

(No Model.)

J. C. MITCHELL & L. B. PERRY.  
FIFTH WHEEL.

No. 591,867.

Patented Oct. 19, 1897.

Fig. 1.

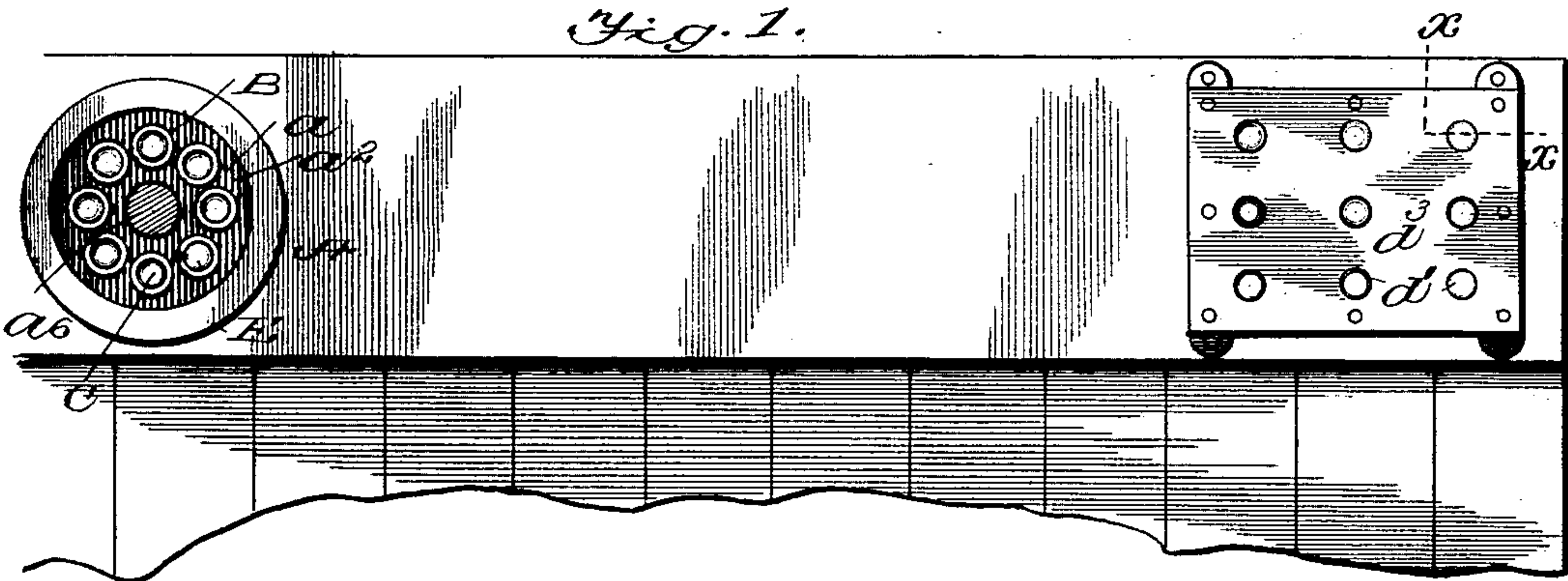


Fig. 2.

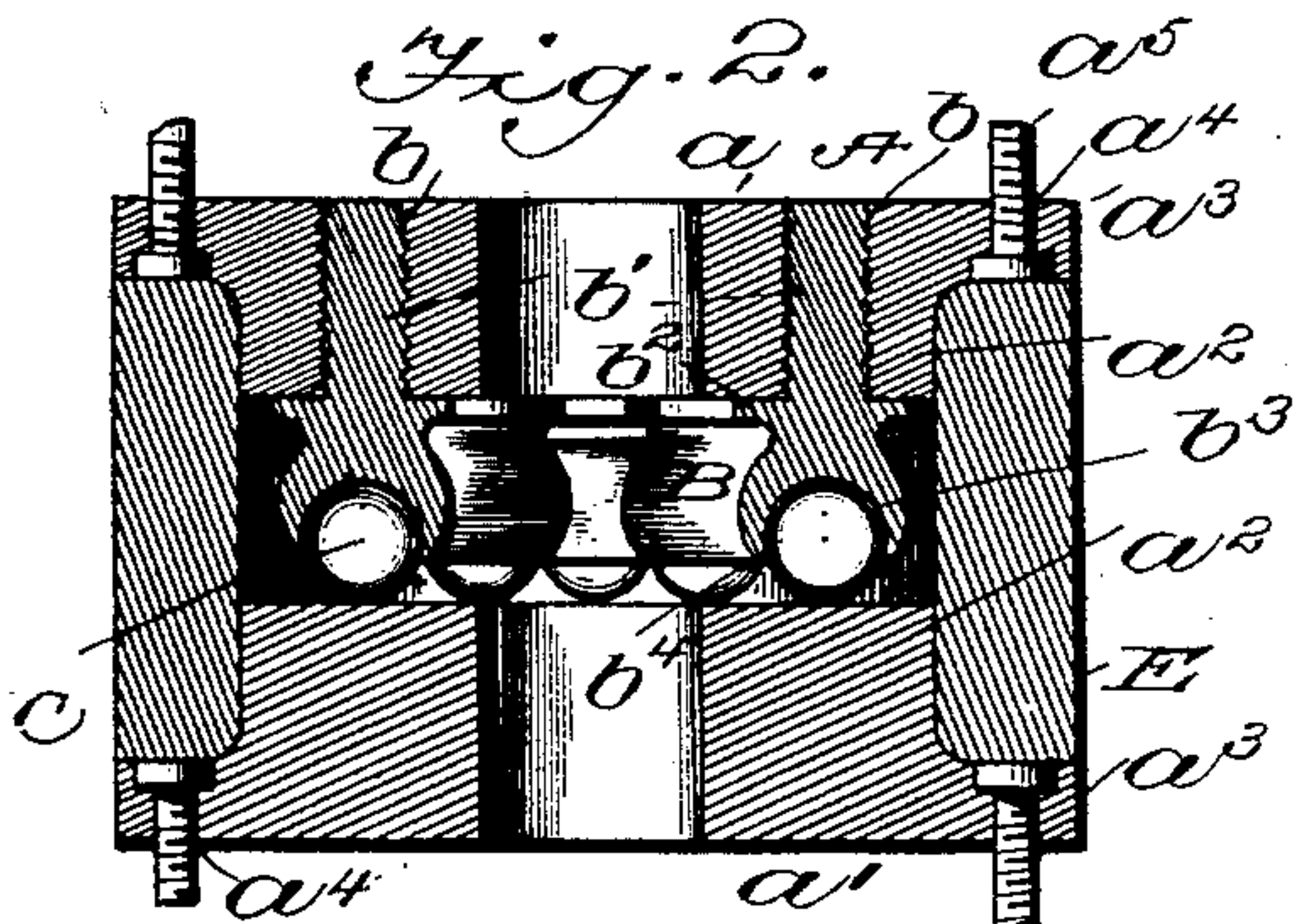


Fig. 3.

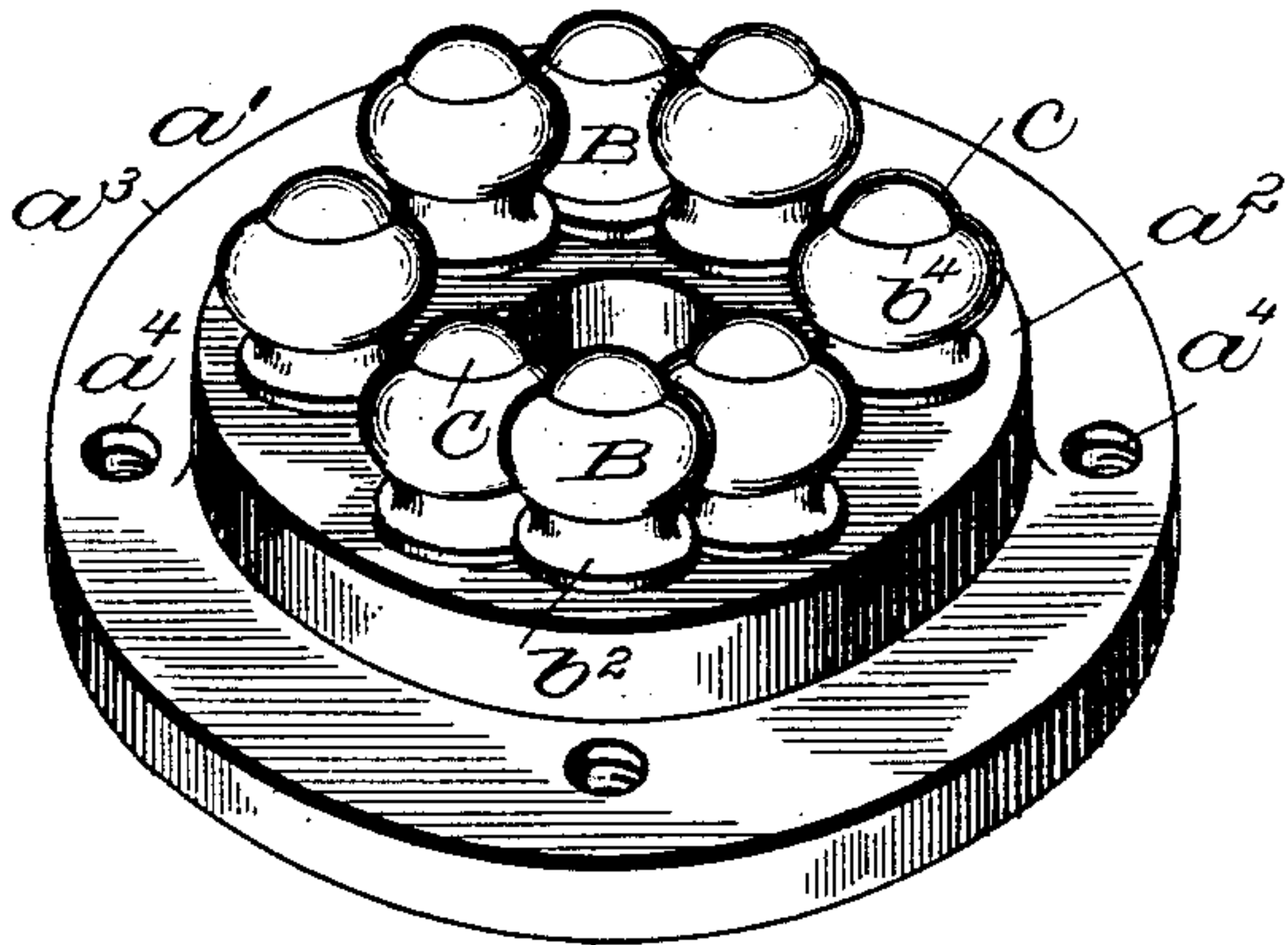
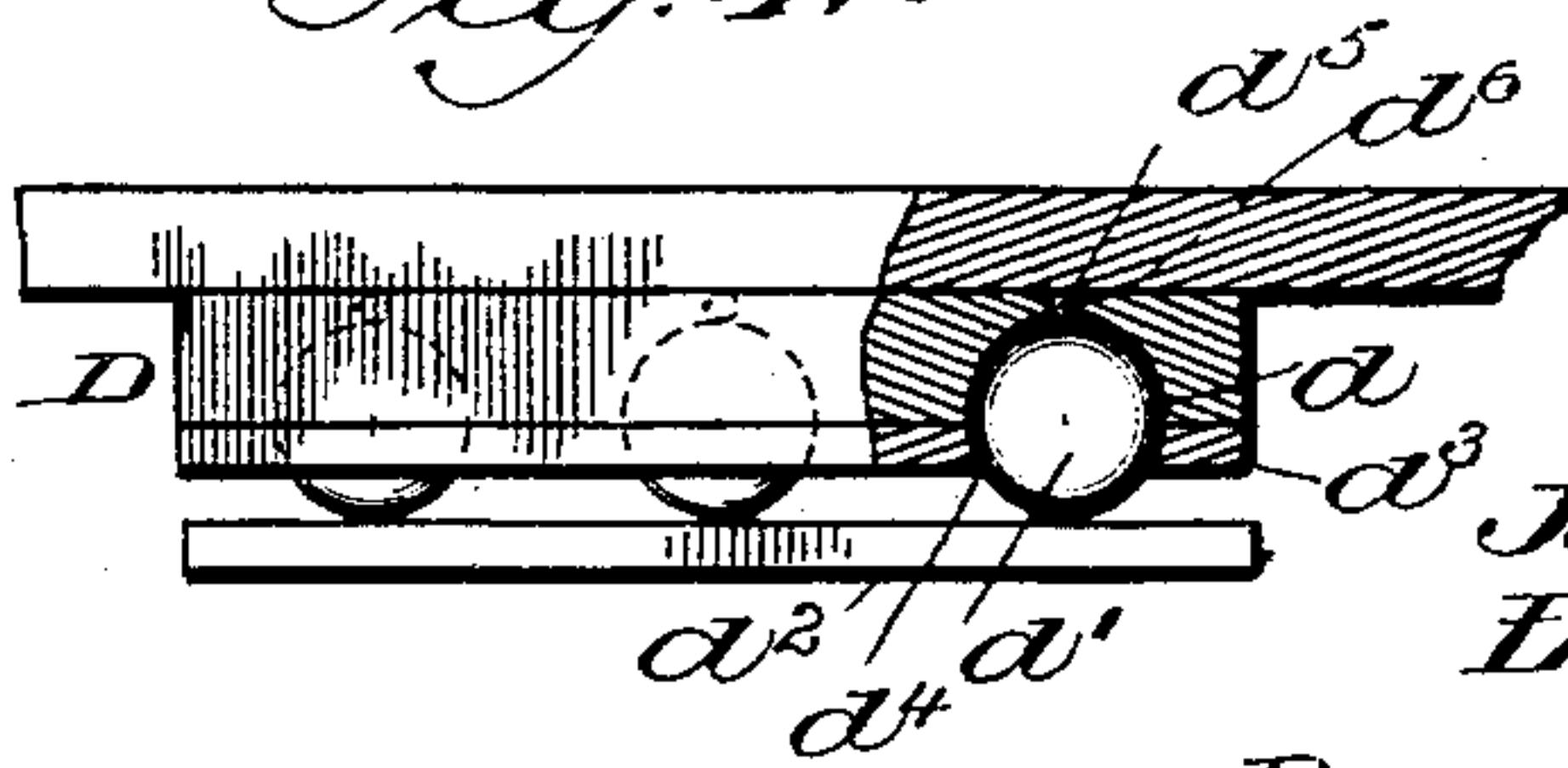


Fig. 4.



Witnesses

*John D. Smith*  
*Wm. S. Dodge*

Inventors

*James C. Mitchell*  
*Levi B. Perry*

By *J. Fred. Keily*  
their Attorney.



# UNITED STATES PATENT OFFICE.

JAMES C. MITCHELL AND LEVI BARKER PERRY, OF LEWISTON, MAINE.

## FIFTH-WHEEL.

SPECIFICATION forming part of Letters Patent No. 591,867, dated October 19, 1897.

Application filed November 17, 1896. Serial No. 612,485. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES C. MITCHELL and LEVI BARKER PERRY, citizens of the United States, residing at Lewiston, in the county of Androscoggin and State of Maine, have invented certain new and useful Improvements in Fifth-Wheels; 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 of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in fifth-wheels and is designed more especially for use in connection with railway-car trucks.

The invention has for its object the production of a device of the character specified by means of which the jerky and rough motion of a railway-car in turning curves and the like will be largely overcome, reducing friction on the parts, and rendering them more durable and lasting.

A further object is to provide a bearing-surface for the sill of the car which is adapted to aid in reducing the friction between the parts.

In carrying out our invention we secure to the bottom of a car-body an annular plate or member having a central reduced portion and a hole or opening for the passage of the king-bolt. In the lower face of the reduced portion of said plate or member are formed a series of threaded holes or openings designed to receive the stems of a series of cups in which are mounted steel balls which are adapted to bear upon the top face of a second plate or member secured to the car-truck and through which the king-bolt is also passed. A flat plate also carrying ball-bearings is secured to the under side of each sill of the car-body and bears on a corresponding plate on top of the truck, whereby friction is greatly reduced when the trucks are passing around curves, switches, or the like.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is

a bottom plan view of a portion of a car-body illustrating our invention. Fig. 2 is a longitudinal sectional view of the fifth-wheel. Fig. 3 is a view in perspective of the upper member thereof, the same being inverted. Fig. 4 is a sectional view on line  $x x$ , Fig. 1.

Referring to the drawings, A designates our improved fifth-wheel as an entirety, the same being made up of two parts or members  $a a'$ , each of which is provided with a central reduced portion  $a^2$  and an annular flange  $a^3$ . Said flanges are provided with holes or openings  $a^4$  for the passage of screws or bolts  $a^5$ , whereby said members are each secured, respectively, to the car-body and the car-truck. A central hole or opening is formed in each of the members  $a a'$  for the passage of the king-bolt  $a^6$ .

In the lower face of the reduced portion of member  $a$  is formed a series of threaded holes or openings  $b$ , designed to receive the threaded stems  $b'$  of cups or the like, B. These cups are each formed with an annular shoulder  $b^2$ , bearing against the faces of said member, and a hollow chamber  $b^3$ , in which are placed steel balls C. After said balls are positioned in said chambers the lower edges of said cups are turned over by any suitable tool to form flanges  $b^4$ , whereby said balls, although free to rotate, are prevented from falling out. These balls are designed to bear upon the upper face of the reduced portion of member  $a'$ .

On the lower faces of the sills of the car-body at the points where they bear upon the car-truck are secured plates D, which are provided with recesses or chambers  $d$ , adapted to receive balls  $d'$ , which are designed to bear upon the face of a plate  $d^2$ , secured to the car-truck. The balls  $d'$  are retained in position by a keeper-plate  $d^3$ , having holes or openings  $d^4$ , through which said balls project, and the latter also bear against smaller balls  $d^5$ , loosely secured in recesses or offsets  $d^6$ , leading in from the recesses or chambers  $d$ .

In order to prevent grit, cinders, and the like from interfering with the operation of our improved fifth-wheel, we secure a sand-band E around the reduced portion  $a^2$  of the members  $a a'$ , thereby rendering the same dust-proof and insuring the proper working of the parts.



The operation and advantages of our invention will be readily understood by those skilled in the art to which it appertains. It will be specially observed that by means thereof a railway-car will be given a smooth even motion when the same passes around curves or the like, and that all jerky and disagreeable motion is entirely overcome. It will also be noted that by arranging the ball-bearings, each in a separate cup with a threaded stem, the same can be quickly and readily replaced should it become injured or worn, or unfit for use from any cause.

We claim as our invention—

1. The herein-described fifth-wheel, comprising upper and lower parts or members provided with annular flanges and central coincident reduced portions, a sand-band surrounding said reduced portions, removable cups secured to the lower face of said upper member, and balls carried by said cups and adapted to bear upon the top face of said lower member, substantially as set forth.

2. The herein-described fifth-wheel, comprising upper and lower parts or members provided with annular flanges and central coincident reduced portions, a sand-band surrounding said reduced portions between said flanges, a series of holes or openings being formed in the face of the reduced portion of said upper member, cups provided with

threaded stems working in said openings, and balls carried by said cups and adapted to bear on the top face of said lower member, substantially as set forth.

3. The combination with a car-body having its sill provided with a bearing-plate carrying ball-bearings, of a fifth-wheel comprising upper and lower parts or members provided with annular flanges and central coincident reduced portions, a sand-band surrounding said reduced portions, removable cups secured to said upper member, and balls carried by said cups and adapted to bear on said lower member, substantially as set forth.

4. The combination with a car-body having a fifth-wheel, of a plate secured to the sill of said car having a series of chambers or recesses therein, balls located in said chambers or recesses, smaller balls located in recesses or offsets leading in from said former chambers or recesses and against which said former balls are designed to bear, and a keeper-plate adapted to retain said balls in position, as and for the purpose set forth.

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

JAMES C. MITCHELL.  
LEVI BARKER PERRY.

Witnesses:

FRANKLIN M. DREW,  
M. L. LIZOTT.