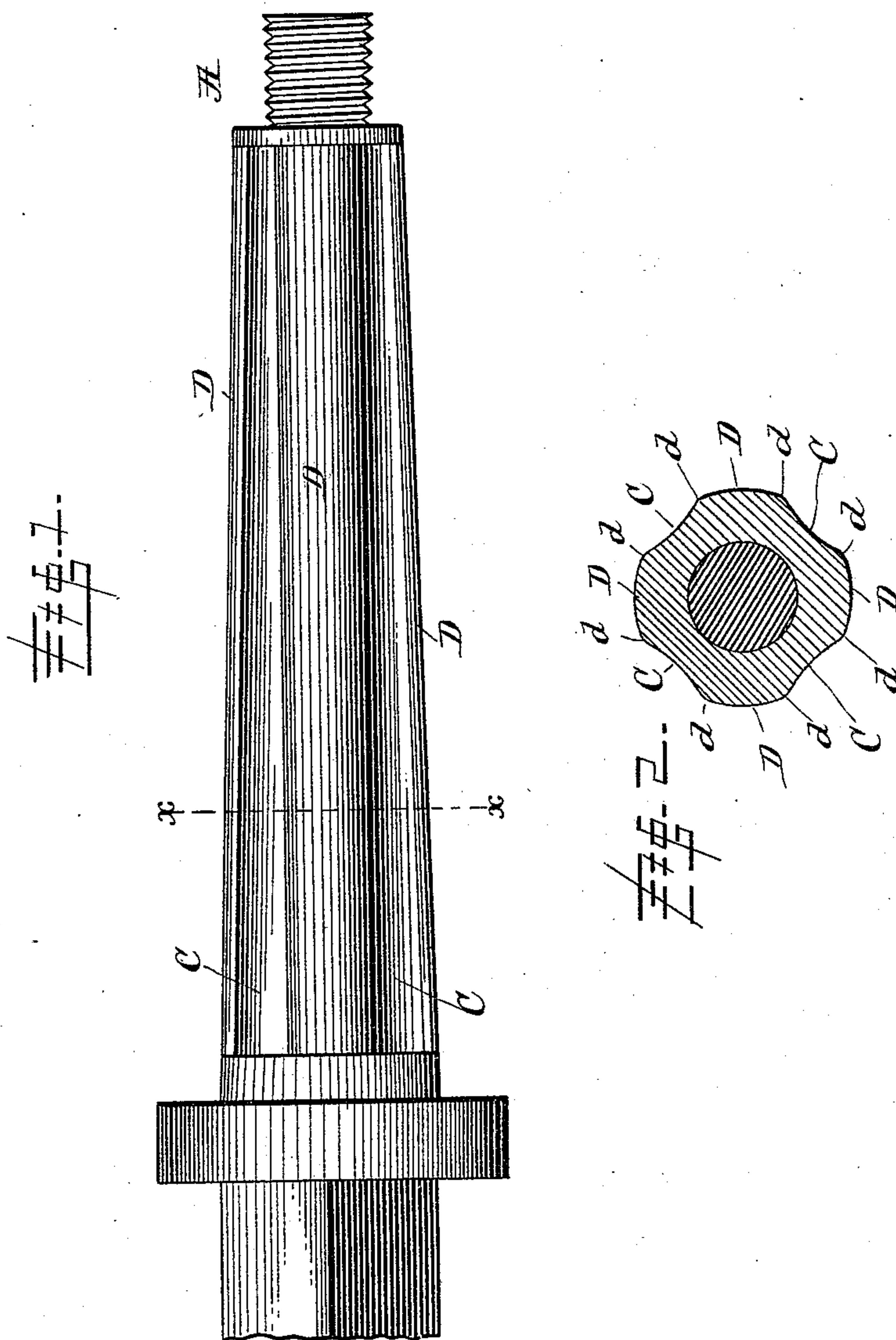


(No Model.)

P. McMENAMIN.
VEHICLE AXLE ARM.

No. 455,239.

Patented June 30, 1891.



WITNESSES

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VEHICLE-AXLE ARM.

SPECIFICATION forming part of Letters Patent No. 455,239, dated June 30, 1891.

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To all whom it may concern:

Be it known that I, PETER McMENAMIN, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Axle-Arms; 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 axle-arms.

The object of my invention is to provide an axle arm or skein which shall give but a comparatively small frictional bearing-surface without weakening the arm.

It is also my object to provide an axle arm or skein of this description which shall be durable and one which shall avoid cutting the axle-box.

It is also my object to provide an axle-arm which shall have means for holding the lubricant, whereby the frictional bearing-surfaces of said arm are automatically lubricated by the revolution of the axle-box.

It is also my object to provide an axle-arm having its bearing-surfaces at the sides and bottom alternate with longitudinal depressions to prevent heating of the axle-arm or axle-box, and for receiving dust and grit, and which shall also facilitate the cleaning of the axle-arm.

It is also my object to provide an axle-arm which shall admit of a close fit with the axle-box and at the same time afford ample space between them for holding the lubricant.

It is also my object to provide an axle-arm with four bearing-surfaces arranged opposite to each other at points best adapted to support the axle-box and receive the jar, pull, and weight from the same, one of said surfaces being on the under side of the arm and adapted to receive the weight directly under the arm, the arc of said bearing-surface extending far enough on either side of the vertical axis of said arm to receive the weight vertically independently of the draft or pull, and also independently of the inclination or declension of the grade upon which the vehicle is moving.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side

elevation of my axle arm or skein, and Fig. 2 is a vertical section taken on the line $x x$ of Fig. 1, showing my invention as applied to an axle skein or thimble shrunk upon the arm.

Referring to the drawings, A denotes the axle-arm, having four concave depressions C C C C formed therein.

D D D D denote four bearing-surfaces of the axle-arm.

d denotes compound curves dividing the bearing-surfaces D from the concave depressions C. As shown in Fig. 1, these depressions extend about a sixteenth of an inch from the outer end of the axle-arm to within about a quarter of an inch of the axle or collar, where said depressions end in nothing, the purpose of which ending is to form a perfect receptacle for the lubricant and prevent it from running out at either end and to avoid weakening the axle-arm at its most vulnerable point—viz., adjoining the axle or collar—and at the same time to have said depressions extend far enough to catch any dust or grit that may escape the dust-band, and also to make the lubricant-receptacle as long as possible. The size and depth of these depressions depend upon the diameter of the axle-arm. An arm of an inch in diameter should have depressions about the sixteenth of an inch in depth; their width between the bearings should correspond with an imaginary line or arc extending from bearing-surface to bearing-surface, and being about one-eighth of the circumference of the axle-arm.

The compound curves d , as shown in Fig. 2, avoid any sharp angles or corners in the axle-arm, and this is an important feature of my invention, as thereby I produce a smoother running axle-arm and avoid cutting and wear to the axle-box.

As shown in Fig. 2, I divide the axle-arm into four bearing-surfaces, one at each side and one at the top and bottom of the arms, at points diametrically opposite. The upper bearing-surfaces and the one at the rear side serve with the other bearing-surfaces to keep the axle-box in proper alignment with the arm and also receive the jar from the box. The forward bearing-surface receives the forward jar and pull, while the lower bearing-

surface receives the weight from the axle-box, the arc of this surface extending far enough to either side of the vertical axis of the arm to receive the weight vertically from
5 the axle-box independently of the draft or pull and also independently of the inclination or declension of the grade upon which the vehicle is moving.

When the lubricant is placed in the depression and the wheel placed on the axle-arm, the axle-box takes its position without interfering with or removing the lubricant as the inner walls or bearings of the axle-box pass over it. This construction is especially
10 valuable when a solid lubricant is used, particularly where there is a close fit of the axle arm and box, as in most wagon and carriage axles. As the wheel revolves, the grit or dust on the axle-arm or on the bushings of the
20 box will be carried to the depressions, where it will be deposited and become embedded in the lubricant, which facilitates the cleaning of the arm. The longitudinal depressions carrying the lubricant extend on all sides
25 nearly the entire length of the arm, and, alternating with the bearing-surfaces, give a perfect and even distribution of the lubricant. Said depressions also serve to lessen materially the friction and prevent heating.
30 It is evident that instead of closing the ends

of these concave depressions I may have said depressions run the entire length of the arm.

The principle of my invention is the same whether applied to axle-arms or to axle skeins or thimbles. When applied to the skeins, the
35 concave depressions may be widened as they approach the inner end of the skein or they may be of the same width, as likewise the bearing-surfaces.

When my invention is applied to a removable thimble or skein, it is evident that the
40 thimble or skein may be turned when the under bearing becomes worn.

Having shown and described my invention, what I claim, and desire to secure by Letters
45 Patent, is—

An axle arm or skein having four concave depressions running horizontally in the surface of the arm or skein and dividing the
50 same into four equal surfaces, said depressions ending at points adjacent to either end of said arm, and said depressions and surfaces being separated by compound curves, substantially as shown and described.

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

PETER McMENAMIN.

Witnesses:

F. G. KITTREDGE,
JAMES ADAMS.