

No. 844,392.

PATENTED FEB. 19, 1907.

F. W. NIMS.
ROLLER BEARING.
APPLICATION FILED MAR. 11, 1904.

Fig. 1.

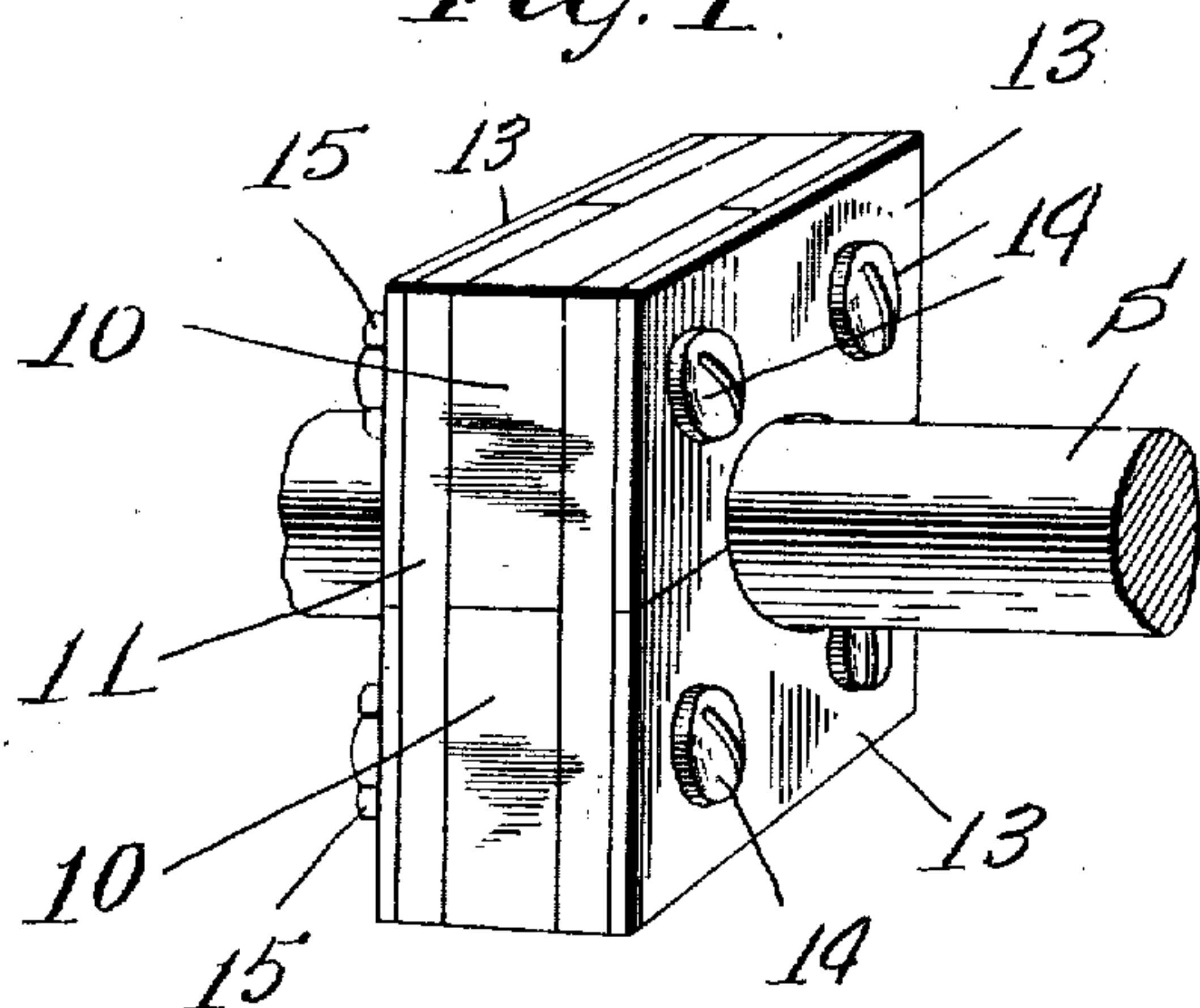


Fig. 2.

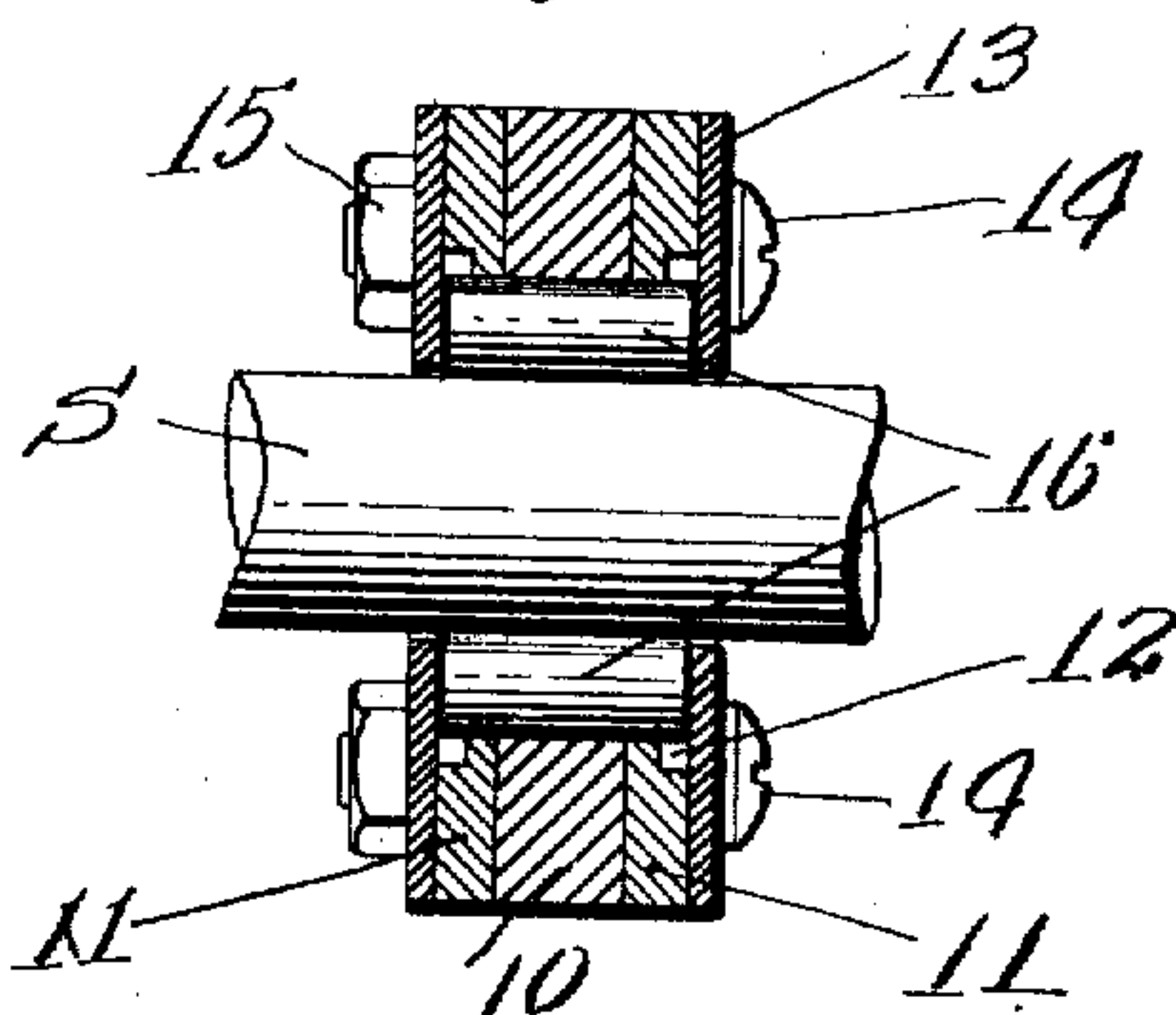


Fig. 3.

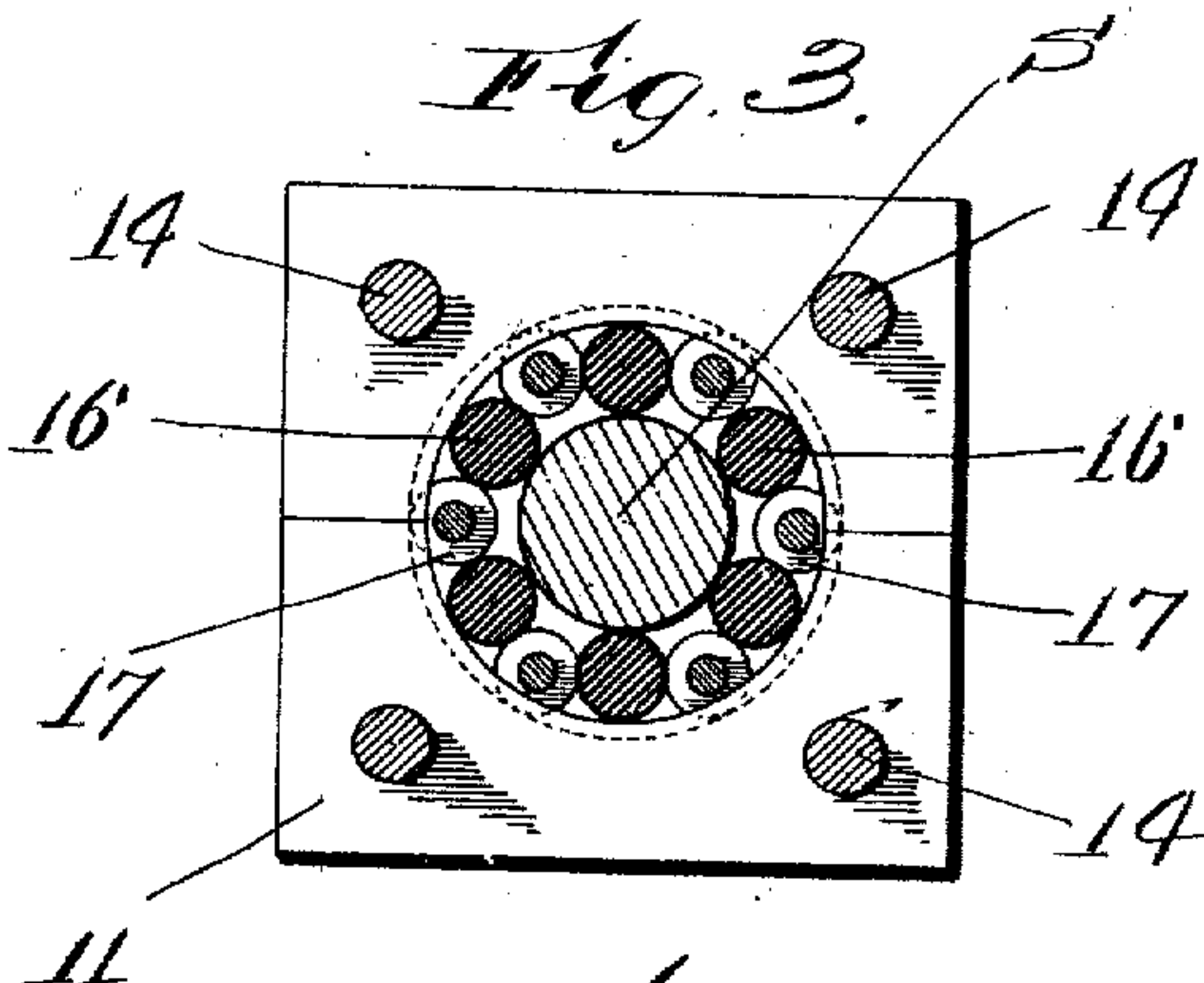


Fig. 4.

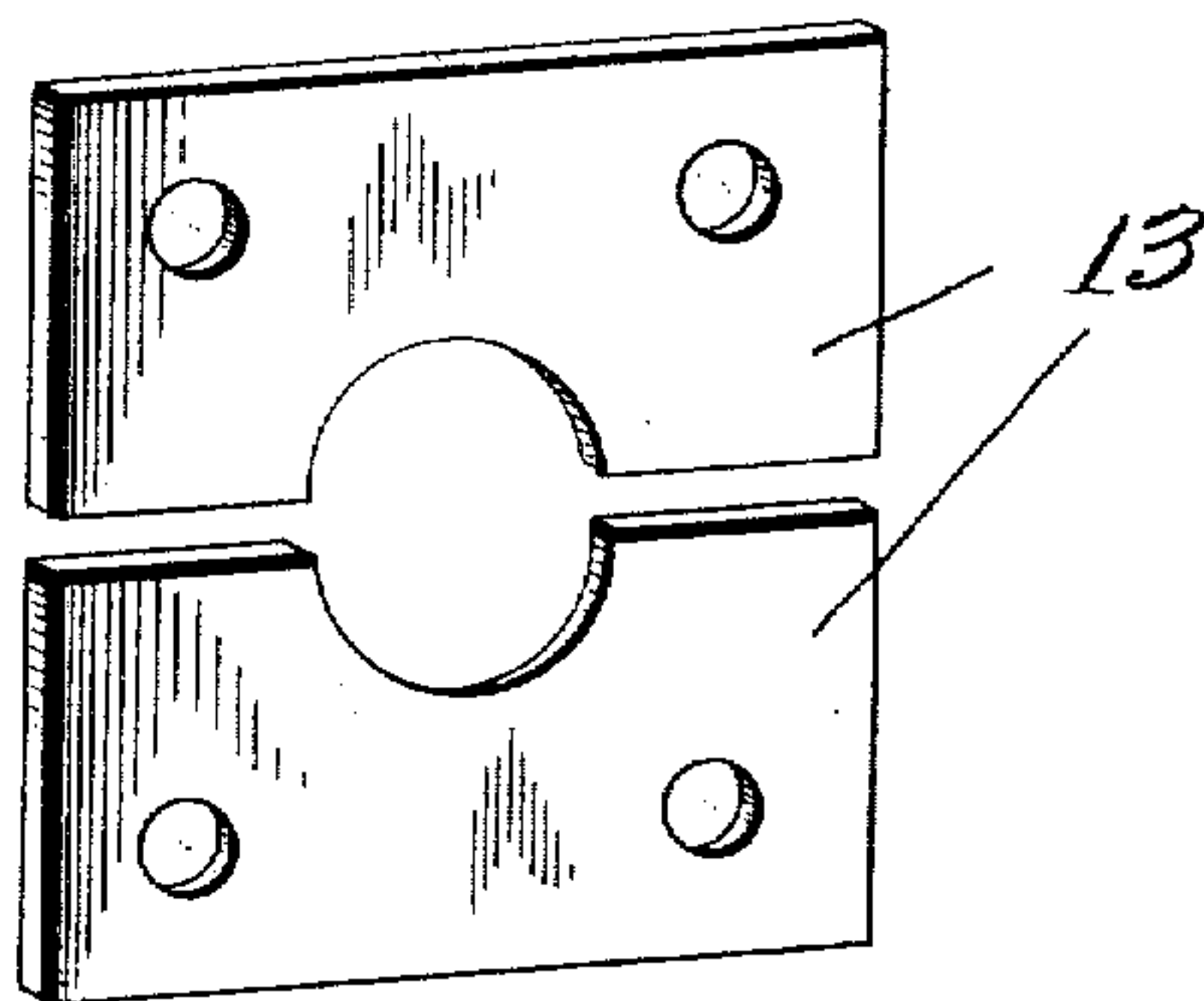


Fig. 5.

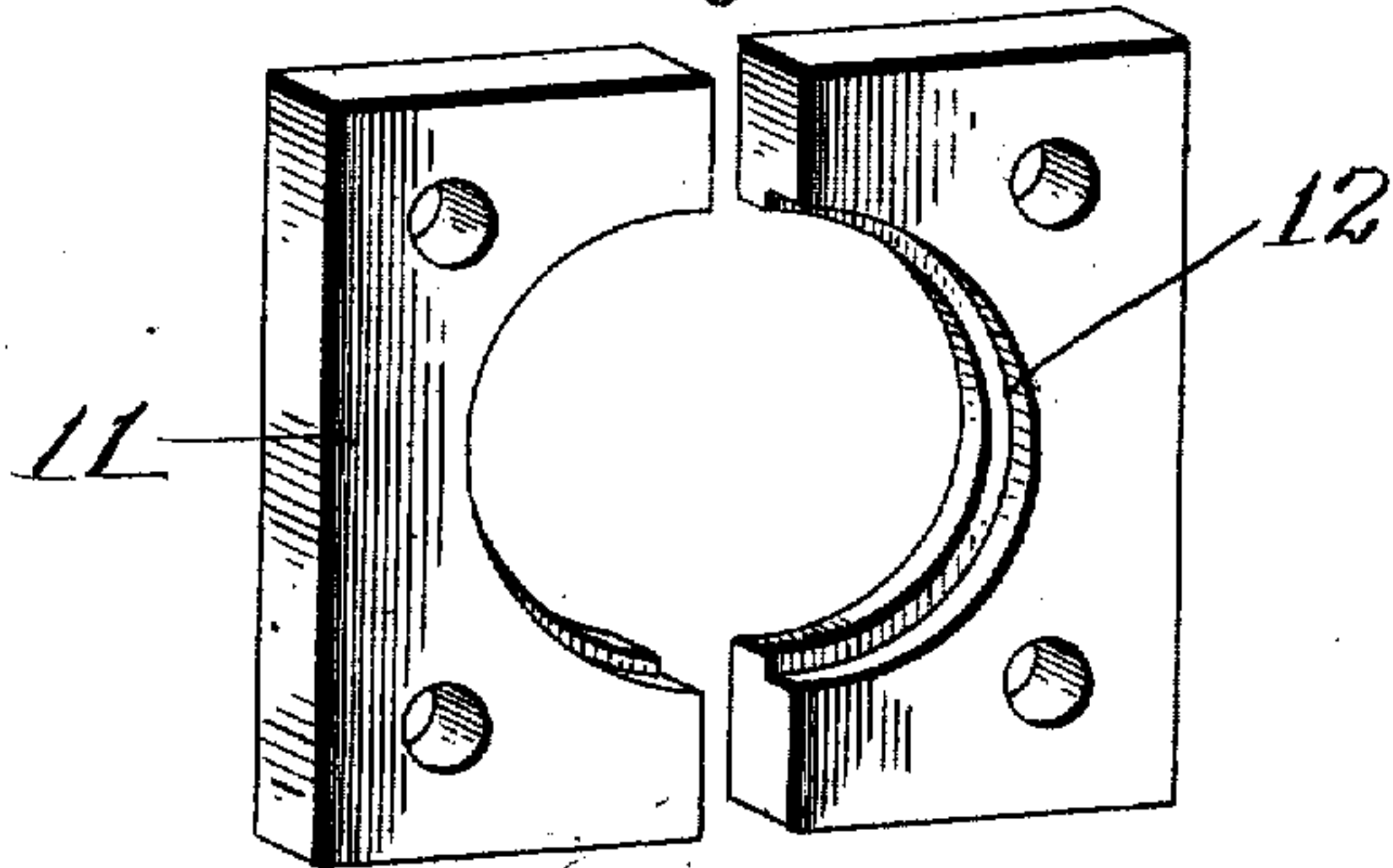


Fig. 6.

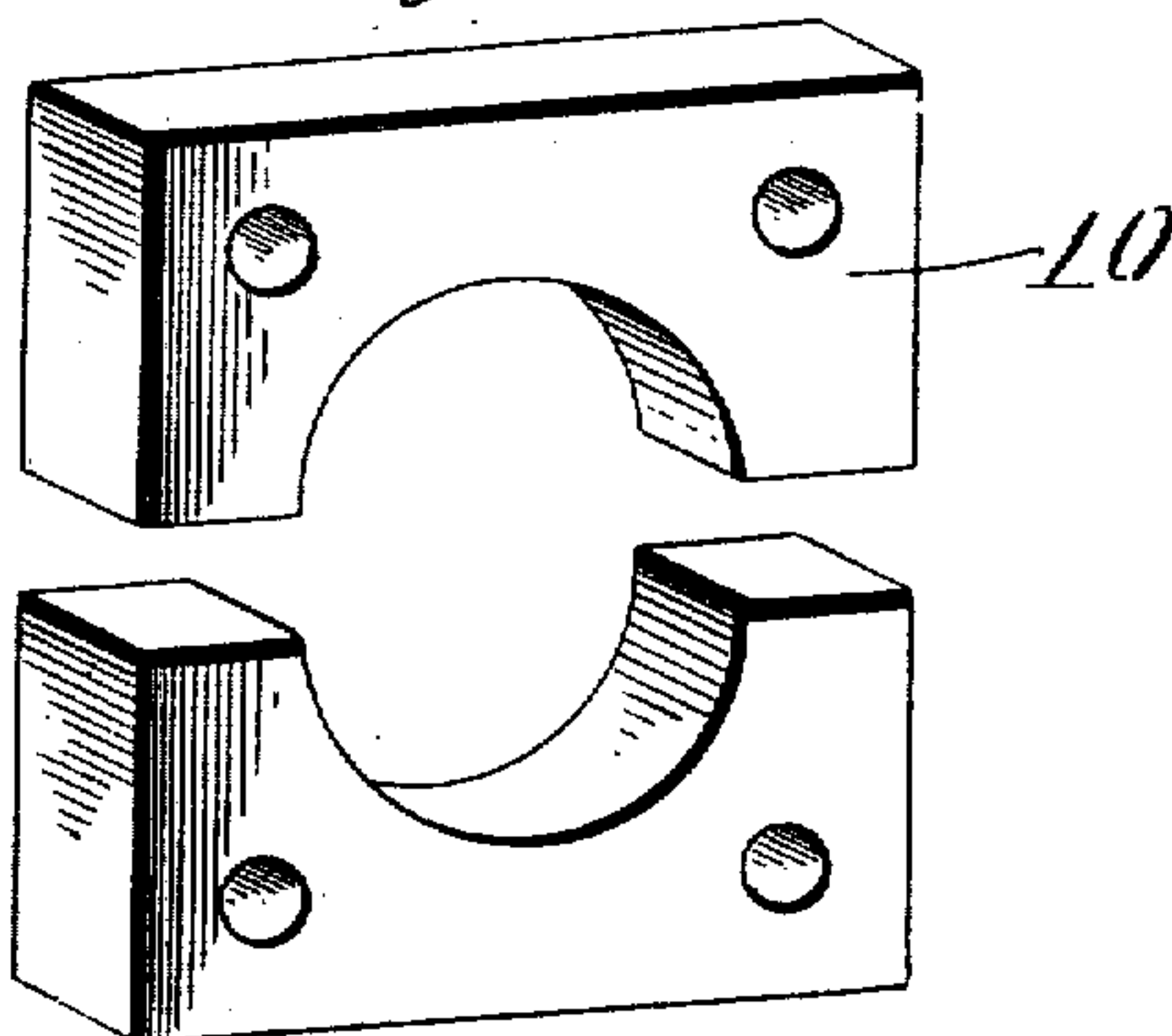


Fig. 7.

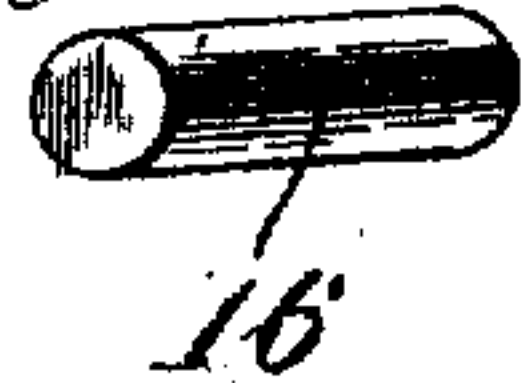


Fig. 8.



Witnesses:
G. F. Mason.
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Inventor:
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UNITED STATES PATENT OFFICE.

FRANCIS W. NIMS, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND ALFRED THOMAS AND WILLIAM RICHARDSON, OF WORCESTER, MASSACHUSETTS.

ROLLER-BEARING.

No. 844,392.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed March 11, 1904. Serial No. 197,705.

To all whom it may concern:

Be it known that I, FRANCIS W. NIMS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Roller-Bearing, of which the following is a specification.

This invention relates to that class of anti-friction-bearings in which a shaft is supported to turn on rolls or balls.

The especial objects of this invention are to provide a simple and efficient form of anti-friction-bearing which can be applied at any desired place upon a revolving shaft without removing the collars, pulleys, or other shaft-fixtures and to separate the bearing-rolls by means of spacing-spools which turn in the opposite direction from the rolls themselves.

To these ends this invention consists of the roller-bearing and of the combinations of parts therein, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawings, Figure 1 is a perspective view of a shaft mounted in a roller-bearing constructed according to this invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a transverse sectional view with one set of retaining-plates and side tracks removed. Fig. 4 is a perspective view of a set of retaining-plates. Fig. 5 is a perspective view of one of the sets of side tracks. Fig. 6 is a perspective view of the divided center track. Fig. 7 is a perspective view of one of the anti-friction-rolls, and Fig. 8 is a perspective view of one of the spacing-spools.

In ordinary roller-bearings of the class to which this invention relates the parts have ordinarily been mounted in solid bearing-boxes, and in order to apply a roller-bearing of ordinary construction to a shaft it has heretofore been necessary to slip the bearing-box onto the end of the shaft. To do this, it is necessary to have access to the end of the shaft and to strip the shaft of all pulleys, collars, or other attachments which may be carried thereby.

One especial object of this invention is to provide a roller-bearing employing a divided bearing-box which can be taken apart, so that the construction may be applied to a

shaft at any point along its length without stripping or removing the fixtures therefrom.

Referring to the accompanying drawings and in detail, a roller-bearing constructed according to this invention, as herein illustrated, comprises a bearing-box consisting of a divided center track formed by plates or pieces 10, the two divided side tracks formed by the plates or pieces 11, which plates or pieces 11, as most clearly illustrated in Fig. 5, are counterbored to form trackways 12.

The parts are held in place by divided side plates comprising plates 13, and all of these parts are clamped together by bolts 14, having nuts 15 threaded thereon.

The shaft S is supported on the center track by means of a set of anti-friction-rolls 16, and the anti-friction-rolls 16 are separated by spacing-spools, each of which is provided with end heads 17, which run in the trackways 12 and which bear upon the anti-friction-rolls 16.

In the operation of a roller-bearing as thus constructed the anti-friction-rolls travel in an orbital path around the shaft and are rolled so that they turn in the opposite direction to the shaft, while the spacing-spools turn in the same direction as the shaft and serve to separate the anti-friction-rolls and to prevent friction between the rolls themselves.

In applying a roller-bearing as thus constructed to a shaft which is already in operative position the parts which form the divided bearing-box, with the exception of one set of side plates, may first be put in place upon the shaft, the parts being held together by the insertion of the bolts 14. The anti-friction-rolls 16 and separating-spools 17 may then be inserted horizontally into place, and the parts may be secured in operative position by putting on the other set of side plates. I regard this way of assembling a roller-bearing as of particular importance, as it enables me to apply my roller-bearings to shafting which is already in operative position, and inasmuch as this can be done without stripping the shafting or taking the same out of place my bearings are especially adapted for application to line-shafting or other comparatively long shafts.

I am aware that changes may be made in the construction of roller-bearings by those who are skilled in the art without departing

from the scope of my invention as expressed in the claims. I do not wish, therefore, to be limited to the construction I have herein shown and described; but

5 What I do claim, and desire to secure by Letters Patent of the United States, is—

1. In a roller-bearing, the combination of a box-section having a bore therein forming a center track, box-sections at each side thereof having counterbores on their outsides forming tracks, a set of rolls of a length substantially equal to the combined thickness of said box-sections and of a uniform diameter throughout their lengths for supporting a shaft in the center track, and a set of separator-spools, each comprising two disks bearing on the rolls and also bearing in the enlarged tracks.

2. In a roller-bearing, the combination of a bearing-box comprising a middle part divided into two sections, two side parts each of which is also divided into two sections with the division-line in a plane at an angle to the division-line of the center part, said middle part having a center track bored therein, and said side parts being counterbored to form enlarged trackways at their outer sides, a set of rolls of uniform thickness throughout their length, each extending from the outside of one side part to the outside of the other for supporting a shaft in the main bearing-box, and a set of separating-spools, each comprising two disks running in the enlarged trackways and engaging the cylindrical surfaces of the rolls.

3. In a roller-bearing, the combination of a bearing-box comprising a center part divided into two sections and having a main central counterbore, two side parts each divided into two sections on a division-line at substantially right angles to the line of division of the central part, the central part being provided with a track therein, and the side

parts with an enlarged trackway at their outer sides, the inner sides of the side parts being of the same diameter as the track in the central part, a set of rolls of uniform diameter throughout their length extending from the outer surface of one side part to the outer surface of the other for supporting a shaft in the track of the central part, separating-spools comprising disks running in the enlarged trackways and engaging the surfaces of the rolls, and retaining-plates at each end of the box for holding the rolls in place, said retaining-plates being divided on a line substantially parallel with the line on which the center part is divided, and bolts passing through said retaining-plates and said parts for holding them in position.

4. In a roller-bearing, the combination of a bearing-box comprising a center part divided into two sections, side parts, each divided into two sections on a division-line at an angle to the line of division of the central part, said bearing-box having a main center track therein and an enlarged trackway at each side thereof, a set of rolls of uniform diameter throughout their length supporting a shaft in the center track, separating-spools, each comprising a spindle with an enlarged disk at each end, the disks running in the enlarged trackways and engaging the rolls, and retaining-plates at each end of the box for holding the rolls in place, said retaining-plates being divided, whereby all parts of the bearing may be applied to an intermediate point of a shaft.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANCIS W. NIMS.

Witnesses:

LOUIS W. SOUTHGATE,
PHILIP W. SOUTHGATE.