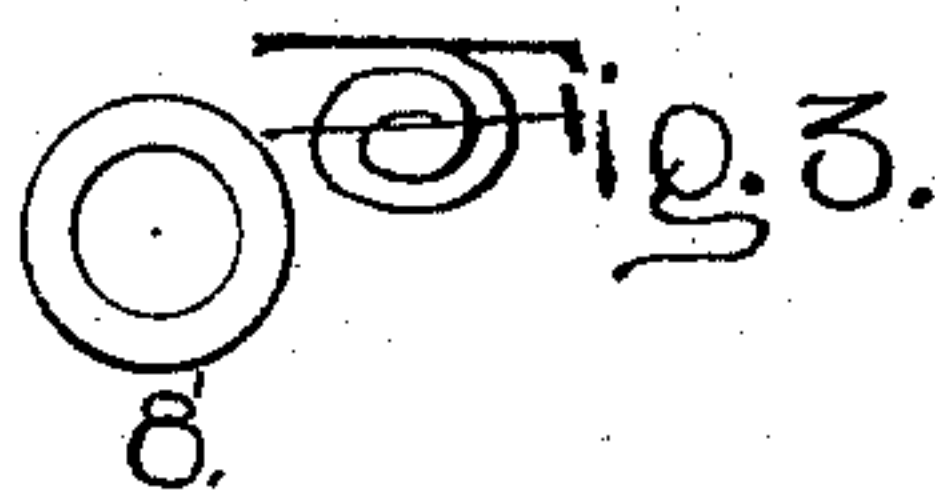
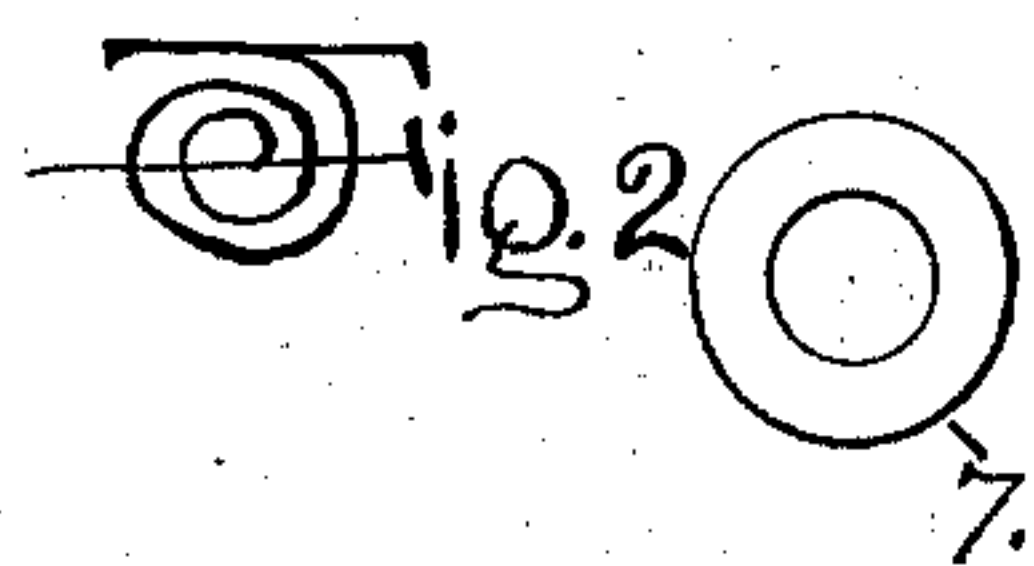
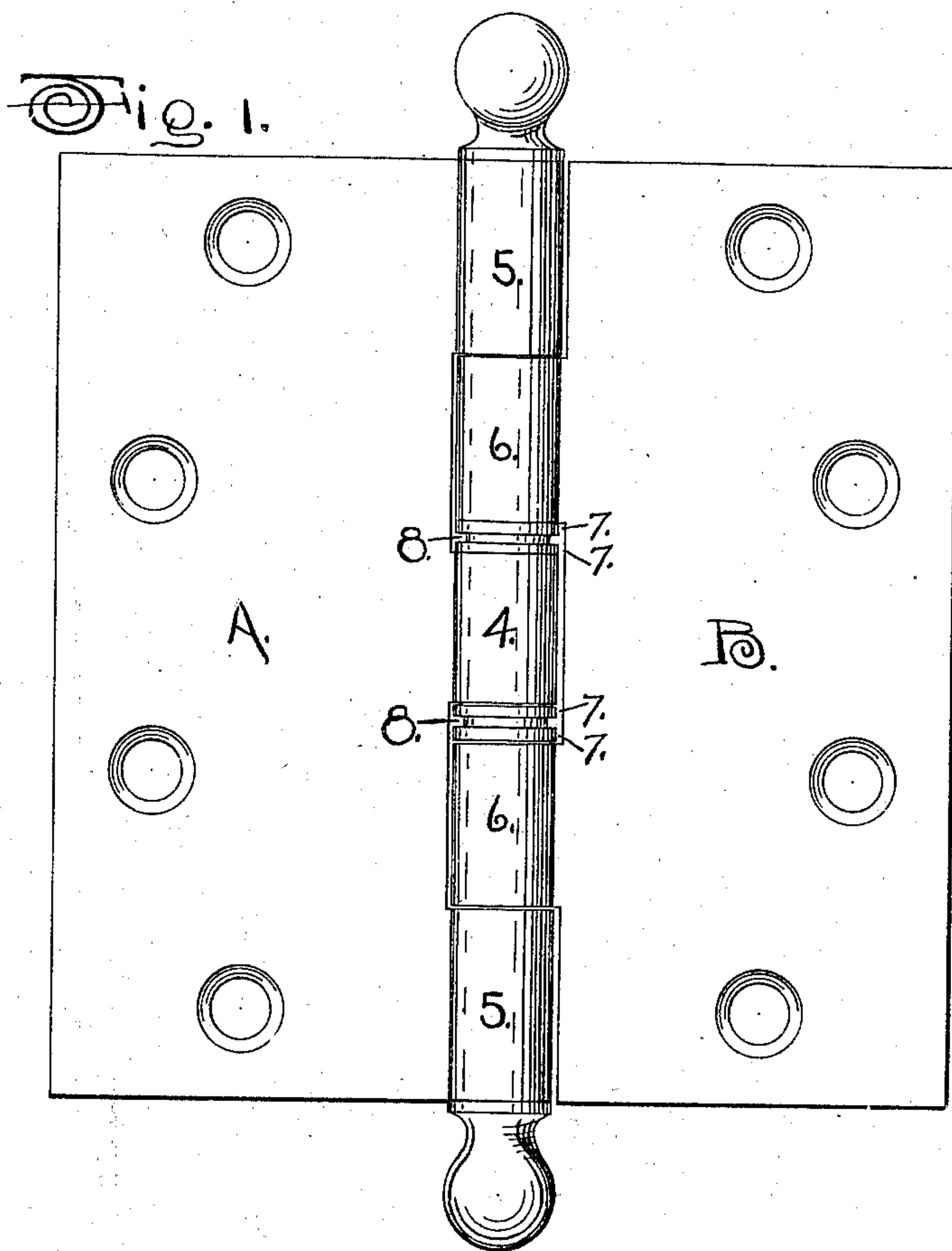


(No Model.)

W. H. HART.
HINGE.

No. 504,877.

Patented Sept. 12, 1893.



Witnesses.

Edward W. Bush,
F. H. Griswold.

Inventor.

William H. Hart
By James Shepard
Att.

UNITED STATES PATENT OFFICE.

WILLIAM H. HART, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE
STANLEY WORKS, OF SAME PLACE.

HINGE.

SPECIFICATION forming part of Letters Patent No. 504,877, dated September 12, 1893.

Application filed October 24, 1892. Serial No. 449,739. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HART, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented a new and Improved Hinge, of which the following is a specification.

My invention relates to improvements in anti-friction hinges and the objects of my improvement are simplicity and economy in production and efficiency of the article.

In the accompanying drawings—Figure 1 is a front elevation of my hinge. Fig. 2 is a plan view of one of the larger washers for my hinge, and Fig. 3 is a plan view of the smaller middle washer.

A, B, designate the leaves of a hinge having knuckles 4, 5, 6, of any ordinary construction.

Between the confronting ends of the knuckles 4 and 6, I place my set of anti-friction washers 7, 8, 7. These washers are of comparatively hard material as for instance hardened steel while the knuckles are of any ordinary softer metal, as wrought iron, soft steel, cast iron, brass or composition. The washers 7 are of larger diameter than the middle washer 8 and preferably are of the same diameter as that of the knuckles, whereby surface of contact, or bearing surface between the knuckles and the washer is of a greater diameter than is the diameter of the bearing surfaces between the washers themselves. This alone would give the larger washers a tendency to adhere to the knuckles while the washers having less area of bearing surface would tend to slip one upon the other, but in addition to this difference in diameters of bearing surface, the tendency to adhere to the knuckles and slip upon themselves is still further increased by the comparative difference in hardness. These washers are held in place by merely passing the ordinary pintle through them. Of course

these ordinary knuckles are made of such length as to bring the leaves in proper relation to each other when the washers are interposed between the ends of two or more knuckles as shown. In the hinge shown, the major weight of the door will be borne by the middle knuckle 4, if the leaf A be the stationary one, the set of washers at one end of said knuckle taking the bulk of the weight when applied to a left hand door and the set of washers at the opposite end of said knuckle doing the same when the hinge is applied to a right hand door. It is of course evident that one or more sets of washers may be applied to hinges having two or more knuckles, the number of sets of washers being limited only by the number of knuckles of the hinge.

I am aware that hinges are shown in prior patents as having a pair of hardened steel washers between the ends of two adjoining knuckles in connection with devices for locking said washers to the respective hinge leaves; also, as having a bushing set in the ends of the knuckles and a washer of a larger diameter than that of said bushings set between the same; also, with a single hardened steel washer between the ends of the knuckles and also with a hardened step at the end of the pintle, all of which is hereby disclaimed.

I claim as my invention—

The herein described anti-friction hinge, having a set of three hard washers loosely held between the ends of the knuckles, the middle washer being of a less diameter than the other washers while the diameter of bearing surface between the washers themselves is less than that between the washers and knuckles substantially as described and for the purpose specified.

WM. H. HART.

Witnesses:

G. L. REYNOLDS,
CARRIE E. TICKNOR.