

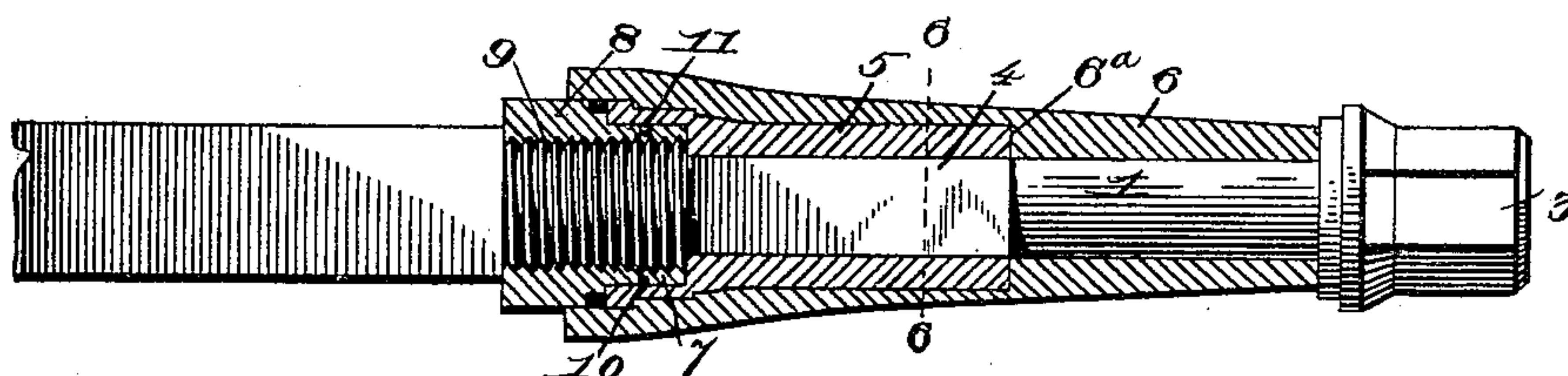
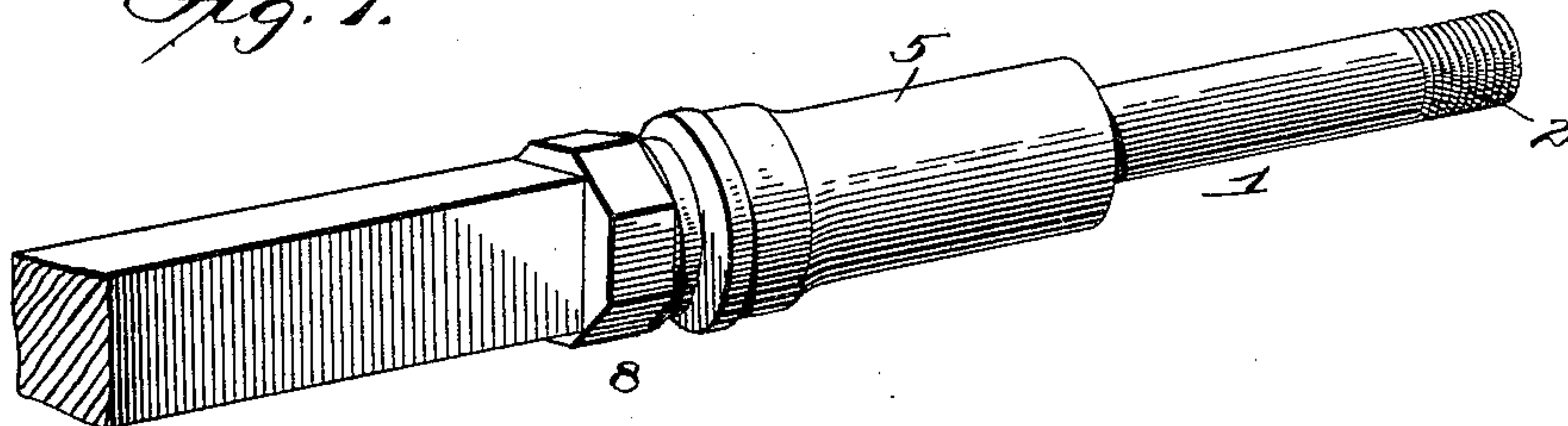
(No Model.)

C. A. FERGUSON.  
AXLE SPINDLE.

No. 583,195.

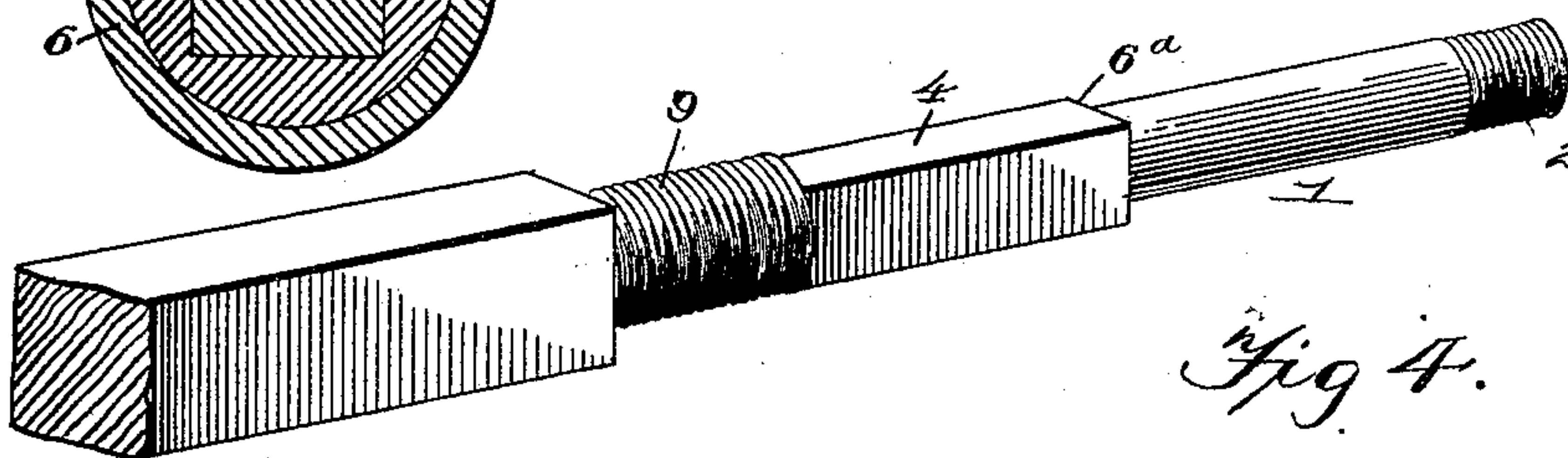
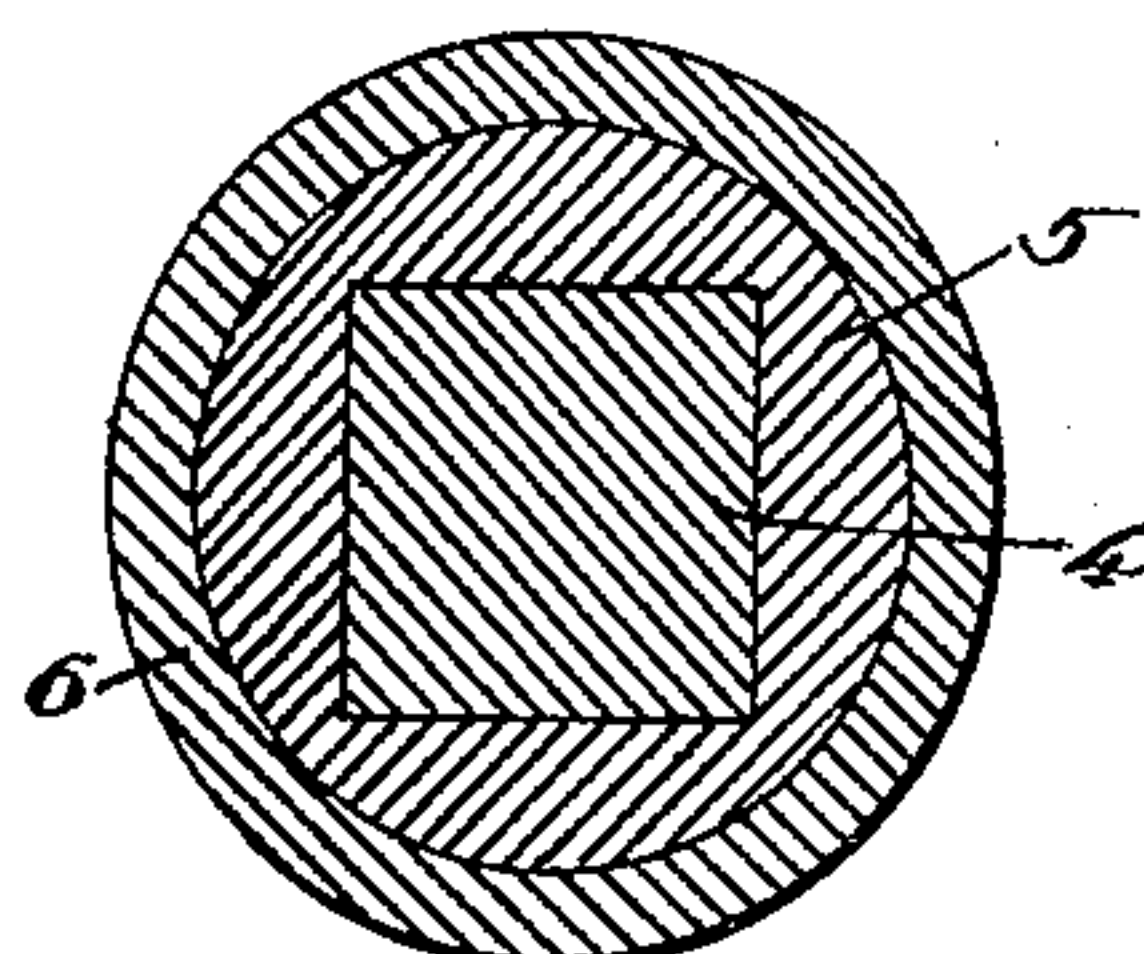
Patented May 25, 1897.

*Fig. 1.*



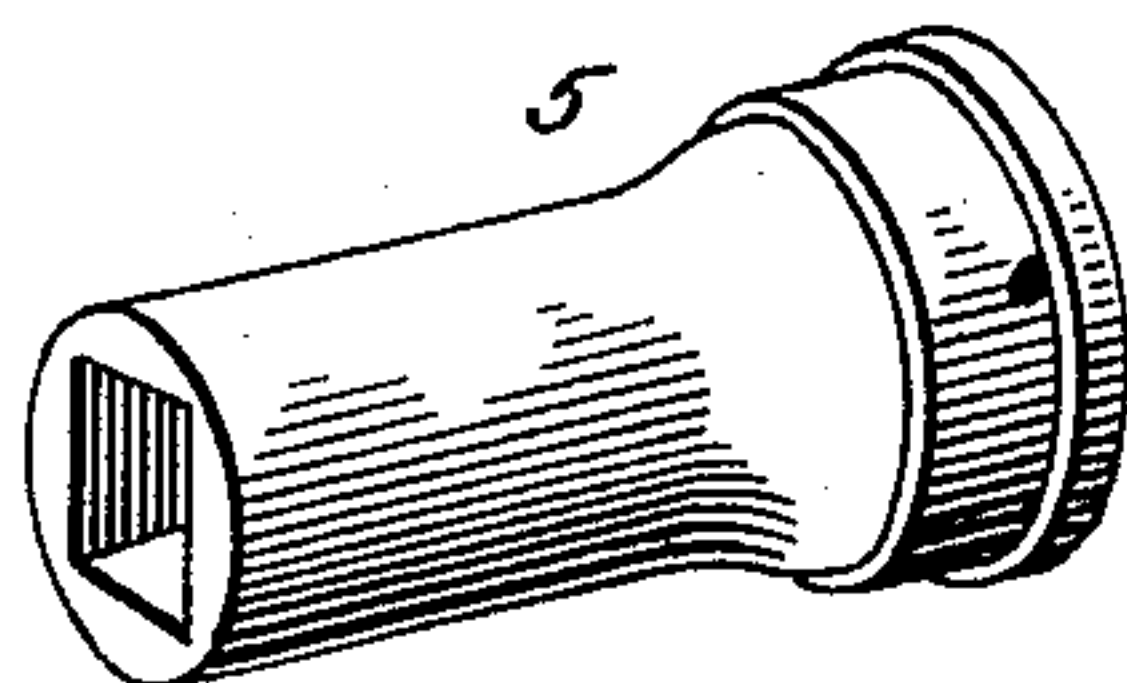
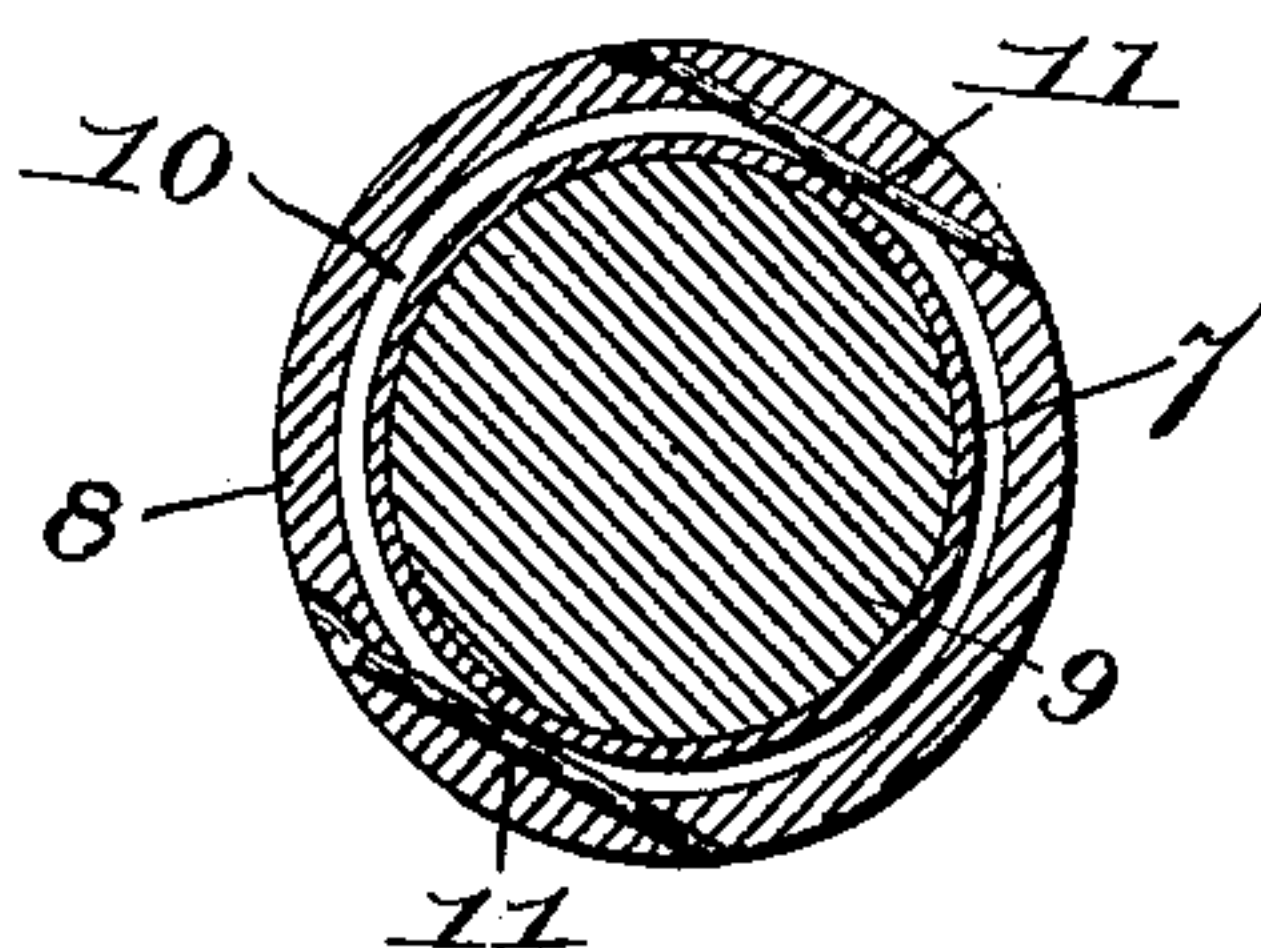
*Fig. 2.*

*Fig. 6.*



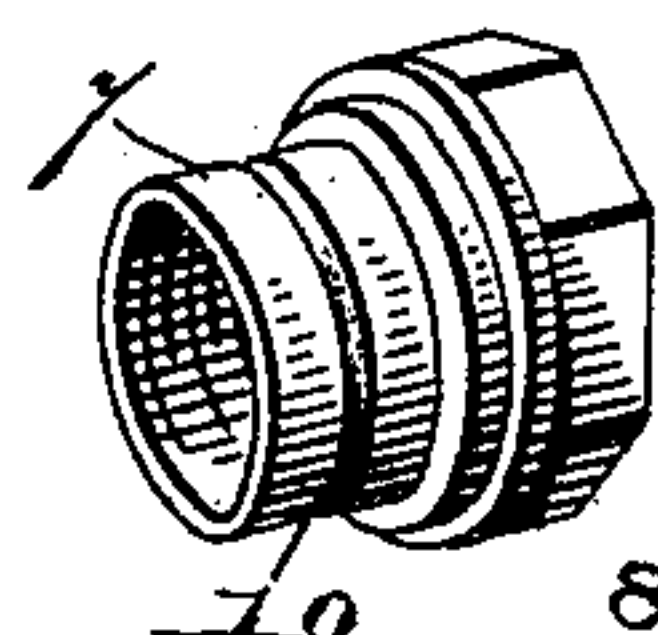
*Fig. 4.*

*Fig. 3.*



*Fig. 5.*

*Fig. 7.*



Witnesses

*D. M. McKinnon*  
*J. F. Riley*

By *H. J. S.* Attorneys.

Inventor  
*Charles A. Ferguson,*

*Chas. Snow & Co.*



# UNITED STATES PATENT OFFICE.

CHARLES A. FERGUSON, OF THEODORE, MARYLAND.

## AXLE-SPINDLE.

SPECIFICATION forming part of Letters Patent No. 583,195, dated May 25, 1897.

Application filed October 12, 1896. Serial No. 608,691. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. FERGUSON, a citizen of the United States, residing at Theodore, in the county of Cecil and State of Maryland, have invented a new and useful Axle-Spindle, of which the following is a specification.

The invention relates to improvements in spindles for vehicle-axles.

10 The object of the present invention is to improve the construction of spindles for vehicle-axles and enable the wear to be readily taken up without the employment of washers and without cutting down the outer end of the  
15 spindle and increasing the threaded portion thereof to enable the axle-nut to advance more closely on the axle-box.

20 The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

25 In the drawings, Figure 1 is a perspective view of a spindle constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same, an axle-box being arranged thereon. Fig. 3 is a transverse sectional view. Fig. 4 is a detail perspective view of the spindle, the axle skein or sleeve  
30 and the adjustable collar being removed. Fig. 5 is a detail perspective view of the adjustable collar. Fig. 6 is a transverse sectional view on line 6 6 of Fig. 2. Fig. 7 is a detail perspective view of the sleeve or skein.

35 Like numerals of reference designate corresponding parts in all the figures of the drawings.

40 1 designates an axle-spindle having its outer end threaded for the reception of an ordinary axle-nut 3. The outer portion of the spindle is round and its inner portion 4 is squared or otherwise polygonal and is adapted to receive a sliding skein or sleeve 5, which has a rectangular opening or bore to conform  
45 to the configuration of the rectangular portion 4 of the spindle. The sleeve or skein 5 forms a bearing for an axle-box 6, designed to be secured in the hub of a wheel in the ordinary manner. The outer portion of the bore  
50 or opening of the axle-box is reduced and of less diameter than the inner portion, in order to conform to the configuration of and snugly

receive and form a bearing for the rounded portion of the axle-spindle, and a shoulder 6<sup>a</sup> is formed at a point intermediate of the ends  
55 of the axle-box by the inner and outer portions of the opening or bore. The inner annular shoulder 6<sup>a</sup> of the axle-box fits against the outer end of the sleeve or skein 5, and the wear of the parts is received at this point, and  
60 the skein or sleeve 5 is adapted to be moved outward on the spindle of the axle to take up such wear and obviates the necessity of employing washers to accomplish the same result. The outer face of the sleeve or skein 5  
65 is rounded to form a journal or bearing-surface for the axle-box, and the wear is received at the bottom of the sleeve or skein, and when the latter becomes worn at this point it is adapted to be removed from the spindle and  
70 partially rotated to bring fresh portions of its surface at the bottom, whereby it is adapted to be used until its entire surface has become worn. After its entire surface has become  
75 worn it may be readily replaced by a new sleeve or skein. The inner end of the sleeve or skein 5 is provided with an annular recess, receiving and detachably swiveled to an annular portion 7 of a collar 8. The adjustable  
80 collar 8, which is provided with a polygonal portion or wrench-seat, is interiorly threaded and screws on an enlarged portion 9 at the inner end of the spindle. The annular or rounded portion 7 of the detachable collar is  
85 provided with an exterior annular groove 10, which is engaged by pins or fastening devices 11 of the skein or sleeve 5, and the pin 11, which is arranged in perforations of the sleeve or skein, extends across the inner face  
90 thereof a sufficient distance to engage the annular groove 10 of the collar 8. The pins or fastening devices 11 are threaded at one end and are provided at the other end with a head, and the perforations of the sleeve or  
95 skein are threaded for the reception of the threaded ends of the pins or screws 11. By this construction the pins or screws are prevented from becoming accidentally displaced and lost.

When it is desired to take up the wear of  
100 the parts, the adjustable collar is readily rotated by means of a wrench to force the sleeve or skein outward, and as such sleeve or skein is slidingly mounted on the polygonal portion



of the spindle and is swiveled to the adjustable collar it will be readily apparent that it can be moved outward by the rotation of the collar 8. Any amount of wear can be readily  
5 taken up in this manner, and the adjustable sleeve or collar obviates the necessity of reducing the spindle or employing washers.

It will be seen that the spindle is simple, strong, and durable, and that it will enable  
10 the wear of the parts to be readily taken up without removing a wheel and without employing washers or cutting down the axle. It will also be apparent that the sleeve or skein is adapted to be removed from the poly-  
15 gonal portion of the spindle and partially rotated to bring fresh portions of its surface at the bottom, so that its entire surface may be used before discarding it.

What I claim is—

20 1. In a device of the class described, the combination of a spindle, a sleeve or skein slidably mounted thereon and capable of movement longitudinally thereof to take up the wear, and an adjustable collar mounted  
25 on the spindle, engaging the sleeve or skein and adapted to force the latter outward, substantially as and for the purpose described.

2. In a device of the class described, the combination of a spindle having its outer end  
30 threaded and provided with an inner polygonal portion, a sleeve or skein slidably mounted on the polygonal portion of the spindle and having its opening or bore conforming to the configuration thereof, and an interiorly-threaded adjustable collar arranged on  
35 the threaded end of the spindle and swiveled to the adjacent end of the skein or sleeve, substantially as described.

3. In a device of the class described, the  
40 combination of a spindle having its inner end

enlarged and threaded, provided with a polygonal inner portion and having its outer portion rounded and threaded at the end to receive an axle-nut, an adjustable collar arranged on the threaded inner end of the  
45 spindle, provided with a wrench-seat and having an annular portion with an exterior annular groove, a sleeve or skein slidably mounted on the polygonal portion of the spindle and provided at its inner end with an  
50 annular recess receiving the annular portion of the adjustable collar, and a pin passing through the inner end of the sleeve or skein and engaging the annular groove of the collar, substantially as and for the purpose de-  
55 scribed.

4. In a device of the class described, the combination of a spindle having a polygonal inner portion and a rounded outer portion, a sleeve or skein arranged on the polygonal  
60 portion of the spindle and adapted to slide thereon, an axle-box having an outer reduced portion to fit the rounded portion of the spindle and having an enlarged inner  
65 portion receiving the sleeve or skein, said axle-box being provided at the juncture of the inner and outer portions of its bore with a shoulder fitting against the outer end of the sleeve or skein, and an adjustable collar  
70 mounted on the spindle, swiveled to the sleeve or skein and adapted to advance the same to take up the wear, substantially as described.

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

CHARLES A. FERGUSON.

Witnesses:

JOHN H. SIGGERS,  
W. B. HUDSON.