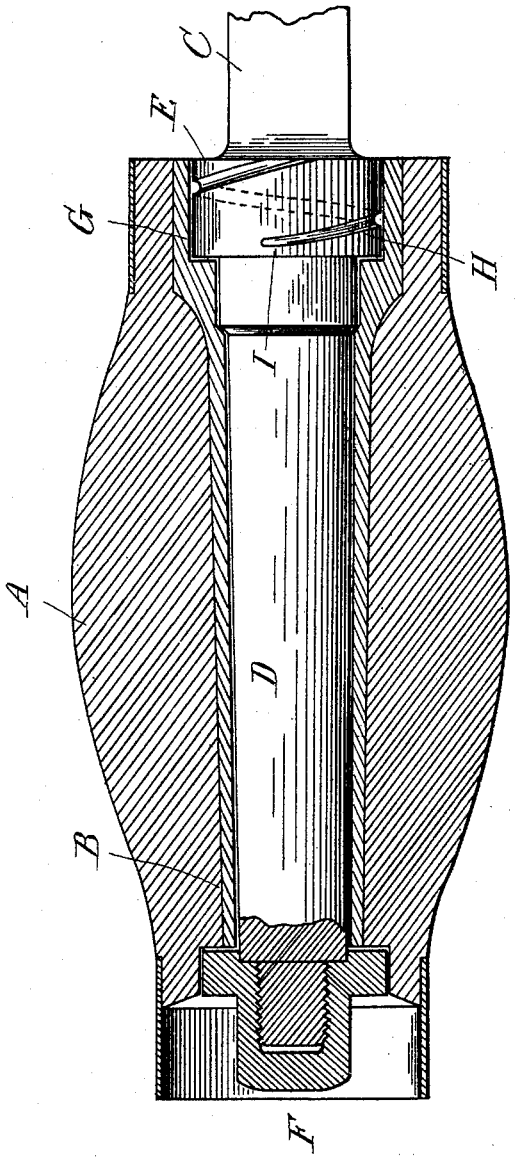
(No Model.)

F. S. CHURCH.

VEHICLE AXLE.

No. 489,181. Patented Jan. 3, 1893.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

FRANK S. CHURCH, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO WM. FITZ-HUGH EDWARDS, OF SAME PLACE.

VEHICLE-AXLE.

SPECIFICATION forming part of Letters Patent No. 489,181, dated January 3, 1893.

Application filed August 10, 1892. Serial No. 442,650. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. CHURCH, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Vehicle-Axles, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to new and useful improvements in vehicle axles, and the invention consists in the peculiar construction of the collar of the axle, whereby the dust is prevented from reaching the journal, all as more fully hereinafter described.

In the drawing I show a vertical, central longitudinal section through a vehicle hub and axle illustrating my invention.

A is the hub B, the skein therein, C the axle. D is the spindle of the axle. E is the collar. F is the nut. G is a socket or enlargement formed in the skein around the collar E, all of known and usual construction except as hereinafter described.

In the previous state of the art many attempts have been made to construct vehicle axles and hubs in such a manner as to prevent the dust getting into the journal, and somewhat similar devices to my own have been employed, a spiral screw thread has been cut in the collar E extending from the inner edge to the outer edge thereof. This has the serious objection that it will draw out the oil from the journal and in backing the vehicle will carry the dust into the journal, such a screw thread has been formed also beginning slightly inside of the inner edge of the collar and extending to a point slightly within the exterior edge of the collar. The objection to this construction was that it could not discharge the dust to the outside and consequently would soon become filled up and become useless.

My invention consists in making a spiral groove H commencing at a point slightly within the inner edge of the collar and extending to the outside thereof leaving a flange I between the end of this groove and the journal. The groove as shown increases in width and depth from its inner to its outer end. This construction is such that any dust which gets in between the enlargement G of the skein and the collar will be forced out by the screw action in the turning of the hub upon the spindle and be discharged at the bottom of the axle where it is free to drop upon the ground.

In backing the vehicle the screw action cannot carry the material into the groove beyond the flange I, thus I obtain a perfect dust proof axle under all conditions of use.

What I claim as my invention is:

1. In a vehicle axle, the combination with the spindle and the collar at the end thereof, having a spiral groove formed in its face and extending from a point near the inner edge only thereof, one or more times around said collar and directly to the outer edge, substantially as described.

2. In a vehicle axle, the combination with the spindle and a fixed collar at the end thereof having a spiral groove formed in its face and extending from a point near the inner edge only thereof, one or more times around said collar and directly to the outer edge, increasing in width and depth from its inner to its outer end, substantially as described.

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

FRANK S. CHURCH.

Witnesses:
M. B. O'DOGHERTY,
N. L. LINDOP.