

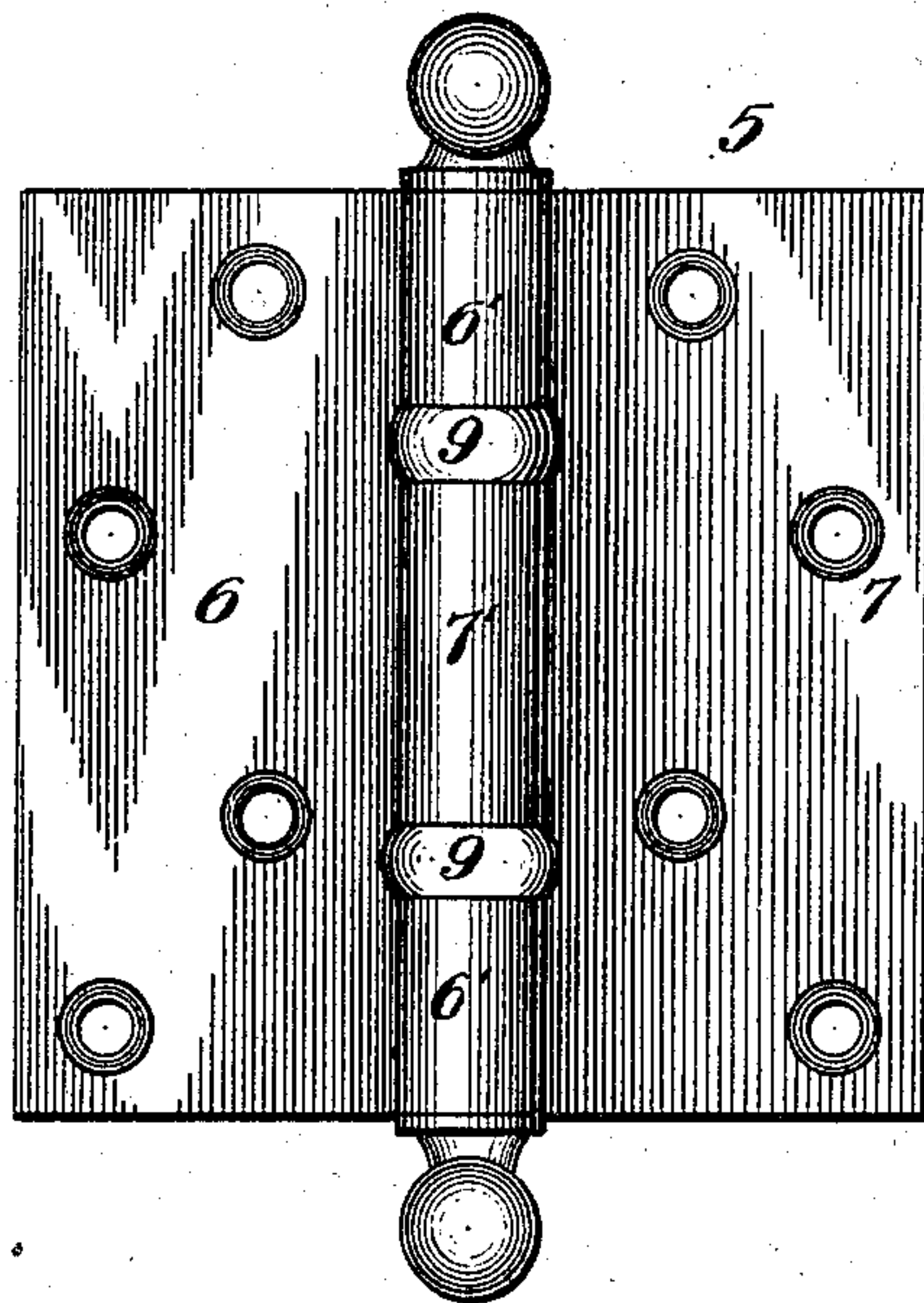
No. 724,117.

PATENTED MAR. 31, 1903.

E. A. MOORE.  
ANTIFRICTION WASHER FOR HINGES.

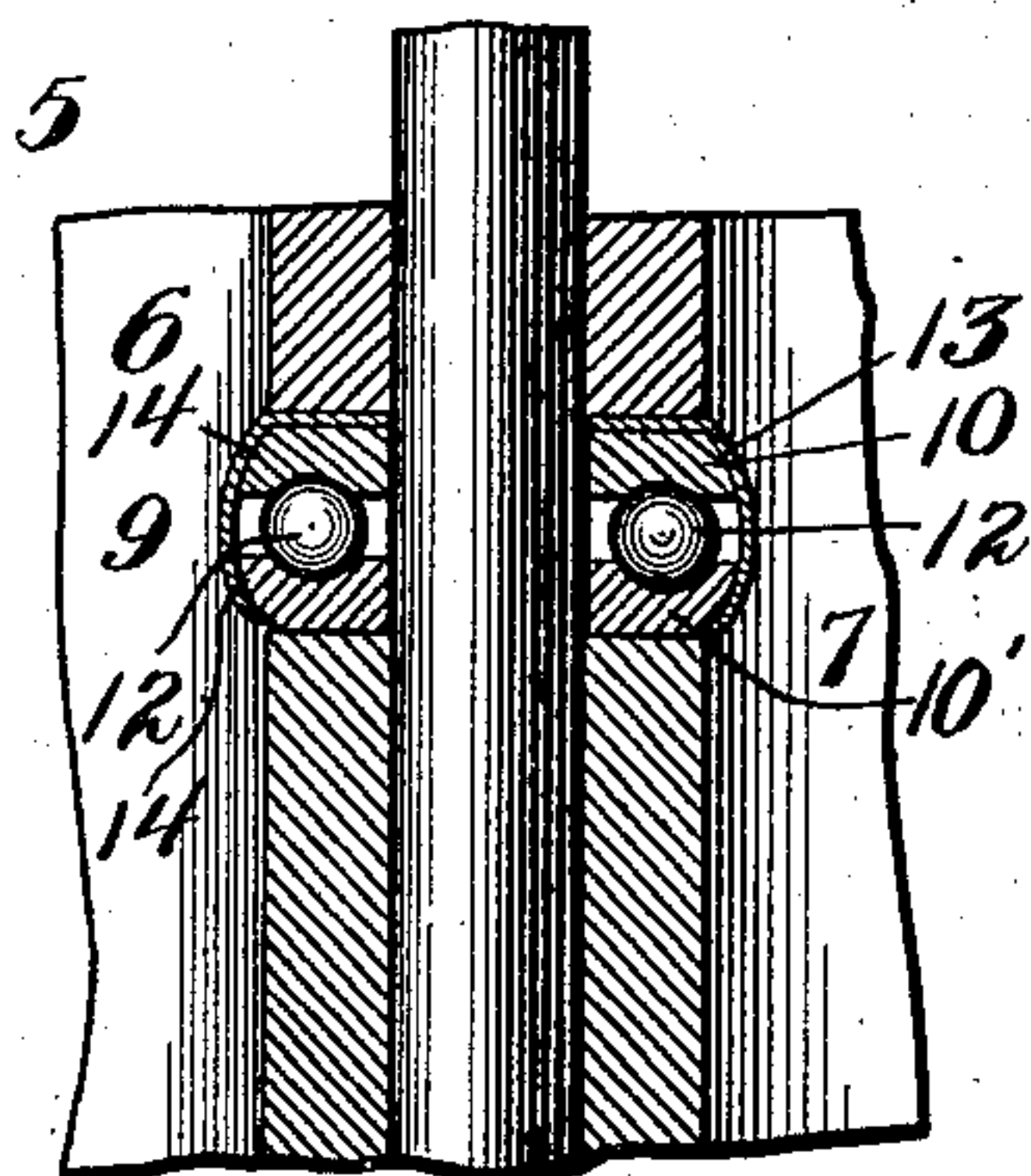
APPLICATION FILED DEC. 2, 1902.

NO MODEL.

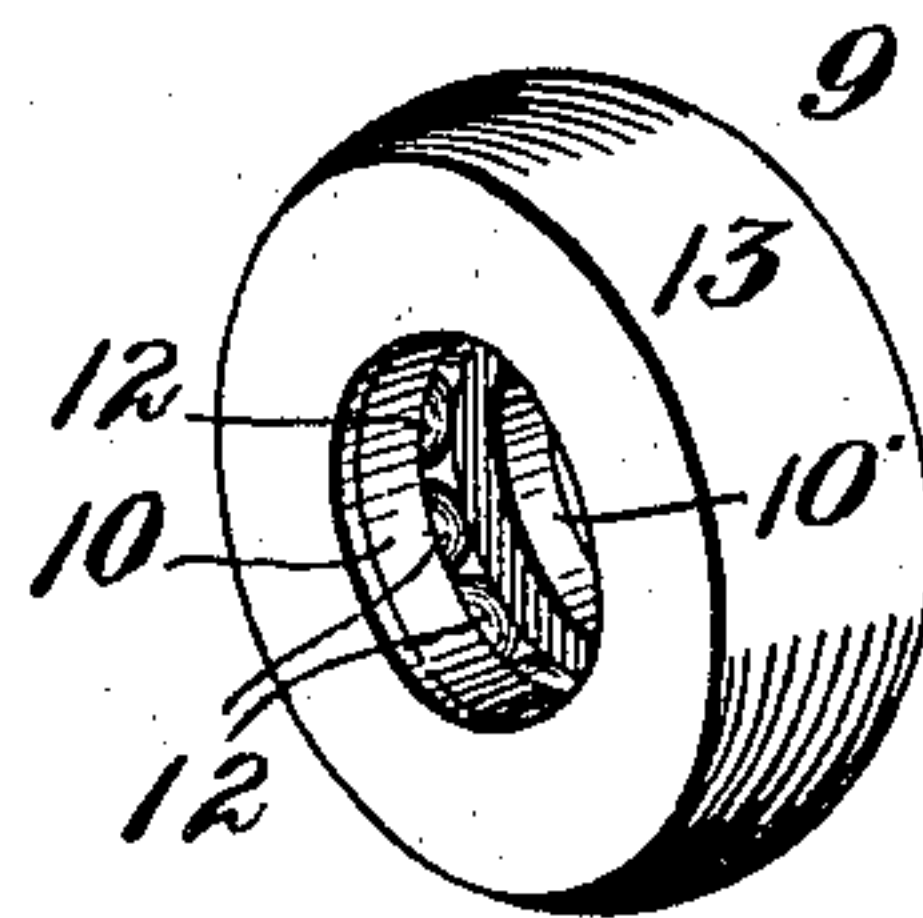


*Fig. 1.*

*Fig. 2.*



*Fig. 3.*



*Witnesses:*

*F. G. Campbell.*

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# UNITED STATES PATENT OFFICE.

ETHELBERT A. MOORE, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE STANLEY WORKS, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

## ANTIFRICTION-WASHER FOR HINGES.

SPECIFICATION forming part of Letters Patent No. 724,117, dated March 31, 1903.

Application filed December 2, 1902. Serial No. 133,552. (No model.)

*To all whom it may concern:*

Be it known that I, ETHELBERT A. MOORE, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Antifriction-Washers for Hinges, of which the following is a specification.

My invention relates to antifriction-washers for hinges of various kinds; and it has for its object the provision of a simple and compact device of this character ornamental in appearance and which may be readily and cheaply manufactured and by whose employment friction may be reduced to a minimum and the parts so protected that there will be no liability of the entrance of dust, dirt, or other extraneous matter between the joints thereof.

In the accompanying drawings, Figure 1 is a plan view of a butt-hinge with my improved antifriction-washer between the knuckles thereof. Fig. 2 is a longitudinal vertical section of a part of a knuckle of said hinge and my improved antifriction-washer, part of the pintle being represented in elevation. Fig. 3 is a perspective view of my improvement.

Referring to the drawings, the numeral 5 indicates a hinge which may be of any conventional type, but which is shown as a butt-hinge composed of leaves 6 and 7, respectively, having knuckles 6' and 7', through which a pintle passes.

Designated in a general way by the numeral 9 is my improved antifriction-washer, which in the illustration given comprises a pair of raceway-plates 10 10', interposed balls or rollers 12, and a protecting-covering 13, of ornamental and non-oxidizable metal, in which the parts just mentioned are seated and retained. As will appear by reference to Fig. 2, the peripheries of these raceway-plates 10 10' are curved or beveled, as at 14, and the protecting-covering 13 is spun over or otherwise shaped upon said round or beveled portions, and consequently conforms to the configuration thereof. At its lower end this protective covering is made to engage the corresponding raceway-plate, and the top of said cover-

ing is provided with the usual pintle-opening registering with like openings in the raceway plates or disks. In the use of my invention the antifriction-washer described is placed between the knuckles of the hinge, as shown in Fig. 1, and as the part to which said hinge is secured is turned one of the raceway-plates—for instance, the plate 10—and covering will rotate upon the plate 10', the covering being sufficiently loose to enable the result to be accomplished, or, stated differently, said plate 10' may rotate within the covering with relation to the plate 10, the balls or rollers reducing the frictional contact, and thereby rendering the door or other structure to which the hinge is attached capable of easy and noiseless operation.

Heretofore in constructions known to me the raceway-plates and protecting-covering have been united by a sleeve or thimble through which the pintle passes. By practical experience it has, however, been discovered that said sleeve or pintle although working well in practice may be omitted and the raceway-plates secured in the covering in the manner above described, thereby simplifying the construction and producing a device also fully effective and reliable in operation.

My invention is shown applied to hinges; but it is to be understood that it is not limited to such use, nor, as above stated, is it restricted to employment with any particular kind of hinge.

Slight changes may be made in the manner of uniting the covering to the raceway-plates, and the shape of said plates and covering may be varied without departure from the invention.

Having thus described my invention, what I claim is—

1. An antifriction-washer comprising raceway-plates having curved or beveled peripheries; antifriction devices between said plates; and a protective covering permanently uniting the plates, and conforming to the peripheries thereof.

2. An antifriction-washer for hinges comprising perforated, disk-like raceway-plates with curved or beveled peripheries; balls set

in the raceways of said plates; a protective covering of non-oxidizable material having a base against which one of the raceway-plates rests, and also having a curved periphery, 5 said covering embracing the peripheries of both raceway-plates, and having its end united with one of said plates.

3. The combination, with a device capable of being turned, of an antifriction-washer 10 against which part of said device bears, said washer comprising raceway-plates; balls located between said plates; and a protective covering having a base against which one of the plates rests, said covering being provided 15 with a flange protecting the edges of said plates and serving to retain them in position.

4. The combination, with a hinge, of an antifriction-washer, comprising perforated raceway-plates having curved or beveled peripheries; antifriction devices between said 20 plates; and a protective covering having a base against which one of said plates rests, and also having a flange shaped to conform to the peripheries of the raceway-plates, said flange being connected directly to one of said 25 plates.

In testimony whereof I affix my signature in presence of two witnesses.

ETHELBERT A. MOORE.

Witnesses:

C. F. BENNETT,  
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