

No. 721,801.

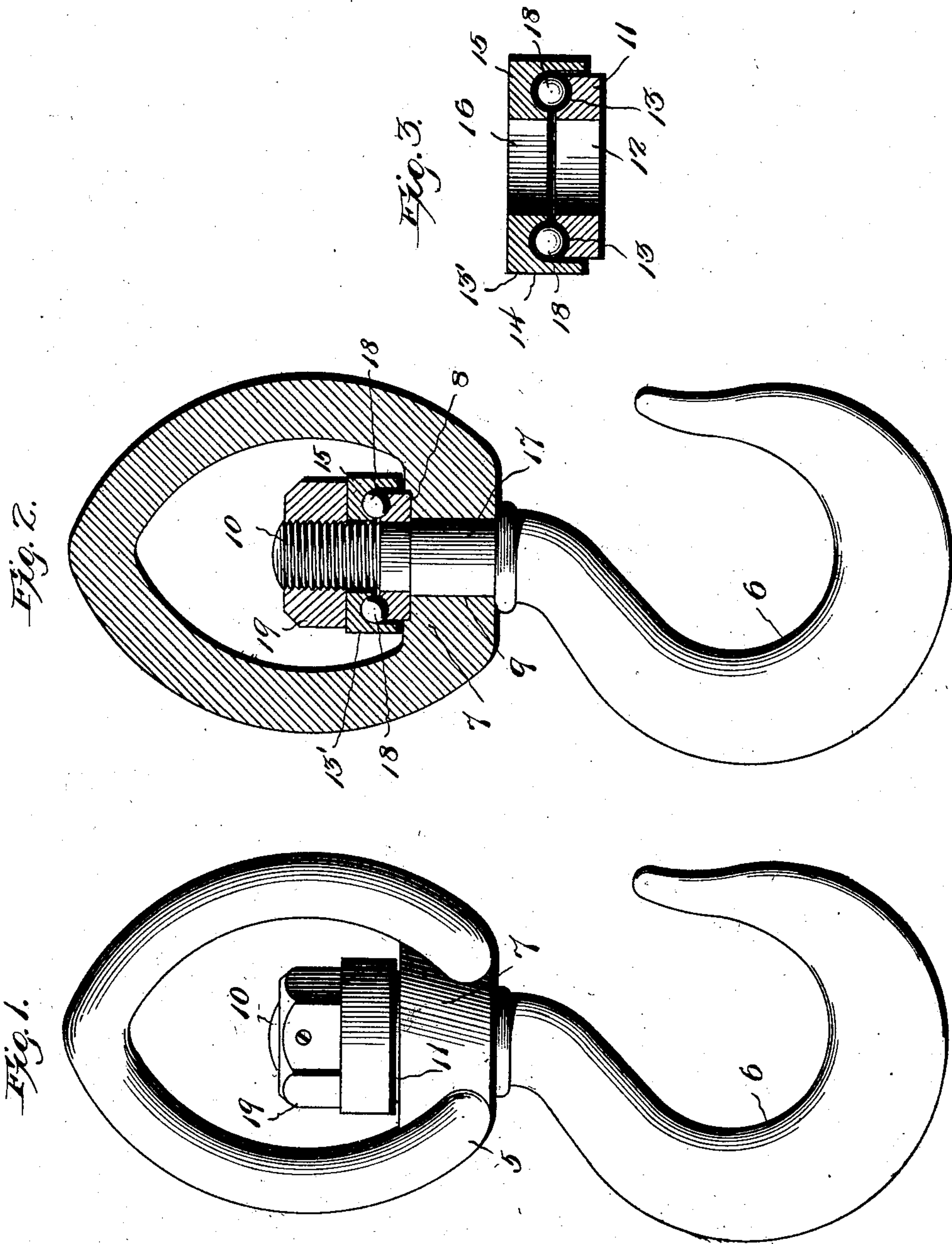
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F. HOOKER.

BALL BEARING IN SWIVEL JOINTS FOR HOIST BLOCKS.

APPLICATION FILED MAR. 28, 1902.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

FREDERIK HOOKER, OF BALTIMORE, MARYLAND.

BALL-BEARING IN SWIVEL-JOINTS FOR HOIST-BLOCKS.

SPECIFICATION forming part of Letters Patent No. 721,801, dated March 3, 1903.

Application filed March 28, 1902. Serial No. 100,435. (No model.)

To all whom it may concern:

Be it known that I, FREDERIK HOOKER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Ball-Bearings in Swivel-Joints for Hoist-Blocks; 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 improvements in ball-bearings in swivel-joints for hoist-blocks, and has for its object to provide said swivel-joint with antifriction-bearings to insure freedom of movement and to effect such combination by economical construction.

A further object of my invention is to provide a ball-bearing joint in said swivel-joint that is convenient of access and still is proof against admission of dust and moisture.

A still further object of my invention is to provide a side bearing in one of the members the function of which will be called into play during moments of lateral strains—i. e., when the hoist-block is caused to swing when employed in doing work.

With these objects in view my invention consists in constructions and combinations to be hereinafter described and pointed out.

In the accompanying drawings, Figure 1 represents in side elevation the hoist-block constructed according to my invention, while Fig. 2 shows the block in cross-section. Fig. 3 represents in detail the ball-bearing swivel-joint members in separation.

Like letters of reference indicate like parts in the several figures.

Referring to the drawings by numerals, 5 represents the body portion of said block, while 6 represents the hook member thereof. Both are preferably made of wrought-iron. The lower extremity or portion of the body member is fashioned to form a bridge or cross-head 7 and is provided with a slight depression or pocket 8, having a central orifice 9 for the reception of the screw-threaded shank 10, which is formed on the upper end of the hook member. The body 5 has an upright-extending loop that serves as a means for securing it in position for use. In the pocket 8 is fitted or seated a ball-bearing cup or retainer 11,

formed, preferably, of a tubular piece of steel and that is provided with a central orifice 12 and that is adapted to register with the one in the bridge or cross-head through which the shank extends. Said cup is provided with a ball-bearing annular channel or groove 13, the faces of which are properly tempered and which are adapted for the reception of the balls or spheres 18, and which constitutes one member of the ball-bearing portion of the case. The other member of said case comprises a cap 15, having a like central orifice 16, that is adapted to register with that in the member 11 when fitted thereon and through which the shank extends. This cap is likewise provided with an annular groove 13', having hard surfaces, and with an annular side flange integral therewith that is adapted to fit telescopically about the lower member of the ball-case. This construction serves not only as a side covering for the protection of the balls or spheres to prevent the admission of dirt and moisture, but provides a side bearing against which the balls contact and roll, especially during the moment when side or lateral strains are brought to bear upon the swivel-joint, as is the case when said block is in working position and allowed to swing. The central orifice in the respective parts before referred to are made of a diameter to allow of a slight play between the bridge portion of the body and the portion 17 of the shank proper to allow of a slight lateral yielding of the shank in its movements relative to those of the body portion.

18 represents a suitable number of steel spheres or balls that are placed in the retaining cup or member of the case. The nut 19 is provided and adapted to screw onto the threaded portion of the shank when the parts above described have been assembled and the shank of the hook has been introduced within the orifice of the respective parts, whereupon said screw is turned until the balls are brought in operative contact with their respective bearings, thereby forming a ball-bearing joint.

Having described my invention, what I desire to claim as new and useful is—

A ball-bearing swivel-joint for hoist-blocks comprising a base portion having an annular recess or socket, an orifice extending through said base portion that is arranged centrally

with relation to said recess, an annular cup
provided with a central orifice and adapted
to be socketed within said recess to present
its orifice in register with that of the orifice
5 formed in the base portion, a cap adapted to
fit over said cup having centrally an orifice
that registers with those of the cup and base
portion, said cap being internally unthreaded,
a series of spheres having a bearing in said
10 cup and cap and a side bearing against the
flange of said cap, and a shank having a
threaded end that is adapted to extend

through said opening; and a nut that is adapt-
ed to screw onto the end of the shank to form
a bearing for the parts, the walls of the base 15
portion being out of contact with the said
nut, cup and cap, substantially as described.

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

FREDERIK HOOKER.

Witnesses:

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