging the rollers to the foot-piece I show only a single  
30 pair of rollers, or one attachment. It will be understood, however, that this is or may be applied alike to both pairs of rollers.

A represents the foot-piece, of any of the known constructions; B, an inverted-cup-shaped socket, which is made fast to the under  
35 side of the foot-piece by screws or otherwise, with a central hole through it, forming a concave seat, *a*, on the upper side. Through the foot-piece is a hole, *b*, corresponding to the seat *a* on the socket. C is the saddle, its head or upper surface corresponding to or somewhat less than the internal diameter of the socket B, as seen in Fig. 3. In the socket is  
40 an india-rubber or other suitable spring, D, upon which the saddle bears. Through the socket a screw, *d*, extends into the saddle below, its head *e* of ball or spherical shape to fit the corresponding seat, *a*, on the socket. This ball-shaped head and seat permits a universal

movement of the saddle, the spring D yielding  
50 for such movement, so that the foot may rock to a considerable extent with relation to the rollers. The spring D yields for such movement, and returns the axle to its proper parallelism when at rest. The spring D yields under the  
55 pressure of the foot and gives an elasticity to the skate, and this elasticity may be reduced by compressing the spring, or vice versa, such compression of the spring being produced by turning the screw *d*, which the hole  
60 *b* permits to be done without removing the socket from the foot-piece. At the lower end the saddle is provided with a transverse bearing, E, for the axle.

To prevent the saddle from rotating on the  
65 screw *d* as a pivot, a lug, F, is formed at diametrically-opposite points on the head of the saddle, which sets into corresponding notches, G, in the sides of the cup. These notches permit the free play up and down of the saddle,  
70 but engage the lugs F, so as to prevent rotation.

My improved roller consists of a hub, *f*, through which is a corresponding hole to receive the axle, as seen in Fig. 2. Surrounding  
75 this hub and connected to it by a web, *h*, is a metal rim, *i*, concentric with the axle, and of a diameter little less than that of the finished roller. Around this rim, at one end, is a flange, *l*, projecting at right angles to the  
80 axis. On the other end are projecting lugs *m*, here shown as three, set inside the periphery of the rim, as seen in Figs. 4 and 5.

*n* is a collar corresponding to the flange *l* at the opposite end. This collar is recessed on  
85 its face, as seen in Fig. 6, its internal diameter being so as to set on over the lugs *m* against the end of the rim *i*, as seen in Fig. 7. From the inside of the recess projections *o* are formed, extending inward, leaving a space, *p*, between  
90 such projections, as seen in Fig. 8, these spaces corresponding to the lugs *m*, and so that those spaces will permit the collar to pass on over the lugs. In the outer surface of the lugs *m* is an annular notch, *r*, corresponding  
95 to the projections *o* on the collar, and so that when the collar is set on over the lugs it may be turned, and so as to bring the projections *o*

into the notches *m* on the lugs, and thus interlock the collar with the lugs. The periphery of the roller is composed of rings *s*, more or less in number, cut from leather or  
 5 other suitable material, their internal diameter corresponding to the rim *i*, their external diameter little larger than that of the flange *l* and collar *n*. These rings are first set on over the rim *i*, against the flange *l*, and when the  
 10 requisite number have been applied the collar *n* is set thereon and forced toward the opposite flange, so as to compress the rings *s* between them, and when suitably compressed the collar is turned to bring the projections *o*  
 15 into engagement with the notches *m* of the lugs, and thus securely hold the non-metallic periphery upon the roller.

In order to prevent the non-metallic portion from turning on the rim, the rim is constructed with one or more projecting ribs, *t*,  
 20 as seen in Fig. 7, and the collars have a corresponding notch cut upon their inner surface, so that when set over these ribs the rings cannot turn upon the rim of the roller.  
 25 By this construction of roller I am enabled to produce a roll presenting a non-metallic surface, the material of which is much thinner than in previous constructions, and therefore less liable to work into irregular shape than  
 30 where greater depth or thickness is employed.

I claim—

1. In a roller-skate, the combination of the foot-piece constructed with a hole, *b*, vertically through it, the inverted-cup-shaped  
 35 socket B fixed to the under side of the foot-piece, the saddle C, the head of which corresponds to the interior of said socket, the said saddle carrying the rollers, the spring D in said socket, the screw *d* through the hole in  
 40 the foot-piece and through the socket into the saddle, the under side of the head of the screw spherical, and a seat on the socket of corresponding shape, substantially as and for the purpose described.

2. The combination of the foot-piece A, inverted-cup-shaped socket B, spring D therein, the sides of the socket constructed with a notch, G, the saddle C, its head corresponding to the spring D, and constructed with a  
 45 lug, F, corresponding to said notch G, and  
 50 carrying the rollers, screw *d* through said socket into said saddle, whereby the saddle is held in elastic connection with the foot-piece, substantially as described.

3. The herein-described roller for skates, consisting of the metal hub *f*, the rim *i*, and the flange *l* on one end of said rim, the rim connected to the hub, notched lugs *m* projecting from the end of the rim opposite the  
 55 flange, all constructed in one and the same piece, combined with the ring-shaped collar  
 60 *n*, having projections *o* and corresponding notches, *p*, upon its inside, and the non-metallic rings *s*, the said rings set upon the rim against its flange, and the collar forced over  
 65 the lugs on the opposite end and turned to bring the projection *o* into the notches *r*, substantially as described.

4. The herein-described roller for skates, consisting of the metal hub *f*, the rim *i*, and the flange *l* on one end of said rim, the rim connected to the hub, notched lugs *m* projecting from the end of the rim opposite the  
 70 flange, all constructed in one and the same piece, combined with the ring-shaped collar  
 75 *n*, having projections *o* and corresponding notches, *p*, upon its inside, and the non-metallic rings *s*, the said rings set upon the rim against its flange, and the collar forced over  
 80 the lugs on the opposite end and turned to bring the projection *o* into the notches *r*, the rim constructed with ribs *t* and the non-metallic rings with corresponding notches, substantially as described.

FRANK E. VANDERCOOK.

Witnesses:

F. W. OTIS,  
 G. E. COOK.