

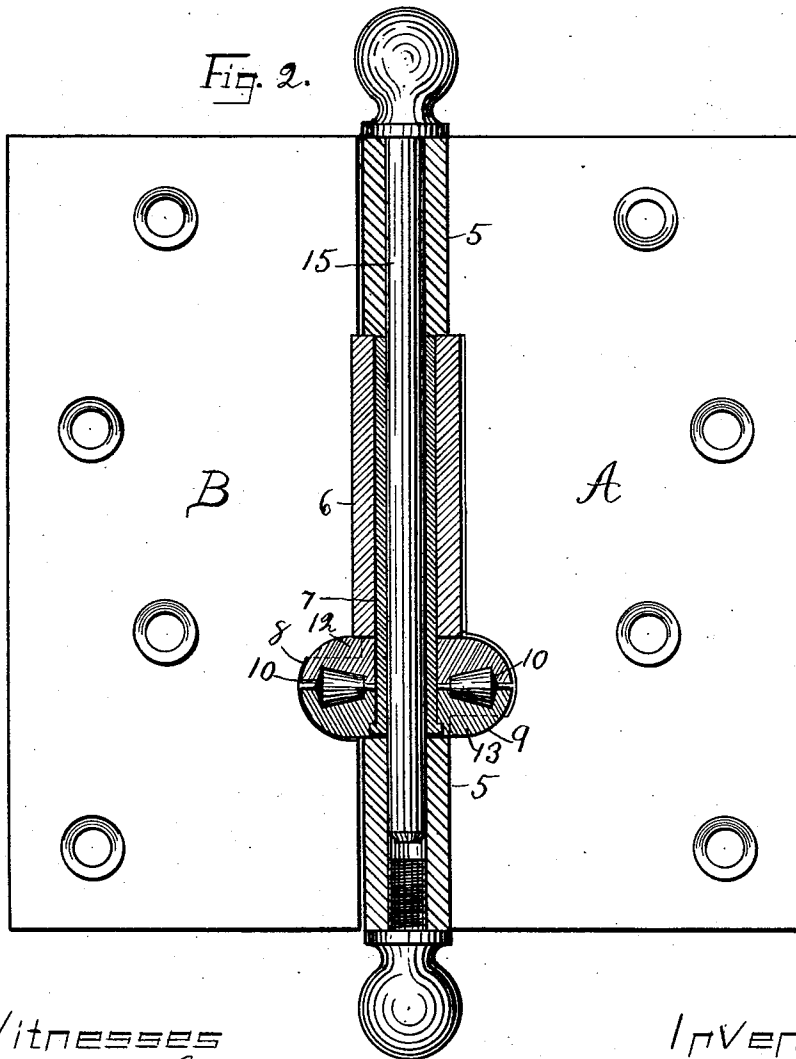
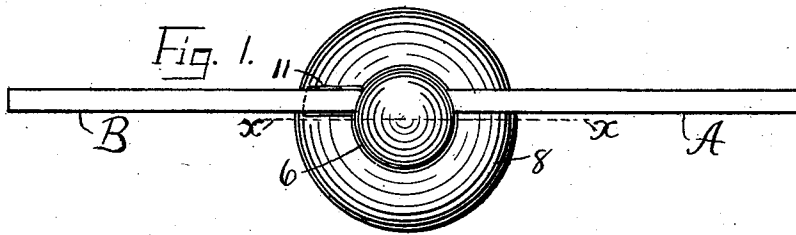
(No Model.)

2 Sheets—Sheet 1.

T. CORSCADEN.
ANTI-FRICTION HINGE.

No. 475,439.

Patented May 24, 1892.



Witnesses
Hilmer Svenson.

C. Garvin Loomis Jr.

Inventor

Thomas Corscaden

By James Shepard

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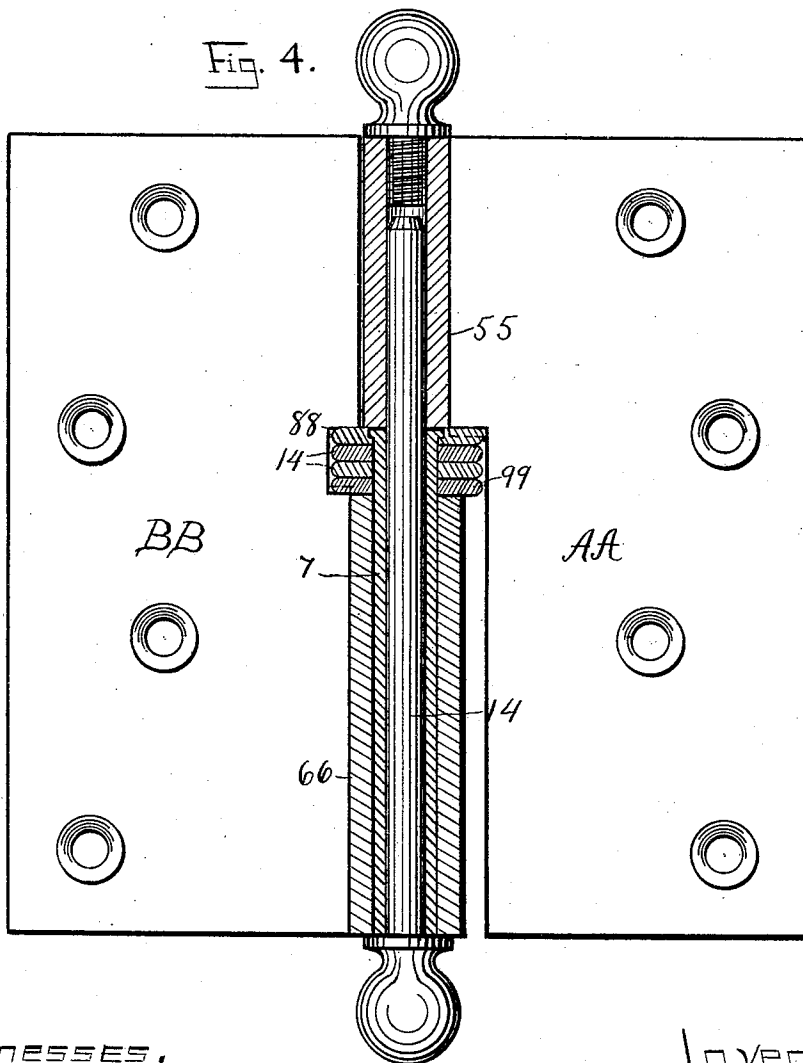
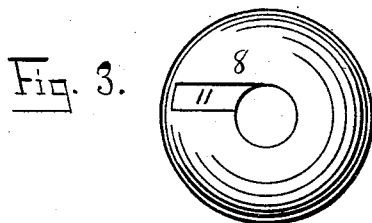
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T. CORSCADEN.
ANTI-FRICTION HINGE.

No. 475,439.

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Witnesses,
Hilmer Swenson.
C. Darwin Loomis, Jr.

Inventor.
Thomas Corscaden
By James Shepard.
Att'y.

UNITED STATES PATENT OFFICE.

THOMAS CORSCADEN, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE
STANLEY WORKS, OF SAME PLACE.

ANTI-FRICTION HINGE.

SPECIFICATION forming part of Letters Patent No. 475,439, dated May 24, 1892.

Application filed July 16, 1891. Serial No. 399,772. (No model.)

To all whom it may concern:

Be it known that I, THOMAS CORSCADEN, 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 Anti-Friction Hinges, of which the following is a specification.

My invention relates to improvements in anti-friction hinges; and the chief objects of my improvement are to provide anti-friction devices for receiving the weight brought to bear upon the hinge, to connect said devices with one of the hinge-leaves when the leaves are detached, and in general to simplify the construction and improve the efficiency of the hinge.

In the accompanying drawings, Figure 1 is a plan view of my hinge. Fig. 2 is a vertical section on the line *x x* of Fig. 1. Fig. 3 is a detached plan view of one of the friction-washers; and Fig. 4 is a vertical section, corresponding with Fig. 2, of a different style of hinge and with loose middle washers substituted for friction-rollers.

The hinge shown in Figs. 1 and 2 is a loose-pin hinge, A designating a leaf with two knuckles 5 5, and B a leaf with one knuckle 6. The knuckle 6 is preferably made larger than the knuckle 5, in order that it may have a larger bore to receive the washer-holding sleeve 7. The pintle or loose pin 15 extends through the upper knuckle of the leaf A, the sleeve 7 of the knuckle 6, and into the lower knuckle of the leaf A. The knuckle 6 is shorter than the space between the knuckles 5 5 of the leaf A, in order to make room for the two anti-friction washers 8 9. The confronting faces of the washers are turned or milled out to form an annular chamber or recess for a series of anti-friction rollers 10 between said washers, as shown in Fig. 2. The lower end of the sleeve 7 is headed, while the body of said sleeve passes through said washers and is snugly driven into the knuckle 6 of the leaf B, thereby securing both washers and their rollers upon the leaf B, so that they will remain attached thereto when the leaves are disconnected. Both of the leaves are notched or recessed on their inner edge to accommodate the washers 8 and 9. The washer 8 is provided with a tangential slot 11, (see Figs.

1 and 3,) into which a portion of the leaf B may enter at the upper corner of the notch that receives the upper washer 8, as indicated by broken lines at 12 in Fig. 2. The under side of the washer 9 is slotted in like manner to engage a portion of the leaf A, as indicated by broken lines at 13, Fig. 2, thereby necessitating the turning or rotation of the washer 8 with the leaf B and the washer 9 with the leaf A.

While I prefer to employ the slots and engaging portion of the leaves to necessitate their simultaneous rotation, it is not essential, especially when the friction-rollers are employed, as the parts will ordinarily move one upon the other where there is the least friction, and this of course is at the series of rollers. Furthermore, the washer 8 might be made to rotate with the leaf B and sleeve 7 by having the sleeve snugly fitted to said washer and driven in, while the other washer was loosely fitted on said sleeve. It will be seen that the sleeve is the means of holding the two washers together, so that the rollers will be held in place while one washer is loose, and this it will do whether the sleeve is driven into the knuckle only or one of said washers.

While I have shown a series of conical rollers, it is evident that other well-known forms of anti-friction rollers or balls may be substituted therefor.

In Fig. 4 I have shown a loose-joint butt or hinge, in which the larger knuckle 6 6 is on the leaf B B and the smaller knuckle 5 5 is on the leaf A A. The upper and lower slotted washers 8 8 and 9 9 have loose washers 14 between them instead of rollers, and all of the washers are secured to the leaf B B by the sleeve 7, as before described, for the washers 8 and 9. The upper and lower washers are made to necessarily rotate with their respective leaves by portions of said leaves engaging slots in said washers, as before described. The pintle 14 is or may be rigidly secured within the sleeve 7, so as to be rigid on the leaf B B.

I claim as my invention—

1. The herein-described anti-friction hinge, having two adjoining short knuckles forming a space for receiving washers between the confronting ends of said short knuckles, a pair

of anti-friction washers chambered on their confronting faces and secured with the end of one short knuckle resting on the broad face of one washer, while the end of the confronting short knuckle is in engagement with the broad face of the other washer, and a series of friction-rollers within the chambered faces of said washers, substantially as described, and for the purpose specified.

10 2. In an anti-friction hinge, the combination of a pair of hinge-leaves, a pair of anti-friction washers, and the headed tubular sleeve on which said washers are mounted and held at the end of a knuckle of one of said leaves, substantially as described, and for the purpose specified.

15 3. The combination of a pair of hinge-leaves having a washer-space between the ends of two adjoining knuckles and notches or recesses at the inner edges of said leaves with

a corner projecting into the plane of said washer-space on that side of the notch or recess which is nearest the knuckle of the particular leaf to which such corner belongs, and a pair of round anti-friction washers of a diameter to enter said notches or recesses and provided with a slot for engagement with the corner of said notched or recessed leaves, substantially as described, and for the purpose specified.

30 4. In an anti-friction hinge, the combination of the two washers chambered on their confronting faces, a series of rollers inclosed thereby, and the sleeve for holding said washers and rollers together, substantially as described, and for the purpose specified.

THOMAS CORSCADEN.

Witnesses:

JAMES SHEPARD,

ROBERTA CORSCADEN.