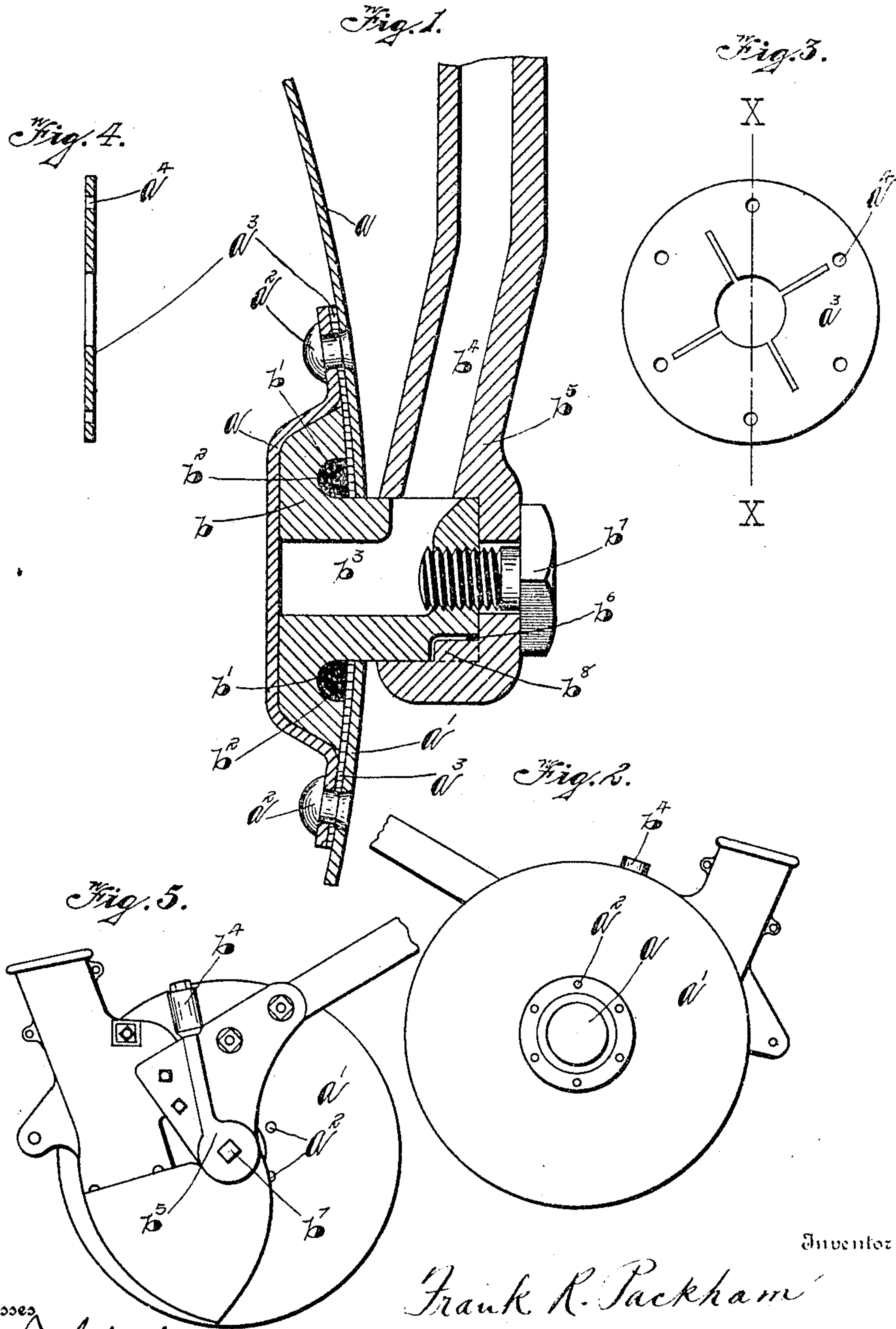


F. R. PACKHAM.
BEARING FOR FURROW OPENING DISKS.
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944,045.

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BEARING FOR FURROW-OPENING DISKS.

944,045.

Specification of Letters Patent.

Patented Dec. 21, 1909.

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To all whom it may concern:

Be it known that I, FRANK R. PACKHAM, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Bearings for Furrow-Opening Disks, of which the following is a specification.

This invention relates to an improvement in bearings, and is especially adapted for use in a disk furrow opener employing a revolving disk of concavo-convex form.

The general object of the invention is to construct the bearing and arrange the parts that the bearing may be easily renewed from time to time, though presenting an improved form of bearing, insuring the proper lubrication of the parts of the bearing and protecting the same against the interference of the small particles of sand, dust and analogous substances that ordinarily interfere with the proper wear of disk furrow opener bearings. The entire bearing is so arranged that the parts worn may be readily renewed during the time the machine is in actual use without interference from the associated furrow openers, it being remembered that in this type of machine there are usually a plurality of furrow openers, a disk for each furrow opener being placed very close to its associated disk, so that there is usually a minimum amount of space between the concave face of one disk and the convex face of the associated disk.

Referring to the drawings, Figure 1 is a vertical sectional view showing the disk cap and supports in section. Fig. 2 is a side elevation showing the concave side of the disk. Figs. 3 and 4 are detail views of the wearing plate or washer. Fig. 5 is a side elevation showing the convex side of the disk.

Like characters of reference indicate like parts in the several views.

Referring to Figs. 1 and 2, there is preferably shown a solid cap, a , which is riveted to the concavo-convex disk, a^1 , preferably on the concave side thereof, it being obvious that the steel cap may be attached to the convex side of the disk, where it is preferable in construction to extend the disk to a greater distance beyond the drag-bar support than would be the case were the housings attached to the concave side, as described. The rivets are indicated by a^2 . The form and arrangement of the cap are such that

it is susceptible of undergoing a special hardening process for the purpose of resisting wear, its form of construction is such as to permit of being readily removed from the disk at a very slight expense whenever necessary. A wearing plate, a^3 , (Figs. 1 and 3) is shown located between the disk, a^1 , and the cap, a . This wearing plate has rivet holes, a^4 , located at various points around its circumference, and the rivets, a^2 , are inserted through said openings and in this way the wearing plate is securely packed against the disk a^1 . As shown in Fig. 4 the wearing plate is of a flat or slightly concave construction. When of flat construction, it is manifest that the slight concavity of the disk would not be conformed with. It is this lack of conformity which I use for the purpose of obviating lateral looseness, since the center of the wearing ring, not having backing, a slightly yielding tension is secured at the time plates were riveted to the disk for the purpose of inclosing the supporting core. The wearing plate may be slotted from its center toward its outer periphery as shown for very heavy plates to effect the desired resiliency or cushion, it being necessary so to do in order to obtain the yielding center. But when placed in its proper relation to the disk and cap and held therein, the plate will assume the complete concavo-convex shape of the disk by reason of its novel construction. The main purpose of this wearing plate is two-fold. First, to protect the central portion of the disk immediately above the central opening thereof against the wear that would ordinarily occur. Second, by reason of its yieldability to maintain a constant contact of the vertical wearing surfaces.

Referring to Fig. 1, there is preferably shown an intermediate bearing support, b , of such shape that its outer portion is formed of a shape to coöperate with the cap, a , having a body portion projecting upwardly and fitting within the space formed between the cap, a , and the sides of the wearing plate, a^3 . There are preferably formed in the sides of the body portion of this intermediate support grooves, b^1 , and within these grooves or channels, b^1 , there is inserted felt or other resilient absorbing material, b^2 . While it is not absolutely necessary that the groove or channel be formed in the support still there are marked advantages in forming

said groove or channel in the support because thereby the groove becomes the stationary or non-rotatable element which minimizes the danger of the absorbing material being thrown from the groove by centrifugal force. An oil passageway, b^3 , is formed in the body portion of said intermediate support, b , and the upper end of this oil passage, b^3 , registers with a vertical oil passage, b^4 , extending through the outer bracket support, b^5 . This outer support, b^5 , is formed with a socket, b^6 , and a screw-threaded bolt, b^7 , draws the intermediate bearing support, b , in contact with the interlocking faces, preferably splines, b^8 , and in this manner the intermediate support is held within the bracket support, b^5 , and the rivets, a^2 , heretofore mentioned, will cause the spring wearing plate, a^3 , to assume its concavo-convex shape preventing any rattle, at the same time providing for sufficient freedom of the movement of the spring wearing-plate tending to take up slack even after considerable wear of the parts, and the bolt, b^7 , will hold the intermediate and outer support together.

From this description of the different parts and their relation to each other, it is apparent that in assembling the parts of the bearing, the intermediate support, b , with the absorbent material placed properly in the grooves, b^1 , will be first placed with its hub portion projecting through the opening of the disk, the wearing plate having been previously placed in proper position on the intermediate support. The cap, a , can then be riveted to the disk and the wearing plate so as to hold the parts rigidly connected to the disk. The bracket support, b^5 , can then be placed upon the intermediate support, the two supports being held securely in contact by the bolt, b^7 , having the advantages hereinbefore explained.

As to the oil feature, it is apparent that the oil will pass through the passage, b^3 , to the side of the cap, a , and from there it may pass downwardly and thereafter upwardly until it reaches the groove, b^1 , and the absorbent material, b^2 , in this manner working down and up to the absorbent material, b^2 . The vertical conduit or passageway, b^4 , may be provided at its top with a cap, so that heavy oils or grease may be used under compression if deemed desirable.

Having thus described my invention, I claim as follows:

1. In a disk bearing, the combination of a disk and a disk supporting cap, of an intermediate stationary support, a grooved socket encircling the support and formed in the body of the same, a washer located within the socket, a wearing plate projecting alongside the groove socket, means for securing the cap to said plate and means for securing the plate to said disk, and a main support for said intermediate support, substantially as specified.

2. In a disk bearing, the combination of a concavo-convex disk, a solid cap secured to the concave face of the disk, an intermediate support between the cap and the concave face of the disk, a wearing plate with yieldable central portion, said plate projecting below the upper or flange portion of the cap and between the intermediate support and the disk, a groove formed in the body portion of the intermediate support and absorbent material inserted therein, a central oil passageway formed in the support, and a main support with an oil conduit registering with the first mentioned oil passageway, and means for securing the main support to the intermediate support, substantially as described.

3. In a disk bearing, the combination of a concavo-convex disk, a solid cap secured to the concave face of the disk, an intermediate support between the cap and the concave face of the disk, a wearing plate projecting below the upper portion or flange of the cap and between the intermediate support and the disk, a groove formed in the body portion of the intermediate support, and absorbent material inserted therein; a central oil passageway formed in the support, a main support with an oil conduit registering with the first mentioned oil passageway, a socket formed in said main support, and means for drawing the intermediate support within said socket, substantially as specified.

In testimony whereof, I have hereunto set my hand this 27th day of March 1907.

FRANK R. PACKHAM.

Witnesses:

CHAS. I. WELCH,
OLIVER T. CLARKE.