

No. 708,122.

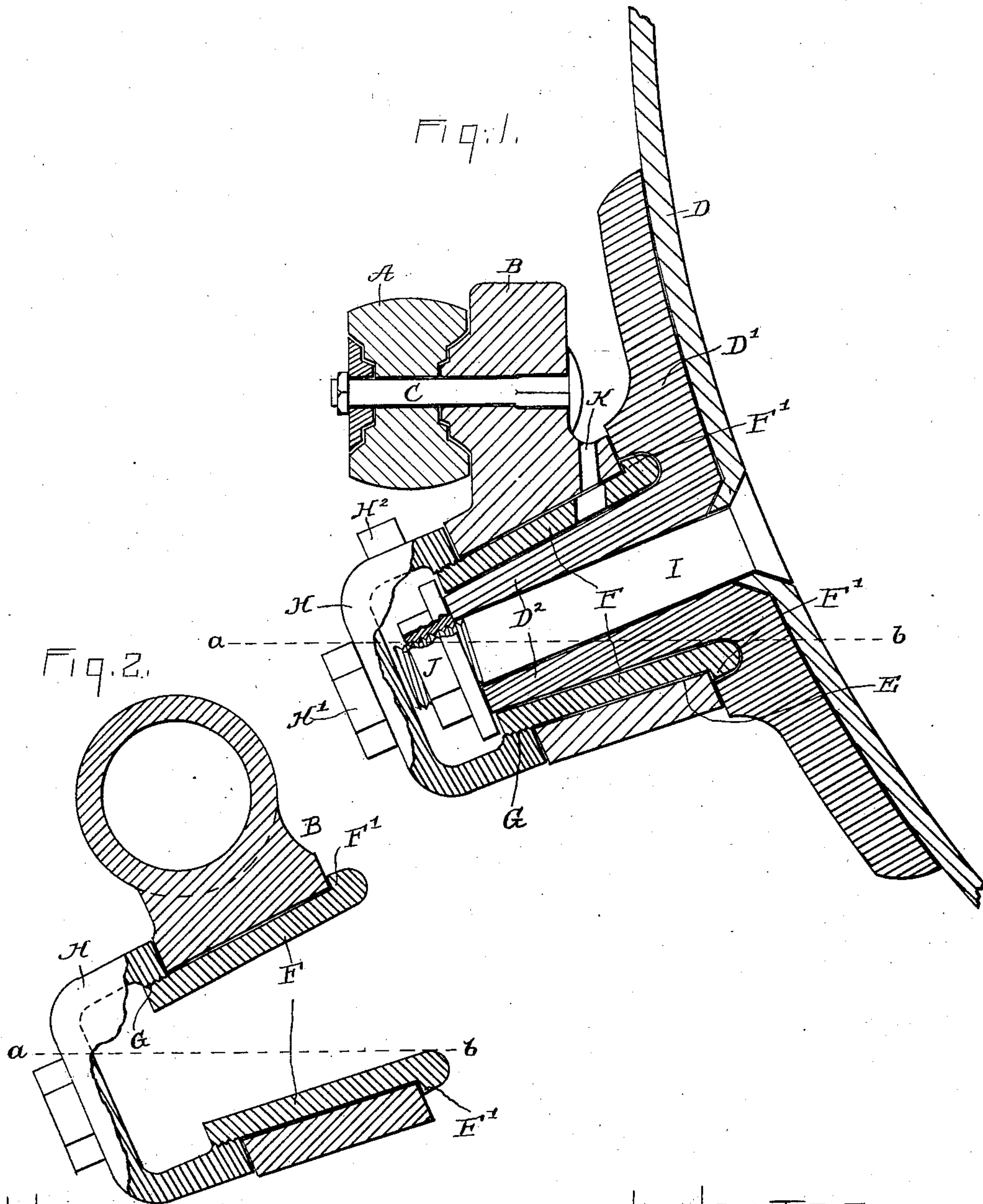
Patented Sept. 2, 1902.

J. BUCHANAN.

PLOW.

(Application filed Jan. 13, 1902.)

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

JUDSON BUCHANAN, OF CHATTANOOGA, TENNESSEE, ASSIGNOR TO CHATTANOOGA PLOW CO., A CORPORATION OF TENNESSEE.

PLOW.

SPECIFICATION forming part of Letters Patent No. 708,122, dated September 2, 1902.

Application filed January 13, 1902. Serial No. 89,433. (No model.)

To all whom it may concern:

Be it known that I, JUDSON BUCHANAN, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Plows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates particularly to what are known as rotary moldboard or disk plows.

The object of my invention is to provide a convenient and durable journal and bearing for the rotary moldboard or disk of such plows.

In the accompanying drawings, Figure 1 is a vertical transverse section through the beam and the journal and bearing and central portion of the disk of such a plow. Fig. 2 is a similar section of such a bearing, the hanger in which the bearing is formed being integral with a tubular plow-beam.

Referring first to Fig. 1, A is the plow-beam, and B is the hanger, in which the bearing for the disk is formed. C is a bolt by which said hanger is joined to said beam, as is well known in this art. The lower portion of said hanger is inclined laterally in the direction of the moldboard or disk D in order that the latter may stand at the desired inclination to the ground. E is a substantially cylindrical opening in the hanger. This is inclined downward from the moldboard and is preferably somewhat tapering from the side of said hanger next the disk toward the opposite side of the hanger, as shown in the drawings. F is a bushing fitting closely into the opening E and extending outside of the hanger at each end. At its higher end (the end adjacent to the moldboard) said bushing is preferably provided with a flange F', extending radially outward over the adjacent outer face of said hanger, which limits the movement of said bushing into said hanger from said side of the latter. At the opposite or lower end the exterior of said bushing is screw-threaded, as shown at G. H is a cup-shaped cap of proper diameter to fit around

the screw-threaded end of the bushing F and having its interior threaded along its edge to engage the threads of said bushing. The base of said cup-shaped cap is provided with suitable means for engagement with a turning-tool, as a polygonal head H' for receiving an ordinary wrench or a radial stud H² for engaging a spanner-wrench. It is obvious from an inspection of the drawings that the tightening of said cap will cause the edge thereof to abut with more and more force against the adjacent face of said hanger and that this causes said cap to draw said bushing in the direction of said cap until said bushing becomes immovable by engagement with said hanger within the latter or by means of said flange at the side of the latter opposite said cap.

The moldboard or disk D is secured to a central base D', from the center of which base a journal D² extends through said bushing. Said base may be integral with said disk, or it may be secured thereto in any suitable manner. The drawings show said disk separable from said base and held thereto by a bolt I, extending centrally through said disk, base, and journal. Said bolt is long enough to permit its lower end to extend through the journal D² sufficiently to receive a nut J. Said nut is wide enough to extend across a portion or all of the end of said bushing, and said nut is preferably made to bear firmly against the end of said journal and only lightly against the end of said bushing when said nut has been drawn sufficiently to clamp the disk D and the base D' together. The journal D² is made to fit loosely within said bushing in order that said journal may rotate easily within said bushing. It has already been explained that the bushing is firmly bound or secured within the hanger by means of the cap H. It will now be seen that the disk D and the base D' and the journal D² may be rigidly secured to each other by means of the bolt I and nut J, and that by means of said bolt and nut said journal may be rotatably secured within said bushing, the flange of said nut being wide enough to extend over the adjacent end of said bushing, thus making it impossible for said nut to pass through said bushing. In

assembling the parts the journal D^2 and bolt I are extended through the said bushing and secured to the latter by applying the nut J to said bolt. Then the cap H is turned upon the bushing F, whereby said bushing is immovably secured within the hanger, as already explained. The joint between the bushing and the cap H is dust and oil tight. In addition to securing the parts together, as has been described, said cap H performs two other functions—namely, first, to seal the adjacent end of said bearing against the admission of dust, and, second, to complete a chamber having for its walls the walls of said cap and said bushing, the portion of said chamber below the lowest point of the edge of the higher end of said bushing constituting an oil-reservoir. Such reservoir is represented in Fig. 1 by the space within said chamber below the dotted line *a b*. K is an oil-inlet extending downward through the hanger B and said bushing. Oil introduced through said inlet passes around the said journal, between the latter and said bushing, and accumulates in the chamber formed by said bushing and said cap H below said line *a b*. Thus provision is made for the rotation of said journal in a mass of oil.

Obviously the journal D^2 may be extended into the exterior of the cap H and provided with screw-threads to receive the nut J, the bolt I being then altogether omitted or extended only partially into said journal.

I claim as my invention—

1. In a rotary moldboard-plow, the combination with a plow-beam, of a hanger, a bearing comprising a tubular bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, means for securing said journal in said bushing, and a cup-shaped cap extending over the lower end of said journal and secured to said bushing by a dust and oil tight joint, substantially as described.

2. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, means for securing said journal in said bushing, and a cup-shaped cap extending over the lower end of said journal and threaded to said bushing, substantially as described.

3. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, means for securing said journal in said bushing, and a cup-shaped cap extending over the lower end of said journal and threaded around said

bushing and abutting against said hanger, substantially as described.

4. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, and a nut for securing said journal in said bushing, and a cup-shaped cap extending over the lower end of said journal and threaded around said bushing, substantially as described.

5. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, a nut for securing said journal in said bushing, and a cup-shaped cap extending over the lower end of said journal and threaded around said bushing and abutting against said hanger, substantially as described.

6. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, a bolt extending through said moldboard and said journal, a nut applied to said bolt, and a cup-shaped cap extending over the lower end of said journal and secured to said bushing by a dust and oil tight joint, substantially as described.

7. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, a bolt extending through said moldboard and journal, a nut applied to said bolt, and a cup-shaped cap extending over the lower end of said journal and threaded to said bushing, substantially as described.

8. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular bushing located within said hanger and inclined downward from said moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, a bolt extending through said moldboard and journal, a nut applied to said bolt, and a cup-shaped cap extending over the lower end of said journal and threaded around said bushing and abutting against said hanger, substantially as described.

9. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular, tapering bushing located within said hanger and inclined

downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, means for securing said journal in said bushing, and a cup-shaped cap extending over the lower end of said journal and threaded to said bushing, substantially as described.

10. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular, tapering bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, means for securing said journal in said bushing, and a cup-shaped cap extending over the lower end of said journal and threaded around said bushing and abutting against said hanger, substantially as described.

11. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular, flanged bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, means for securing said journal in said bushing, and a cup-shaped cap extending over the lower end of said journal and secured to said bushing by a dust and oil tight joint, substantially as described.

12. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular, flanged bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, means for securing said journal in said bushing, and a cup-shaped cap extending over the lower end of said journal and threaded around said bushing and abutting against said hanger, substantially as described.

13. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular, flanged bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, and a nut for securing said journal in said bushing, and a cup-shaped cap extending over the lower end of said journal and threaded around said bushing, substantially as described.

14. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular, flanged bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal rigid upon and extending from the moldboard through said bushing, a bolt extending through said moldboard and said journal, and a cup-shaped cap extending over the lower end of said journal and secured to said bushing by a dust and oil tight joint, substantially as described.

15. In a rotary moldboard-plow, the combination with the plow-beam, of a hanger, a bearing comprising a tubular, flanged bushing located within said hanger and inclined downward from the moldboard, a rotary moldboard, a journal extending from the moldboard through said bushing, a bolt extending through the moldboard and journal, a nut applied to said bolt, and a cup-shaped cap extending over the lower end of said journal and threaded around said bushing and abutting against said hanger, substantially as described.

16. In a rotary moldboard-plow, the combination with a beam and a hanger formed integral with said beam, of a bearing comprising a tubular bushing located within said hanger and inclined downward, and a cup-shaped cap secured over the lower end of said bushing by a dust and oil tight joint, substantially as described.

17. In a rotary moldboard-plow, the combination with a beam and a hanger formed integral with said beam, of a bearing comprising a tubular bushing located within said hanger and inclined downward, and a cup-shaped cap threaded to the lower end of said bushing, substantially as described.

18. In a rotary moldboard-plow, the combination with a beam and a hanger formed integral with said beam, of a bearing comprising a tubular bushing located within said hanger and inclined downward, and a cup-shaped cap threaded around the lower end of said bushing and abutting against said hanger, substantially as described.

19. In a rotary moldboard-plow, the combination with a beam and a hanger formed integral with said beam, of a bearing comprising a tapering, tubular bushing located within said hanger and inclined downward, and a cup-shaped cap secured over the lower end of said bushing by a dust and oil tight joint, substantially as described.

20. In a rotary moldboard-plow, the combination with a beam and a hanger formed integral with said beam, of a bearing comprising a flanged, tubular bushing located within said hanger and inclined downward, and a cup-shaped cap secured over the lower end of said bushing by a dust and oil tight joint, substantially as described.

21. In a rotary moldboard-plow, the combination with a beam and a hanger formed integral with said beam, of a bearing comprising a flanged, tubular bushing located within said hanger and inclined downward, and a cup-shaped cap threaded around the lower end of said bushing and abutting against said hanger, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 7th day of January, in the year 1902.

JUDSON BUCHANAN.

Witnesses:

W. W. PACE,
C. F. MINTURN.