

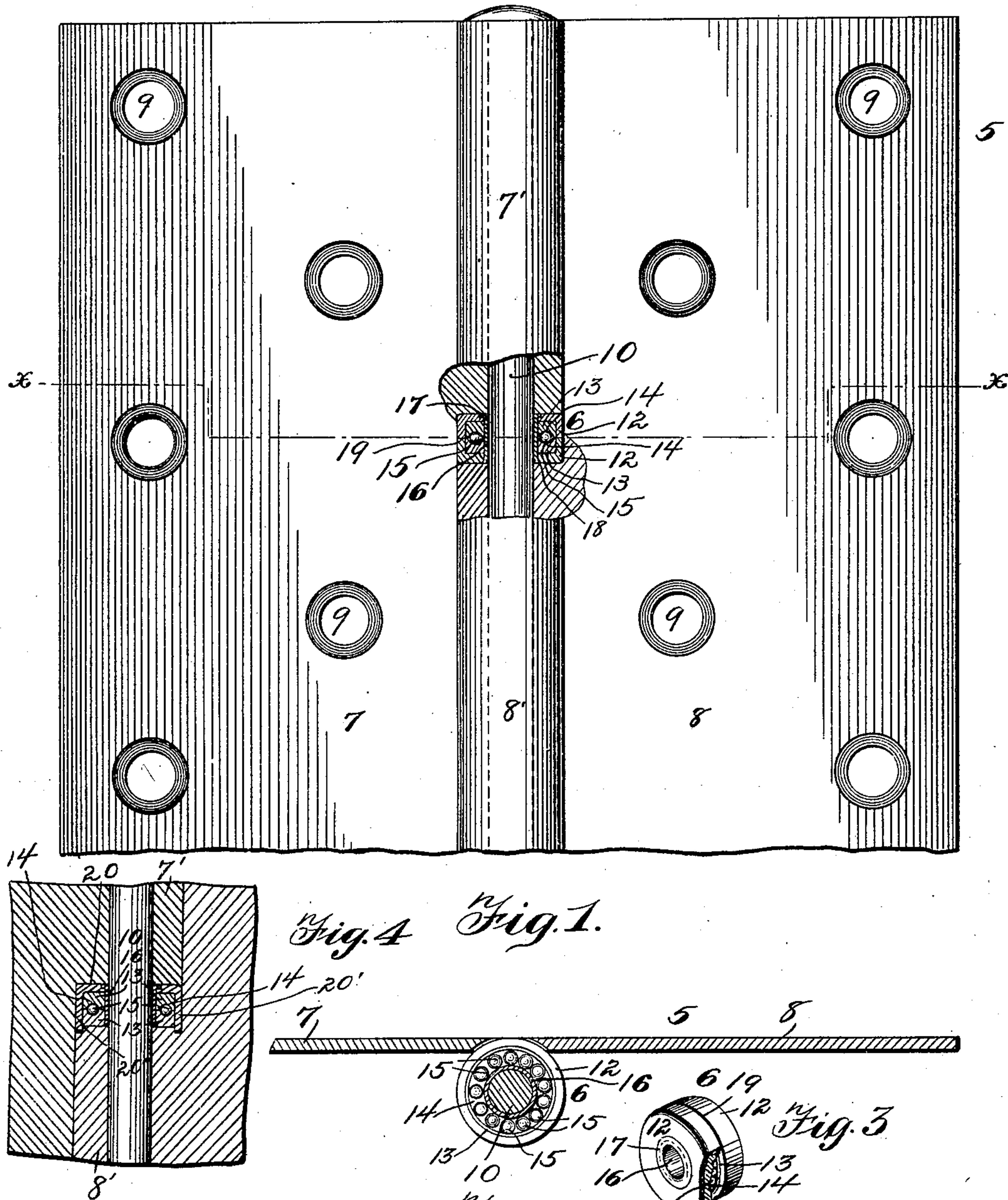
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E. A. MOORE.
ANTIFRICTION WASHER FOR HINGES.

(Application filed Apr. 18, 1902.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

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ANTIFRICTION-WASHER FOR HINGES.

SPECIFICATION forming part of Letters Patent No. 711,731, dated October 21, 1902.

Application filed April 18, 1902. Serial No. 103,504. (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 hinges, and has for its object the provision of an improved removable antifriction-washer for such devices, said washer being so constructed that friction will be reduced to a minimum and the joint between the parts will be protected from dirt and rust or corrosion.

A further object of the invention is the provision of an antifriction-washer containing balls arranged around the pintle between the knuckles of the hinge and of means for uniting the component parts of said washer to make it a complete structure, ornamental in appearance, and protected from dirt and destructive agencies.

In the accompanying drawings, Figure 1 is an elevation of a hinge having my invention applied thereto, certain parts thereof being shown in section and the lower part of the hinge being broken away. Fig. 2 is a horizontal section on line *x x* of Fig. 1. Fig. 3 is a perspective view of my improved antifriction-washer, and Fig. 4 is a sectional view of a modified form thereof.

Like numerals designate similar parts throughout the several views.

Referring to the drawings, the numeral 5 indicates a hinge comprising leaves 7 and 8, having any desired number of knuckles 7' and 8', two being shown, said leaves being perforated, as at 9, for the reception of the usual fastening devices.

An antifriction-washer (designated in a general way by the numeral 6) is inserted between the knuckles 7' and 8', said washer being formed in two parts, each comprising a circular cup 12, composed of non-oxidizable material, in which a plate 13 is seated, and each of said plates being provided with a groove or raceway 14 for the reception of balls 15.

These cups and plates are perforated to receive a sleeve, hereinafter described, through which the pintle 10 passes. After the balls 15 have been placed in one of the ball-races 14 the parts are united by the sleeve 16, above described, one cup 12 being recessed around its perforation to receive a flange 17 of said sleeve and the opposite end of the sleeve being expanded, as at 18, against the wall of the perforation in the other cup to cause the parts to be securely fastened together, with, however, a capability of rotation of one part upon the other part. In former devices of this character it has been found that the raceway-plates are exposed to the action of the elements, the result being that the proper operation of said parts is affected by rust, dirt, and other foreign substances.

It has been a desideratum to provide an antifriction-washer so constructed that the component parts thereof would be securely united and protected and at the same time present an ornamental appearance, and to accomplish this result the cups 12, of non-oxidizable material, hereinbefore described are provided, the rims or vertical flanges of said cups fitting closely together when assembled, as at 19, and covering the peripheries and top and bottom surfaces, respectively, of the plates 13.

In the modification illustrated in Fig. 4 the plates 13 are both placed in a single cup 20 of non-oxidizable material, said cup having a flange 20', extending over the exposed surfaces of the plates 13, and therefore protecting them in the manner above described.

While I have shown my improved antifriction-washer as placed between two of the knuckles of a hinge, it is to be understood that it is not limited in this respect, for it may be utilized with hinges having any desired number of knuckles; nor is it limited to the precise details of configuration and construction illustrated.

Having thus described my invention, what I claim is—

1. A removable antifriction-washer for hinges comprising plates having raceways;

antifriction devices in said raceways; means for covering the exposed surfaces of said plates; and a sleeve for permanently uniting the plates and the means for covering said plates.

2. An antifriction-washer for hinges consisting of perforated raceway-plates; antifriction devices between said plates; a protector for the plates; and a sleeve having a flanged end engaging the protector, and serving to unite the parts.

3. An antifriction-washer for hinges comprising plates having ball-raceways; cups in which said plates are seated, said cups covering the exposed surfaces of the plates; and a

sleeve secured to one of the cups, and adapted to rotate in the other cup.

4. The combination, with a hinge, of a removable antifriction-washer comprising in its construction perforated cups, plates seated in and protected by the cups, and a sleeve uniting the cups, whereby said washer is adapted to be seated on the pintle and between two adjacent knuckles of the hinge.

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

ETHELBERT A. MOORE.

Witnesses:

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