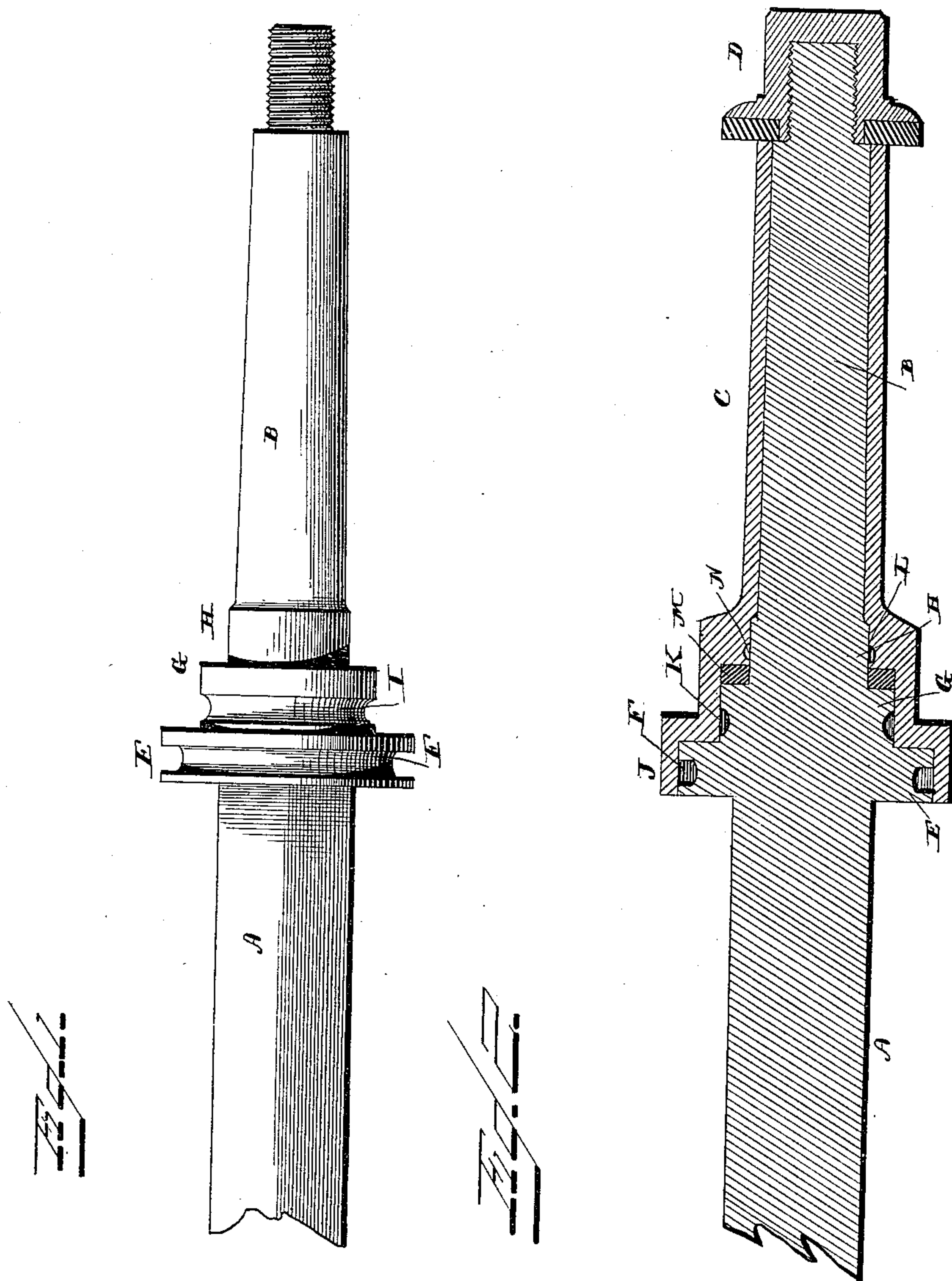


(No Model.)

P. K. HUGHES.
VEHICLE AXLE.

No. 329,835.

Patented Nov. 3, 1885.



WITNESSES
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PATRICK K. HUGHES, OF AUBURN, NEW YORK.

VEHICLE-AXLE.

SPECIFICATION forming part of Letters Patent No. 329,835, dated November 3, 1885.

Application filed September 7, 1885. Serial No. 176,407. (No model.)

To all whom it may concern:

Be it known that I, PATRICK K. HUGHES, a citizen of the United States, and a resident of Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Vehicle-Axles; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view, showing one end of a vehicle-axle having my improved spindle. Fig. 2 is a longitudinal sectional view of the end of the axle with the axle-box in position upon the spindle.

The same letters refer to the same parts in both the figures.

This invention relates to vehicle-axles; and it consists more particularly in certain improvements in the construction of the spindles of the same, as well as the axle boxes, which are constructed with particular reference to being used in conjunction with the said improved spindles.

The invention has for its object to so construct the spindles and axle-boxes as to form a complete and effective sand band or guard, which shall prevent sand and dirt from working into the bearings between the axle-box and spindle; and with these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claim.

In the drawings hereto annexed, A designates the end of a vehicle-axle of ordinary construction. B is the spindle of the same, which is made tapering, in the usual manner, to receive the axle-box C, which latter, when adjusted upon the spindle, is retained in position by means of the flanged nut D upon the outer end of the spindle. Upon the end of the axle adjoining the inner end of the spindle is formed a collar, E, having an annular groove, F, and upon the inner end of the spindle adjoining the said collar are formed two steps or shoulders, G and H, the inner one of which, G, is of the largest diameter, and is provided with an annular groove, I. The step or shoulder H may be made almost flush with the spindle proper.

The axle-box C is provided at its inner end with a flange, J, fitting closely upon and around the collar E adjoining the inner end of the spindle, and adjoining the said flange the axle-box is provided with annular recesses K and L, registering with and fitting tightly upon the shoulders G and H of the spindle. At the bottom of the recess K may be placed a washer, M, of leather or other suitable material, and the wall of the recess L is provided with an annular groove, N, registering with the central portion of the step or shoulder H of the spindle, as will be clearly seen in Fig. 2 of the drawings.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains without requiring any extended explanation. The collars or steps of the spindle, fitting in and registering with the flanges or annular grooves of the axle-box, serve to prevent the entrance of sand or mud, which, if it should by any possibility enter, will be intercepted by and retained in the annular grooves.

The improvement thus forms an efficient and simple sand and mud guard. The construction is simple and inexpensive and may be carried into effect at a trifling expense.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

The combination of an axle-spindle, an annularly-grooved collar at the inner end of the same, steps or shoulders formed upon the inner end of said spindle adjoining the said collar, the innermost one of said steps being provided with an annular groove, and an axle-box having a flange at its inner end to accommodate the collar at the inner end of the spindle, annular recesses to accommodate the shoulders or steps of the same, and an annular groove in the outermost recess registering with the outermost step or shoulder upon the spindle, and a washer between said step and said recess, substantially as and for the purpose herein shown and specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

Witnesses: PATRICK K. HUGHES.

G. S. WILLIAMS,
H. G. WYCKOFF.