

S. P. BUSH.  
ANTIFRICTION CENTER BEARING.  
APPLICATION FILED FEB. 2, 1909.

994,373.

Patented June 6, 1911.

2 SHEETS—SHEET 1.

FIG. 1.

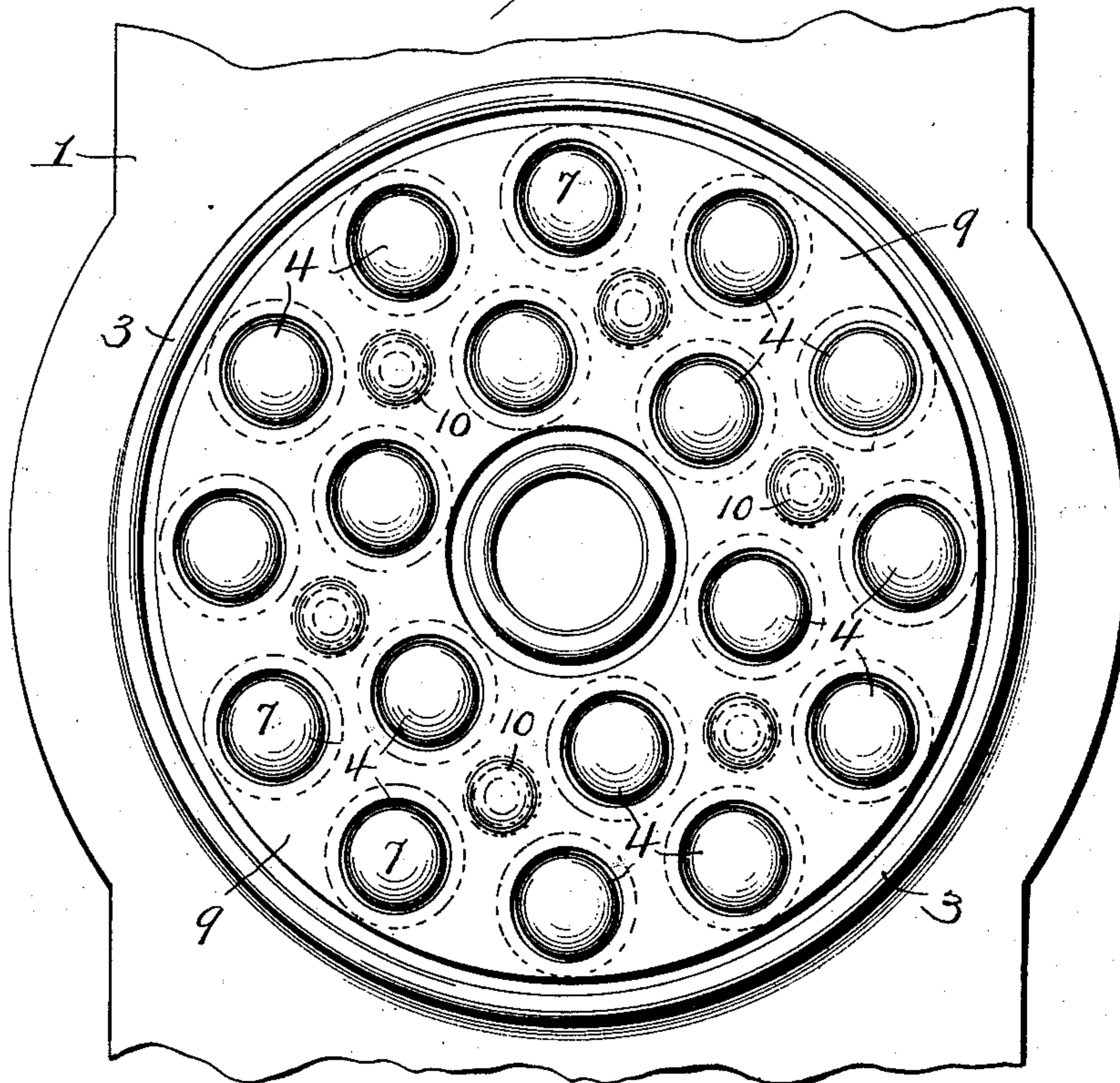
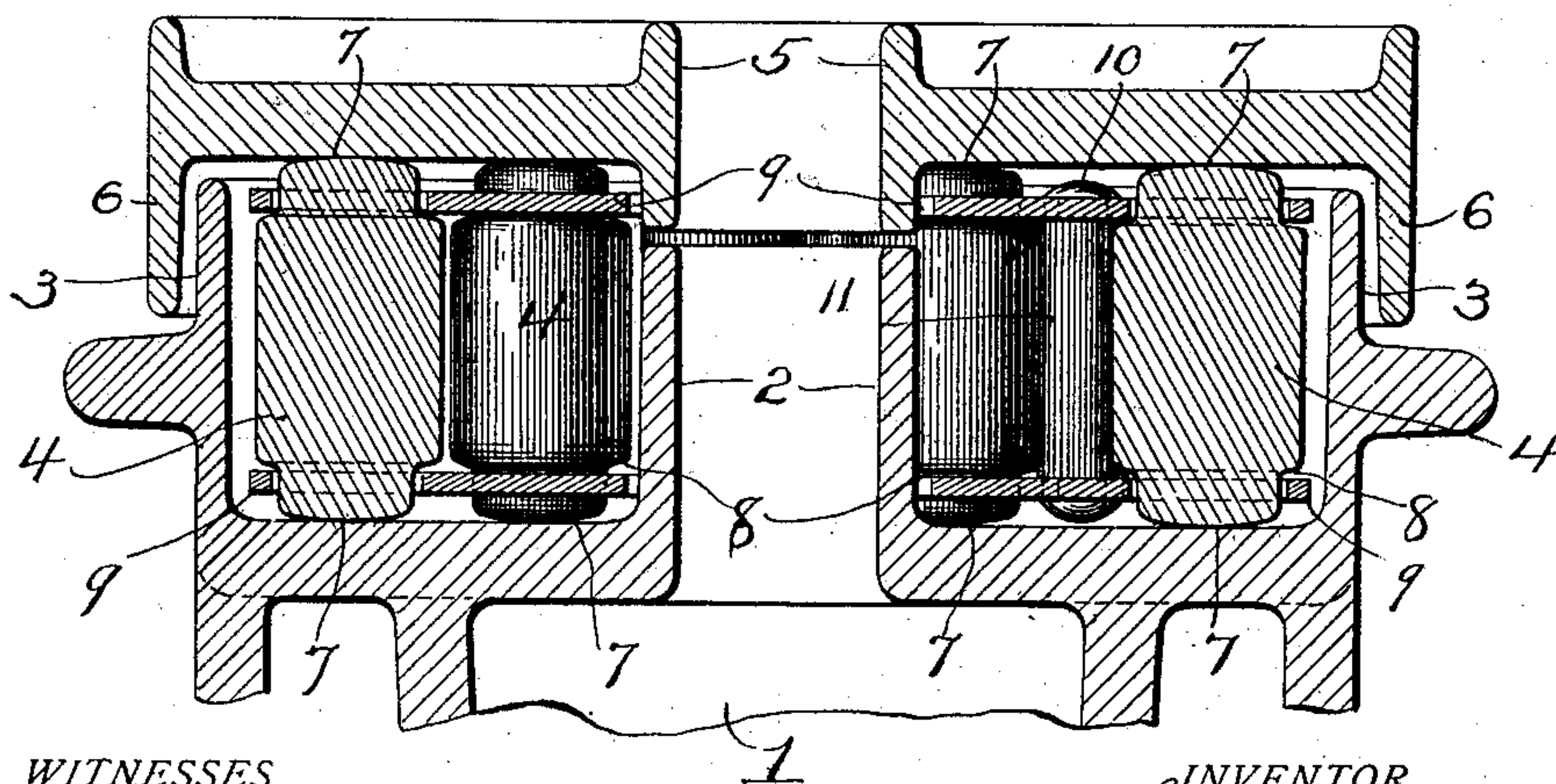


FIG. 2.



WITNESSES  
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2 SHEETS—SHEET 2.

FIG. 3.

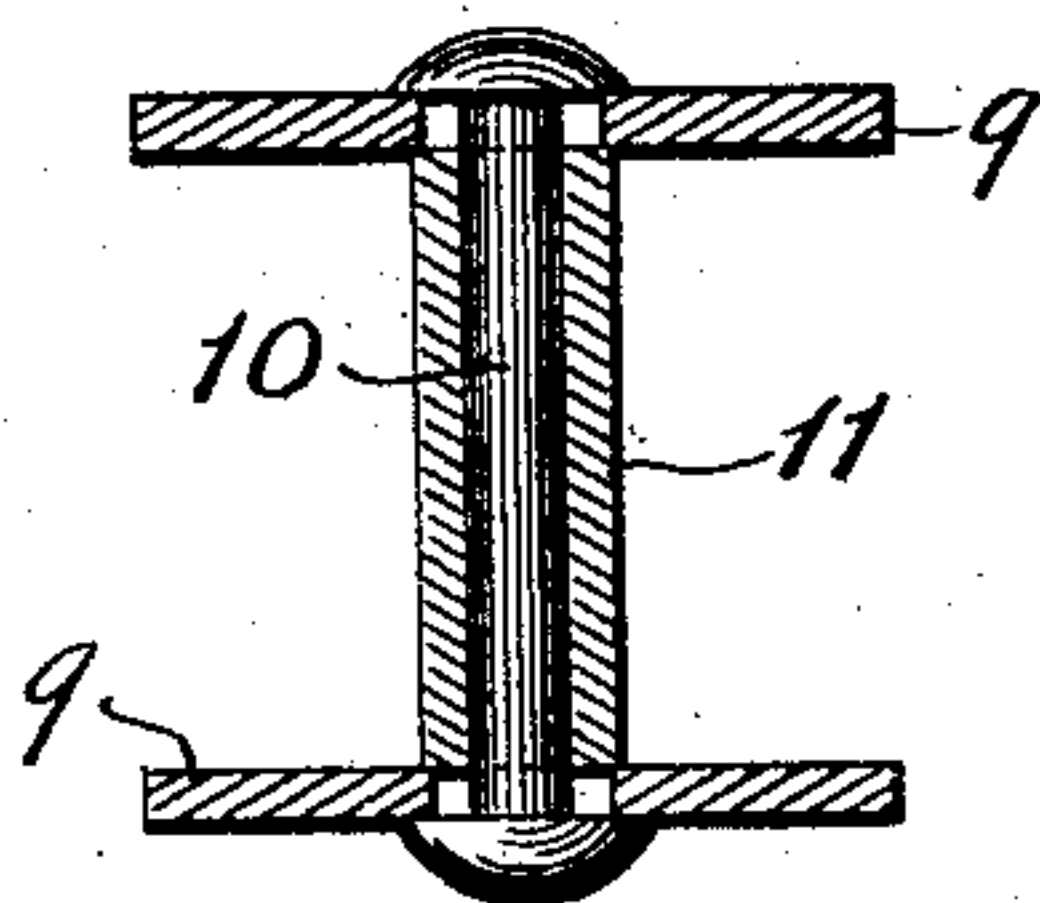


FIG. 5.

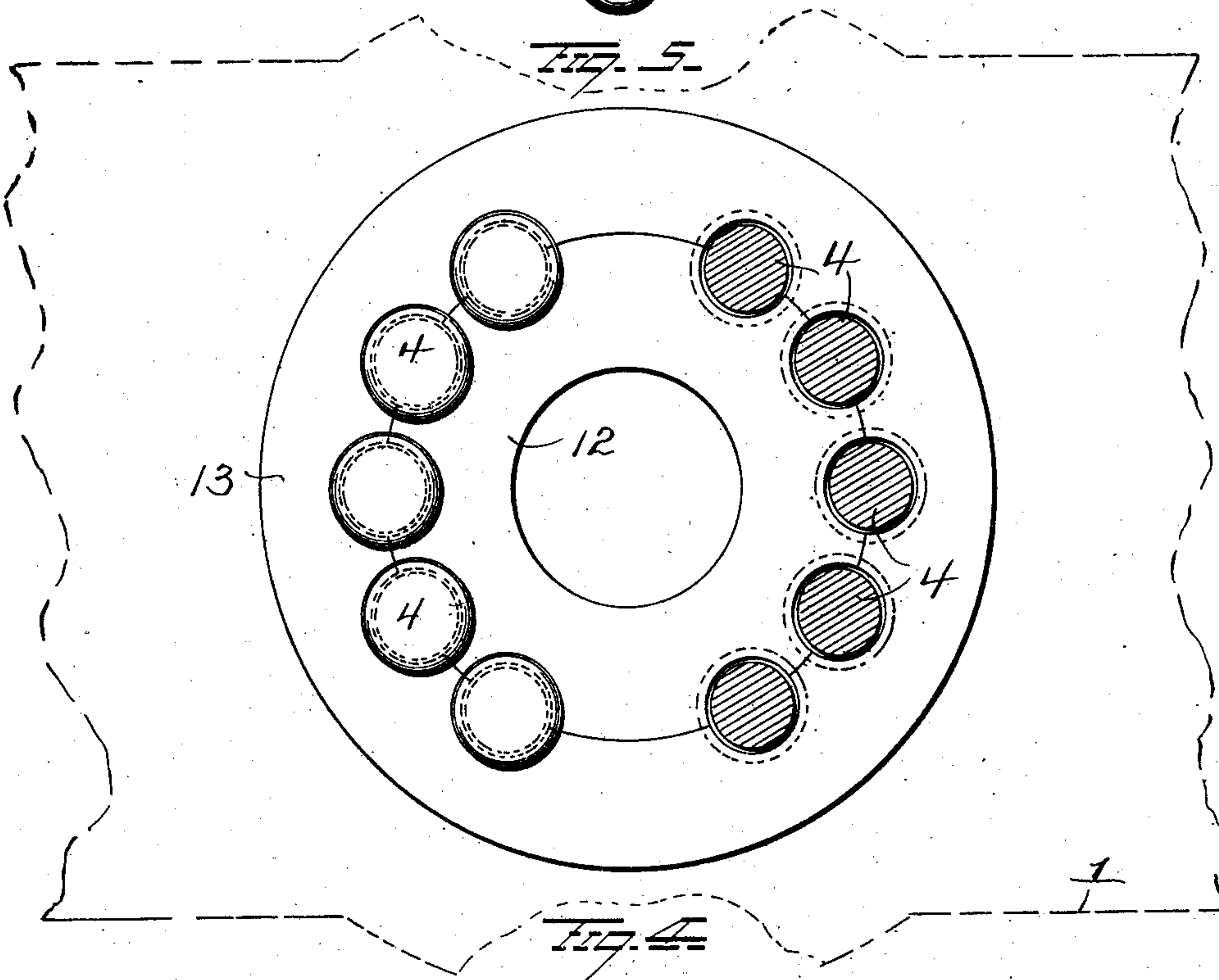
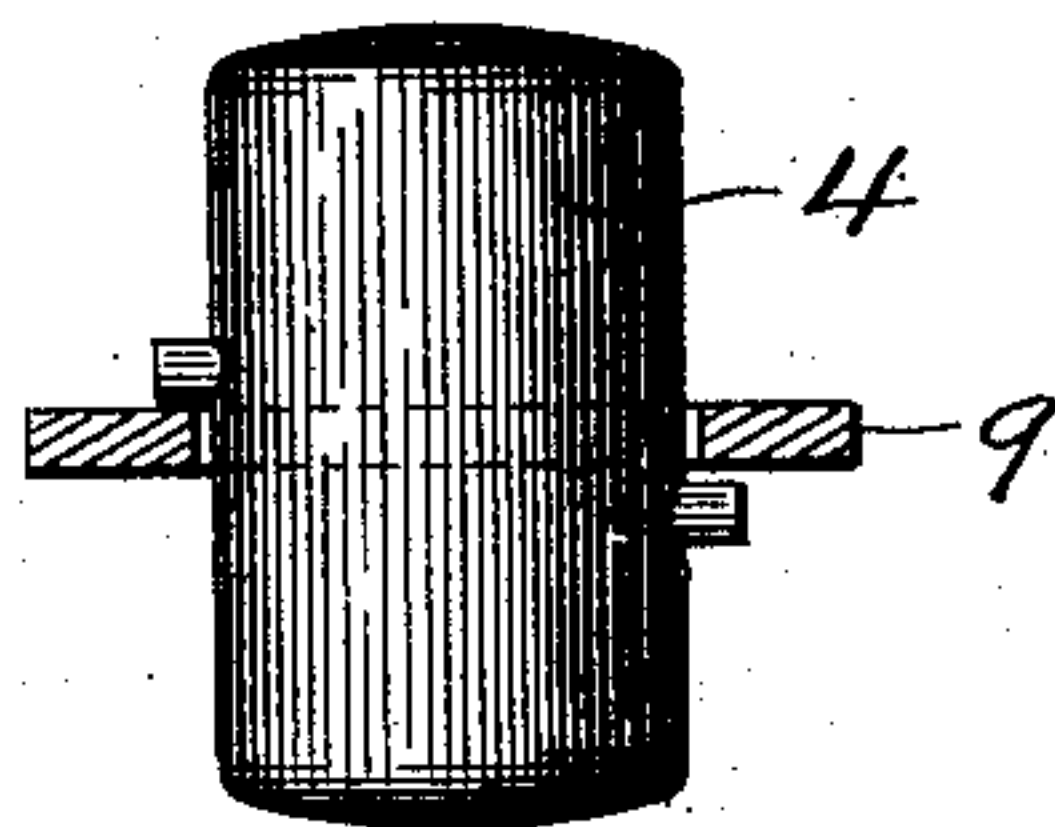


FIG. 4.



WITNESSES

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# UNITED STATES PATENT OFFICE.

SAMUEL P. BUSH, OF COLUMBUS, OHIO.

ANTIFRICTION CENTER-BEARING.

994,373.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed February 2, 1909. Serial No. 475,616.

*To all whom it may concern:*

Be it known that I, SAMUEL P. BUSH, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Antifriction Center-Bearings; 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.

My invention relates to an improvement in anti-friction center bearings, applicable for use in connection with devices one part of which has a rotative movement on another, but designed more particularly for use on railway cars.

In the modern heavy and rigid type of cars mounted on trucks having the ordinary bearings, considerable resistance is developed to the pivoting or turning action of the trucks in passing around curves, and this frictional resistance also prevents the trucks from straightening out after passing the curve, thus causing the wheel flanges to stand at an angle to the rail, instead of parallel thereto, and bear with considerable pressure against the rail, thus increasing the wear on both the rails and wheel flanges, and consequently increasing the resistance of the cars to movement.

Anti-friction bearings have been designed, consisting of a series of balls, conical rollers and radially disposed rockers, loosely placed between the center plates of the truck and body bolsters. These are all objectionable for the reason that in the event the truck leaves the tracks, or the cars leave the trucks, the separation of the center plates permits the loose and disconnected rockers to escape from between the center plates and are frequently lost. This also happens while the cars are being dumped, in machines now commonly employed for dumping coal cars.

The object of my invention is to provide simple means for holding the rockers assembled or in a group, whereby they are caused to move or work in unison, and are prevented from accidental separation or displacement either during the separation of the center

plates or when removed from between the center plates.

A further object is to reduce the cost of center bearings, by using shapes and kinds of material for the rockers, as are readily obtainable on the market, and which will require but a small amount of labor to convert them into rockers.

With these and other objects in view my invention consists in a plurality of connected anti-friction bearing rockers having freedom of movement with relation to the connecting mechanism.

My invention further consists in the details of construction and combination of parts as will be more fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in plan showing my improvement on a truck bolster. Fig. 2 is a view in vertical section taken through the center plates of the body and truck bolsters. Fig. 3 is an enlarged view showing the connecting frame and the manner of securing the latter together and Figs. 4 and 5 are views of modifications.

In my device I use center bearing member 1 for the truck bolster, provided with an inner upwardly projecting flange 2 surrounding the king bolt opening, and an upwardly projecting circular flange 3 adjacent to the outer edge of the plate, the space between the flanges 2 and 3 forming the seat for the rockers 4, and a center bearing member 5 for the body bolster, similarly constructed, the outer flange 6 on the member 5 overlapping the flange 3 on the lower member 1.

Between the upper and lower center bearing members, the rocking members 4 are located. These rockers may be cylindrical or angular in cross section, and are each provided with rounded or curved ends 7, one curved end resting on the truck bolster center bearing 1 and the other supporting the body bolster center bearing 5. These rockers are, as shown in Fig. 2, cut away at their ends to form shoulders 8 against which the connecting frames 9 rest. These frames are



provided with openings for the passage of the ends of the rockers, the openings being sufficiently large to permit of the necessary tilting and rocking movement of the rockers within the frame 9.

The frames are secured together by the bolts or rivets 10, which pass through the ferrules 11, the latter operating to hold the two frames apart and in their proper relative positions. Instead however of employing two parallel frames, I may use a frame 12 within a frame 13, as shown in Fig. 5. In this construction the rockers are each provided preferably about midway its ends with a slot, and the frame 12 is provided on its outer edge with semi-circular recesses, and the outer frame 13 is provided on its inner edge, with semi-circular recesses conforming in size and position to the recesses in the frame 12. With this construction the rockers are assembled in one frame, say the outer one, and are locked therein by flexing or bending the inner frame and forcing it into position.

In Fig. 4, I have shown a single frame with the rockers secured thereto by pins projecting from the rockers above and below the frame, and in Fig. 5 I have shown the rockers located at the sides only and not at the front and rear of the center bearing.

While I prefer to use two sets of rockers as shown in Fig. 1, that is to say, one set or series arranged in circular formation within another set or series, this is not essential, as a single set of regularly or irregularly arranged and of sufficient size to properly sustain the weights and resist the strains, will answer all purposes, and by providing elongated rollers or rockers with curved ends and straight sides, I am enabled to nest them closely together, and employ a greater number than have heretofore been used, thus enabling me to utilize the ordinary materials of commerce in the manufacture of the rockers without subjecting same to any special treatment, and by employing rockers cylindrical or angular in cross section, I reduce the cost by using shapes as are readily obtainable on the market.

In turning a curve, the truck first turns after which the body swings sidewise, thus throwing all the weight of the car body onto the rockers at one side of the center, and removing all the weight off the rockers at the other side of the center. This turning of the truck, causes a radial rocking of all the rockers, and unless means were provided for preventing the return of those rollers freed from weight by the subsequent tilting of the car body, they would rock back to normal position, and when again engaged by the body bolster center bearing, as would be the case when the truck passes onto the

straight track, they would not stand upright, but be inclined. By employing the connecting frames 9, all the rockers will be tilted or moved in unison, hence when the weight of the car is shifted to one side, those segments freed of the weight are prevented from returning to their normal position, until those sustaining the weight are restored by the turning of the truck.

In making the bearing surfaces of the rockers it is desirable to so form them, and proportion the rockers, that as the latter rock or roll from their normal positions, they would, if free to move, return to that position by reason of the curvature of the bearing surfaces, so that after the truck has passed the curve, the center bearing will exert a tendency to turn the truck to its normal and straight position and so hold it. This may be accomplished by having the radii of the curved bearing surfaces increase as the rocker moves from its normal upright position.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but,

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. A center bearing comprising upper and lower center bearing members, a series of anti-friction rockers circularly arranged between said members, and means independent of said members, and connecting the series of rockers, whereby the latter are maintained in proper position relative to each other, and are caused to rock in unison.

2. A center bearing comprising upper and lower bearing members having overlapping flanges, a series of anti-friction rockers arranged between said members and within the flanges, and means connecting the entire series of rockers intermediate their bearing ends, whereby they are caused to rock in unison and are prevented from relative displacement when separated from the bearing members.

3. The combination with upper and lower center bearing members having side flanges, of a series of rockers arranged about a center between said bearings and within the space bounded by said flanges, and means independent of the bearing members, and connecting the entire series of rockers, whereby they are caused to rock in unison.

4. The combination with upper and lower center bearing members, of a group of rockers arranged about a center between said



members and two connected frames supporting and connecting said rocking members.

5 5. The combination with a series of rocking members each having curved ends, and shoulders adjacent to each end, of frames having openings therein for the passage of the ends of the rockers, the said shoulders being intermediate the frames, and means  
10 connecting the frames.

6. In an anti-friction center bearing the

combination with the top and bottom center bearing members, of a plurality of rockers with rounded ends and two loosely connected holding frames for said rockers. 15

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

SAMUEL P. BUSH.

Witnesses:

WM. J. BENNETT,  
A. L. BRUEGEMAN.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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